

Phase II Comprehensive Site Assessment

71 Airport Road
West Tisbury, Massachusetts
RTN 4-0027571



November 18, 2022

Ms. Jennifer Wharff
Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

**Re: Phase II Comprehensive Site Assessment
71 Airport Road
West Tisbury, Massachusetts
RTN 4-0027571**

Dear Ms. Wharff:

Tetra Tech has prepared this Phase II Comprehensive Site Assessment report (Phase II Report) for the above-referenced Disposal Site on behalf of the Martha's Vineyard Airport Commission (MVAC). The Disposal Site is related to the identification of per- and polyfluoroalkyl substances (PFAS) attributed to suspected releases from various sources including aqueous film-forming foam (AFFF). This Phase II Report has been performed pursuant to the requirements of the Massachusetts Contingency Plan, 310 CMR 40.0835.

Please contact the undersigned at (508) 786-2200 if you have any questions or require additional information.

Very truly yours,

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1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) has prepared this Phase II Comprehensive Site Assessment report (Phase II Report) on behalf of the Martha's Vineyard Airport Commission (MVAC), in accordance with the Massachusetts Contingency Plan (MCP) under 310 CMR 40.0000, for the Disposal Site identified by the Massachusetts Department of Environmental Protection (MassDEP) with Release Tracking Number (RTN) 4-0027571 (the Site).

This submittal has been prepared in accordance with the requirements of a Phase II Report and Completion Statement under 310 CMR 40.0835 to document the Comprehensive Site Assessment (CSA). This submittal contains the findings of CSA activities implemented pursuant to the MCP to evaluate the presence of hazardous materials resulting from usage and releases of aqueous film-forming foam (AFFF) which has resulted in the presence of per- and polyfluoroalkyl substances (PFAS) at the Site. The Phase II Report and Completion Statement present relevant information, data, and findings to document the CSA activities and the opinion of the Licensed Site Professional (LSP) for RTN 4-0027571. The material facts and LSP Opinions presented in this submittal are subject to the limitations and conditions presented in Appendix A. This submittal is appended to the appropriate transmittal form (BWSC-108) established by MassDEP and is submitted in electronic format via eDEP.

2.0 DISPOSAL SITE INFORMATION

The Site includes a portion of the Martha's Vineyard Airport (MVY) property which is comprised of two separate parcels of land: a 410.28-acre parcel of land identified as 71 Airport Road in West Tisbury, Massachusetts, and a separate 385.6-acre parcel of land identified as 9 Airport Road in Edgartown, Massachusetts. The Site also includes properties owned by other parties in the downgradient (southerly) direction relative to MVY. The general location and the 500 foot and ½ mile radii from the Site are shown on a topographic map of the area on Figure 1. A Disposal Site Plan showing relevant details of the Site and downgradient properties relative to the boundaries of the Site is included as Figure 2.

2.1 DISPOSAL SITE LOCATION

The Site is generally located in a cleared area surrounded by scrub oak forest on the island of Martha's Vineyard off the south coast of Massachusetts. The Site includes paved runways and roads, several separate buildings related to airport operations, aircraft storage, airport maintenance and administration, associated parking areas, and a business park with numerous buildings for office space and commercial tenants. The MVY property is supplied with municipal water from the Town of Oak Bluffs, and the on-site wastewater treatment plant receives wastewater from the airport and business park. MVAC employs approximately 18 workers who may be on-site at any one time.

The Site also includes residential developments to the south of MVY including suburban style single family homes with both seasonal and fulltime residents. The residential developments south of MVY have private wells and on-site sewage disposal (septic) systems.

3.0 DISPOSAL SITE HISTORY

The following sections provide information on the history of the Site in accordance with 310 CMR 40.0835(4)I.

3.1 OWNER AND OPERATIONS HISTORY

The Site was initially developed by the U.S. Navy as an airport and pilot training facility in 1942. In 1959, the property was transferred to Duke's County for use as a county airport. MVAC operates the airport on behalf of Duke's County including the business park and the water and wastewater services.

3.2 RELEASE HISTORY

In early 2018 based on the then available scientific data regarding PFAS and the likelihood of future MassDEP guidance and regulatory standards, MVAC initiated a voluntary assessment of suspected releases of AFFF associated with Federal Aviation Administration (FAA)-required testing of AFFF formulations, historic firefighting exercises (none documented over the past 20 years), one documented small aircraft gear-up landing where AFFF was applied to an aircraft and runway in 2006, and one response to a fire at a boat storage yard at the business park in 2011. AFFF is comprised of PFAS, and it was believed that these events may have released PFAS into the environment in the past when the potential environmental impacts of PFAS were less understood, and such activities were not considered to be detrimental to groundwater.

Based on interviews with MVY personnel, there are nine (9) separate locations where it is suspected that AFFF was used and may have been released to the environment at MVY. The suspected AFFF use locations are shown on Figure 2 and described below:

- Semi-annual testing of AFFF formulations from approximately 2002 to 2017 – estimated 100 to 400 gallons of 3% AFFF solution per event (Area 1).
- Four hydrants where residual AFFF within equipment was flushed from equipment following testing – estimated 2,000 to 3,000 gallons of clean flush water with diluted AFFF solutions per event (Areas 2, 3, 4, 7). Area 2 is believed to have been utilized most frequently based on proximity to the semi-annual AFFF testing area.
- AFFF testing prior to 2002 was reportedly infrequently performed but is believed to have occurred proximate to the aircraft rescue and firefighting (ARFF) building – unknown volume (Area 3).
- A large-scale AFFF test was reportedly performed on the apron in the early 1990s in the area north-northwest of the airport terminal building – unknown volume (Area 5).
- An aircraft gear-up landing where AFFF was dispersed on the plane and runway in 1996 – estimated 20 to 30 gallons of 3% AFFF solution (Area 6).
- Semi-annual AFFF testing at the paved deicing containment area since 2017 – estimated 100 to 400 gallons of 3% AFFF solution plus 2,000 to 3,000 gallons of diluted AFFF flush water per event (Area 8). In fall 2018 and spring 2019, discharges of AFFF solutions in this area were

directed to an underground storage tank for containment. Approximately 7,000 gallons of AFFF solution were contained in the underground storage tank during these events. From 2019 to present, FAA-required testing is performed using a no discharge procedure where AFFF is not discharged to the environment.

- Firefighting incident at a boat storage yard in the business park in 2011 – estimated 500 to 1,000 gallons of 3% AFFF solution (Area 9).
- There have been other documented aircraft accidents at or near MVY (Tetra Tech, 2019); however, there is limited or no information documenting the use of AFFF. The locations of these other incidents are not depicted on Figure 2, but are briefly described below:
 - A passenger airplane crash (Cape Air flight 1381) on January 30, 2001 involved a fire where foam was reportedly sprayed onto the burning plane located within the Manuel F. Correllus State Forest (unknown location).
 - A small plane crash with a fire occurred within the Manuel F. Correllus State Forest (unknown location) on November 27, 2005. It is unknown whether AFFF was deployed during this incident.
 - A single engine plane crashed and exploded on the evening of September 18, 1992 in a wooded area about one-half mile from the airport. It is unknown whether AFFF was deployed during this incident.

3.2.1 Release Identification, Reporting, and Regulatory History

In June 2018, MassDEP issued drinking water guidance via the Office of Research and Standards Guidelines (ORSG) for the sum of five PFAS of 70 parts per trillion (ppt). Sampling of private wells located south of MVY on Waldrons Bottom Road and Vineyard Meadow Farms Road in November 2018 identified PFAS at concentrations above the ORSG concentration and at concentrations that necessitated reporting to MassDEP as a potential Imminent Hazard (IH) based on a Method 3 risk characterization. On November 20, 2018, MassDEP was notified of this condition; RTN 4-0027571 was assigned to the PFAS release at MVY; and MVAC and Tetra Tech initiated Immediate Response Action (IRA) activities that had been orally-approved by MassDEP. These activities included providing bottled water to impacted residents, installing point-of-entry treatment (POET) systems, and performing an extensive private well sampling and public notification program within the potentially-impacted area. As outlined in the IRA Plan, the orally-approved IRA activities also included provisions for managing potential PFAS-impacted soils as part of a planned runway project.

On December 27, 2019, MassDEP promulgated regulatory standards for PFAS along with other revisions to the MCP. These regulatory revisions to the MCP identified six (6) individual PFAS that are regulated as hazardous materials under the MCP including: perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), and perfluorodecanoic acid (PFDA). Collectively these 6 PFAS compounds are herein referred to as “PFAS6”. The concentrations of PFAS6 in soil and groundwater detected at the Site exceed the established and applicable MCP Reportable Concentrations (RC).

The following summarizes the regulatory history of RTN 4-0027571:

- November 20, 2018: Verbal notice to MassDEP

- December 12, 2018: MassDEP issued a Notice of Responsibility (NOR) and a request for IRA with interim deadlines
- January 18, 2019: Release Notification Form (RNF) and IRA Plan submitted to MassDEP
- February 18, 2019 through July 2019: Monthly IRA Status Reports to address the IH
- November 20, 2019: Phase I Initial Site Investigation and Tier I Classification submitted to MassDEP
- December 19, 2019 through June 21, 2022: Semi-annual IRA Status Reports
- July 28, 2020: MassDEP performed a technical screening audit of the Site
- January 4, 2021: MassDEP performed a technical screening audit of the Site
- August 26, 2021: MassDEP performed a technical screening audit of the Site
- January 27, 2022: MassDEP performed a technical screening audit of the Site
- July 25, 2022: MassDEP performed a technical screening audit of the Site

3.3 OIL AND/OR HAZARDOUS MATERIALS USE AND STORAGE HISTORY

According to 14 CFR Part 139 §139.315 and §139.317, operators of Part 139 airports (including MVY) must provide ARFF services including a vehicle carrying an amount of water and the commensurate quantity of AFFF during air carrier operations that require a Part 139 certificate. Based on interviews with MVY personnel, FAA-required testing of AFFF formulations has occurred since at least the 1990s, but likely began many years prior. The FAA required ARFF services at certain airports beginning in 1972.

In September 2016, the FAA issued a National Part 139 CertAlert specified that all purchases of AFFF after July 1, 2006 by airport operators holding an FAA Airport Operating Certificate conform to specification MIL-F-24385 as a replacement for the older UL 162 AFFF formulations. The FAA stated that “If an airport is still using UL 162 AFFF, it may continue to do so until the supply is gone; however, it may not purchase additional UL 162 AFFF.” Due to the phase-out of the manufacturing of longer-chained perfluorinated compound-based products, current “mil-spec” AFFF formulations may contain only very low concentrations of PFOS, which was the predominant PFAS compound in early AFFF formulations.

The current inventory of AFFF at MVY includes two 265-gallon totes of Chemguard 3% AFFF (C-301MS – manufactured circa 2011), one 265-gallon tote of Chemguard 3% AFFF (C306-MS-3 – manufactured circa 2017), five 55-gallon drums (3 full, 2 partial) of Chemguard 3% AFFF (C306-MS-C - manufactured circa 2019). There is also one 55-gallon drum of about 25 gallons of an older unidentified AFFF formulation (circa 2010) that is being stored pending disposal. Copies of the Safety Data Sheets for the identified products are included in Appendix B. Totes and drums of AFFF concentrate are stored in a secured location at the MVY ARFF building as identified on Figure 2.

Prior to November 2018, the FAA-required testing of AFFF from the two ARFF firefighting trucks typically involved the release of AFFF solutions to the ground surface during testing. From 2002 to 2017 these tests were performed semi-annually in an unpaved area just west of the wastewater treatment plant (WWTP), shown as Area 1 on Figure 2. Following testing, the truck tanks and dispensing equipment were flushed

with domestic water at various hydrants to remove residual AFFF. Based on its proximity to the primary AFFF testing area (Area 1), most flushing is believed to have occurred proximate to a hydrant at Area 2, shown on Figure 2. As further detailed in Section 4.1.1, beginning in November 2018 operational changes to mitigate releases to the environment were implemented by MVY personnel during AFFF testing that included collecting both testing solutions and flush water during the FAA-required testing of AFFF. More recently in January 2019, the FAA issued a National Part 139 CertAlert that documented the approval of non-discharge (closed loop) AFFF testing systems, and MVY is now performing AFFF testing by using the approved non-discharge testing systems.

Additional oil and hazardous materials storage activities at MVY are briefly summarized below:

- Aircraft are fueled with aviation gasoline or jet fuel using mobile refueling vehicles. There is a fuel storage area at the southwesterly portion of MVY where bulk aboveground storage tanks for petroleum products are stored.
- Various maintenance related oils and hazardous materials are stored in small containers (e.g., 1-gallon to 55-gallon) at the maintenance building adjacent to the ARFF building. Also, various airport maintenance equipment (trucks, snowplows, etc.) are stored in this area.
- A separate building (the Hadley Hanger) is also used for temporary storage of small quantities of maintenance related chemicals. During an inspection Tetra Tech observed empty containers of AFFF in this building. However, it is not believed that this was an area used for AFFF activities.

3.4 WASTE MANAGEMENT HISTORY

The following sections provide a general description of the known and relevant waste management practices at the Site.

3.4.1 AFFF Solution Testing

The FAA continues to require AFFF formulation testing and/or demonstration of capability to respond to aircraft emergencies approximately semi-annually to annually. Based on the AFFF formulations that have existed in the past, it is believed that the AFFF historically discharged at the Site may have contained PFOS, and to a lesser extent, PFOA and other PFAS. AFFF last discharged at the Site likely included C301 (2011) and C306 (2017) formulations. These formulations are comprised primarily of shorter-chained PFAS that are not included on the MassDEP PFAS6 list. Further evaluation of AFFF source materials is presented in Section 5.1.1.

As previously discussed, beginning in November 2018, operational changes to mitigate releases were implemented by MVY personnel during AFFF testing that included collecting both testing solutions and flush water during the FAA-required testing of AFFF. Collected water was conveyed into an underground containment tank at MVY via a drain system within the paved deicing area of the apron. The containment area is a sloped and paved apron area at the southeast portion of the apron at MVY, as shown as Area 8 on Figure 2. A valve-operated piping system connects the containment area to a 10,000-gallon underground fiber-reinforced containment tank. This tank was originally intended to contain solutions associated with deicing; however, deicing operations have not been required at MVY. The valve can also be actuated to discharge stormwater to a subsurface infiltration area (for normal stormwater discharges), the location of which is shown on Figure 2. AFFF testing was performed in fall 2018 and spring 2019 within the deicing apron area, and the control valve was configured such that AFFF residues were contained and collected into the underground containment tank during the test. No discharges of AFFF have been

required by FAA since spring 2019. Approximately 7,000 gallons of AFFF solution and flush water have been contained within the underground tank. The AFFF testing solutions that are collected in the underground tank will be either disposed off-site or treated and discharged on-site in accordance with the MassDEP Underground Injection Control (UIC) Program.

3.4.2 MVY Wastewater Management

Wastewater from MVY is managed by an on-site WWTP. The WWTP includes approximately 2.4 miles of piping and services the airport facility and the business park. Wastewater is treated via a rotating biological contactor prior to discharge to groundwater to the south of the WWTP on the portion of MVY in West Tisbury, Massachusetts. The discharge to the infiltration gallery is intermittent and varies seasonally with an overall average of approximately 9,300 gallons per day (GPD). The discharges typically occur for several hours each day. In general, the highest flow rates occur during the busier summer months and average approximately 13,300 GPD with discharges occurring for approximate 10 to 12 hours beginning in the morning. In the off-season (September through May) the average discharge flow rate is approximately 7,900 GPD with discharges occurring for approximately four hours beginning around mid-day (in the fall) and mid-afternoon (in the winter). The location of the WWTP and infiltration gallery is shown generally on Figure 2 and in detail in Figure 4. There are also two private “grandfathered” septic systems that are located on MVY property at the former Amerigas building and the former C&W Building near Barnes Road.

3.4.3 Hazardous Waste Management

MVY is listed as a Small Quantity Generator (SQG) of hazardous waste (D001 ignitable waste) and is associated with identification number MAD985275809. The main hazardous waste storage area is located in the MVY hanger to the west of the ARFF building as depicted on Figure 2.

3.4.4 Stormwater Management

Stormwater from MVY is managed by a variety of means including sheet flows and a dedicated stormwater conveyance system. Past application of AFFF has occurred to paved apron areas at MVY that may have been exposed to stormwater. Within the apron areas of the MVY, stormwaters are collected via a stormwater conveyance system that directs stormwater to various management areas. The stormwater management areas that are applicable to the Site are identified on Figure 2 and include:

- **Underground Drainage Chamber #1:** this subsurface stormwater infiltration structure is located on the westerly aircraft apron and southerly of Runway 6-24.
- **Underground Drainage Chamber #2:** this subsurface stormwater infiltration structure located at the easterly side of the airport apron and southerly of Runway 6-24.
- **Deicing Area Stormwater Management System:** this subsurface stormwater infiltration area is located on the westerly side of the deicing area and southerly of Runway 6-24. A valve can be actuated to divert the collected flow into an underground storage tank.
- **Stormwater Outfall:** this is a stormwater outfall to the ground surface located east of the main airport area that may have received past discharges from aviation-related areas.

3.5 ENVIRONMENTAL PERMITS AND COMPLIANCE

A written RNF and a written IRA Plan were submitted to MassDEP on January 18, 2019, and MassDEP subsequently issued a Conditional Approval and Interim Deadline on February 7, 2019. IRA Status Reports were required and were submitted to MassDEP monthly through July 2019. MassDEP subsequently reduced the IRA Status Report submittal frequency to semi-annually after July 2019. Semi-annual IRA Status Reports have been submitted in December and June of each year since December 2019.

On November 20, 2019, the Site was classified as a Tier I Site under the MCP because there is evidence of groundwater contamination in a drinking water source area, and one or more remedial actions are required as part of an IRA. As part of the IRA, POET systems were installed at residential properties located in West Tisbury and Edgartown, Massachusetts. The installation of the POET systems required obtaining permits from the local towns.

The discharge from the WWTP is permitted by an Individual Groundwater Discharge Permit issued by MassDEP pursuant to 314 CMR 2.00 and 314 CMR 5.00. The current permit for the WWTP discharge was issued to the MVAC and is identified by permit number is 171-4 with an effective date of May 15, 2017. The WWTP discharge permit has influent, effluent, and groundwater monitoring requirements.

The existing stormwater infiltration at the Site is permitted under the UIC Program and is associated with UIC Registration #MAS41A296201-5D401.

The discharge of treated AFFF solutions and rinse water, currently being stored in the underground tank near the deicing area, is approved for discharge to the subsurface stormwater infiltration area under the MassDEP UIC Program following effective treatment to remove PFAS. Approval was granted on April 22, 2020, but a UIC registration number was not provided. The submittal was associated with eDEP Transaction # 1172893. However, at this time no discharge to the subsurface has occurred under this approval.

3.6 POTENTIALLY RESPONSIBLE PARTIES

The MVY airport is owned by Dukes County and operated by MVAC; therefore, each of these entities are potentially responsible parties (PRPs) under the MCP.

PFAS are widespread and persistent in various environmental media. It is likely that atmospheric deposition and rainwater contribute to PFAS impacts to soil and water. There are also permitted discharges of wastewater that likely contain PFAS from septic systems and wastewater treatment plants. These sources may contribute to the presence of PFAS in the environment but may not be attributable to a specific PRP.

4.0 REMEDIAL ACTIVITIES SUMMARY

As described above, on November 20, 2018, MassDEP was notified of an IH condition at the Site, and an IRA was initiated. Based on the circumstances that resulted in reporting the release of PFAS to MassDEP, the following objectives were established for the IRA:

- Evaluate the Site for conditions that may indicate an existing or potential future IH to current receptors;

- If an IH is identified, facilitate the implementation of mitigation measures to protect human health at the Site; and,
- Further assess the nature and extent of PFAS impacts to the subsurface to mitigate and/or control the potential on-site source of PFAS impacts that may contribute to Substantial Release Migration, a Critical Exposure Pathway and/or IH.

IRA activities are ongoing to address the potential IH and CEP conditions. The following summarizes the IRA activities completed at the Site.

4.1 SOURCE ELIMINATION

An important objective for initiating the voluntary assessment of AFFF impacts at MVY in early 2018 was to identify and eliminate sources of PFAS to the environment to the extent possible. The following summarizes the current status of source elimination activities.

4.1.1 AFFF Testing Discharge Elimination

The FAA continues to require AFFF formulation testing and/or demonstration of capability to respond to aircraft emergencies approximately semi-annually to annually. Based on the AFFF formulations that have existed in the past, it is believed that the AFFF historically discharged at the Site may have contained PFOS, and to a lesser extent, PFOA and other PFAS. The AFFF discharged in recent years, based on current AFFF formulation in use at MVY, is believed to have been comprised of primarily shorter chained PFAS which are not included in the list of the PFAS6 currently regulated by MassDEP.

AFFF testing was performed in fall 2018 and spring 2019 within the deicing apron area, and the control valve was configured such that AFFF residues were contained and collected into the underground containment tank during the test. Approximately 7,000 gallons of AFFF solution and flush water have been contained within the underground tank. A treatment approach is being developed and evaluated to determine the feasibility of treating and discharging this wastewater under the MassDEP UIC Program. Otherwise, this liquid will be hauled off-site for disposal once an appropriate disposal option is identified.

In 2019, the FAA issued a National Part 139 CertAlert that documented the approval of non-discharge AFFF testing systems, and MVY is now performing AFFF testing using the approved non-discharge testing systems. Therefore, there are no recent discharges of AFFF solutions to the ground or subsurface at the Site.

4.1.2 Source Area Soil Assessment

Between 2018 and 2022, soil sampling was performed under the IRA to assess known or suspected AFFF discharge locations at the Site. The detected PFAS6 concentrations at the source areas ranged from <1 ng/g to 126 ng/g. The highest and most frequent detections of PFAS6 were found at the AFFF testing area proximate to the WWTP, Area 1, as shown on Figure 3 and Figure 4. However, the concentrations of PFAS6 in soil at the Site were well below the MCP Method 2 direct contact exposure-based soil concentrations and did not suggest that immediate soil remediation activities were warranted. The soil assessment activities completed to support this Phase II Report are detailed in Section 5.2.

4.2 PRIVATE WELL SAMPLING

PFAS migration in groundwater was found to have resulted in the presence of PFAS6 in residential private water supply wells south of MVY with the highest concentrations identified at the northerly portions of Waldrons Bottom Road and Vineyard Meadow Farms Road. To further assess potential drinking water impacts from PFAS, an extensive community outreach and sampling program was initiated under the IRA in November 2018 and is ongoing. The private wells were sampled following purging, according to applicable drinking water sampling protocols. Additional details on private well sampling and a summary of the findings of this assessment are provided in Section 5.5. To maintain privacy, each residential property that was sampled was assigned a unique identifier (e.g., Property A). A map showing the private well sampling locations and maximum PFAS6 concentrations of PFAS6 is included as Figure 5A. The highest PFAS6 concentrations detected in 2022 or the most recent sample for locations not sampled in 2022 are shown in Figure 5B.

4.3 ASSESSMENT OF PUBLIC WATER SUPPLIES

The Site is not located within the Zone II for a public water supply, an Interim Wellhead Protection Area for a public water supply, or the Zone A of a Class A surface water body. However, based on the persistence and mobility of PFAS in groundwater, an assessment of nearby drinking water source areas was performed. The Zone II for the Oak Bluffs water supply wells is located greater than 0.5-miles north of the Site. The following describes the assessment of public water supplies performed under the IRA.

The U.S. EPA performed sampling of the Oak Bluffs and Edgartown public water supply systems in 2014-2015 (U.S. Environmental Protection Agency, 2019). The results of U.S. EPA assessment did not detect PFAS above the laboratory detection limits (typically 10 to 40 ppt) in the various U.S. EPA samples from these public water supplies. MassDEP has performed more recent drinking water sampling at the Oak Bluffs and Edgartown public water supply systems in 2020 through 2022. No detections of PFAS6 at concentrations above the 2020 Maximum Contaminant Level (MCL) of 20 ppt have been identified from these public water supplies. However, low concentrations of certain PFAS compounds have been detected (MassDEP, 2022), including PFOA (1.38 ppt), PFHxS (0.436 ppt), and Perfluorohexanoic Acid (PFHxA) at 1.44 ppt reported in samples from the Edgartown public water supply.

On December 7, 2018, water samples were collected by Tetra Tech from the MVY public water supply system sourced from the Oak Bluffs Water District. One sample was collected at a location close to where the water system enters the MVY property (sample "Water Supply Start"). A second sample (sample "Water Supply End") was obtained from the public water supply at a point near the end of the MVY distribution piping run to assess for potential for cross contamination within the MVY distribution system. In addition, a sample was obtained from the Edgartown public water supply at sampling location 40890000-76 (public water supply well). The samples from the public water supplies were analyzed for PFAS via EPA Method 537. Laboratory analysis of each of the samples from the public water supplies did not detect PFAS above the laboratory analytical method detection limits (less than 1.89 ppt). This detection limit is below the MCP Method 1 GW-1 standard and the Maximum Contaminant Level (MCL) of 20 ppt.

These data suggested that PFAS had not significantly affected the public water supplies in the area. The data and laboratory certificates of analysis were presented in the November 2019 Phase I Report. No further assessment of public water supplies related to this Site was warranted.

4.4 DRINKING WATER EXPOSURE PATHWAY ELIMINATION/MITIGATION MEASURES

At locations where PFAS6 was detected above the MCP Method 1 GW-1 standard of 20 ppt, residents were provided with bottled water while installation of a POET system was planned and installed. After POET installation and post-treatment water samples demonstrated adequate treatment of PFAS6 to below 20ppt (typically to below laboratory detection limits), bottled water was no longer provided. Presently there are 50 POET systems at 45 individual properties. Five properties had more than one residential dwelling and water systems that could not accommodate treatment of the private well water using one POET system, and, in those instances, separate POETs were installed for each dwelling.

- The POET systems for those locations with PFAS6 concentrations above 70 ppt consist of two 12" x 42" upflow type polyethylene vessel with 55 pounds of granular activated carbon (GAC) connected in series, a cartridge filter/sediment filter, and a flow totalizer.
- For private well locations with PFAS6 concentrations between 20 ppt and 70 ppt, the POET systems consist of one 12" x 42" upflow type polyethylene vessel with 55 pounds of GAC, a cartridge filter/sediment filter, and a flow totalizer.

4.5 PILOT-SCALE PLUMESTOP BARRIER

Based on recent soil and groundwater assessment activities at the Site, the highest PFAS6 concentrations in soil and groundwater were identified at the former AFFF testing location identified as Area 1 on Figure 2. This area is believed to be the primary source of PFAS impacts at the Site. On November 2, 2022, a Modified IRA Plan was submitted to MassDEP which detailed the intent to install a pilot-scale treatment barrier just downgradient from AFFF testing area proximate to the WWTP at Area 1. The proposed barrier would be composed of colloidal carbon (PlumeStop® product by Regenesis) and installation would involve the injection of the product via direct push drilling techniques at the targeted depth. The proposed location of the PlumeStop barrier is shown on Figure 4 but is subject to minor adjustments based on pending data. This treatment process is intended to transform the native sand and gravel into a purifying filter with the goal of mitigating the migration of PFAS in the target area to the downgradient area. The Modified IRA Plan was conditionally approved by MassDEP per a letter date November 17, 2022, as follows:

Based on MassDEP's review of the data and the available IRA Status reports, MassDEP conditionally approves the Request for IRA Modification with the following condition:

- 1. Submit a contingency plan should there be a sudden increase of PFAS above the baseline concentrations that could indicate that the colloidal carbon is no longer adsorbing PFAS and may be releasing it. A failure of the colloidal barrier will be suspected if the data from the monitoring wells downgradient of the barrier indicate a significant increase in PFAS concentrations.
 - a. The contingency plan should, at a minimum, identify the areas where residential, private wells will be monitored; and*
 - b. The steps that will be taken should an increase of PFAS mass be observed in the downgradient private well raw water samples, including, but not limited to, increased residential treatment system monitoring (if applicable) to evaluate if breakthrough is occurring more quickly than originally anticipated or the provision of bottled water and/or installation of a point-of-entry treatment system.**

Installation of the pilot-scale PlumeStop barrier is currently scheduled for December 2022, and the contingency plan will be submitted in the IRA Status Report that is due on or before December 20, 2022.

5.0 COMPREHENSIVE SITE INVESTIGATION ACTIVITIES

The following sections summarize the prior investigations and provide details of the recent investigations conducted at the Site in support of this Phase II Report.

5.1 SOURCE MATERIAL ANALYSIS

5.1.1 AFFF Source Materials

Tetra Tech has performed sampling of AFFF source materials that may have been released at the Site. These data are summarized in Table 1. The laboratory certificates of analysis were provided in prior IRA submittals.

On December 13, 2018, Tetra Tech collected an aqueous sample of the AFFF test liquid from the underground storage tank near the aircraft deicing area to the northeast of main airport terminal area. From 2018 to 2019, this area was used to contain AFFF testing liquids prior to use of the non-discharge testing system. The aqueous sample is reportedly a mixture of Chemguard 3% AFFF and water including flush water that was used to remove residual AFFF from truck tank and application equipment during the fall 2018 and spring 2019 FAA required testing event. The aqueous sample was submitted for laboratory analysis of PFAS via EPA Method 537 at a Massachusetts certified laboratory, Alpha Analytical of Westborough, Massachusetts. The laboratory analysis of the AFFF solution sample identified Perfluorohexanoic Acid (PFHxA) at a concentration of 3,070 ppt. PFHxA is a shorter-chained PFAS compound (having six carbon atoms) and is not listed as one of the PFAS6. It should be noted that this sample was analyzed on dilution due to matrix interferences, and the detection limit for other PFAS analyzed was 333 ppt. Therefore, it was suspected that concentrations of other PFAS may exist in this solution at concentrations less than 333 ppt that were not reported. To further assess the solution in the AFFF containment tank, a second sampling from the AFFF containment tank was collected by Tetra Tech on March 12, 2020. This second sample was analyzed for PFAS via liquid chromatography mass spectrometry (LCMS) with isotope dilution, a method which minimizes matrix interferences, improves data quality, and allows analysis of additional shorter chained PFAS. Analysis by isotope dilution detected shorter chained PFAS at the highest concentrations including 1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS) at 141,000 ppt and PFHxA at 25,400 ppt. Also, five of the PFAS6 were detected with the sum of 3,572 ppt.

On January 21, 2020, Tetra Tech collected a sample from the water tank of the ARFF fire truck. This vehicle has been used for several years for AFFF activities, and the water contained in the tank was believed to be representative of residuals that may remain in equipment. The aqueous sample was submitted for laboratory analysis of PFAS via EPA Method 537. The laboratory analysis of the AFFF solution sample identified PFHxA at a concentration of 3,810 ppt. Also, two of the PFAS6 were detected, PFOA and PFHpA, at concentrations of 239 ppt and 772 ppt, respectively.

On March 12, 2022, Tetra Tech collected samples from three different AFFF products being stored on-site. The AFFF products sampled included C-301MS – manufactured 2/21/2011 (sample ID: AFFF-C301-2011), C-306-MS-3 – manufactured 3/2017 (sample ID: AFFF-C306-207), and C-306-MS-C – manufactured in 2019 (sample ID: AFFF-C306-2019). In general, the results of laboratory analysis of the AFFF products indicates that the highest detected concentrations were of the shorter chained PFAS. The oldest formulation, C-301MS, detected 6:2FTS at 1,181,000 ppt and PFBA at 328,000. The 2017 formulation, C-306-MS-3, had PFHxA at 1,930,000 ppt, 6:2FTS at 1,700,000 ppt and PFBA at 538,000 ppt. The newest formulation, C-306-MS-C, had lower concentrations of the analyzed PFAS detected including PFHxA at

398,000 ppt and 6:2FTS at 367,000 ppt. The C-306-MS-3 product contained the highest concentrations of PFAS6 of 209,500 ppt compared to 12,000 ppt detected in the C-301MS product. PFAS6 were not detected in the newer AFFF product (C-306-MS-C) above the detection limit of 50,000 ppt. These data suggest that the AFFF recently used at MVY has contained no detectable PFOS and little detectable PFOA.

Additional details regarding the environmental fate and transport of PFAS are presented in Section 7.

5.1.2 Wastewater Analysis

In addition to AFFF, discharges WWTP which receive wastewater from the airport and business park were identified as a potential source of PFAS. Tetra Tech has assessed the WWTP by sampling and laboratory analysis of wastewater from various sources at MVY, untreated wastewater (influent) at the WWTP, treated wastewater at the WWTP, and wastewater treatment sludge from the WWTP. The wastewater data are summarized in Table 2 and the WWTP sludge data are summarized in Table 3. Laboratory certificates of analysis were provided in prior IRA Status Reports and/or the Phase I Report.

Between November 2018 and August 2019, five samples of the influent to the WWTP and six samples of the effluent from the WWTP were collected and submitted for laboratory analysis of PFAS via EPA Method 537 at Alpha Analytical. The sample collected from the untreated influent to the WWTP on August 8, 2019, was also analyzed via total oxidizable precursor (TOP) assay at Alpha Analytical. The TOP assay includes heating the sample and using alkaline activated persulfate to oxidize the sample. Certain PFAS can be transformed via oxidation to perfluoroalkyl acids (including PFOS and PFOA), which are regulated as PFAS6. The WWTP includes biological processes which could similarly transform these precursor compounds to perfluoroalkyl acids, and the TOP assay was used to assess whether the WWTP may be a source of PFAS6.

- PFAS were not detected above laboratory detection limits in the influent to the WWTP in any of the 5 samples analyzed through August 2019. However, analysis of the effluent samples detected PFAS6 concentrations ranging from <20.7 ppt to 266 ppt. Analysis of the August 8, 2019, influent wastewater sample via TOP assay yielded detectable concentrations of PFHxS, PFHxA, PFOS and PFOA with a PFAS6 of 11.6 ppt. This suggests that precursor constituents may be present in the influent wastewater and may transform into these quantifiable PFAS following oxidation or WWTP processes.

Between December 2018 and March 2019, wastewater samples were collected from several contributors to wastewater flow into the WWTP including: a wet well that combines flows at the business park before pumping to the WWTP (ABP Wet Well); a car wash facility; a bus wash facility; and a laundromat. These samples were submitted for laboratory analysis of PFAS via EPA Method 537 at Alpha Analytical.

- PFAS were not detected above laboratory detection limits in the samples from the car wash, the bus wash, or the laundromat. However, it is noted that the laboratory detection limits were 50 ppt to 500 ppt, and PFAS may be present at concentrations below these detection limits.
- PFAS6 were detected in the ABP Wet Well at a concentration of 381 ppt.

A sample of the sludge from the WWTP was collected on March 14, 2019 and submitted for laboratory analysis of PFAS via EPA Method 537 at Alpha Analytical. Laboratory analysis of the WWTP sludge did not detect PFAS6 above laboratory detection limits; however, four non-target PFAS were detected.

These data have been presented to representatives of MassDEP. The concentrations of PFAS detected in the wastewater are significantly lower than the concentrations detected in potential AFFF source materials.

Therefore, although discharges may contribute to the presence of PFAS in groundwater (similar to septic systems), the WWTP is not believed to be a significant source of PFAS impacts to downgradient residences.

5.2 SUMMARY OF SOIL INVESTIGATIONS

The following sections present the assessment of PFAS impacts to soil at the Site. Soil sampling locations are shown on Figure 3 (site-wide locations) and Figure 4 (locations near Area 1). Soil boring logs and groundwater monitoring well construction diagrams are provided in Appendix C. Soil analytical data are summarized in Tables 4 (background soils), 5 (AFFF discharge area soils), 6 (residential soils), and 7 (leachability assessment). Laboratory certificates of analysis for samples that have not been previously included in MCP submittals (e.g., Phase I Report, IRA Plan, IRA Status Reports) are included in Appendix D.

5.2.1 Background Soil Assessment

In March 2022, a soil sample was collected from the capillary fringe just above the groundwater during installation of monitoring well TT-11. Soil sample TT-11 (50') was collected during the soil boring advancement for the upgradient monitoring well, TT-11, which is located at the northerly portion of MVY and away from known areas of AFFF discharge. Also, a near surface soil sample was collected from Property AB at a depth of 0 to 6 inches below the ground surface (bgs) which is located downgradient of MVY, but where PFAS have not been detected in the water samples from the private well. The soil samples were analyzed at Alpha Analytical for PFAS via LCMS with isotope dilution. Also, the TT-11 (50') sample was also analyzed for physical parameters including dry density, specific gravity, grain size, porosity, total organic carbon and percent moisture.

In September 2022, additional near-surface (0-6 inches) background samples were collected at locations believed to be away from AFFF discharges at MVY including a playground to the northeast of the airport terminal building, near monitoring well TT-11 and near monitoring well TT-12. Also, another near surface soil sample was collected from the downgradient residential property identified as Property FY where PFAS6 were not detected in prior sampling from the private water supply well.

PFAS were detected in the samples from the downgradient residential properties Property AB (PFAS6 of 20.8 ng/g) and Property FY (PFAS6 of 0.384 ng/g). PFOS was detected at both locations at concentrations of up to 13.1 ng/g at Property FY. PFAS were not detected in the soil samples from the surface soil or soil at top of the water table at TT-11, the surface soil at TT-12 or the playground area at MVY.

The background soil sample from TT-11 at the water table approximately 50 feet bgs was also analyzed for total organic carbon, grain size analysis, moisture, specific gravity, bulk density and dry density. Total organic carbon was not detected above the laboratory detection limit of 0.01%. The grain size analysis indicates that the soil from this location is comprised of mostly sand (85.9%) with approximately 9% gravel and 5% fines.

5.2.2 Source Area Soil Assessment

In early 2018, MVY and Tetra Tech evaluated potential AFFF release locations at the Site. The suspected AFFF use locations are shown on Figure 2 and described in Section 3.2. In March 2018, soil borings were advanced proximate to areas of suspected AFFF releases at the Site (TT-1, TT-2, TT-3, and TT-5). The TT-4 location was selected to assess soils at a location of stormwater discharge from the former apron stormwater drainage system before terminal reconstruction in 1998. The soil boring locations are shown on

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Figure 2. The borings were advanced using a truck mounted Geoprobe 7822DT direct push drill rig. Soil samples were collected at continuous five-foot intervals using dedicated plastic sleeves. Two soil samples were submitted for laboratory analysis of PFAS via EPA Method 537 modified: one from boring TT-1 at a depth of 1 to 2 feet bgs and a second from TT-4 from a depth of 1 to 2 feet bgs.

During installation of monitoring well M-4E on March 12, 2019, Tetra Tech personnel collected two soil samples of soil from the screened interval of monitoring well M-4. One sample was collected from the 31 to 32 feet bgs depth interval in an area of coarser grained sand with gravel. The second sample was collected from 45 to 46 feet bgs, in an area of finer grained soils, primarily observed to include sand. These soil samples were submitted for particle size analysis via ASTM Method D422 at GeoTesting Express of Acton, Massachusetts. The laboratory report from this analysis is also included in Appendix D. The results of particle size analysis reported that the sample from 31 to 32 feet bgs contained 88.6% sand, 10% gravel and 1.4% silt/clay sized particle and was classified as poorly graded sand. The second sample from 45 to 46 feet bgs identified 95.7% sand, 2.8% silt/clay and 1.5% gravel and was also classified as poorly graded sand.

On March 13, 2019, Tetra Tech collected a soil sample [Boatyard Soil Sample (0-2')] at a depth of 0 to 2 feet bgs proximate to the location of the firefighting incident that occurred at a boat storage yard in the business park in 2011 (Area 9 on Figure 2).

On March 14, 2019, two soil samples were collected by Tetra Tech from stockpiles of soil generated during construction-related excavation activities at MVY. One sample (Runway Soils-AFFF area) was collected proximate to the runway at a location where AFFF was reportedly applied in response to a gear-up landing that occurred in 1996 (Area 6 on Figure 2). The second sample (Runway Soils-General) was obtained from the stockpile of approximately 40 to 50 cubic yards of soil from the remainder of the construction excavation area near the runway. The soil samples were submitted for laboratory analysis of PFAS via EPA Method 537 modified.

On September 11, 2019, Tetra Tech performed additional soil assessment at the locations of groundwater monitoring wells TT-1 and TT-2 to further assess impacts from past AFFF use at these locations. Shallow soil samples were collected at each location from the ground surface to one-foot bgs. Also, soil samples were collected of the soils at the capillary fringe (26 to 28 feet bgs at TT-1 and 30 to 32 feet bgs at TT-2). The soil samples were submitted to Alpha Analytical for laboratory analysis of PFAS via LCMS with isotope dilution.

In March 2022, soil samples were collected by Tetra Tech at the capillary fringe during the installation of monitoring well TT-13. The soil sample TT-13 (29') was collected during the soil boring advancement for monitoring well, TT-13, which is located at the AFFF testing discharge location at Area 1. This location was chosen to provide a general understanding of subsurface soil characteristics and PFAS concentrations in subsurface soil at or near the groundwater table interface, where PFAS associated with AFFF are likely to persist. The soil sample was analyzed at Alpha Analytical for PFAS via LCMS with isotope dilution as well as various physical parameters including dry density, specific gravity, grain size, porosity, total organic carbon and percent moisture.

On March 15, 2022, four shallow surface soil samples were collected proximate to the WWTP. These samples were identified as WWTP-CLARIFIER (0-0.5), WWTP-AFFF #1 (0-0.5), WWTP-AFFF #2 (0-0.5) and TT-13 (0-0.5) and sampling locations are shown on Figure 4. The four shallow surface soil samples were analyzed at Alpha Analytical for PFAS via LCMS with isotope dilution.

On July 21, 2022, Tetra Tech collected a replicate sample from the WWTP-AFFF #2 location and re-analyzed for PFAS via LCMS with isotope dilution.

On September 20 and 21, 2022, near surface (0 to 6 inches) soil samples were collected at known and suspected AFFF discharge locations at MVY by Tetra Tech. These sampling locations included granular near surface soils downgradient from a hanger where empty AFFF containers were observed (HADLEY SOIL-0-6"), 10 additional soil samples from Area 1 (sample IDs: AFFF-SA-1 through AFFF-SA-10), and a soil sample from an unpaved area close to and downgradient from the east side of the ARFF building where AFFF had been stored and possibly tested in the past (ARFF-SOIL-0-0.5').

Source area soil analytical data are summarized in Table 5, and the laboratory certificates of analysis are included in Appendix D.

5.2.3 Source Area Soil Analytical Data

A total of 29 soil samples were collected from MVY to assess PFAS impacts from past discharges of AFFF at certain locations. Overall PFAS6 were detected in 19 of the 29 samples analyzed at MVY with concentrations ranging from 0.69 ng/g to 126 ng/g and an average of 10.9 ng/g. The following describes the findings of soil assessment activities at MVY.

- In general, PFAS were not detected, or were detected at low concentrations likely consistent with background at the following locations:
 - Soil samples collected from the runway near AFFF discharge Area 6 on Figure 3
 - TT-4 (near the stormwater outfall from the airport) which may have received runoff from former AFFF discharge Areas 4 and 5
 - The unpaved area southeast of the ARFF building (ARFF-SOIL-0-0.5')
 - The unpaved area northwest of the Hadley hanger (HADLEY SOIL-0-6")
- At AFFF discharge Area 2 (near TT-2), the shallow soil sample had a PFAS6 concentration of 8.08 ng/g. A deeper sample was collected from the soils at or near the groundwater table at 30 to 32 feet bgs and detected a lower concentration of PFAS6 of 2.58 ng/g.
- The highest concentrations and greatest frequency of detections of PFAS were detected within an area of known AFFF testing discharges where foam was sprayed to the ground surface during past FAA-required testing activities. This location, identified as Area 1, is located west of the WWTP and the approximate PFAS sampling locations are shown on Figure 4.
 - The highest detected PFAS6 concentration of 126 ng/g was identified in the shallow soil sample (0 to 6 inches bgs) collected at sample location AFFF-SA-4. This location was collected from an area of highly organic topsoil primarily comprised of pine needle leaf litter.
 - The average PFAS6 concentration in this area was 21.1 ng/g which is higher than the MVY average of 10.9 ng/g. The detected PFAS6 in soils at this area include PFOA (up to 34.7 ng/g), PFDA (up to 34.1 ng/g) and PFHpA (up to 21.3 ppt). Also, non-PFAS6 compounds were detected frequently including PFHxA (up to 17.5 ng/g) and PFNA (up to 36.2 ng/g).
 - At monitoring well TT-1, three soil samples were collected to assess the vertical extent of PFAS including the 0 to 1 foot, 1 to 2 foot and 26-to-28-foot bgs depth intervals. The

highest concentration of PFAS6 was 4.56 ng/g and was detected in the sample from 1 to 2 feet bgs.

- At monitoring well TT-13, two soil samples were collected to assess the vertical extent of PFAS including a shallow soil sample (0 to 6 inches bgs) and a sample from proximate to the capillary fringe at 29 feet bgs. PFAS6 were detected at a concentration of 5.95 ng/g in the shallow soils and 0.876 ng/g at 29 feet bgs. Analysis of the sample from TT-13 that was collected at 29 feet bgs reported total organic carbon at a concentration of 0.038%. These soils were comprised mostly of sand (83.8%) with some silt/clay (7%) and gravel (9.2%).

5.2.4 Residential Area Soil Assessment

On March 15, 2022, shallow surface soil samples were collected at four downgradient residential properties within the subject area (Property IDs: AB, AX, DA and J). The soil samples were collected from a depth of approximately 0 to 6 inches below the ground surface within an area at each property where water was reportedly used to irrigate landscape plants or lawns. The soils that were sampled are representative of accessible soils that adult and/or child receptors may contact. The four shallow surface soil samples were analyzed at Alpha Analytical for PFAS via LCMS with isotope dilution.

In March 2022, soil samples were collected at the capillary fringe at monitoring well MW-AY, which is a residential property (Property AY) located south of MVY. The soil sample MW-AY (4') was collected at Property AY to provide an understanding of subsurface soil characteristics and PFAS concentrations in subsurface soil at or near the groundwater table interface in the downgradient area, where PFAS may have migrated with groundwater. The soil sample was analyzed at Alpha Analytical for PFAS via LCMS with isotope dilution as well as various physical parameters including dry density, specific gravity, grain size, porosity, total organic carbon, and percent moisture.

In September 2022, shallow surface soil samples were collected at residential properties including Property B, Y, F, I and CL. The soil samples were collected from a depth of approximately 0 to 6 inches below the ground surface within an area at each property where water was reportedly used to irrigate plants/gardens, lawns, or areas of landscaping.

A summary of the soil analytical data from the downgradient residential area is provided in Table 6, and the laboratory certificates of analysis are included in Appendix D.

5.2.5 Residential Area Soil Analytical Data

The following summarizes the findings of soil assessment activities in the downgradient residential area:

- PFAS6 were detected in five of the nine soil samples analyzed at concentrations ranging from 0.254 ng/g to 12.6 ng/g. The most frequently detected PFAS was PFOS which was also detected at the highest concentration of 9.1 ng/g at Property Y. Although PFAS were detected at a higher frequency in this data set, the range of concentrations are similar to the site-specific background data set.
- At Property AY PFAS was not detected above laboratory detection limits in the soil sample collected proximate to the capillary fringe. This suggests that potential PFAS migration in groundwater is not resulting in the accumulation of PFAS in these soils.

5.2.6 PFAS Leachability Assessment

To assess the potential mobility of PFAS from soil to groundwater, synthetic precipitation leaching procedure (SPLP) testing was performed on select soil samples from each data set. The SPLP testing was performed by Alpha Analytical via EPA Method 1312 and included extraction using a pH 4.2 solution followed by filtration through a 0.6 to 0.8 μm glass fiber filter. The extract was then analyzed for PFAS via LCMS with isotope dilution. This procedure is intended to yield a leachate concentration that could result from low pH rainwater or similar precipitation leaching through soil. The following locations were selected for SPLP testing:

- Two soil samples were collected from the AFFF testing area located just west of the WWTP (sample IDs: WWTP-AFFF #2 and AFFF-SA-8).
- One soil sample was collected from Property CL, which is located downgradient of MVY and PFAS6 have been detected in groundwater at concentrations that represent an IH to human health.
- One soil sample was collected from Property AB, which is located downgradient of MVY, but where PFAS6 have not been detected in prior water samples from the private well at this residence.

The SPLP testing analytical data are summarized in Table 7, and the laboratory certificates of analysis are included in Appendix D.

PFAS6 were detected in the leachate at both locations from Area 1 at concentrations of 724 ppt and 574 ppt, respectively. Also, higher concentrations of shorter-chained PFAS including 6:2FTS and 8:2FTS were detected in the leachate from both sampling locations WWTP-AFFF #2 (2,400 ppt and 1,970 ppt, respectively) and AFFF-SA-8 (4,090 ppt and 2,840 ppt, respectively). Also, lower concentrations of 4:2FTS, PFBA, Perfluorododecanoic Acid (PFDoA), PFHxA, PFTA, Perfluorotridecanoic Acid (PFTrDA), and Perfluoroundecanoic Acid (PFUnA) were detected in these SPLP samples. These data suggest that the near surface soils in this area of AFFF discharge are likely a continuing source of PFAS impacts to groundwater.

PFAS were not detected in the SPLP sample collected from Property CL. However, it is noted that although PFAS6 concentrations in the groundwater samples from the private well at this location exceeded the levels that indicate a potential IH to human health, the analysis of the soil sample for total PFAS did not detect PFAS above laboratory detection limits. Therefore, it is not unusual that SPLP testing did not detect leachable PFAS from this location.

SPLP testing of the soil sample from Property AB detected relatively low concentrations of PFOS (4.57 ppt) and PFOA (1.99 ppt) in the leachate. Both compounds were detected in the total PFAS sample from this property (as shown in Table 4). It is notable that although the total PFAS6 concentrations in soil at Property AB (20.8 ng/g) were similar to (only slightly lower than) the total PFAS6 concentration reported in the two WWTP-AFFF #2 samples (25.7 ng/g and 38.1 ng/g) and were lower than the total PFAS6 concentration detected in sample AFFF-SA-8 (17.2 ng/g), the SPLP concentrations were significantly lower in the SPLP sample from Property AB. This provides another line of evidence that likely anthropocentric PFAS impacts to soil in areas outside of known PFAS impacts to groundwater attributable to MVY have a significantly lower potential to leach PFAS from acidic precipitation compared to the Area 1 location where AFFF impacts are known to have occurred.

5.3 HYDROGEOLOGICAL CHARACTERIZATION INVESTIGATIONS SUMMARY

The following summarizes the groundwater assessment activities completed at the Site. Groundwater monitoring well locations are shown on Figure 6, which also includes a color-coded graphic representation of the maximum concentrations of PFAS6 detected in groundwater. Soil boring logs and groundwater monitoring well diagrams are included in Appendix C. The following briefly summarizes the groundwater monitoring well installation activities:

- The Site includes a network of existing groundwater monitoring wells that were previously installed as part of monitoring for the WWTP discharge and/or as part of prior MCP investigations related to past releases of oil and/or hazardous material at the MVY. Available soil boring logs and groundwater monitoring well diagrams are included in Appendix C. Where logs were not identified, these wells were gauged to determine the depth to bottom, and the likely screened interval was estimated.
- As part of the investigation activities supporting the initial voluntary assessment and subsequent Phase I Report, monitoring wells TT-1 through TT-10 were installed at MVY by New England Geotech in March 2018 and September 2019, using a truck mounted Geoprobe 7822DT direct push drill rig. Monitoring wells TT-1 through TT-6 were installed proximate to areas of known or suspected AFFF handling/discharge. The TT-7 through TT-10 monitoring wells were installed to assess the horizontal extent of PFAS impacts to groundwater.
- Cascade Environmental (Cascade) of Gardner, Massachusetts performed in-situ depth-discrete groundwater sampling at the Site on November 9-17, 2021. The borings were advanced using a Geoprobe direct push drill rig. Each boring was advanced to 100 feet bgs. Groundwater grab samples were collected at each location at 15-foot intervals from the bottom of the boring to approximately the groundwater interface (e.g., collected at 100-feet bgs, 85-feet bgs, 70-feet bgs, 55-feet bgs and 40-feet bgs, as applicable). The groundwater samples were collected following purging of each sample point using dedicated polyethylene tubing and a foot valve (Waterra). Groundwater samples were analyzed for PFAS via LCMS with isotope dilution at Alpha Analytical.
- Monitoring well TT-11 was installed by New England Geotech on March 14, 2022, using a truck mounted Geoprobe 7822DT direct push drill rig. This monitoring well was installed at a location to the north of MVY as an upgradient monitoring well to assess groundwater conditions away from areas of known AFFF discharges.
- Monitoring wells TT-12 through TT-14 were installed by New England Geotech on March 15-18, 2022, using a truck mounted Geoprobe 7822DT direct push drill rig. The TT-12 monitoring well was installed at the western side of MVY to assess the horizontal extent of PFAS impacts. Monitoring well TT-13 was installed just downgradient of Area 1, and TT-14 was installed further downgradient to the southeast toward the property boundary of MVY.
- New England Geotech installed monitoring wells in the downgradient area between March 15-17, 2022. Deep and shallow monitoring well couplets were installed at Property B (MW-BS and MW-BD) and Property DA (MW-DAS and MW-DAD). Also, three monitoring wells were installed at Property AY (MW-AYS, MW-AYI and MW-AYD) representing three distinct depth intervals to assess the vertical extent of PFAS impacts in these areas.

- Three deep and shallow monitoring well couplets were also installed between March 15-16, 2022, by New England Geotech at the southern end of the residential area along Scrubby Neck Road (MW-15 S/D, MW-16 S/D, and MW-17 S/D) to assess groundwater conditions downgradient of the residential area and upgradient of Long Pond.
- Monitoring wells TT-18 through TT-23 were installed between October 25-26, 2022, by New England Geotech using a truck mounted Geoprobe 7822DT direct push drill rig. These monitoring wells were installed near Area 1 to further refine the extent of PFAS impacts in this area in preparation of the PRB design as part of the IRA. Figure 4 is a detailed view of the sampling locations in this area.

Several iterative rounds of groundwater sampling were performed at the Site beginning with sampling of monitoring wells in March 2018 through recent groundwater monitoring well sampling completed in September 2022. Groundwater samples were collected from monitoring wells TT-18 through TT-23; however, results have not yet been reported by the laboratory. These monitoring wells are not anticipated to provide significant new information relevant to the overall nature and extent of PFAS impacts at the Site and were rather intended to aid in the design of the PlumeStop barrier under the IRA.

During these various rounds of sampling that were completed to support this Phase II Report, the depth to groundwater was gauged using an electronic water level meter prior to sampling. Relevant groundwater gauging data are presented in Tables 8 and 9. Except for a few samples where dedicated polyethylene bailers were used to collect shallow groundwater samples, groundwater monitoring wells were typically purged and sampled using a Proactive stainless-steel Hurricane Pro pump via dedicated high-density polyethylene (HDPE) tubing set at the approximate midpoint of the well screen. Groundwater was purged at a low flow rate until temperature, pH, specific conductance, dissolved oxygen concentration and oxidation-reduction potential had stabilized, or until at least 3 well volumes had been purged at a low flow rate. Groundwater samples were collected and submitted for analysis of PFAS via LCMS with isotope dilution and/or EPA Method 537 at Alpha Analytical. Groundwater analytical data from monitoring wells are summarized in Table 10. The November 2021 depth-discrete sampling data are summarized in Table 11. Laboratory certificates of analysis for samples that have not been previously included in MCP submittals (e.g., Phase I Report, IRA Plan, IRA Status Reports) are included in Appendix D. Groundwater analytical data are summarized in Section 5.4.

5.3.1 Groundwater Gauging and Elevation Surveys

Based on prior environmental investigations at MVY, a southerly direction of groundwater has been documented across MVY. The following groundwater gauging and elevation surveys were performed in support of this Phase II Report. Groundwater monitoring well locations are shown on Figure 6.

- On September 12, 2019, Tetra Tech surveyed selected groundwater monitoring wells at a targeted area of the Site relative to an arbitrary reference elevation. Subsequently, on September 13, 2019, Tetra Tech gauged the depth to water in monitoring wells M-4, TT-1, TT-2, TT-8, TT-9 and TT-10 to assess local groundwater elevations in the area approaching private wells with the highest detected PFAS concentrations. This assessment identified a generally south to southwesterly groundwater gradient in the vicinity of the primary AFFF source area (Area 1 on Figure 2). A figure showing the groundwater potentiometric surface contours estimated from this survey was provided in the November 2019 Phase I Report.
- Between September 19-23, 2022, Tetra Tech used a global positioning system (GPS) instrument (Arrow Gold® RTK GNSS Receiver) to obtain location and elevation information for select

monitoring wells at the Site, including at MVY and in the downgradient area. The depth to groundwater was also measured using an electronic water level meter. GPS survey was limited by the presence of overhead obstructions such as trees and brush; therefore, GPS locations/elevations could not be obtained from downgradient monitoring wells in the residential area. We note that the accuracy of this elevation survey was estimated to be ± 0.5 -feet. Also, because a synoptic gauging was not practical, there is likely some error from minor changes in groundwater elevation from the start of the survey to the end; however, we note that no significant precipitation occurred during the time of the survey. Considering the general distance between the wells surveyed using this method, the potential errors are not likely to be significant. Due to the size of the Site, a comprehensive transit survey was not feasible and would not yield significantly more useful data. The gauging and GPS survey data are summarized in Table 8. A site-wide groundwater potentiometric surface map was generated and is provided as Figure 7. The depth to groundwater ranged from approximately 22.5 feet bgs to 48 feet bgs. The groundwater elevations ranged from 18 feet MSL to the north to 13 feet MSL along the main area of PFAS impacts to residential properties south of MVY. Based on this groundwater elevation survey groundwater flows to the southerly with a gradient of 0.001.

- On October 27, 2022, Tetra Tech performed a more detailed groundwater elevation survey of monitoring wells at or near the AFFF discharge area (Area 1 on Figure 2) proximate to the WWTP. This groundwater elevation survey included a transit survey of the well casings and gauging of groundwater using an electronic water level meter. This survey technique is more precise than the GPS survey and is estimated to have an error margin of ± 0.01 feet. This more precise survey was appropriate to better refine groundwater migration patterns in this smaller area. The source area gauging and transit survey data are summarized in Table 9. A groundwater potentiometric surface map of this area was generated and is provided as Figure 8. The depth to groundwater ranged from approximately 29 feet bgs to 32 feet bgs. Groundwater elevations ranged from 13.8 feet MSL to the north of Area 1 to 13.65 feet MSL to the south of Area 1. Within this area, groundwater was inferred to flow southerly with a gradient of approximately 0.001.

5.3.2 1988 – Five Day Pump Test

According to an IRA Status Report for RTN 4-0012087 (MassDEP, 1996) prepared by Saunders Associates and submitted to MassDEP on August 16, 1996, Dufresne-Henry, Inc. conducted a pump test proximate to the Site in 1988. The test was performed on a 12-inch supply well (backup fire protection water supply) on the southeastern sector of the airport property. Seven shallow observation wells were installed at varying distances from the supply well, and a five-day constant rate pump test was performed. The results of the pump test indicated a high transmissivity reported to range from 273,000 to 330,000 gallons per day per foot (gpd/ft) of drawdown.

5.3.3 Soil Hydraulic Profiling and Electrical Conductivity Testing

On November 9-17, 2021, Tetra Tech collected depth-discrete groundwater samples at twelve locations at MVY and downgradient (identified as DD-1 through DD-12). The location of each depth-discrete sampling area is identified on Figure 6. The advancement of the depth-discrete borings to collect groundwater samples was performed by Cascade. The borings were advanced using a Geoprobe direct push drill rig. Each boring was advanced to 100 feet bgs. At select soil boring locations, direct measurements of electrical conductivity (EC) and hydraulic conductivity (K) were collected electronically using a 1.75-inch probe (MH6534 HPT/EC). At five boring locations (DD-1, DD-3, DD-6, DD-8, and DD-10), EC only measurements were collected using a more refined and dedicated EC probe. EC of soils typically varies

with grain size, but can also be affected by mineralogy, geochemistry, and presence of other organic or inorganic compounds. Also, EC typically increases in the capillary fringe and groundwater. During advancement of four of these borings (DD-3, DD-6, DD-9 and DD-10), a Hydraulic Profiling Tool (HPT) was used which creates a log of the relative formation permeability vs. depth as the probe is advanced and is used to estimate a K value for the location. The data from these investigations are presented in a report by Cascade which has been included in Appendix E.

Typically, sands have EC measurements of 0.1 to 2 mS/m, silts have EC measurements of 3 to 20 mS/m, and clays have EC measurements of 10 to 1000 mS/m. In general, the EC results indicated that the soil EC was less than 2 mS/m, suggesting that soils are primary sands. This is consistent with Tetra Tech observations and particle size analysis of soil samples collected from the Site. However, the following findings are noted which suggest variations from this general trend:

- At DD-3 higher EC was reported from 30-40 feet bgs (2 to 3 mS/m), 76-80 feet bgs (2 to 2.5 mS/m), from 82-86 feet bgs (2 to 2.5 mS/m), and from 90-100 feet bgs (2 to 2.5 mS/m). The increase in EC from 30-40 feet bgs may be attributable to the groundwater table and/or geochemical conditions in this zone.
- At DD-6 an apparent spike in EC concentrations was reported from approximately 26 feet bgs to 36 feet bgs which peaked at 5.5 mS/m. This may suggest the presence of finer grained soils in this zone, the groundwater table and/or geochemical conditions in this zone. Also, increasing EC was measured from 90 to 100 feet bgs with EC ranging from 2 to 3 mS/m.
- At DD-8 an apparent spike in EC was reported from approximately 13 feet bgs to 20 feet bgs with EC readings ranging from 3 to 3.5 mS/m suggesting the possibility that a thin band of finer grained sand and/or silt may exist in this area. Also, from approximately 45 feet bgs to 60 feet bgs another area of increased EC was observed of 3 to 3.5 mS/m suggesting the presence of finer grained soils and/or other sources of higher conductivity. Finally, EC readings from approximately 82 feet bgs to 100 feet bgs were slightly elevated (2.5 to 3 mS/m).

In general, the estimated K values from the HPT measurements were in the 80 to 100 feet/day range which is consistent with expected K values for sandy soil. However, at the DD-9 location, K values reduced from approximately 80 to 90 feet/day to 60 to 70 feet/day in the HPT data collected from approximately 57 feet bgs to 62 feet bgs. This suggests that lower permeability soils exist within this depth range.

5.3.4 2022 Slug Tests

On July 14, 2022, Tetra Tech performed rising head slug tests on eight monitoring wells at the Site: M-4, M-4D, M-4E, MW-JM, MW-JS, MW-AYD, MW-AYI, and MW-AYS. The M-4 series wells are installed just downgradient from the primary AFFF source area (Area 1 on Figure 2). The MW-JM and MW-JS wells are located downgradient of MVY between Waldrons Bottom Road and Vineyard Meadow Farms Road at Property J. The MW-AY series wells are located at Property AY, which is located on Waldrons Bottom Road at the southerly end of the Site. The monitoring well locations are shown on Figure 6. Slug test results are summarized below and presented in Appendix E.

- At the downgradient (southerly) end of the MVY property, the hydraulic conductivity (K) was estimated to range from 140 to 348 feet per day. The highest K value was in the deeper well (M-4E) while the lowest K value was in the middle well (M-4D).

- At Property J, the K was estimated to be 750 feet per day in the shallow well (MW-JS) and 96 feet per day in the deeper well (MW-JM). This suggests that finer-grained soils reduce hydraulic conductivity in deeper soils.
- At Property AY, the K values ranged from 16 to 240 feet/day and was highest in the deeper well (MW-AYD) and lowest in the shallow well (MW-AYS).

5.4 GROUNDWATER ANALYTICAL DATA SUMMARY

The following sections summarize the findings from groundwater sampling and laboratory analysis.

5.4.1 Upgradient (Background) Groundwater Assessment

PFAS6 were not detected at TT-11; however, 6:2FTS was detected at a concentration of 3.69 ppt. These data suggest that low concentrations of 6:2FTS may be present in groundwater upgradient of MVY.

5.4.2 MVY Groundwater Assessment

TT-1

The highest concentrations of PFAS6 (3,961 ppt) were detected at monitoring well TT-1 in a sample collected on March 16, 2018. This monitoring well is installed proximate to Area 1, as shown on Figure 4.

- Replicate sampling of TT-1 in November 2018 (PFA6 of 1,727 ppt) and August 2019 (PFAS6 of 636 ppt) suggested a decreasing trend over time.
- Concentrations of 6:2FTS at TT-1 (2,060 ppt to 5,130 ppt) were significantly higher than PFOS concentrations (4.48 ppt to 17.4 ppt). This suggests that much of the PFAS mass in this area is likely attributable to newer AFFF formulations.
- In September 2019, discrete groundwater samples were collected from TT-1 by adjusting the intake of the sampling pump to a specific depth below the well casing and purging from that location at a low flow rate until water quality readings stabilized. Samples were collected from near the top of the measured water level (29-30 feet), in the center of the screened interval (31-33 feet) and near the bottom of the well screen (34-35 feet). These data indicated decreasing concentrations of PFAS6 with increasing depth with the highest detected concentration of 200 ppt in the shallow sample and the lowest (150 ppt) in the deepest sample.
- Samples of groundwater from TT-1 collected in September 2020 (PFAS6 of 222 ppt), November 2021 (PFAS6 of 679 ppt) and September 2022 (PFAS6 of 218 ppt) suggest that PFAS6 concentrations have varied within a wide range of concentrations.
- The depth-discrete sample DD-3 was advanced at this location to assess the vertical extent of PFAS impacts. However, laboratory analysis did not detect similar PFAS6 concentrations compared to prior sampling at TT-1. The maximum PFAS6 detected at DD-3 was 82 ppt at a depth of 34 feet bgs. PFAS6 concentrations decreased at 40 feet (20.4 ppt) and 55-feet (15.9 ppt). PFAS concentrations remained below 20 ppt in samples from 70 feet and 85 feet bgs. However, PFAS6 concentrations in groundwater from DD-3 increased to 78.6 ppt at a depth of 100 feet bgs.

- Just downgradient from the AFFF testing area, monitoring well TT-13 was also found to have PFAS6 concentrations of 3,058 ppt in June 2022. Depth-discrete sampling was performed at TT-13 in July 2022 and found similar concentrations of PFAS6 at the 33-foot sample (3,330 ppt) and 37-foot sample (3,780 ppt).

TT-2

Monitoring well TT-2 was installed in an area believed to have been used to rinse AFFF testing equipment. Groundwater sampling from TT-2 in March 2018 reported PFAS6 at 3,866 ppt; however, concentrations decreased in samples from August 2019 (710 ppt) and September 2020 (243 ppt). Groundwater samples were not obtained from TT-2 in September 2022 because the well was dry.

TT-3

Proximate to the ARFF building, monitoring well TT-3 was installed to assess PFAS impacts from past testing and/or storage of AFFF. Groundwater sampling at TT-3 in March 2018 reported PFAS6 at a concentration of 2,454 ppt. However, subsequent groundwater samples from November 2018 through September 2022 have indicated decreased concentrations from 710 ppt in August 2019 to 97.8 ppt in November 2021 and 156 ppt in September 2022.

- Sampling for PFAS at TT-3 also reported concentrations of other non-PFAS6 compounds including PFHxA up to 9,370 ppt in March 2018 and 6:2FTS up to 7,570 ppt September 2020.
- The depth-discrete sampling location DD-2 was advanced proximate to TT-3 in November 2021 and sampling detected PFAS6 at a concentration of 52 ppt at the sample from 40 feet bgs and 15.5 ppt in the sample from 55 feet bgs. PFAS6 were not detected in the deeper samples at depths from 70 feet to 100 feet bgs at DD-2.

Downgradient of Area 1

Further downgradient from Area 1, several monitoring wells are installed generally from east to west just north of Edgartown-West Tisbury Road including RIZ-12, M-10, M-4, M-4D, M-4E, TT-9 and TT-10.

- The highest concentrations of PFAS in this area were identified in March 2018 at monitoring well M-4 (1,546 ppt). PFAS6 concentrations at monitoring well M-4 have decreased in sampling events from March 2019 through September 2022 when PFAS6 was 129 ppt. Also, non-PFAS6 compounds were detected at significant concentrations including 6:2FTS (11,200 ppt in September 2020), PFHxA (2,860 ppt in March 2018), and Perfluoropentanoic Acid (PFPeA) (1,170 ppt in September 2020).
- The vertical extent of PFAS impacts in groundwater in this area was assessed by sampling at M-4D (screened from 62 to 77 feet bgs) and M-4E (screened from 75 to 80 feet bgs). At each of these monitoring well PFAS6 concentrations are less than 55 ppt and PFOS was not detected above laboratory detection limits. Concentrations of non-PFAS6 compounds were also detected including 6:2FTS (up to 162 ppt at M-4E in September 2022) and PFHxA (up to 74.1 ppt at M-4D in March 2019).
- Depth-discrete sampling location DD-4 was also advanced just north of the M-4 well group to assess the vertical extent of PFAS impacts to groundwater. Similar to the wells at the M-4 well group, the highest concentrations of PFAS6 were detected in the groundwater samples from 40 feet bgs (909 ppt) and 55 feet bgs (24.8 ppt). PFAS6 concentrations decreased with depth and

ranged from 19.9 ppt at 70 feet bgs to 8.21 ppt at 100 feet bgs. Also, non-PFAS6 compounds were detected at the highest concentrations in the 40-foot bgs sample including 6:2FTS (8,120 ppt), PFPeA (714 ppt), PFHxA (354 ppt), and PFBA (214 ppt).

- To the east of M-4, at M-10, PFAS6 were detected at concentrations ranging from 154 ppt in September 2022 to 342 ppt in November 2018. Similar to other locations higher concentrations of 6:2FTS (1,320 ppt in September 2020) and PFHxA (up to 349 ppt in November 2018). Further east at RIZ-12 groundwater samples in March 2018 and September 2022 were less than 13 ppt.
- Further east, concentrations of PFAS6 were detected below 20 ppt in groundwater samples from monitoring well RIZ-12 in March 2018 and September 2022.
- Monitoring well TT-9 was installed at a topographic low point in the area where elevations to the west increase and to the east are slightly decreasing or flat. PFAS6 from September 2019 and September 2022 were detected at 81.9 ppt and 48.2 ppt, respectively. Similar to other locations in this area, the concentrations of non-PFAS6 compounds were detected higher including PFPeA (up to 293 ppt) and PFHxA (up to 116 ppt).
- West of TT-9, monitoring well TT-10 was installed near the top of a topographic rise in elevation. Groundwater samples were collected in September of 2019, 2020, and 2022, and PFAS6 concentrations suggest a generally decreasing trend over time beginning at 336 ppt and decreasing to 212 ppt. Also, concentrations of non-PFAS6 compounds were detected at this location including 6:2FTS (up to 278 ppt), PFPeA (up to 122 ppt) and PFHxA (up to 107 ppt).
- The westerly limits in this area were established by sampling of monitoring well TT-12 and depth-discrete sampling point DD-5. PFAS were not detected at TT-12 at concentrations above the laboratory detection limits in a groundwater sample from June 2022. Also, at DD-5 PFAS6 were not detected above laboratory detection limits. Low concentrations of non-PFAS6 compounds were detected at DD-5 including PFPeA (up to 2.65 ppt at the 100-foot sample) and 6:2FTS (up to 3.53 in the 55-foot sample).

TT-5

Monitoring well TT-5 was installed downgradient of the paved deicing apron and proximate to an area of a hydrant that was reportedly used for AFFF equipment washing. Groundwater sampling has been performed from March 2018 through September 2022 and with detected concentrations of PFAS6 ranging from 305 ppt in August 2019 to 623 ppt in September 2020.

- PFOS was not detected at TT-5 above laboratory detection limits suggesting that the newer AFFF formulations likely contributed to PFAS impacts at TT-5.
- Sampling for PFAS at TT-5 also reported concentrations of non-PFAS6 compounds that were higher than the PFAS6 concentrations including: PFHxA (up to 3,410 ppt), PFPeA (up to 1,200 ppt), 6:2FTS (up to 2,000 ppt) and PFBA (up to 1,200 ppt).
- The depth-discrete sampling point DD-1 was advanced proximate to monitoring well TT-5. The highest PFAS6 concentration of 55 ppt was identified at the groundwater sample from 40-foot bgs. PFAS6 were not detected in the deeper groundwater samples at 55, 70, 85 or 100 feet bgs. Like the groundwater sampling results from TT-5, non-PFAS6 compounds including PFPeA (552 ppt), 6:2FTS (332 ppt), PFHxA (262 ppt), and PFBA (129 ppt) were also detected in the 40-foot bgs

sample from DD-1 at concentrations higher than the maximum PFAS6 concentration and likely associated with newer AFFF formulations.

Terminal Building Area

Existing monitoring wells (TMW-2, RIZ-5, RIZ-10, RIZ-64 and RIZ-61) that were previously installed just south and east of the airport terminal building as part of prior response actions for a separate release of hazardous material were sampled to support assessment of potential PFAS impacts at Area 4 (hydrant near ARFF building) and Area 5 (testing area on apron).

- The maximum reported PFAS6 concentrations identified at these monitoring wells were as follows: TMW-2 (109 ppt), RIZ-5 (2.35 PPT), RIZ-10 (91.4 ppt), RIZ-64 (46.7 ppt) and RIZ-61 (51 ppt). PFOA and PFHpA were generally the PFAS6 that were detected at the highest concentrations and frequency in this area.
- Concentrations of non-PFAS6 were also detected including 6:2FTS (up to 1,070 ppt at RIZ-64) and PFHxA (up to 74.2 ppt at TMW-2).

Former Stormwater Outfall

Downgradient from the stormwater outfall southeast of the MVY terminal building, PFAS6 concentrations at monitoring well TT-4 have ranged from 34.8 ppt in March 2018 to 56.9 ppt in September 2020.

- The PFAS6 detected at TT-4 were primarily PFOA (up to 15.9 ppt) and PFHpA (up to 30.4 ppt).
- Sampling for PFAS at TT-4 reported concentrations concentration of non-PFAS6 compounds including PFHxA up to 61.2 ppt and PFPeA of up to 99.7 ppt in September 2020 that were higher than the reported PFAS6 concentration of 56.9 ppt.

Boat Yard Area

Downgradient from the area of the boat fire, where AFFF was deployed in the business park east of the airport, monitoring well TT-6 was sampled three times between March 2019 and September 2022. PFAS6 concentrations at TT-6 ranged from 24 ppt (September 2020) to 45.7 ppt in March 2019. The highest concentrations of PFAS were reported for PFOA, suggesting that an older AFFF formulation may have been used in this area (which contained PFOA or had longer chained PFAS which have since degraded to PFOA over time).

Southerly Limits of MVY

A series of monitoring wells are installed in an east to west orientation along Edgartown-West Tisbury Road southeast of the MVY terminal area and south of monitoring well TT-4 and the stormwater outfall area. These monitoring wells were installed as part of prior response actions for an unrelated hazardous material release and include TMW-4, RIZ-42, TMW-5, TMW-5D, TMW-6, TMW-6D M-6, and M-6D. Concentrations of PFAS6 were above 20 ppt in groundwater samples from RIZ-42, TMW-5, TMW-6, TMW-6D, M-6 and M-6D. Two groundwater samples were collected from monitoring well TMW-4 one in March 2018 and a second in September 2022 with the maximum PFAS6 detected at a concentration of 4.86 ppt in September 2022.

- The highest concentration of PFAS6 in this area was 217 ppt at monitoring well TMW-6D in September 2020. The PFAS6 compounds that were detected included PFHpA (118 ppt), PFOA (77.3 ppt) and PFNA (21.3 ppt). Non-PFAS6 compounds were also detected at this monitoring well

including 6:2FTS (704 ppt), PFPeA (367 ppt), PFHxA (192 ppt), and PFBA (141 ppt). Groundwater samples from the co-located shallower monitoring well TMW-6 were collected in March 2018, September 2020 and September 2022. The results of these sampling events reported decreasing concentrations of PFAS6 compounds over time from 60.9 ppt in March 2018 to 35.5 ppt in September 2022.

- Further east at the M-6 and M-6D deep/shallow well couplet, the highest PFAS6 concentrations (up to 104 ppt) were also reported in the deeper monitoring well (M-6D). At monitoring well M-6 PFAS6 concentrations ranged from 27.8 ppt in March 2018 to 9.62 ppt in September 2020. The non-PFAS6 compounds detected at the M-6/M-6D well couplet were similar to those detected at TMW-6/TMW-6D well couplet but at generally lower concentrations.
- At RIZ-42 groundwater samples were collected in March 2018, November 2018 and September 2022. The reported PFAS6 concentrations appear to have increased over time from 18.4 ppt in March 2018 to 36.5 ppt in September 2022. Also, concentrations of 6:2FTS (79.6 ppt) and PFHxA (40.6 ppt) were detected at monitoring well RIZ-42.
- Samples were collected from the shallow/deep well couplet at TMW-5 and TMW-5D in March 2018 and September 2022. The highest PFAS6 concentration of 51.1 ppt was detected at TMW-5 in September 2022 while the maximum concentration of PFAS6 at TMW-5D was 15.4 in March 2018. Non-PFAS compounds were detected in one or both monitoring wells including PFHxA (up to 53.6 ppt at TMW-5D), PFPeA (up to 43.9 ppt at TMW-5), 6:2FTS (up to 35 ppt in TMW-5), 8:2FTS (30.8 ppt at TMW-5), and PFBA (up to 14.1 ppt at TMW-5). These data indicate that PFAS6 impacts are highest in the shallower monitoring well TMW-5 which is screened from 44 to 59 feet bgs.

Easterly Limits of MVY

Monitoring well TT-7 is located on the easterly side of the Site, and monitoring well OW-B is located northeast of TT-7. These monitoring wells provide horizontal delineation to the southeast of TT-6.

- Monitoring well TT-7 was sampled twice in March 2019 and September 2020. Reported concentrations of PFAS6 were detected in the March 2019 sample at 2.89 ppt. PFAS6 were not detected above the laboratory detection limits in the September 2020 sample. Groundwater samples from TT-7 did not report higher concentrations of PFHxA or 6:2FTS.
- In December 2018 and September 2020, groundwater samples were collected from monitoring well OW-B. PFAS6 were not detected in the groundwater samples from this monitoring well at concentrations above 20 ppt.

5.4.3 FluxTracer® Testing

Concurrent with the June 2022 groundwater sampling at TT-13 and TT-14, Tetra Tech deployed FluxTracer® passive sampling devices at these monitoring wells. The FluxTracer® samplers are a product of Regenesis and are used to measure Darcy flux, mass flux, and concentration-derived flux. According to Regenesis, “The quantitative FluxTracer® test measures the amount of alcohol tracers that desorbed from the activated carbon due to groundwater passively flowing through the cylinder cannisters. Concurrently, contaminants present in the plume will adsorb to a sorptive media ideally suited for PFAS during the deployed period after which will be extracted from the adsorbent to quantify mass flux and flux derived contaminant concentration.” A copy of the report presenting the results of FluxTracer® testing prepared by Regenesis is included in Appendix F.

- At TT-13, the measured Darcy velocity ranged from 3.0 cm/day to 7.5 cm/day. The highest mass flux and flux-derived concentrations were determined to occur within the 34 to 35-foot depth interval. Overall, the estimated mass flux derived from groundwater concentration and groundwater velocity at TT-13 was higher than the results from TT-14. It is also noted that the highest mass flux was found to be for the 6:2 FTS and PFPeA which are likely associated with newer AFFF formulations.
- At TT-14, the measured Darcy velocity ranged from 3.0 cm/day to 18.3 cm/day. The highest mass flux and flux-derived concentrations were determined to occur within the 46 to 47-foot depth interval. Overall, the mass flux was significantly lower at TT-14 compared to TT-13. It is noted that the FluxTracer® sampling device got stuck within a portion of the well casing while being deployed and needed to be retracted and re-deployed several times to achieve the desired depth. This redeployment of the sampler may have resulted in the calculated Darcy velocity estimates to be higher near the bottom of the sampling device; however, the overall PFAS mass flux was lower compared to TT-13 and does not affect the conclusions of FluxTracer testing.

5.4.4 Downgradient Groundwater Assessment

To assess PFAS impacts to groundwater in the area downgradient from MVY, three existing monitoring wells (M-11, RIZ-19 and RIZ-21) were sampled. To assess vertical and horizontal extent of PFAS, new monitoring well groups were installed in the residential area (MW-JS/JM, MW-BS/BD, MW-AYS/AYI/AYD, and MW-DAS/DAD). Also, depth discrete groundwater sampling was performed at DD-6 (at Property J), DD-7 (Property I), DD-8 (Property AX), DD-9 (Property AY), DD-10 (Property DA), DD-11 (Property CL), and DD-12 (Property CB).

The residential area just downgradient from Area 1 and the WWTP along Waldrons Bottom Road and Vineyard Meadow Farms Road has the highest detected concentrations of PFAS6 in groundwater beyond the limits of MVY.

Property B (Waldrons Bottom Road - north)

- PFAS6 was detected at a concentration of 697 ppt in the groundwater sample from MW-BS, a shallow monitoring well installed at Property B screened from 30 to 40 feet bgs. Each of the PFAS6 were detected at MW-BS with the highest concentrations including PFHpA (462 ppt) and PFOA (204 ppt). Several non-PFAS6 compounds were also detected; the highest concentrations included 6:2FTS (28,600 ppt), PFPeA (1,820 ppt), PFHxA (787 ppt) and PFBA (378 ppt).
 - The groundwater sample from monitoring well MW-BD, which is screened from 65 to 75 feet bgs, had detected PFAS6 at a concentration of 16.8 ppt.

Property J (Vineyard Meadow Farms Road - north)

- At the monitoring well couplet MW-JS/JM, the highest PFAS6 concentration of 400 ppt was reported in the groundwater sample from March 2019 at MW-JS, a shallow well screened from 26 to 36 feet bgs. Samples were also collected in September 2020 and November 2021 with detected decreasing concentrations of PFAS6 up to 184 ppt in November 2021. Non-PFAS6 compounds were also detected including 6:2FTS (1,050 ppt), PFPeA (338 ppt), PFHxA (199 ppt), and PFBA (123 ppt).

- Monitoring well MW-JM is screened from 60 to 65 feet bgs. Although the maximum PFAS6 concentrations at MW-JM (up to 350 ppt) are lower compared to those detected at MW-JS, the concentrations at MW-JM have increased from March 2019 (74.7 ppt) to November 2021 (351 ppt). This increase is primarily attributable to increased concentrations of PFOS (below detection limits to 146 ppt) and PFHxS (below detection limits to 128 ppt). Also, the reported concentrations on non-PFAS6 compounds are higher than those detected at MW-JS including 6:2FTS (1,710 ppt), PFPeA (459 ppt), PFHxA (260 ppt), and PFBA (158 ppt).
- To further assess groundwater conditions at Property J, depth-discrete sampling location DD-6 was advanced to a depth of 100 feet bgs. The highest PFAS6 concentrations at DD-6 were reported in groundwater samples collected from 70 feet bgs (1,498 ppt) and 80 feet bgs (1,059 ppt). PFAS6 concentrations decreased to 763 ppt in the groundwater sample at 100 feet bgs. Concentrations of PFAS6 at DD-6 were lowest in the shallow groundwater sample from 40 feet bgs (71.6 ppt). The PFAS6 concentrations at DD-6 were primarily attributable to PFOS and PFHxS.
- Depth-discrete sampling location DD-7 is located at Property I and is southwest of the MW-JS/JM well couplet. At DD-7, the highest concentration of PFAS6 (412 ppt) was detected in the groundwater sample collected from 40 feet bgs. Concentrations of PFAS6 decreased to 8.94 ppt at 55 feet bgs and were below laboratory detection limits at 70 feet and 85 feet bgs. PFAS6 were detected at a total concentration of 36.1 ppt at 100 feet bgs. The PFAS6 concentrations reported at DD-7 were primarily attributable to PFOA and PFHpA.
 - Concentrations of non-PFAS6 compounds were also detected at DD-7 including 6:2FTS (up to 458 ppt), PFPeA (up to 306 ppt), PFHxA (up to 220 ppt), and PFBA (up to 80 ppt). Similar to PFAS6 the highest concentrations of these compounds were detected in the groundwater sample collected from 40 feet bgs.

Property AY and Property DA (Waldrons Bottom Road - south)

To assess the extent of PFAS impacts further south in the downgradient area, additional depth-discrete groundwater sampling locations were sampled in November 2021. Subsequently monitoring wells were installed at two additional downgradient properties including Property AY (monitoring wells MW-AYS/AYI, and AYD) and Property DA (monitoring wells MW-DAS/DAD).

- DD-8 is a depth-discrete groundwater sampling location advanced at Property AX. At this location the maximum detected concentration of PFAS6 was 38.3 ppt in the groundwater sample collected from 40 feet bgs. PFAS6 concentrations decreased to 3.05 ppt at 55 feet bgs and were below the laboratory detection limits in groundwater samples from 70 feet, 85 feet and 100 feet bgs. The PFAS6 detected at the highest concentrations were PFOA and PFHpA.
- Groundwater samples were collected from Property AY at the discrete-depth sampling point DD-9 at depths of 40 feet bgs to 100 feet bgs in November 2021. The highest PFAS6 concentration was 4.44 ppt in the sample from 40 feet bgs.
 - Subsequent sampling of monitoring wells MW-AYS, AYI and AYD was performed in June 2022. PFAS6 were reported at a concentration of 11.1 ppt in the groundwater sample from MW-AYI, which is screened at a depth of 20 to 30 feet bgs. The PFAS6 detected included PFOA (5.24 ppt), PFHpA (3.2 ppt), and PFHxS (2.58 ppt). Detectable concentrations PFAS, including PFAS6, were not reported for the samples from MW-AYS or MW-AYD.

- At Property DA, groundwater samples were collected from depth-discrete sampling location DD-10 in November 2021. PFAS6 concentrations were detected in the groundwater samples from 40 feet bgs (46.2 ppt) and 55 feet bgs (648 ppt), the majority of which was attributable to PFOS. Also, PFHpA (one of the PFAS6) was detected in the 85-foot groundwater sample. Non-PFAS6 compounds were detected in groundwater samples from DD-10, but at low concentrations (less than 10 ppt).
 - PFAS, including PFAS6, were not detected above laboratory detection limits in the groundwater samples from MW-DAS (screened from 20 to 30 feet bgs) or MW-DAD (screened from 55 to 65 feet bgs).

Coffins Field Road Area

Additional groundwater assessment was performed in the area around Coffins Field Road, just south and downgradient from the monitoring well TMW-6S/D and M-6/6D well couplets where PFAS6 were detected at MVY. The groundwater assessment in this area included advancement of two depth-discrete groundwater sampling points at DD-11 (Property CL) and DD-12 (Property CB) and sampling of existing groundwater monitoring wells RIZ-19 and RIZ-21.

- RIZ-19 is installed just south of the M-6/M-6D well couplet to a depth of approximately 48 feet bgs. However, PFAS6 concentrations at RIZ-19 (3.1 ppt) were significantly lower compared to the PFAS6 concentrations detected at M-6 and M-6D.
- At DD-11 PFAS6 concentrations were found to generally increase with depth with the lowest concentration of 19.3 ppt at 40 feet bgs and the highest 44.4 ppt at 100 feet bgs. The majority of the PFAS6 was attributable to PFHpA and to a lesser extent PFOA. Also, non-PFAS6 compounds were detected at DD-11 including PFPeA (74.3 ppt at 100 feet bgs), PFHxA (48.6 ppt at 100 feet bgs), PFBA (27.1 ppt at 100 feet bgs), and 6:2FTS (22.2 ppt at 85 feet bgs).
- Monitoring well RIZ-21 is installed southwest of DD-11 to a depth of approximately 52 feet bgs. The groundwater sample from RIZ-21 collected in September 2022 detected on PFAS6 compound (PFHpA) at a low concentration of 3.77 ppt.
- Depth-discrete sampling point DD-12 is located at Property CB and south of RIZ-21. PFAS6 was detected at a concentration of 76.4 ppt at a depth of 55 feet bgs and 98 ppt at a depth of 70 feet bgs. Lower concentrations of PFAS6 were reported at 40 feet bgs (6.42 ppt) and 100 feet bgs (7.11 ppt). In the groundwater sample from 55 feet bgs, the PFAS6 included PFHpA (49.9 ppt) and PFOA (48.1 ppt) and with higher concentrations of non-PFAS6 compounds included 6:2FTS (409 ppt), PFPeA (335 ppt), and PFHxA (151 ppt).

5.5 DRINKING WATER INVESTIGATION

Public drinking water is not available in the residential area to the south of MVY. Most of these properties are developed with residential structures and are used as full-time residences or for part-time or seasonal purposes. Private water supply wells have been installed at these properties to provide a source of potable water. Typically, the local Board of Health issues permits for the use of these private drinking water supply wells. During the IRA and as part of the Phase I investigations, available records were reviewed for these private drinking water wells. The available information including date of installation, well location and depth of the well screen, when provided, were used to assist in the environmental assessment activities

supporting the Phase I Report and this Phase II Report. The available data on private water supply wells are provided in Appendix G.

As summarized in Section 4.2, the IRA included assessment of PFAS concentrations in potable water from private drinking water wells downgradient from MVY beginning in October 2018. The water samples were obtained following purging the water system for 15 minutes prior to sampling. In general, water samples were collected from a cold-water supply line at a point closest to the water supply well (e.g., a spigot at or near the pressure tank) to minimize the potential for cross-contamination with other potential sources of PFAS such as plumbing/piping materials; however, in some cases this was not feasible and water samples were collected from another accessible untreated fixture. The untreated water samples were submitted for laboratory analysis of PFAS by EPA Method 537 at Alpha Analytical. In many cases private well samples were analyzed for PFAS via LCMS with isotope dilution to provide an expanded list of PFAS compounds to assist with the Phase I and Phase II investigations. The laboratory analytical data from samples of these private water supply wells are summarized in Table 12.

The initial drinking water assessment activities were completed under the IRA between October 2018 and August 2019. Additional outreach efforts were completed as part of the IRA, the Phase I Report and the investigations supporting this Phase II Report. The following sections detail the results of sampling and laboratory analysis of water samples collected from 206 properties at and downgradient from MVY. This total includes 202 residential wells and four commercial/industrial water supply wells.

5.5.1 Drinking Water Analytical Data Summary – Residential Properties

The concentrations of PFAS6 detected in 12 private wells at residential properties downgradient from the AFFF testing/discharge area located west of the WWTP at concentrations above 110 ppt, which represents a potential IH to human health. These properties are located along Waldrons Bottom Road and Vineyard Meadow Farms Road. The following summarizes the water sampling and analysis at these locations:

The first group of these wells have higher concentration ratios of PFOS, suggesting impacts from older AFFF formulations:

- **Property F:** This property is located southwest from Area 1. No well construction information was available for the private well serving this residential property. The property includes two residential dwellings, a main house, and a smaller apartment over the garage.
 - A water sample from this property was first collected in November 2018, and PFAS6 were detected at a concentration of 861 ppt. Quarterly to semi-annual sampling has been performed from March 2019 through September 2022. From March 2019 to March 2021, PFAS6 generally increased from 1,110 ppt to 3,306 ppt. The PFAS6 decreased in samples collected from June 2021 (2,875 ppt) to September 2022 (958 ppt). The primary PFAS6 compounds detected at Property F include PFOS (maximum of 2,670 ppt), PFHxS (maximum of 698 ppt), and PFHpA (maximum of 202 ppt).
 - Lower concentrations of non-PFAS6 compounds were also detected at Property F including PFHxA (up to 257 ppt), PFPeA (up to 219 ppt), 6:2FTS (up to 184 ppt), Perfluoroheptanesulfonic Acid (PFHpS) (up to 166 ppt).
- **Property J:** This is a residential property with two separate single-family dwellings each connected to a single water supply well. The private well is a 4-inch diameter PVC well screened from approximately -35 feet mean sea level (MSL) to -43 feet MSL. This private well was first sampled in

November 2018, and quarterly groundwater monitoring has been performed at this property from March 2019 through September 2022.

- PFAS6 were detected at a concentration of 1,358 ppt in the November 2018 sample. Subsequent sampling through September 2022 has indicated generally stable concentrations of PFAS6 ranging from 639 ppt to 2,199 ppt. The majority of the PFAS6 detected at Property F was attributable to PFOS (maximum of 1,820 ppt) and PFHxS (up to 425 ppt), and to a lesser extent PFHpA (maximum of 163 ppt).
- Lower concentrations of non-PFAS6 compounds were also detected at Property J including 6:2FTS (up to 192 ppt), PFHxA (up to 174 ppt), and PFPeA (up to 140 ppt).
- **Property Y:** This property has a single-family residential dwelling with a 4-inch diameter PVC water supply well screened from approximately -5 feet MSL to -8 feet MSL. The water from this private well was first sampled in December 2018, and subsequent samples have been collected quarterly from June 2019 through September 2022.
 - PFAS6 concentrations have ranged from 312 ppt in December 2021 to 911 ppt in June 2021. The PFAS6 detected at the highest concentrations include PFHxS (up to 728 ppt), PFOS (up to 341 ppt), and PFHpA (up to 161 ppt).
 - Concentrations of non-PFAS6 compounds were also detected at Property Y including 6:2FTS (up to 1,200 ppt), PFPeA (up to 336 ppt), and PFHxA (up to 234 ppt).
- **Property L:** The private well at this residential property is a 6-inch diameter PVC well screened from approximately 0 feet MSL to -10 feet MSL. First sampled in December 2018, this well has been sampled generally semi-annually from March 2019 through September 2022.
 - PFAS6 concentrations have remained relatively stable from 2018 to 2022 and ranged from 164 ppt in March 2019 to 272 ppt in June 2021. PFAS6 are primarily attributable to PFHpA (up to 114 ppt), PFOS (up to 88.6 ppt) and PFOA (up to 71.7 ppt).
 - Higher concentrations of non-PFAS6 compounds were detected including PFPeA (maximum of 755 ppt), PFHxA (maximum of 685 ppt), and 6:2FTS (maximum of 443 ppt).

A second grouping of private wells in the downgradient residential area is identified that is characterized by higher concentrations of non-PFAS compounds in groundwater including 6:2FTS. Also, the ratios of PFAS6 compounds in groundwater at these locations generally have higher PFOA. These locations appear to be impacted by newer AFFF formulations and/or degraded longer chained PFAS.

- **Property B:** This residential property is located southeast of Area 1 at MVY. The private well at this property is a 4-inch diameter 53-foot deep well of PVC construction that is screened from approximately -5 to -8 feet MSL. The water from the private well at Property B has been sampled generally quarterly since 2019.
 - The first water sample was collected in November 2018 and PFAS6 was detected at 547 ppt. Subsequent samples were collected from December 2018 through September 2022, and PFAS6 concentrations ranged from 44.6 ppt to 1,180 ppt. The lowest PFAS6 concentration (44.6 ppt) was reported for the September 2022 sample. The majority of the

PFAS6 concentration is attributable to PFHpA (maximum of 553 ppt) and PFOA (maximum of 470 ppt).

- Non-PFAS6 compounds were detected at higher concentrations compared to PFAS6 including 6:2FTS (up to 25,400 ppt) and PFHxA (up to 1,260 ppt).
- **Property G:** This is a single-family residential property with a 4-inch diameter PVC water supply well screened from -10 feet MSL to -13 feet MSL. The first sample from this property was collected in November 2018, and samples have been collected generally semi-annually between June 2019 and September 2022.
 - PFAS6 concentrations have ranged from 97.5 ppt (May 2022) to 364 ppt (December 2020). The highest concentrations of individual PFAS6 were reported for PFHxS (maximum of 208 ppt), PFHpA (maximum of 102 ppt), and PFOA (maximum of 50.2 ppt).
 - The highest concentrations of non-PFAS6 included PFPeA (up to 214 ppt) and PFHxA (up to 127 ppt).
- **Property BJ:** This residential property has two single-family dwellings, a main house, and a smaller apartment/guest house above the garage. The property receives water from one 4-inch diameter PVC water supply well screened from approximately 3 feet MSL to -1 feet MSL. A water sample from this property was first collected in December 2018, and samples have been collected semi-annually to quarterly, based on occupancy.
 - PFAS6 concentrations have remained generally stable within a broad range from 110 ppt in September 2022 to 255 ppt in September 2021. Most PFAS6 is attributable to PFHpA (maximum of 168 ppt) and PFOA (maximum of 84.8 ppt).
 - The majority of detected PFAS were non-PFAS6 compounds include 6:2FTS (up to 415 ppt), PFHxA (up to 213 ppt) and PFPeA (up to 133 ppt).
- **Property I:** The private well at this single-family residential property is a 4-inch diameter PVC well screened from approximately -3 feet MSL to -6 feet MSL. The water at this property was first sampled in November 2018, and water samples have been generally collected quarterly from March 2019 to September 2022.
 - PFAS6 concentrations have ranged from 160 ppt (March 2020) to 957 ppt (March 2019). The PFAS6 concentrations are primarily attributable to PFHpA (up to 590 ppt) and PFOA (up to 357 ppt).
 - Higher concentrations of non-PFAS6 compounds were also detected at this property including 6:2FTS (maximum of 1,050 ppt), PFPeA (maximum of 849 ppt), and PFHxA (maximum of 487 ppt).
- **Property C:** This property is a single-family residence with a 4-inch diameter private well screened from approximately -5 feet MSL to -8 feet MSL. Water sampling for PFAS was first performed in November 2018, and samples have generally been collected quarterly from March 2019 through September 2022.

- PFAS6 concentrations have remained generally stable within a range from 28.2 ppt (June 2022) to 178 ppt (December 2019). The primary PFAS6 detected at this location include PFHpA (up to 108 ppt) and PFOA (up to 69.8 ppt).
 - Non-PFAS6 compounds have also been detected at this location including PFHxA (maximum of 84.2 ppt), PFPeA (maximum of 79.5 ppt), 6:2FTS (maximum of 59.7 ppt) and PFBA (maximum of 30.2 ppt).
- **Property AS:** This property is a single-family residence with a 4-inch diameter PVC well with a stainless-steel well screen set at approximately 1-foot MSL to -2 feet MSL. This private well was first sampled in December 2018 and has generally been sampled semi-annually through June 2022.
 - PFAS6 concentrations have ranged from 36.2 ppt in June 2022 to 158 ppt in June 2019; however, PFAS6 concentrations have been below 110 ppt since June 2020. The primary PFAS6 compounds have included PFHpA (up to 105 ppt) and PFOA (up to 52.8 ppt).
 - Higher concentrations of non-PFAS6 compounds were detected at this private well including 6:2FTS (maximum of 1,450 ppt), PFHxA (maximum of 407 ppt), PFPeA (maximum of 347 ppt), and PFBA (maximum of 93.4 ppt).
- **Property BO:** This residential property includes two separate residential dwellings: a main house with detached garage and a separate smaller guest house. Both residential dwellings are served by one private well which is constructed of 4-inch diameter PVC and is screened from approximately -5 feet MSL to -8 feet MSL. The private well at this property was first sampled in December 2018 and has generally been sampled semi-annually
 - PFAS6 concentrations have ranged from 86.7 ppt in September 2022 to 383 ppt in September 2020. Recent concentrations suggest a decreasing trend from September 2020 to September 2022. Only two of the PFAS6 were detected at this location, PFHpA (maximum of 249 ppt) and PFOA (maximum of 144 ppt).
 - The detected concentrations of some non-PFAS compounds were higher compared to PFAS6 including 6:2FTS (up to 819 ppt), PFPeA (up to 260 ppt), and to a lesser extent PFHxA (up to 182 ppt).
- **Property AC:** This single-family residential property has one 4-inch diameter PVC water supply well that is screened from approximately -18 feet MSL to -21 feet MSL. This location was first sampled in December 2018 and was sampled annually through June 2022.
 - The detected concentrations of PFAS6 at this location have ranged from 36.5 ppt in March 2019 to 156 ppt in June 2022. PFAS6 concentrations have demonstrated an increasing trend since June 2020. The detected PFAS6 is primarily comprised of PFHpA (up to 86.8 ppt) and PFOA (up to 68.7 ppt).
 - Higher concentrations of non-PFAS6 compounds have been reported at this location including PFPeA (up to 234 ppt), 6:2FTS (up to 224 ppt), and to a lesser extent PFHxA (up to 96.2 ppt).

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In addition to the above-referenced locations with PFAS6 concentrations that represent a potential IH to human health, there are 18 residential properties proximate to Edgartown-West Tisbury Road that have private wells with PFAS6 concentrations that exceed the Massachusetts drinking water MCP and MCP Method 1 GW-1 standard of 20 ppt but are below the potential IH concentration of 110 ppt.

There are three additional residential properties with private wells where PFAS6 concentrations that exceed 110 ppt, which represents a potential IH to human health, and three residential private wells with PFAS6 concentrations above 20 ppt but below 110 ppt, which are located further south (downgradient from the larger group of properties directly downgradient from MVY). These locations are separated from the larger group of properties directly downgradient from MVY by locations that have private wells with PFAS6 concentrations below 20 ppt. The following summarizes the water sampling and analysis at these locations:

- **Property AX:** This is a single-family residential property with one private water supply well. No well construction information was available for the private well serving this residential property. This property is located downgradient from Property AC. The private well at this location was first sampled in December 2018, and sampling has been performed semi-annually through September 2022.
 - PFAS6 concentrations at this private well have ranged from 43.8 ppt (June 2011) to 136 ppt (March 2020). The detected PFAS6 include PFHpA (maximum of 98.8 ppt) and PFOA (maximum of 37.4 ppt).
 - Higher concentrations of non-PFAS6 compounds were detected including PFHxA (up to 102 ppt), 6:2FTS (up to 100 ppt), and PFPeA (up to 69.2 ppt).
- **Property AY:** This residential property is located approximately 1/3 mile south of Property AX. This single-family residence is served by one 4-inch diameter PVC water supply well screened from approximately 0 feet MSL to -3 feet MSL. A water sample from this property was first collected in December 2018, and subsequent samples have been collected generally semi-annually through September 2022.
 - PFAS6 concentrations have demonstrated a generally decreasing trend from 2018 to 2022 with a maximum reported concentration of 586 ppt in December 2018 and a concentration of 111 ppt in September 2022. The PFAS6 are primary attributable to PFOS (up to 427 ppt) and PFHxS (up to 148 ppt).
 - Non-PFAS6 compounds are not detected at concentrations approaching the concentrations of PFOS or PFHxS at this location, although low concentrations of PFHxA (maximum of 13.6 ppt), PFBS (maximum of 10.4 ppt), and other compounds were reported.
- **Property DA:** This single-family residential property is at the southerly end of Waldrons Bottom Road and approximately 740 feet south of Property AY. This property has a 4-inch diameter private water supply well with a wire-wrapped screen set from approximately -12 feet MSL to -18 feet MSL. The private well at this property was first sampled in January 2019 and has generally been sampled semi-annually from April 2019 to September 2022.

- PFAS6 concentrations have been detected within a wide range from 139 ppt (January 2019) to 611 ppt (December 2020). The majority of the PFAS6 concentrations are attributable to PFOS (up to 487 ppt) and PFHxS (up to 116 ppt).
- Non-PFAS6 compounds were not detected at concentrations approaching either of the two primary PFAS6. However, PFHxA was detected frequently at this property at concentrations up to 12.6 ppt (December 2020).
- Property DA also has a manmade pond which is supplemented with water from the private well. A sample from the water within the pond was collected by Tetra Tech on September 9, 2021. The PFAS6 concentration was 107ppt and included PFHxS (23.6 ppt) and PFOS (83.6 ppt) which are also detected in the untreated private well water.

In the Coffins Field Road residential development area south of the entrance to MVY and downgradient from the TMW-6/6D and M-6/M-6D well couplets, there is one residential private well (Property CL) with a maximum PFAS6 concentration above 110 ppt and eight residential private wells with PFAS6 concentrations above 20 ppt but below 110 ppt. Except for Property CS, the PFAS6 in water samples from the residential private wells in this area are primarily attributable to PFHpA and PFOA. At property CS, the reported concentration of PFOS in the June 2022 sample was significantly higher than PFHpA and PFOA.

- **Property CL:** This property is located southeast of the monitoring well TMW-6/6D well couplet. There was no well construction information available for the private well serving this residential property. The water samples from this property were first collected in December 2018 and have been collected semi-annually from March 2019 to September 2022.
 - PFAS6 concentrations have ranged from 197 ppt in October 2020 to 85.4 ppt in October 2021. The primary PFAS6 compounds detected at this location are PFHpA (up to 128 ppt), PFOA (up to 46.8 ppt), and to a lesser extent PFNA (up to 22.2 ppt).
 - Higher concentrations of non-PFAS6 compounds were detected including 6:2FTS (maximum of 354 ppt), PFPeA (maximum of 351 ppt), PFHxA (maximum of 211 ppt) and PFBA (maximum of 109 ppt).

In addition to the main sampling areas between Waldrons Bottom Road and Coffins Field Road to the south/southwest of MVY and near Coffins Field Road and Rustling Oaks Road to the southeast of MVY, water samples were also collected from several residential properties with private water supply wells that are located to the west, east and south of the main investigation area. These sampling locations are shown on Figures 5A and 5B. The results of sampling in these areas did not detect PFAS6 above laboratory detection limits. The following summarizes the findings of these assessment activities:

- Two private wells (Properties DI and V) along Bluebird Lane and one private well on Heather Lane (Property CW) were sampled to the west of the main investigation area. PFAS were not detected above the laboratory detection limits at these locations.
- Two private wells (Properties GP and GQ) were sampled along Thumb Point Road which borders Deep Bottom Cove and is southwest of Charles Neck Way. PFAS were not detected above the laboratory detection limits at these locations.

- Two private wells (Properties DT and EJ) were sampled along Middle Point Road, which are south of Charles Neck Way and borders Middle Point Cove. PFAS were not detected above the laboratory detection limits at these locations.
- One private well (Property ES) that borders Homer Pond to the east and is south of the Coffins Field Road and Rustling Oaks Road area was sampled for PFAS. PFAS were not detected above the laboratory detection limits at this location.
- One private well to the northwest of Watcha Pond (Property BB) and one private well to the southeast of Watcha Pond (Property DN) were sampled and PFAS were not detected above the laboratory detection limits.
- Three private wells along Oyster Pond to the southeast of Coffins Field Road development area were sampled (Properties DL, GR, and DM). PFAS were not detected above the laboratory detection limits at these locations.

5.5.2 Private Well Analytical Data Summary – Commercial Properties

There are three private wells located at MVY including a non-potable water supply well for a commercial laundry facility (Property A), a water supply well located at a private airplane hangar (Stanley Well), and a private well at the Amerigas facility in the northeasterly portion of the airport business park.

- Laboratory analysis of the water from Property A detected on PFHpA at a concentration of 2.87 ppt and PFHxA at 12.4 ppt.
- Analysis of a sample from the private well at the Stanley Hanger detected PFHpA (2.92 ppt) and PFHxA (3.27 ppt).
- The results of sampling and analysis of the water from the private well at the Amerigas facility did not report concentrations of PFAS above laboratory detection limits.

Downgradient from MVY, one private well was identified at a commercial property (a solid waste handling/transfer station) which was identified as Property BW and is located to the southeast of the boat storage yard area (Location 9). PFAS6 were detected at this location at a concentration of 11.9 ppt, primarily including PFOA (9.07 ppt).

5.5.3 POET System Performance Monitoring

As part of the IRA, a total of 50 POET systems were installed to mitigate PFAS impacts to potable water at residential private wells. POET system monitoring is performed at regular intervals based on the schedule presented in the IRA Plan. A summary of the treatment system installations, sampling frequency, and performance sampling results is provided in Table 13. Laboratory certificates of analysis for POET sampling prior to June 2022 were provided in prior IRA Status Reports. The laboratory certificates of analysis for POET sampling from June 2022 through September 2022 are included in Appendix D. As noted on Table 13, two separate POET systems were required at five properties due to the presence of multiple structures on a property that were connected to the private well via separate water lines.

POET system operation met performance objectives, and PFAS6 concentrations have consistently been reduced to below the MCP Method 1 GW-1 standard of 20 ppt. Breakthrough of the first GAC unit occurs

when PFAS6 concentrations exceed 20 ppt in the treated water. The following observations have been made regarding POET performance through the September 2022 sampling event:

- **Property F, Property J and Property B:** No significant breakthrough of the first GAC unit has been identified at Property F, Property J or Property B which have some of the highest PFAS6 concentrations observed. At Property F-1 (main house), over 92,753 gallons of water have been treated with PFAS6 concentrations ranging from 803 ppt to 3,359 ppt. At Property J-2 (POET at guest house), over 143,362 gallons of water have been treated with PFAS6 concentrations ranging from 639 ppt to 2,200 ppt. At Property B, over 475,760 gallons of water have been treated with PFAS6 concentrations ranging from 44.6 ppt to 1,181 ppt.
- **Property Y:** Following initial treatment for approximately one year, PFAS6 were detected in the midpoint sample (between the first and second GAC units) in the sample from June 2020 at a concentration of 22.7 ppt following treatment of 101,758 gallons of well water with PFAS6 concentrations ranging from 426 ppt to 852 ppt. The spent GAC was replaced and subsequent sampling in September 2020 did not detect PFAS6 in the midpoint or effluent (treated water) samples.
- **Property L:** PFAS6 were detected in the midpoint sample from June 2021 following treatment of 80,440 gallons of well water with PFAS6 concentrations ranging from 164 ppt to 287 ppt. The spent GAC was replaced in September 2021; however, subsequent sampling in June 2022 and September 2022 suggest that minor breakthrough was still occurring in the first GAC unit, but effective treatment was occurring after the second GAC unit. The first GAC unit was serviced, and the GAC was again replaced in October 2022. Results of resampling are pending.

5.6 SURFACE WATER INVESTIGATION SUMMARY

A Tetra Tech representative collected a surface water sample and a pore water sample from Long Pond on March 15, 2022 (identified as LONG POND SURFACE and LONG POND PORE, respectively). To collect the pore water sample, Tetra Tech personnel used a 36-inch long PushPoint Field Investigation Sampler by M.H.E. Products. This sampling tool allows the sampler to compare the static water level of the pore water to the surface water elevation. The pore water sample was collected from a location where the pore water elevation was equal to or higher than the surface water elevation, suggesting that pore water was discharging into the surface water. The locations of the pore water and surface water samples are shown on Figure 6.

The samples were analyzed at Alpha Analytical for PFAS compounds via LCMS with isotope dilution. Laboratory analytical data for pore water and surface water samples are summarized in Table 14. Laboratory certificates of analysis were provided in the June 2022 IRA Status Report. The following summarizes the results of laboratory analysis of pore water and surface water samples from Long Pond:

- PFAS6 were not detected in the pore water sample above the laboratory detection limit of 1.81 ppt. This suggests that the pore water discharging to Long Pond at this sampling location is not adversely impacted by PFAS.
- One PFAS6 compound, PFOS, was detected in the pond surface water sample at a concentration of 3.19 ppt. Also, non-PFAS6 compounds were detected in the surface water sample including PFPeA (4.25 ppt) and PFHxA (1.85 ppt).

5.7 FIELD DATA QUALITY ASSURANCE AND QUALITY CONTROL

During implementation of the IRA, quality assurance/quality control (QA/QC) sampling was performed. These data have been provided in prior IRA submittals as well as in the Phase I Report. The following QA/QC sampling was performed from June 2022 through September 2022. These data are summarized in Table 15. Laboratory certificates of analysis are included in Appendix D.

- During each sampling event, one field blank sample was collected during each sampling activity. A total of two field blanks were collected in June 2022 (POET sampling and groundwater sampling). Also, in September 2022, three field blanks were collected (POET sampling, groundwater sampling, and soil sampling). The field blanks were submitted to Alpha Analytical and analyzed for PFAS via EPA Method 537. The laboratory analysis of field blanks in June and September 2022 did not detect PFAS about the laboratory detection limits. This indicates that cross-contamination from conditions at the Site and during transit to the laboratory did not adversely affect the data.
- During groundwater sampling, an equipment blank was collected in June and September 2022 to assess the effectiveness of field decontamination methods. The equipment blank samples were analyzed for PFAS at Alpha Analytical. PFAS6 were not detected in either of the equipment blank samples. However, in the September 2022 equipment blank, 6:2FTS was detected at a concentration of 33.6 ppt. This suggests that potential carry-over of 6:2FTS during sampling either from decontamination and/or equipment used during sampling (high-density polyethylene tubing or sampling pump). Due to the low detection of 6:2 FTS and since PFAS6 were not detected, this finding does not significantly impact the findings of this Phase II Report.
- Trip blank samples were submitted with each of sample coolers transported to Alpha Analytical to assess sample integrity during temporary storage and transport. Three trip blank samples were analyzed in September 2022. The analysis of the trip blank samples did not report detectable concentrations of PFAS6; however, 6:2FTS was detected at a concentration of 1.99 ppt in one of the trip blank samples. This indicates that cross-contamination from conditions at the Site and/or during transit to the laboratory did not affect the PFAS6 data. However, potential laboratory or cross-contamination from 6:2FTS is noted. Since PFAS6 were not detected, this finding does not significantly impact the findings of this Phase II Report.
- Two field blind duplicate samples were collected during sampling in June 2022, one for a sample from a private well (Property FG) and a second from a groundwater monitoring well sample (TT-11). The relative percent difference between the duplicate and the primary samples indicated values ranging from 2.1% to 8.7%. These values are well below acceptable laboratory duplicate QC limits for RPD of 30%.

6.0 SITE HYDROGEOLOGICAL CHARACTERISTICS

The following sections present a description of the hydrogeologic conditions at the Site, as currently understood.

6.1 TOPOGRAPHY AND SURFACE FEATURES

The topography of the Site is relatively flat at an elevation of approximately 45 feet to 50 feet above MSL. The topography generally slopes downward to the south with elevations of approximately 30 feet MSL to 10 feet MSL along the southerly boundaries. Toward the Edgartown/West Tisbury Road, shallow depressions

(also referred to as bottoms) can be observed which were likely formed by Pleistocene stream valleys in the glacial outwash plain. A shallow depression, identified as Waldron Bottom, drains southerly toward Long Pond and likely affects drainage and groundwater migration proximate to the Site. The Site is in close proximity to one smaller shallow depression to the west of Waldron Bottom which appears to drain to the south toward Middle Point Cove. Also, two smaller and connected shallow depressions are in close proximity to the main entrance to MVY at the intersection of Edgartown-West Tisbury Road and Airport Road. These two connected shallow depressions appear to drain toward Watcha Pond and Homer Pond to the south.

The MVY property includes lands that are paved, occupied by buildings, or landscaped. The downgradient portion of the Site includes residential developments and undeveloped woodland areas with natural vegetation to the south of West Tisbury/Edgartown Road and includes gentle slopes to the south. The Waldrons Bottom Road development includes unpaved roadways, residential buildings, landscaped areas, and undeveloped woodlands. The Vineyard Meadow Farms Road development includes paved roadways, residential buildings, landscaped areas, and undeveloped woodlands. The Coffins Field development includes paved roadways, residential buildings, and landscaped areas.

6.2 NATURAL RESOURCE AREAS

Our evaluation of natural resource areas included observations at the Site and in the surrounding area, a review of the MassDEP Phase I Site Assessment Map, a review of information from the Massachusetts Division of Fisheries & Wildlife and the Natural Heritage and Endangered Species Program (MassWildlife, 2022), and a review of the available USGS topographic map of the Site (Figure 1). Copies of the Phase I Site Assessment Map and information from MassWildlife are included in Appendix H. Based on our review, we found the following natural resource areas proximate to the Site:

- The Site is located within a designated high yield aquifer and EPA Sole Source Aquifer. The portion of the Site that is at MVY is classified as a high yield non-potential drinking water source area. However, the area to the south of MVY is a high yield potentially productive aquifer and is considered a Potential Drinking Water Source Area, as defined in the MCP. Also, pursuant to the MCP all aquifers on Martha's Vineyard are considered Potentially Productive Aquifers. The residential developments to the south of MVY are not serviced by public water, and there are private water supply wells in this area. The locations of current GW-1 areas proximate to the Site are shown on Figure 9.
- The Manuel F. Correllus State Forest and associated bike path that abut the Site are designated as protected open space.
- Surface waters (associated with Long Cove) and wetlands are located within 500 feet of the southerly boundary of the Site. Long Cove may also represent potential fish habitat.
- There are no Areas of Critical Environmental Concern or certified vernal pools located within 500 feet of the Site. There is one potential vernal pool mapped proximate to Waldrons Bottom Road and Laurand Drive.
- Based on our review of available information available from MassWildlife, the Site is located within 500 feet of Priority Habitat for rare species and wildlife. Specifically, habitat is identified in the undeveloped lands surrounding MVY, along Waldrons Bottom Road, and in the undeveloped lands to the west of Charles Neck Way.

MVY operates a Non-Transient Non-Community Water System that is supplied with potable water by the Oak Bluffs Water District, a municipal supplier of drinking water for the area. The Oak Bluffs Water District system is interconnected with the Edgartown water system, and in the event of a water emergency, the Oak Bluffs water system can be fed from the Edgartown water system. In addition, three private water supply wells were identified on MVY tenant properties that are not connected to the MVY water system. The Airport Laundromat facility has a non-potable water supply well located at 1 Flight Path (Takemmy Laundry Private Well). A private water supply well is located at the former Amerigas building (Former Amerigas Private Well), which is currently unused. A private water supply well was also identified at a hanger building operated by Direct Flight (the Stanley Private Well). The locations of these private water supply wells are shown on Figures 5A/B.

6.3 SITE GEOLOGY

According to prior assessment activities (Tetra Tech, 2012), the Site is underlain by outwash plain deposits, which also comprise much of the central portion of the island of Martha's Vineyard. These deposits consist of stratified sand and gravel deposited by glacial melt water streams toward the latter stages of the Pleistocene Glaciation (Pleistocene deposits). The Pleistocene deposits are divided into an upper more permeable primary aquifer and a lower less permeable secondary aquifer. The upper aquifer is composed primarily of sand and gravel and is at least 60 to 70 feet in thickness. The Pleistocene deposits are reportedly underlain by silt, sand, and clay deposited on the Coastal Plain during the Upper Cretaceous Period. At the MVY, these deeper finer-grained deposits have not been observed during subsurface investigations where samples have been collected at depths of approximately 100 feet bgs. However, at Property AY, observations during subsurface assessment activities and hydraulic conductivity testing suggest that finer grained soils may exist in this area. According to a referenced United States Geological Survey monitoring well located two miles northeast of the Site, the unconsolidated deposits were observed to depths of over 800 feet bgs.

Bedrock is expected to be encountered at depths of greater than 800 feet bgs at the Site. According to the Bedrock Geology Map of Massachusetts (Zen, 1983), bedrock at the Site is described as Cretaceous Sediments, consolidated from clay, silt, sand and gravel mostly of non-marine and near shore marine origin.

6.4 HYDROGEOLOGY

Hydrogeology is likely influenced by surface topography which, in this region, is dominated by shallow depressions (bottoms) formed by stream valleys in the outwash plain during the Pleistocene Glaciation. Based on the most recent groundwater elevation survey and prior groundwater elevation surveys at the Site, groundwater flow is southerly. The measured groundwater gradient across the Site has been calculated at approximately 0.001 feet/foot. The groundwater potentiometric surface map is provided as Figure 7 (Site-wide) and Figure 8 (near WWTP and Area 1). Based on our review of the groundwater hydrogeology at the Site, it is likely that Waldrons Bottom, and to a lesser extent, the unnamed bottoms draining toward Homer Pond and Watcha Pond, have an effect on groundwater migration from AFFF release locations at the Site. In general, groundwater from MVY appears to migrate southerly toward Edgartown-West Tisbury Road. Groundwater from the Area 1 portion of MVY near the WWTP likely migrates southerly with possible influence from Waldrons Bottom toward Long Pond. Also, groundwater from the MVY ARFF and terminal building areas migrates southerly with possible southeasterly influence of the bottoms leading toward Homer Pond and Watcha Pond.

The findings of Site assessments have indicated an estimated linear groundwater flow velocity at the portion of the Site nearest to MVY ranging from 77 feet/year to 608 feet/year to the south/southeast. The highest groundwater migration rate was identified at monitoring well MW-JS from approximately 9 feet MSL to 19 feet MSL. The wide range in groundwater flow velocity is likely attributable to relatively minor variations in subsurface soil type (e.g., medium to coarse sand with gravel vs. fine sand). In the downgradient area of the Site (e.g., MW-AY well grouping) significantly slower linear groundwater flow velocities were measured including 14 feet/year at MW-AYS and 17 feet/year at MW-AYI. However, monitoring well MW-AYD, which is screened from approximately -32 feet MSL to -42 feet MSL, the linear groundwater flow velocity was 195 feet/year. These findings suggest that groundwater may migrate along relatively narrow preferential flow pathways which have soils with relatively higher permeability, creating preferential flow patterns in the downgradient area.

Also, in the area downgradient of MVY along Waldrons Bottom, apparent upwelling of PFAS-impacted groundwater is observed. This phenomenon appears to be associated with the presence of either an area of lower permeability soils at a location upgradient from Property AY and/or the presence of higher salinity and denser groundwater from the Atlantic Ocean that is intruding beneath freshwater.

7.0 ENVIRONMENTAL FATE AND TRANSPORT OF PFAS

The fate and transport characteristics of chemicals are related to their physical and/or chemical properties. The fate and transport of contaminants may also be influenced by site-specific factors and regional environmental/climatic conditions. The following identifies the contaminants attributed to the Site and summarizes their environmental fate and transport characteristics.

7.1 CONTAMINANTS OF CONCERN

The contaminants of concern (COCs) at the Site are attributed to past discharges of AFFF, as required by the FAA to support airport operations. AFFF has been in use by the U.S. Department of Defense (DOD) since the 1960s, and its use was not widespread until the 1970s. However, the Site was transferred to Dukes County in 1959, and it is not believed that AFFF was used by previous U.S. DOD activities at the Site. It is believed that FAA-required testing of AFFF formulations at MVY has occurred since at least the 1990s but likely began many years prior.

The first type of AFFF developed for use by the U.S. DOD was manufactured by 3M from the late 1960s until 2002 and was branded as 3M Lightwater. The use of the first generation AFFF products was suspended beginning in 2016; however, some of these first generation AFFF products remained in use beyond this date. Therefore, the AFFF formulations used at MVY may have included first generation or legacy AFFF. The legacy AFFF contain PFOS as well as various PFAS precursors that can break down to PFOA and other shorter chained PFAS.

The second generation of AFFF was manufactured from the 1970s until 2016 and did not include the use of PFOS. However, PFOA was often present in these products as a manufacturing byproduct. Also, these AFFF formulations contain some longer chained PFAS including precursors that have been known to degrade to PFOA and other shorter chained PFAS. These second generation AFFF formulations do not break down to PFOS.

The modern fluorotelomer AFFF formulations contain predominantly shorter chained PFAS (six-carbon atoms or less). These shorter chained PFAS do not breakdown to PFOS, PFOA, or similar compounds.

However, they do contain and may breakdown to shorter fluorinated carbon chain structures that may be environmentally persistent but are not regulated by MassDEP as one of the PFAS6.

The results of laboratory analysis of various AFFF formulations (Section 5.1.1) were used to generate fingerprint profiles for comparison to similar profiles for PFAS in environmental media. To visualize the different AFFF formulations that may have been released at the Site, color coded pie charts were created. Since samples of the older AFFF formulations were not available, the ratios of the various PFAS components were estimated based on other studies (Tetra Tech, 2022). The color scheme selected for this visualization includes red, orange and yellow shades for the sulfonate/sulfonic acid compounds; bluish shades for the carboxylate/carboxylic acid compounds; and gray to purple shades for the fluorotelomer compounds. This color scheme was intended to make visualizing the relative age or degradation state of PFAS impacts at the Site. Fingerprint profiles for the MVY AFFF formulations and likely older AFFF formulations that may have been used in the past are presented in Figure 10.

The 2011 and 2017 AFFF formulations present at MVY were predominantly shorter chained based on the presence of 6:2FTS but also contained detectable carboxylates including PFOA and PFHxA. Therefore, these products may have also contained detectable concentrations of the regulated PFAS6. The nature of PFOA in the 2017 AFFF formulation is not clear and may have been present as an impurity. The newest formulation manufactured in 2019 is also a shorter chained fluorotelomer based product that did not have detectable PFAS6. The differentiation of groundwater impacts attributable to degradation of legacy AFFF, second generation AFFF or modern fluorotelomer AFFF formulations is more difficult due to the presence of similar PFAS (e.g., PFOA and PFHxA). The shorter chained fluorotelomer compounds, mainly 6:2FTS, are present at the highest concentrations at the Area 1 and just downgradient of MVY suggesting these impacts are the results of more recent AFFF testing at MVY, although no discharge during testing has occurred since early 2018.

A color-coded pie chart for effluent from the WWTP was also created using the same color scheme used for AFFF formulations. This fingerprint for the WWTP effluent suggests that the majority of PFAS in this material is related to PFOA and other carboxylate/carboxylic acid compounds which may be degradation products from longer chained PFAS precursors. The fingerprint for the WWTP effluent is not consistent with AFFF formulations. These data are also presented in Figure 10.

7.2 FATE AND TRANSPORT CHARACTERISTICS

There are numerous PFAS compounds, each of which has varying physical and chemical properties that affect fate and transport characteristics. However, most common PFAS typically include a hydrophobic and lipophobic end “tail” which is comprised of carbon-fluorine bonds and a nonfluorinated end “head” which can be polar and hydrophilic. This is the characteristic that made AFFF so useful in mitigating petroleum fuel fires as the hydrophilic head would be attracted to the aqueous portion of the foam while the hydrophobic tail would form a barrier to suppress flammable vapors. These vying characteristics can lead to uneven or unpredictable interactions with environmental media based on varying subsurface conditions, such as the presence of organic carbon, varying surface charges, and interactions at the interface between environmental media. The following are the key fate and transport characteristics of primary PFAS detected at the Site:

- The PFAS detected at the Site, including PFOS, have a moderate to high solubility in water. Based on observations and the maximum concentrations of various PFAS detected at the Site, it does not appear that non-aqueous phase PFAS is present at the Site. There is some information that the water solubility of PFOS decreases with increasing salt concentrations in water.

- The surfactant properties of PFAS may result in foaming and the production of micelles (e.g., colloidal suspension) in groundwater or at the capillary fringe of the water table. The foam and/or micelles could accumulate at the capillary fringe of the water table and reduce migration of PFAS in the subsurface. However, the maximum concentrations of PFAS detected in groundwater are likely well below the concentration at which micelles could form except in the source area where AFFF testing occurred. However, no evidence of micelles was observed at the Site.
- The primary fate and transport mechanism is related to the flow of groundwater in the subsurface. As detailed in Section 6.4, hydrogeologic investigations at the Site have estimated that the linear groundwater flow velocity varies significantly at the Site. This is likely attributable to varying subsurface soil types and the potential for more granular soils to exist along the long narrow bottoms that may act as preferred flow pathways.
 - The highest groundwater flow velocity of 608 feet per year (ft/year) was measured in monitoring well MW-JS which is screened from 19 feet MSL to 9 feet MSL. A relatively high groundwater flow velocity was also estimated in the shallow monitoring well M-4 (231 ft/year).
 - The groundwater velocities further downgradient from MVY were lower in the deeper screened wells including MW-JM (77 ft/year) and MW-AYD (195 ft/year).
 - Even lower groundwater velocities were measured further downgradient in the shallower wells including monitoring well MW-AYS (14 ft/year) and MW-AYI (17 ft/year).
- PFAS migration through the subsurface can be influenced by various interactions where these compounds are contained within the soil matrix. A general soil adsorption coefficient (K_d) can be estimated from published sources and adjusted based on the fraction of organic carbon in soil. The following describes the factors that may influence the K_d . Additional supporting information is provided in Appendix E.
 - PFAS may adsorb to organic carbon via hydrophobic interactions. This fate and transport characteristic is likely to be most important for PFAS mobility in soil at the Site. However, organic carbon present in groundwater may also accumulate PFAS. This characteristic is measured by the organic carbon partitioning coefficient (K_{oc}) for PFAS. In general, other than topsoil (top 6 inches), the soils at the Site have been found to have a relatively low organic carbon content.
 - PFAS may also partition to the solid phase in soil via electrostatic interactions with the polar head since PFAS tend to have a negative charge on one end of the compound. However, soils also tend to have a negative charge which may limit the partitioning to soil from this characteristic. Electrostatic interactions can vary widely based on soil type and are complex interactions. This gives some uncertainty to available K_d values. Also, limited spatial sampling of soils in the downgradient area adds to uncertainty about potential for varying soil conditions which may affect electrostatic interactions with PFAS.
 - Considering these characteristics, groundwater migration retardation factors can be estimated. As detailed in Appendix E, PFAS retardation factors for site-specific soil conditions were found to range from 1.23 to 8.31. The retardation factors most relevant to migration of COCs are likely PFOS (4.77), PFOA (5.31), 6:2FTS (3.45), PFHxA (3.76), and

PFHxS (6.94). Although lower retardation factors were calculated for some compounds, these are not primary COCs and/or are not included in the PFAS6 list.

- Groundwater linear flow velocities can be adjusted by the applicable retardation factors to estimate the rate of PFAS migration in the subsurface. Using the lowest retardation factor for a primary PFAS (6:2F7S) which was detected frequently and at high concentrations at the Site, the estimated PFAS migration rates range from 4 ft/year (MW-AYS) to 177 ft/year (MW-JS).
- The carbon-fluorine bond results in a very high chemical stability and resulting low reactivity. This characteristic makes these PFAS persistent and difficult to break down.
- Leaching of PFAS from soil to water is affected by infiltration rates, precipitation rates, or anthropogenic activity such as irrigation. At the Site, the depth to groundwater at MVY is typically greater than 20 feet which will result in greater opportunity for partitioning from leachate to deeper soils.
- The relatively low vapor pressure and higher water solubility likely limits partitioning of PFAS to air. MassDEP has not established MCP Method 1 GW-2 standards of PFAS and therefore, this fate and transport pathway is not considered significant.
- The AFFF formulations used recently at MVY include 3% aqueous solutions. Laboratory analysis of these products (Table 1) has only detected total PFAS in the low (less than five) parts per million range. Although these products are not 100% PFAS, it is likely that there is a large portion of PFAS compounds present in these products which are not detectable by standard laboratory methods available presently. Certain longer chained polyfluorinated PFAS may have been present in second generation AFFF products and could have been subject to transformations in environmental media where the interactions at the carbon-hydrogen bonds and possibly carbon-oxygen bonds can result in the formation of shorter chained PFAS. There are thousands of PFAS and thus a high level of uncertainty regarding precursor transformations and the conditions by which they may occur. The terminal degradation products of these processes appear to be perfluoroalkyl acid compounds. However, transformation of certain fluorotelomer-derived precursors may result in the formation of perfluoroalkyl carboxylic acids such as PFOA. This PFAS characteristic is particularly relevant because there are only six MassDEP regulated PFAS, and the current analytical methods are capable of reporting only a small fraction of the numerous PFAS that may exist. Therefore, it is likely that unknown and undetectable precursor PFAS may be present both from AFFF formulations released at the Site and from general anthropogenic processes. These unregulated, unknown, and unquantified PFAS precursor compounds could transform via various physicochemical and/or biological processes into terminal PFAS over time. These unique characteristics of PFAS precursors are also relevant to the development of the conceptual site model since this adds uncertainty to future conditions, and there may be differences between the rates of transport characteristics in the subsurface and the transformation of unknown precursor compounds into PFAS. Disperse and distant detections of PFAS6 have been reported in several private wells located further downgradient from the main grouping of private wells impacted by PFAS6 closer to Edgartown-West Tisbury Road. It is possible that precursor transformations may contribute to PFAS6 impacts at these locations. Advancements in laboratory analysis of PFAS could facilitate detection of currently undetectable compounds. Also, regulatory changes in the future could add to the list of regulated PFAS.

- The ultimate fate of PFAS is likely terminal fully fluorinated compounds such as perfluoroalkyl acid compounds and perfluoroalkyl carboxylic acids. It is anticipated that these compounds would be slow to naturally degrade and may be available for bioaccumulation in the environment. Migration of PFAS via groundwater in the area downgradient from MVY appears to slow approaching Long Pond (e.g., MW-AY well group). However, laboratory analysis of soils at the groundwater table and capillary fringe at monitoring well MW-AY did not detect PFAS above laboratory detection limits. PFAS were also not detected in the pore water sample collected in the area just upgradient of Long Pond. The exact mechanisms that affect the ultimate fate of PFAS in this downgradient area are not clear, and there is some uncertainty; however, the following summarizes some potential scenarios:
 - PFOS and other PFAS appear to be diluted to concentrations below the laboratory detection limits in the shallow groundwater approaching Long Pond.
 - These PFAS are interacting with less permeable soils in this area which may have different physiochemical characteristics compared to the more permeable granular sands observed further north toward MVY. Examples of these potential difference may be the presence of lower permeability soil, higher organic content soil, and an increase in salinity as groundwater migrates toward the Atlantic Ocean. The location of the transition to these lower permeability soils is not well delineated, so it is possible that PFAS may be accumulating at the interface of these lower permeability soils, higher organic content soils and/or higher salinity conditions. This potential phenomenon may also explain why PFOS concentrations are higher in the shallow monitoring wells (e.g., MW-AYS) closer to Long Pond compared to higher PFOS concentrations in deeper screened wells at DD-6 and private well Property J.
 - Subsurface conditions in the downgradient area may be conducive to greater degradation of PFAS into shorter chained and non-detectable terminal compounds in the downgradient area approaching the pore water of Long Pond.

7.3 MIGRATION PATHWAYS

Based on our review of migration pathways at the Site, we have developed the following summary:

- PFAS have been detected in shallow accessible soils at MVY. The most frequent and highest concentrations of PFAS were identified in the shallow soils (less than 2 feet bgs) in the AFFF discharge area west of the WWTP (Area 1), as detailed on Figure 4. PFAS above background were also identified in the AFFF equipment rinsing area proximate to monitoring well TT-2. In other areas at MVY and in the downgradient residential area, detected concentrations of PFAS in shallow soils are generally consistent with estimated background conditions likely attributable to anthropogenic sources such as atmospheric deposition from industrial sources and/or high organic content compost/topsoil which may have accumulated PFAS. It is unlikely that bulk transport of these PFAS impacted soils would be a significant migration pathway. However, PFAS may migrate in dust that could be generated by activities in these areas such as landscape maintenance and vehicle traffic.
- At Area 1, the soils have also been demonstrated to contain leachable PFAS which may act as a continuing source of PFAS impacts to the subsurface, including groundwater. PFAS may be mobilized from the soils in this area via precipitation.

- PFAS have been identified in groundwater from monitoring wells installed at MVY proximate to known or suspected AFFF release locations. Also, PFAS impacts to groundwater have been identified in downgradient areas beyond MVY suggesting that past AFFF discharges have resulted in migration via groundwater. Therefore, groundwater is a confirmed migration pathway at the Site.
- No correlation was observed between the presence of PFAS6 in groundwater at the downgradient residential properties and PFAS6 in surface soil at that property. For example, the maximum surface soil PFAS6 concentration was detected at a property where PFAS6 was not detected in groundwater, while two of the top three PFAS6 groundwater concentrations are on properties with surface soil PFAS6 concentrations less than 1.0 ng/g. This indicates that irrigation water from PFAS6-impacted private wells does not appear to be a likely migration pathway for PFAS6 to enter surface soil, nor is PFAS6 in surface soil a source of continuing PFAS6 impacts to groundwater.
- PFAS has not been detected at elevated concentrations in the monitoring wells or pore water samples approaching and/or proximate to Long Pond. Therefore, migration from groundwater to surface water is not considered a likely migration pathway of concern at this time
- PFAS have been identified in water samples from private water supply wells in the area downgradient from MVY. Public water supply pipelines are not available in the vicinity of the residential properties where PFAS has been detected in private wells. Based on these findings, drinking water is a confirmed migration pathway at the Site
- PFAS have a low potential for volatilization; therefore, airborne migration pathways are not considered significant at the Site.

8.0 NATURE AND EXTENT OF CONTAMINATION AND CONCEPTUAL SITE MODEL

8.1 NATURE AND SOURCES OF CONTAMINATION

Based on our review of past activities and uses involving PFAS containing AFFF at the Site and a review of the results of sampling and analysis of soil, groundwater, wastewater, and private well water at the Site to date, it appears there are at least three general areas where one or more releases of AFFF occurred as described below:

- Past release of suspect first generation AFFF formulations have been identified at the Site. These past releases are associated with relatively higher ratios of PFOS compared to other PFAS. Also, PFHxS is also commonly detected in these locations. There is no obvious remaining source of suspect first generation AFFF at MVY; however, PFOS impacts at MVY monitoring wells appear to be mixed with other newer AFFF formulations at monitoring wells M-4 and M-10. Similar PFAS fingerprints with higher ratios of PFOS were also identified in downgradient monitoring wells MW-JS and MW-JM and downgradient private wells at Properties F, J, Y, AY, and DA. Impacts from this PFAS fingerprint have migrated in groundwater the furthest distance downgradient from MVY compared to impacts associated with other PFAS fingerprints. This migration distance is consistent with past releases of first generation dating back at least several decades.

- More recent releases of AFFF containing a greater portion of 6:2FTS and to a lesser extent PFHxA and low to no PFOS are identified at MVY. Some of these locations also have PFOA and PFHpA which may be from releases of second generation AFFF products that have blended with impacts from newer AFFF formulation releases. These PFAS impacts are identified in soils and at monitoring wells installed at/near Area 1 (e.g., TT-1, TT-13), which appears to be the primary residual source of these PFAS impacts at the Site. PFAS impacts to groundwater demonstrating a similar PFAS fingerprint were also identified in the downgradient area approaching Edgartown-West Tisbury Road (TT-10, TT-14, M-4/4D, and M-10). Also, monitoring wells including but not limited to TT-2, TT-3, TT-5, RIZ-10, TMW-6D and M-6 demonstrate a similar PFAS fingerprint. Impacts from this PFAS fingerprint profile appear to be associated with most of the private wells in the downgradient area with PFAS6 above 20 ppt.
- The effluent discharge from the WWTP demonstrates a unique fingerprint profile and likely contains precursor PFAS that may transform to target PFAS, including PFOA. The WWTP effluent likely contains similar PFAS as septic system effluent discharges. Each of the residential properties at the Site has a septic system where domestic wastewater is discharged to the subsurface. It is likely that these discharges contain similar PFAS to the WWTP. The profile of the WWTP effluent samples do not demonstrate significant correlation to downgradient monitoring wells or private wells, but the WWTP and septic system discharges present another source of PFAS within the Site.

8.2 BACKGROUND CHARACTERIZATION

PFAS are released to the environment from several industrial categories and in a variety of media and may be deposited over long distances via atmospheric depositions including particulates (dry deposition) and in atmospheric precipitation. These potential atmospheric emissions and precipitates have occurred with little regulation since the 1960s. More recently, industrial use has shifted to the shorter chained fluorotelomer and fluoropolymer substances. Certain PFAS, especially the fully fluorinated perfluoroalkyl substances such as PFOS and PFOA, can be very persistent in the environment. Also, certain precursor compounds, including some fluorotelomer and fluoropolymer substances, may transform to the more stable perfluoroalkyl substances via actions such as oxidation. This can make identification of the exact source of PFAS in environmental media challenging.

Due to the widespread presence of PFAS in a variety of products (waterproof papers, textiles, carpets, food wrappers, clothing, cookware, cleaning products, etc.), PFAS has been found in human blood and is likely to be excreted in bodily wastes. Therefore, PFAS is expected to be present in wastewater. Downgradient from the Site, the residential homes are not connected to a municipal sewage system, and these domestic wastewaters are discharged to the subsurface via septic systems. The discharge of domestic wastewater via septic systems as well as the WWTP presents a secondary source of PFAS to the subsurface at the Site because of normal anthropocentric activity.

PFAS compounds may adhere to organic matter and may have some potential to bioaccumulate. There is evidence that PFAS are found in organic soil additives such as compost and other soil amendments (including some products identified as organic). The application of compost or imported topsoil to lawns may also contribute to PFAS loading in soils.

8.2.1 Site-Specific Background Data Set

Tetra Tech collected a limited background data set in and around MVY and in the downgradient area. Five sampling locations were selected in the vicinity of the Site to assess background concentrations of PFAS in

soil, and six soil samples were analyzed for PFAS, as summarized in Table 4. Background soil sampling locations are shown on Figure 3. PFAS were detected in 2 of the 6 samples analyzed with PFAS6 concentrations of 0.384 ng/g to 20.8 ng/g. The highest PFAS detected was PFOS with concentrations of 0.384 ng/g at Property FY and 13.1 ng/g at Property AB. These residential properties did not have detectable concentrations of PFAS in water samples collected from their private water supply wells; therefore, it is believed that these PFAS compounds are attributable to background conditions such as use of compost/topsoil containing PFAS and/or atmospheric deposition of PFAS.

SPLP testing for PFAS was performed on a soil sample collected from Property AB. Detectable concentrations of PFOS (4.57 ppt) and PFOA (1.99 ppt) were detected in the leachate from this sample; however, the PFAS6 concentration was well below 20 ppt. These data suggest that PFAS compounds that may be present in soil at background levels may have low concentrations of leachable PFAS and could contribute to subsurface impacts including groundwater.

Two background groundwater samples were collected from monitoring wells TT-11 and TT-12. PFAS6 were not detected at either location above laboratory detection limits. PFAS were not detected at monitoring well TT-12. However, in the sample from TT-11, 6:2FTS was detected at a concentration of 3.69 ppt which may be present as a background condition.

8.2.2 Background PFAS in Groundwater and Soil

PFAS compounds are present in soil and groundwater in Massachusetts from background sources. The presence of background levels of PFAS in soil and groundwater complicates delineation of the extent of PFAS impacts, particularly when potential human health effects may be associated with PFAS levels below background levels and below laboratory practical quantitation limits (PQLs). A discussion of publicly available background datasets is provided below. Note that Tetra Tech has evaluated the locations at the Site with detected concentrations of PFAS in soil or groundwater in the risk characterization (Section 10), including locations that are presumed to be unrelated to releases of AFFF at the Site.

8.2.2.1 Groundwater

MassDEP is undertaking a Private Wells PFAS Sampling Program to gather information on the extent of PFAS presence in groundwater across the state. To date, MassDEP has reported results from 1,669 residential wells from 85 towns. According to information obtained from the MassDEP Private Wells PFAS Sampling Program online portal on November 11, 2022:

- PFAS6 has been detected in 27% of private wells (453 of 1,669) state-wide;
- PFAS6 has been detected above the Massachusetts Maximum Contaminant Level (MCL) and MCP GW-1 Standard of 20 ppt in 5% of private wells (83 of 1,669) state-wide;
- PFAS6 has been detected in 21% of private wells (9 of 42) tested in West Tisbury; and,
- PFAS6 has been detected above 20 ppt in 10% of private wells (4 of 42) tested in West Tisbury.

MassDEP's Private Wells PFAS Sampling Program does not include Edgartown, but it does include five additional towns on Martha's Vineyard, Nantucket, and Cape Cod – Aquinnah, Chilmark, Nantucket, Truro, and Wellfleet.

Summary of MassDEP Private Wells PFAS Sampling Program Cape Cod and the Islands					
Town	Number of Wells	# Detected PFAS6		# Detected PFAS6 > 20 ppt	
Aquinnah	10	0	0%	0	0%
Chilmark	19	5	26%	1	5%
Nantucket	41	14	34%	5	12%
Truro	33	3	9%	0	0%
Wellfleet	45	13	29%	4	9%
West Tisbury	42	9	21%	4	10%

These results indicate that PFAS are present at a background level in groundwater in communities similar to West Tisbury, including at concentrations exceeding the Massachusetts MCL and MCP Method 1 GW-1 Standard.

At the Site an extensive private well sampling program has been implemented that has included sampling and analysis of 206 private wells near MVY. Of these properties 45 (22%) residential private wells had maximum PFAS6 at concentrations exceeding the Massachusetts MCL and MCP Method 1 GW-1 Standard of 20 ppt. Also, 51 private wells (including 3 commercial wells) had PFAS6 concentrations above the laboratory detection limits (generally <2 ppt) but below the MCL and GW-1 standard.

The frequency of detection of PFAS in groundwater in Massachusetts complicates the delineation of lower concentrations of PFAS6 impacts at private wells that may be attributable to AFFF from MVY from those PFAS impacts that may be attributable to other anthropocentric sources in the environment including discharges from septic systems and the WWTP.

8.2.2.2 Soil

Woodard and Curran presented a summary of a soil background study to the Licensed Site Professionals Association (LSPA) on October 25, 2022. According to Woodard and Curran:

- They collected 100 samples from 25 Open Spaces throughout Massachusetts, including 9 locations in MassDEP’s Southeast Region.
- Sample locations were selected to be near no suspected historical sources and to give representative geographic coverage across the state.
- PFAS6 compounds were detected in 88 of 100 background soil samples.
- 58% of sample locations exceeded at least one S-1/GW-1 standard.

Woodard and Curran concluded that PFAS is present in surface soil almost everywhere in Massachusetts at concentrations that are often higher than the MCP Method 1 GW-1-based soil standards.

Woodard and Curran also presented summaries of background PFAS concentrations in surface soils in Maine and Vermont, showing that background concentrations in Massachusetts are generally consistent with, or slightly higher than, background data sets reported in two other New England states.

Comparison of State 95% Upper Tolerance Limits (UTL) for PFAS <i>From Woodard and Curran's October 25, 2022 presentation to the LSPA</i>				
Analyte	Maine ¹	Vermont ²	Massachusetts ³	MCP S-1/GW-1
PFDA	3.24	0.39	0.458	0.3
PFHpA	0.246	0.84	1.44	0.5
PFHxS	Not Reported	0.38	Not Detected	0.3
PFNA	1.93	0.44	0.698	0.32
PFOS	3.036	3.4	3.64	2
PFOA	2.18	1.6	2.15	0.72

1. Sanborn, Head & Associates, 2022. *Background Levels of PFAS and PAHs in Maine Shallow Soils*. Prepared for the Maine Department of Environmental Protection. April 2022.
2. University of Vermont and Sanborn, Head & Associates, 2019. *PFAS Background in Vermont Shallow Soils*. February 8, 2019.
3. Woodard & Curran, 2022. *PFAS in Massachusetts Soils: Establishing Background Conditions to Inform Regulatory Decision-Making*. Presentation to the Massachusetts Licensed Site Professionals Association (LSPA). October 25, 2022.

Detected PFAS concentrations in soil in the Area 2, the Hadley Hangar, and at 8 of 10 residential sampling locations are consistent with these state-level 95% UTLs for PFAS, as shown on Tables 16 and 17. This indicates that detected concentrations of PFAS outside of known areas of AFFF releases are generally consistent with background levels found throughout Massachusetts.

8.3 EXTENT OF CONTAMINATION

The approximate horizontal extent of PFAS impacts at the Site, as currently understood, is shown as the approximate Disposal Site Boundary on Figure 2. In general, PFAS6 impacts follow two relatively narrow migration pathways. The primary migration pathway appears to flow from Area 1 near the WWTP southerly to the area along Waldrons Bottom approximately between Waldrons Bottom Road and Charles Neck Way. The second migration pathway generally flows from the MVY terminal building southeast to the area along Coffins Field Road, Rustling Oaks Road, and to a lesser extent, Leah's Lane.

Figure 10 is a cross-sectional view of the Waldrons Bottom portion of the Site and presents a graphic description of PFAS concentrations and fingerprint profiles. In general, the higher concentrations of PFAS are present in the shallower portions of the saturated unconsolidated soil unit (shallow groundwater) on MVY proximate to suspected AFFF release areas near the ARFF building and WWTP area and to the southwest with generally decreasing PFAS concentrations with increased vertical depth as well as increased horizontal distance to the south. However, at Property J, PFOS concentrations increase in the deeper portion of the groundwater. Further south, migration of PFOS appears to transition from deeper groundwater near Property J to shallower groundwater further downgradient at Properties AY, DA and to a lesser extent EK. Also, apparent anomalous areas of PFAS6 impacts to two private wells (Properties AO

and AT) were identified west of Property AY, which had different fingerprint profiles with no detectable PFOS and higher PFHpA and PFHxA.

Low concentrations of PFAS6 (3.29 ppt) were also detected at monitoring well TT-17D. However, pore water sampling further downgradient from this location did not detect PFAS, suggesting that significant impacts to the surface water of Long Pond are unlikely.

Along the second migration pathway relatively disperse AFFF use/discharge areas at MVY appear to have resulted in disperse aqueous phase PFAS impacts to groundwater. These groundwater impacts have migrated south/southeast around Coffins Field Road, Rustling Oaks Road, and to a lesser extent, Leah's Lane. The approximate extent of PFAS6 impacts in this area are shown on Figure 2.

8.4 SUMMARY OF CONCEPTUAL SITE MODEL

Prior to early 2018, AFFF was used at MVY for ARFF equipment as required by the FAA. The FAA required routine (semi-annual) testing of the AFFF equipment included discharge of AFFF in certain test areas. Because adverse human health and/or environmental effects of PFAS were unknown, this AFFF testing was generally unrestricted, and residuals and rinse waters were not collected for disposal. There was no single dedicated AFFF testing area, and several different and disperse areas of AFFF testing were identified at MVY; however, the most frequent testing area is reported to be Area 1, which is located just west of the WWTP.

Area 1 is the primary AFFF testing/discharge area and has the highest frequency of PFAS detections in soil. The approximate extent of near surface impacts to soil in this area are shown on Figure 4. PFAS6 were detected at concentrations up to 126 ng/g in soil from this area. The PFAS6 detected at Area 1 were primarily attributable to PFOA and PFHpA. PFOS was detected infrequently and at low concentrations. Also, non-PFAS6 compounds including 8:2FTS, 6:2FTS, PFPeA and PFHxA were generally detected at higher concentrations in soil than the PFAS6 compounds. These data suggest that most of the remaining mass of PFAS in this area is likely attributable to newer AFFF formulations. SPLP testing indicates that the Area 1 soils are a potential source of PFAS6 impacts to groundwater with SPLP leachate concentrations of PFAS6 up to 724 ppt. Similar to total PFAS concentrations in soil, some non-PFAS6 compounds were detected at higher concentrations in the SPLP leachate including 6:2FTS, 8:2FTS, PFPeA and PFHxA. The potential discharge of second generation AFFF products in this area may have included longer chained PFAS precursor compounds that are not detectable by EPA Method 537 or LCMS with isotope dilution. These longer chained PFAS precursor compounds may transform to detectable PFAS over time at and/or downgradient from Area 1. It is likely that the terminal compounds associated with these transformations are PFOA, PFHpA, and similar carboxylate PFAS. The PFAS6 concentrations in groundwater at Area 1 are highest at TT-13 and have been measured at up to 3,780 ppt. Higher concentrations of non-PFAS6 compounds in soil and groundwater have also been detected in Area 1 including 6:2FTS, PFPeA, and PFHxA. The PFAS impacts to groundwater from this area appear to have migrated southerly and impacted groundwater at the residential developments along Waldrons Bottom south of MVY. These impacts have been detected in relatively shallow groundwater in the residential area at distances of approximately 3,500 feet downgradient from Area 1. Migration rates of PFAS at the downgradient limits of MVY 67 feet/year at M-4 in the shallow groundwater and are higher in deeper groundwater (82 feet/year at M-4E). The PFAS migration rates at M-4D, which is screened at an elevation between M-4 and M-4E, are estimated at 33 feet/year.

It is noted that most of the remaining PFAS mass at MVY is comprised of newer AFFF formulations, and PFAS related to newer AFFF formulations are present at the highest concentrations in the relatively shallow groundwater. A significant area of residual impacts to soil from PFOS containing AFFF

formulations was not identified at MVY. The nature of PFAS and the low organic carbon content of the native soils at the Site suggests that releases from older AFFF formulations likely primarily affected groundwater, and any impacts to soil that may have existed have been diluted or were transported to the aqueous phase over time. The migration rates for PFAS in the shallow groundwater south of MVY are estimated at up to 177 feet/year. However, older AFFF releases (primarily PFOS) are present in deeper groundwater proximate to Property J which may be the result of infiltration of water above the older PFAS plume and/or a downward flow gradient. The estimated PFAS migration rates in the deeper groundwater at Property J are estimated to be 22 feet/year. Further downgradient (south) PFAS impacted groundwater with a higher ratio of PFOS appears to encounter an area of geophysical/chemical restriction (likely lower permeability soils and/or denser groundwater from increasing salinity), and groundwater with higher ratios of PFOS migrates upward and is present at higher concentrations in the shallower groundwater at Properties AY and DA. These properties where apparent rising of PFOS-impacted groundwater has been observed are located up to approximately 6,600 feet south of Area 1. The migration rates of PFAS in groundwater at this downgradient area (e.g., Property AY) are estimated to be lower than in the upgradient area and are likely less than 10 feet/year.

Areas of groundwater with higher ratios of PFOA and the similar compound PFHpA compared to other PFAS6 are identified generally east and west of the apparent PFOS flow path. These areas may be impacted by migration of groundwater with impacts from newer AFFF formulations and/or the transformation of precursor compounds into these terminal perfluorinated compounds. Like the areas of PFOS impacts to the south, PFOA and/or PFHpA impacts are also identified at Properties AO, AT, and EK which are separated from the larger grouping of PFAS6 impacted properties directly south of Edgartown-West Tisbury Road and may be the result of geophysical/chemical restriction and resulting upward migration of groundwater with higher PFAS6 concentrations.

Along the primary migration pathway south of MVY, low concentrations of PFHxS were detected at monitoring well TT-17D. However, pore water sampling further downgradient from this location did not detect PFAS, suggesting that significant impacts to the surface water of Long Pond are unlikely.

Impacts from general use/testing of AFFF at other areas of MVY have not significantly affected soils, and no evident soil source area was identified that may contribute to the groundwater impacts along the secondary migration pathway. These general and less consistent AFFF use/discharge areas appear to have resulted in disperse aqueous phase PFAS impacts to groundwater. These PFAS impacts appear to originate from two separate locations. The first source is from the area near the MVY terminal building to the southeast toward Coffins Field Road, and the second is from the area near the AFFF equipment washdown activities at Area 7 (monitoring well TT-5) to the south toward Coffins Field Road. Also, possible low-level PFAS6 impacts attributable to AFFF discharge at the boat storage area or other currently unidentified historic AFFF usage areas may also contribute to this area of disperse PFAS impacts to groundwater. The PFAS impacts from these areas have affected groundwater at 9 private wells in the residential area near Coffins Field Road, Rustling Oaks Road, and Leah's Lane (Property GO). Unlike the primary PFAS migration pathway further west, PFOS impacts are generally lower in these areas, and detected PFAS6 are generally related to PFOA and/or PFHpA with the exception of Property CS. Sampling of private wells at properties downgradient from the Coffins Field Road and Rustling Oaks Road area has not identified detectable PFAS6 in groundwater suggesting that downgradient migration toward surface water is not significant in this area.

9.0 EXPOSURE ASSESSMENT

9.1 POTENTIAL FOR HUMAN EXPOSURE

The potential for exposure to PFAS by humans can occur through direct contact with contaminated media, inhalation of impacted media, and ingestion of impacted media. An exposure profile describes possible exposures to a given receptor and consists of the following segments: a receptor, a source, and a route of exposure. If any of these parts are incomplete, the exposure pathway is incomplete, and an evaluation is not necessary.

Humans may be exposed to PFAS identified at the Site via exposure to soil because these compounds were detected in near surface and sub-surface soils at discrete locations, and humans are present at the Site who may have access to soils. In most areas of the Site, PFAS concentrations in soil are at or close to published background levels suggesting that exposure to PFAS is not significantly greater than exposures from background conditions. The exception is within Area 1 at MVY; however, there is a security fence and access restriction to MVY in most areas where PFAS is identified in shallow soil, including Area 1. Therefore, exposure to PFAS in soils at Area 1 is currently restricted to airport employees.

Human receptors may be exposed to PFAS via consumption of water from the on-site and/or downgradient private drinking water supply wells because the Site is located within a Current or Potential Drinking Water Source Area and is within 500 feet of private drinking water supply wells. Also, PFAS have been detected in private drinking water supply wells at the Site. The detection of PFAS6 in water from private wells meets the definition of a Critical Exposure Pathway (CEP) under the MCP. As presented in Section 8.2, it is difficult to discern whether the detection of PFAS in water from private wells downgradient from MVY is attributable to AFFF releases at the Site and/or from other anthropocentric background sources. However, the initial IRA activities included installation of POET system at private wells where PFAS concentrations in potable water represented a potential IH to human health. An initial review of the feasibility of mitigating the CEP for those locations where PFAS6 are detected but at concentrations below an IH was presented in the March 2019 IRA Status Report. Based on this evaluation and, as a conservative approach, response actions for RTN 4-0027571 have been implemented under an IRA Plan to mitigate human exposure to PFAS6 that present a potential IH to human health, and those locations where an IH is not identified but where PFAS6 concentrations exceed the MCP Method 1 GW-1 standard of 20 ppt in drinking water at the Site. It is anticipated that this feasibility evaluation will be re-assessed as part of future IRA and/or MCP response actions, as appropriate.

9.2 POTENTIAL FOR EXPOSURE TO ENVIRONMENTAL RECEPTORS

There are environmental receptors identified in the vicinity of the Site including surface water, potential vernal pools, priority wildlife habitat, and protected open space. However, the use of MVY is currently developed as an airport with a security fence surrounding Area 1 and other areas of potential PFAS impacts. There are no environmental receptors present at MVY that would be exposed to PFAS in near surface soil. Also, in the downgradient area, PFAS exposures from Site-related releases are believed to be limited to groundwater; therefore, exposure to wildlife or similar receptors in protected open spaces or habitats is not anticipated to be significant. Although PFAS have been identified in groundwater, the concentrations of the detected compounds are relatively low, and PFAS was not detected in pore water that is likely discharging to the surface water of Long Pond. Therefore, it appears that exposure pathways to environmental receptors are incomplete.

10.0 METHOD 2/METHOD 3 RISK CHARACTERIZATION

We have conducted this combination Method 2/Method 3 Risk Characterization for the Disposal Site. This risk characterization was conducted in conformance with the requirements of the MCP under 310 CMR 40.0900 and applicable MassDEP guidance documentation. This risk characterization presents an evaluation of the risks posed by PFAS impacts present at the Site. The intent of the risk characterization is to assess the risk associated with AFFF-related PFAS; however, PFAS may also exist in the environment due to the presence of other anthropogenic sources including wastewater discharges from septic systems and WWTPs. It is typically not possible to fully distinguish between these sources. Therefore, the total detected concentrations of PFAS6 compounds were used within this risk characterization.

10.1 METHOD SELECTION

Method 1 allows for a relatively comprehensive, rapid evaluation of risk by comparison of Exposure Point Concentrations (EPCs) to standards published by MassDEP. The MCP Method 1 standards incorporate conservative assumptions for both contaminant transport and exposure, resulting in an overall conservative analysis of risk. A Method 2 Risk Characterization supplements and modifies the MCP Method 1 Standards with site- and chemical-specific information. Specifically, we modified the leaching component of the MCP Method 1 Soil Standards, as described herein.

A combined Method 2/Method 3 risk characterization was selected for the evaluation of risk at the Site. According to the MCP, a combined Method 2/Method 3 risk characterization may be used under 310 CMR 40.0942 if current and foreseeable future human exposure to oil and/or hazardous material (OHM) will occur predominantly through contact with the groundwater or soil, but OHM known to bioaccumulate (i.e., PFAS) are present in the top two feet of soil.

We conducted a Method 3 Stage I Screening Assessment to identify whether or not there is potential for exposure and to assess whether or not “apparent significant harm” has occurred to environmental receptors at the Site. Method 3 is also used to characterize the risk of harm to public welfare.

10.2 IDENTIFICATION OF SOIL AND GROUNDWATER CATEGORIES

The Site groundwater and soil are characterized in accordance with 310 CMR 40.0932 and 310 CMR 40.0933 as required for a Method 2 Risk Characterization.

10.2.1 Identification of Applicable Groundwater Categories

Groundwater at a Site may be classified as one or all of the groundwater categories presented in the MCP. Groundwater is defined as GW-1, per 310 CMR 40.0932, if the groundwater is located:

1. Within a Current Drinking Water Source Area; or
2. Within a Potential Drinking Water Source Area.

Groundwater beneath the majority of the Site is classified as GW-1 either because:

1. It is within 500 feet of a private drinking water well (i.e., Current Drinking Water Source Area); or
2. It is within a Potentially Productive Aquifer that has not been excluded as a Non-Potential Drinking Water Source Area (i.e., Potential Drinking Water Source Area).

A portion of the Site beneath the airport property is classified as a Non-Potential Drinking Water Source Area. Areas of the Site classified as a Non-Potential Drinking Water Source Area and more than 500 feet from the nearest private well are not classified as GW-1. The extent of GW-1 areas and the area classified as a Non-Potential Drinking Water Source Area are shown on Figure 9 and on the MassDEP Phase I Site Assessment Map presented in Appendix H.

Groundwater is located at depths greater than 15 feet bgs throughout the Site, with the exception of 10 residential properties located on Waldron's Bottom Road south of MVY approaching Long Pond. Therefore, groundwater at the Site is not classified as GW-2, except at the following locations:

- Property AW
- Property DY
- Property FI
- Property EV
- Property EW
- Property AJ
- Property CZ
- Property BC
- Property AA

Groundwater at the Site is classified as GW-3, since, by definition, all groundwater in the Commonwealth of Massachusetts is considered GW-3.

10.2.2 Identification of Applicable Soil Categories

Soils at the Site may be classified as any of the three soil categories presented in the MCP (S-1, S-2, or S-3), based on frequency of use, intensity of use, and accessibility. In general, the S-1 soil category represents the greatest exposure potential, followed by S-2 and finally S-3, which represents the least exposure potential (low frequency, low intensity and low accessibility). The following sections describe the classification of soil at the Site.

10.2.2.1 Frequency of Use

Children are highly unlikely to be present in areas of PFAS-impacted soil at MVY because PFAS-impacted soils are located in active areas of the airport (Area 1) that are secured from unauthorized access.

Adult's frequency of use is characterized as low because airport workers would be present in Area 1 only as infrequent visitors and/or for short periods of time (i.e., less than two hours per day on a continuing basis, or for full days or shifts on a sporadic basis).

Children's and adult's frequency of use is characterized as high for the residential properties located south of the airport.

10.2.2.2 Intensity of Use

Adult's intensity of use is characterized as high for construction workers digging in Area 1. Adult's intensity of use is characterized as low for airport workers that may perform work in Area 1.

Children's and adult's intensity of use is characterized as high, which includes activities such as gardening, digging, recreational sports, or other unrestricted activities at the residential properties located south of the airport.

10.2.2.3 Accessibility

PFAS6 have been detected in surface soil, defined as soil from 0 to 3 feet bgs, on the airport property and on residential properties south of the airport. Surface soil is characterized as “accessible” soil.

One soil sample was collected from “potentially accessible” soil, defined as soil from depths between 3 and 15 feet bgs. No PFAS compounds were detected in that soil sample. No soil within the Site is characterized as “potentially accessible”.

Four soil samples were collected from “isolated” soil, defined as soil located more than 15 feet bgs or beneath a building or permanent structure. PFAS6 have also been detected in soil samples collected from near the water table (i.e., 28 to 32 feet bgs) in Area 1.

10.2.2.4 Soil Classification

Soils on the airport property are categorized as S-2/GW-1 and S-3/GW-1 in areas that are GW-1 (as shown on Figure 9) and are categorized as S-2/GW-3 and S-3/GW-3 in all areas for current activities and uses. An Activity and Use Limitation (AUL) has not been recorded for any portion of the MVY property. Soils on the airport property are categorized as S-1/GW-1, S-2/GW-1, S-3/GW-1 in areas that are GW-1 (as shown on Figure 9) and are categorized S-1/GW-3, S-2/GW-3 and S-3/GW-3 in all areas for future activities and uses.

Soils on the residential properties within the Site boundary are categorized as S-1/GW-1, S-2/GW-1, S-3/GW-1, S-1/GW-3, S-2/GW-3 and S-3/GW-3 for current and future activities and uses. In addition, soils are categorized as S-1/GW-2, S-2/GW-2 and S-3/GW-2 for current and future activities and uses on the nine properties identified above as GW-2 properties.

10.3 RECEPTOR INFORMATION

We have identified potential receptors in accordance with 310 CMR 40.0920 in order to provide a conservative estimate of the exposure to COCs which a potential receptor may receive within the Site over a period of time.

10.3.1 Identification of Potential Human Receptors

Potential human receptors who may be present at the airport include airport workers, commercial and industrial workers, construction and utility workers, airport or business visitors, and trespassers. Residents are expected to be present on the residential properties within the Site boundary.

The potential receptors to COCs in groundwater at the Site are current and future residents exposed to drinking water from private wells and current and future workers exposed to water from private wells at three properties within the airport business park:

- Takemmy Laundry Private Well (1 Flight Path) – a non-potable water supply well;
- Former Amerigas Private Well – a currently unused private water supply well; and
- Stanley Private Well – a private water supply well at a hanger building operated by Direct Flight.

No groundwater exposure is expected for airport workers, construction and utility workers, airport visitors, and trespassers because MVY operates a Non-Transient Non-Community Water System that is supplied with potable water by the Oak Bluffs Water District, and there are no active water supply wells on any MVY properties other than the three identified above. In addition, the depth to groundwater is greater than 15

feet and exposure during construction excavation, utility installation and repair, or via COC migration to indoor air is not expected to occur.

10.3.2 Identification of Potential Environmental Receptors

Tetra Tech has reviewed potential environmental receptors surrounding the Site. This evaluation of natural resource areas included observations at the Site and in the surrounding area, a review of the MassDEP Phase I Site Assessment Map, a review of information from MassWildlife, the Massachusetts Natural Heritage and Endangered Species Program (NHESP), and a review of the available USGS topographic map of the Site (Figure 1). A copy of the Phase I Site Assessment Map and information from MassWildlife are included in Appendix H. Based on our review, we found the following natural resource areas proximate to the Site:

- The Manuel F. Correllus State Forest and associated bike path which abut the airport are designated as protected open space.
- Additional protected open space is located south of the airport.
- Surface waters (associated with Long Cove) and wetlands may be located within 500 feet of the southerly boundary of the Site. Long Cove may also represent potential fish habitat.
- There are no Areas of Critical Environmental Concern or certified vernal pools located within 500 feet of the Site. There is one potential vernal pool mapped proximate to Waldrons Bottom Road and Laurand Drive.
- Based on our review of available information available from MassWildlife (MassWildlife, 2017) and NHESP (NHESP, 2022), the Site is located within 500 feet of Priority Habitat for rare species and wildlife. Specifically, habitat is identified in the undeveloped lands surrounding MVY, along Waldrons Bottom Road, and in the undeveloped lands to the west of Charles Neck Way. Although these habitat areas are close to the Site PFAS impacts to soil have not been identified within mapped Priority Habitat areas.

10.3.3 Identification of Site Activities and Uses

The Site includes MVY and additional commercial and industrial uses in the airport business park adjacent to the airport north of the Edgartown-West Tisbury Road, and residential properties located south of the airport. It is expected that the future use of MVY will remain as an airport and as an industrial/business park. We have evaluated current and future activities and uses at the Site without an AUL or similar environmental restriction at the Site.

10.4 IDENTIFICATION OF EXPOSURE POINTS AND EPCS

In accordance with 310 CMR 40.0926, an EPC was identified for each COC in each medium at each exposure point at the Site. The following summarizes the justification for the identified EPCs at the exposure points identified at the Site.

10.4.1 Soil Exposure Point and EPCs

An exposure point is a location of potential contact between a receptor and a COC.

10.4.1.1 Exposure Points

Airport Property

Prior to November 2018, the FAA-required testing of AFFF from the two ARFF firefighting trucks typically involved the release of AFFF solutions to the ground surface during testing. From 2002 to 2017 these tests were performed semi-annually in an unpaved area just west of the WWTP, shown as Area 1 on Figure 3. Following testing, the truck tanks and dispensing equipment were flushed with domestic water at various hydrants to remove residual AFFF. Based on its proximity to the primary AFFF testing area (Area 1), most flushing is believed to have occurred proximate to a hydrant at Area 2.

PFAS6 compounds were detected in 14 of 25 surface soil samples and 3 of 5 subsurface soil samples on the airport property. PFAS6-impacted surface soils were identified in Area 1, Area 2, and an unpaved area northwest of the Hadley Hangar. These three areas are considered Exposure Points on the airport property. The locations of these soil Exposure Points are shown on Figure 3 (Area 2 and Hadley Hangar) and Figure 4 (Area 1).

The **Area 1 Exposure Point** is defined by the following surface soil samples:

- WWTP-AFFF #2 (3/15/2022)
- WWTP-AFFF #2 (7/21/2022)
- WWTP-Clarifier
- TT-1
- TT-13
- AFFF-SA-2
- AFFF-SA-3
- AFFF-SA-4
- AFFF-SA-7
- AFFF-SA-8
- AFFF-SA-9
- AFFF-SA-10

Note that two surface soil samples were collected at WWTP-AFFF #2: one on March 15, 2022 and one on July 21, 2022. Both soil samples were included in the Area 1 Exposure Point.

The **Area 2 Exposure Point** is defined by surface soil sample TT-2A.

The **Hadley Hangar Exposure Point** is defined by surface soil sample Hadley Soil.

Residential Properties

PFAS6 compounds were detected in 7 of 10 surface soil samples collected from residential properties within and near the Site boundary at concentrations ranging from 0.25 ng/g (Property F) to 20.8 ng/g (Property AB).

No known Site-related releases of AFFF have occurred at residential properties. No correlation was observed between the presence of PFAS6 in groundwater at a property and PFAS6 in surface soil at that property. For example, the maximum surface soil PFAS6 concentration was detected at a property where PFAS6 was not detected in groundwater, while two of the top three PFAS6 groundwater concentrations are on properties with surface soil PFAS6 concentrations less than 1.0 ng/g, as shown below.

Property	Maximum Groundwater PFAS6 Concentration (ppt)	Surface Soil PFAS6 Concentration (ng/g)	Surface Soil Total Solids (%)
Property B	1,180.6	ND (<0.611)	85.8
Property F	3,358.8	0.25	85.8
Property I	956.96	0.91	85.8
Property J	2,199.8	2.07	80.5
Property Y	910.89	12.60	65.0
Property AB	ND	20.8	73.0
Property AX	136.2	ND (<0.565)	82.9
Property CL	197.27	ND (<0.451)	80.9
Property DA	610.95	2.30	82.0
Property FY	ND	0.384	75.9

This suggests that irrigation water from PFAS6-impacted private wells does not appear to be a likely migration pathway for PFAS6 to significant impact surface soil, nor is PFAS6 in surface soil a source of continuing PFAS6 impacts to groundwater in this area. The presence of PFAS in residential surface soil appears more closely related to the presence of a higher percentage of organic material in surface soil, as indicated by lower total solids results. Specifically, the two highest PFAS6 surface soil concentrations were detected in samples with the two lowest total solids results.

Although PFAS6 in residential surface soil is not considered related to releases at the Site, each property with PFAS6-impacted surface soils within the Site boundary is conservatively evaluated as an exposure point. The detected PFAS6 concentrations are used to define the EPCs at each property.

10.4.1.2 EPCs

EPCs represent the estimated concentration of a compound to which a receptor may be exposed at the point of exposure. The soil EPCs for the Area 1 Exposure Point are defined by 12 surface soil samples with detected PFAS6 concentrations. In accordance with 310 CMR 40.0926, the 95 percent upper confidence limit on the mean was used as the EPC for current and future exposures for each detected compound in the Area 1 Exposure Point. Soil EPCs for the Area 2 Exposure Point, the Hadley Hangar Exposure Point, and each residential Exposure Point are defined by a single soil sample. Soil EPCs for the airport property exposure points are presented in Table 16. Soil EPCs for the residential property exposure points are presented in Table 17.

10.4.1.3 Hot Spots

We evaluated the soil data to determine whether the COCs impacts to soil could be classified as a hot spot. As defined in the Guidance, a hot spot is “a discrete area where the concentrations of oil or hazardous materials are substantially higher than those concentrations in the surrounding area”. Concentrations in the soil samples were compared to concentrations in neighboring samples, and none of the concentrations detected in Site soil were found to be consistent with the definition of a hot spot.

10.4.2 Groundwater Exposure Point and EPC

In accordance with 310 CMR 40.0924, groundwater exposure points on the Site are characterized by conditions at each private drinking water well or groundwater monitoring well. All private drinking water wells with PFAS6 concentrations greater than 20 ppt have a POET system installed to mitigate current exposure. Potential future exposure for private drinking water wells with a POET system is characterized by samples of untreated water from each private well.

Groundwater data from monitoring wells with detected PFAS concentrations are presented in Table 18. Groundwater data from private wells with detected PFAS concentrations are presented in Table 19.

10.4.2.1 EPCs

The MCP GW-1 Standard for PFAS is for the sum of the concentrations of the PFAS6 compounds in each groundwater sample. The MCP GW-3 Standards for PFAS are specific for each of the PFAS6 compounds. Therefore, a PFAS6 EPC is calculated in addition to EPCs for each of the PFAS6 compounds.

The EPCs for each private well and monitoring well were generally calculated as follows:

- For private wells and monitoring wells with at least four sampling rounds, the temporal average from the past four sampling rounds is selected as the EPC for PFAS6 and each PFAS6 compound.
- For private wells and monitoring wells sampled with fewer than four total sampling events, the maximum detected PFAS6 concentration is selected as the EPC for these wells.

For samples where one or more PFAS compounds were not detected at the method detection limit, a value equal to one-half the method detection limit was used in the calculation of the temporal average. The maximum detected concentration from the last four sampling rounds was selected as the EPC or a subset of private wells and monitoring wells with at least four sampling rounds. This was generally done if the most recent samples had the highest reported concentrations, or if method detection limits skewed the temporal average low.

Two monitoring wells (i.e., TT-1 and RIZ-12) have had discrete depth samples collected within the last four sampling events. For TT-1, samples TT-1-SHALLOW, TT-1-MID, and TT-1-DEEP from September 13, 2019 were excluded. The previous sample for TT-1 from August 8, 2019 was selected as a replacement for the September 13, 2019 sampling event and used in the temporal average calculated for TT-1. For RIZ-12, samples RIZ-12_40' and RIZ-12_70' from September 21, 2022 were both included in the evaluation of RIZ-12 because this was the second sampling event at RIZ-12. The maximum detected concentrations among all three samples collected from RIZ-12 were selected as the EPC for RIZ-12.

Overall, this approach provides a conservative, health-protective assessment of risk because concentrations of PFAS observed in groundwater samples have remained generally consistent during the most recent four monitoring rounds in private wells and monitoring wells that have been sampled at least that frequently. Private wells and monitoring wells with low to non-detectable levels of PFAS have generally

been sampled less frequently. Therefore, the maximum detected concentration in samples collected from these sampling points represent conservative, health-protective EPCs for these exposure points. The EPCs selected and selection criteria used (i.e., whether the temporal average or maximum detected concentration are used) for each monitoring well and private well are shown on Table 18 and Table 19, respectively.

10.4.2.2 Hot Spots

Tetra Tech evaluated the groundwater data to determine whether the PFAS found in groundwater could be classified as a hot spot. Concentrations in the groundwater samples were compared to concentrations in neighboring wells, and none of the concentrations detected in Site groundwater were found to be consistent with the definition of a hot spot.

10.4.2.3 Groundwater Migration to Surface Water

Groundwater samples collected from private wells on residential properties along the southern portion of the Site, near Long Pond and other potential surface water bodies, generally have not shown detected concentrations of PFAS6. Further, a pore water sample collected on March 15, 2022 from the sediment near the shore of Long Pond did not show a detected PFAS6 concentration (<1.76 ppt). Although PFOS was detected (3.19 ppt) in a surface water sample collected from Long Pond on the same day as the pore water sample, a complete pathway does not appear to exist for PFAS-impacted groundwater migrating to surface water. Pore water data and surface water data are presented in Table 14.

10.4.2.4 Man-Made Pond at Property DA

A man-made pond is present at Property DA. Water in the pond is periodically supplemented using well water to maintain a desired water level during times of limited precipitation. Tetra Tech collected a water sample from the pond on June 9, 2021, at the request of the resident. Two PFAS6 compounds, PFHxS and PFOS, were detected in the pond sample at concentrations of 23.6 ppt, and 83.6 ppt, respectively. These compounds were also detected at higher concentrations in the private well sample collected from Property DA on the same day. It is noted that the pond is not a source of drinking water, and there are currently no established Massachusetts or Federal surface water standards for PFAS. The potential exposure to PFAS associated with swimming or similar activities would be substantially less than the potential exposure associated with use of the water as a source of drinking water. According to the *MassDEP: Fact Sheet: Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water: Questions and Answers for Consumers* (June 17, 2022):

Because PFAS are not well absorbed through the skin, routine showering or bathing are not a significant concern unless PFAS6 levels are very high. Shorter showers or baths, especially for children who may swallow water while playing in the bath, or for people with severe skin conditions (e.g., significant rashes) would limit any absorption from the water.

Neither MassDEP nor the Massachusetts Department of Public Health (DPH) have issued quantitative guidance regarding PFAS concentrations in swimming pool water. DPH presented age-dependent “PFAS concentrations of concern for bathing or showering” during a public meeting for the residents of Westminster, Massachusetts on June 8, 2022. According to DPH, PFAS6 concentrations that are of potential concern for bathing and showering include: young children (> 500 ppt), older children (> 1,300 ppt) and adults (>3,500 ppt).

The PFAS6 concentration of 107 ppt detected in the pond water sample is below the concentration identified by DPH that may be of concern for exposure to young children of > 500 ppt referenced in the June 2022 public meeting.

The pond does not discharge to surface water and does not represent a habitat for an ecological receptor. Further, detected concentrations of PFHxS and PFOS are significantly below the surface water benchmark of 19,000 ppt for PFHxS and PFOS used by MassDEP to calculate MCP Method 1 GW-3 Standards. MCP Method 1 GW-3 Standards consider potential impacts from groundwater discharge to surface water and are intended to be protective of ecological receptors.

10.5 DETERMINATION OF METHOD 2 SOIL STANDARDS CONSIDERING LEACHING POTENTIAL

According to 310 CMR 40.0985:

MCP Method 1 Soil Standards consider both the risks associated with direct contact with the contaminated soil and the potential for the oil and/or hazardous material to leach to groundwater. The leaching component of the MCP Method 1 Soil Standards can be modified or eliminated in Method 2 considering site-specific information.

And

- (1) The development of alternative leaching-based soil concentrations or the determination that leaching-based concentrations are not applicable shall be based upon information which is scientifically justified and completely document.*
- (2) When developing alternative leaching-based concentration in soil, alternative values shall be developed for each oil and hazardous material and for each applicable groundwater category. Demonstrations that the leaching-based component of the Method 1 soil standards is not applicable may be made on a chemical-by-chemical basis or for the site as a whole, depending upon the information relevant to that determination.*

10.5.1 Development of Alternative Leaching-Based Soil Concentrations

The leaching-based components of the Method 1 soil standards for PFAS are not applicable at the residential properties south of the airport because concentrations of PFAS in soil samples collected on residential properties south of the airport are too low to leach to groundwater at a concentration that would exceed Method 1 groundwater standards. As described above, the maximum surface soil PFAS6 concentration was detected at a property where PFAS6 was not detected in groundwater, while two of the top three PFAS6 groundwater concentrations are on properties with surface soil PFAS6 concentrations less than 1.0 ng/g.

As shown below, SPLP results from two soil samples collected in the Area 1 Exposure Point (WWTP-AFFF #2 and AFFF-SA-8) indicate potential leaching of PFAS6 compounds to groundwater, whereas SPLP results from two soil samples collected on residential properties (Property AB and Property CL) do not indicate potential leaching of PFAS6 compounds to groundwater at a concentration that would exceed Method 1 groundwater standards (i.e., 20 ppt).

Comparison of PFAS Concentrations in Groundwater, Soil, and SPLP Soil Samples			
Sample Location	Maximum Groundwater PFAS6 Concentration (ppt)	Surface Soil PFAS6 Concentration (ng/g)	Surface Soil PFAS6 SPLP Concentration (ppt)
WWTP-AFFF #2	3,780 (TT-13)	25.78/38.1	724
AFFF-SA-8	3,961 (TT-01)	17.2	574
Property AB	ND	20.8	6.56
Property CL	197.27	ND (<0.451)	ND (<1.74)

10.5.2 Selection of Method 2 Soil Standards

10.5.2.1 Airport Property

PFAS concentrations in soil in the Area 1 Exposure Point, the Area 2 Exposure Point, and the Hadley Hangar exposure point are considered a potential source of PFAS leaching to groundwater. As such, the Method 1 S-1/GW-1, S-1/GW-3, S-2/GW-1, S-2/GW-3, S-3/GW-1, and S-3/GW-3 standards apply to soil in these areas.

10.5.2.2 Residential Properties South of the Airport

In accordance with 310 CMR 40.0985(4), the direct contact exposure-based concentration specific to each soil category (S-1, S-2, and S-3) is applicable for soil on the residential properties south of the airport, as listed in Table 5 in 310 CMR 40.0985(6).

MCP Method 2: Direct Contact Exposure-Based Soil Concentrations Applicable to the Specified Soil Category (from 310 CMR 40.0985(6): Table 5)			
PFAS6 Compound	S-1 (ng/g)	S-2 (ng/g)	S-3 (ng/g)
PFDA	300	400	400
PFHpA	300	400	400
PFHxS	300	400	400
PFNA	300	400	400
PFOS	300	400	400
PFOA	300	400	400

10.5.3 Continued Monitoring

In accordance with 310 CMR 40.0985(5):

Groundwater monitoring shall demonstrate that residual soil contamination is not and will not result in groundwater concentrations greater than the applicable MCP Method 1 or 2 Groundwater Standards. The duration of required monitoring shall depend on the source mass, the mobility of the oil and/or hazardous material, and subsurface conditions.

Groundwater monitoring will be conducted as part of the IRA being conducted at the Site. As described in the Phase II Report, a PlumeStop barrier has been proposed to MassDEP under a modification to the IRA Plan to mitigate PFAS in groundwater near Area 1 from migrating towards residential properties south of the airport. The Modified IRA Plan was conditionally approved on November 17, 2022, and implementation is planned in December 2022. It is expected that this will result in reduced PFAS concentrations in groundwater south of the airport. Groundwater monitoring will continue until Response Actions have reduced residual PFAS impacts such that groundwater concentrations greater than applicable MCP Method 1 or 2 groundwater standards are not migrating towards residential properties south of the airport.

10.6 RISK CHARACTERIZATION CONCLUSIONS

Under the MCP Method 2 risk characterization, a condition of “No Significant Risk” of harm to human health, public welfare and the environment shall exist if each of the EPCs are equal to or less than their applicable MCP Method 1 or Method 2 standards, and there are no risks to public safety. This section presents a comparison of the risk conditions with the conditions identified at the Site.

10.6.1 Risk of Harm to Health

The soil EPCs calculated for current and future activities in the Area 1 Exposure Point, Area 2 Exposure Point, and Hadley Hangar Exposure Point exceed the MCP Method 2 S-1/GW-1, S-2/GW-1, and S-3/GW-1 standards (Table 16). The soil EPCs calculated for current and future activities at the residential exposure points south of the airport are each below the applicable MCP Method 2 S-1, S-2, and S-3 standards (Table 17).

A condition of No Significant Risk does not exist for exposure to soil under current and future conditions at the Area 1 Exposure Point, Area 2 Exposure Point, and the Hadley Hangar Exposure Point due to the potential for PFAS compounds to leach to GW-1 groundwater beneath the airport. Note that soil EPCs on the airport property are below the direct contact exposure-based concentrations promulgated in 310 CMR 40.0985(6). The direct contact exposure-based standards are protective of risk to current airport workers, construction and utility workers, visitors, and trespassers at the airport.

A condition of No Significant Risk does exist for exposure to soil under current and future conditions at the residential exposure points south of the airport. A condition of No Significant Risk is maintained as long as continued monitoring shows that PFAS6 is not leaching from soil to groundwater on residential properties south of the airport. Additional monitoring will be addressed as part of the ongoing IRA and will be evaluated under Phase III of the MCP.

The groundwater EPCs calculated for Site groundwater exceed the MCP Method 1 GW-1 standard for PFAS6 in 29 monitoring wells located within the Site (Table 18) and at 36 private wells on residential properties located south of the airport (Table 19). Therefore, a condition of No Significant Risk to human health does not exist at the Site for groundwater. Note that no groundwater EPCs exceed the applicable GW-3 standards for any of the PFAS compounds.

The private well sampling effort included sampling of 206 private wells at and near the Site. Of the sampled private wells, 110 (i.e., 109 private residential water supply wells and one commercial water supply well) did not have detectable PFAS6 and are not considered potential exposure points. There are 60 private wells at and near the Site where the groundwater EPCs are below the MCP Method 1 GW-1 standard for PFAS6, including 58 private residential water supply wells and two commercial water supply wells. A condition of No Significant Risk to human health for groundwater and soil exists at each of these 60 locations; however, per the MCP these locations represent a potential CEP. However, it is noted that it is not possible to discern to what extent the detection of PFAS6 at these private wells is attributable to AFFF releases at MVY or to other anthropogenic sources such as historic atmospheric deposition, septic system discharges and/or discharges of wastewater from WWTPs.

10.6.2 Risk to Public Welfare

Threats to public welfare include any conditions that may result in the existence of nuisance conditions, loss of property value, or the unilateral restriction of the use of other people's property, and other societal costs due to degradation of public and private resources, both physical and intangible. For a threat to exist, these conditions must preclude the full use of the resources at the Site under existing conditions or conditions about to occur. No nuisance conditions were identified at the Site.

MassDEP defines Upper Concentration Limits (UCLs) as concentrations of oil and hazardous materials, which if exceeded by the average concentration in the area of the release, indicate the potential for significant risk of harm to public welfare and the environment under future conditions. The average detected soil and groundwater concentrations of Site COCs do not exceed the UCLs (Tables 16, 17, 18, and 19). Thus, we find a condition of No Significant Risk of harm to public welfare exists for the conditions observed at the Site.

10.6.3 Risk of Harm to Safety

An assessment of the risk of harm to safety includes assessment of physical conditions and chemical agents that may cause bodily harm or injury (e.g., burns or fractures) as opposed to illness. There are no open pits, lagoons, drums, dangerous structures, or other apparent threats to public safety and no danger of fire or explosion resulting from the conditions attributable to the Site. A condition of No Significant Risk of harm to safety exists at the Site.

10.6.4 Risk to the Environment

Potential risks to the environment were evaluated using the Method 3 Stage I Environmental Screening. As noted above, the Stage I Environmental Screening identifies whether there is potential for exposure and to assess whether "apparent significant harm" has occurred to environmental receptors at a disposal site. The objective of the Stage I Environmental Screening is to eliminate from further evaluation those situations that are unlikely to result in ecological harm. For sites for which either potential for exposure has not been identified or at which "apparent significant harm" is not likely to occur, a condition of "no significant risk of harm to the environment" exists. However, for sites at which the potential for exposure exists and "apparent significant harm" may occur, a quantitative assessment for that site must be performed.

Stage I Environmental Screening

Tetra Tech has reviewed potential environmental receptors surrounding the Site. Based on our review, we identified the following natural resource areas proximate to the Site as described in Section 10.3.2

Tetra Tech evaluated the potential for migration of PFAS from groundwater to surface water. As describe above in the context of human health, evidence suggests that migration of PFAS from groundwater to surface water is not occurring at a detectable level. As such, migration of PFAS from groundwater to surface water is considered an incomplete exposure pathway. In accordance with the Guidance, no further assessment is necessary.

Each individual soil exposure point is less than two acres in area and thus considered not sufficient to support a balanced terrestrial community in accordance with the Guidance. There are mapped Priority Habitat in the vicinity of Area 1; however, PFAS impacts to soil associated with AFFF releases have not been identified and are not expected in the mapped Priority Habitat areas. Exposure of state-listed threatened or endangered species or other species of special concern to COCs identified at the Site, and COC transport from surface soils at the Site to an ACEC are not considered likely. Thus, in accordance with the Guidance, no further assessment is necessary.

In accordance with the MCP (310 CMR 40.0996), the potential for risk of harm to the environment at the Site was also characterized by comparing the average concentrations of the Site COCs in soil and groundwater to the MassDEP UCLs. As shown on Tables 16, 17, 18 and 19, no single soil or groundwater sample exceeds the applicable UCL values. Therefore, it is determined that a condition of No Significant Risk of harm to the environment exists for the Site conditions analyzed. Based on the Stage I Environmental Screening, a Stage II Environmental Risk Characterization is not required for this Site.

10.7 UNCERTAINTIES

As in any risk assessment, the estimated health risks entail many uncertainties. In general, we have selected conservative assumptions to err on the side of public health and safety and protect from the effects of these uncertainties. While it is unlikely that the uncertainties inherent in each step of this analysis will combine in a strictly additive fashion, the overall uncertainty can never be smaller than the least certain step in the series of calculations. Some uncertainty is associated with the sampling and analysis plan, with the available information on toxicity, with our exposure assumptions, and with the methods used to estimate the health effects.

Some uncertainty is associated with the sampling methodology and the analysis of samples used in this assessment. Technology and state-of-the art sampling procedures usually improve over time. Therefore, some data supporting this report may be improved by more sophisticated sampling and analytical techniques in the future. Sampling methods for PFAS continue to evolve as laboratories and regulatory agencies seek to achieve lower detection limits commensurate with low levels of potential human health effects (ITRC, 2020).

Some uncertainty is inherent in the toxicity information, exposure assumptions, and methods used to estimate health effects. By selecting an MCP Method 2 risk characterization, we incorporate MassDEP's conservative estimates for these factors into calculations of estimated risk. Response actions will continue at the Site to contain and/or remove PFAS from environmental media. Response actions will include continued groundwater monitoring to assess whether a Condition of No Significant Risk has been achieved at the Site.

Additionally, this risk characterization assumes that compound concentrations remain constant over time. This overestimates actual concentrations over time because processes such as degradation, volatilization, transport, and other physical, chemical, and biological processes could diminish the concentrations of COCs.

10.7.1 PFAS as an Emerging Contaminant

According to MassDEP, PFAS are an emerging health and environmental concern. They are found in many commercial and industrial products used and manufactured since the 1950s, including food packaging, non-stick cookware, water- and stain-resistant fabrics, personal care products, and water-repellent clothing, in addition to their use in AFFF. PFAS compounds were first identified in population studies of chemicals found in blood samples in the 1970s. Although there are thousands of PFAS compounds, publicly available health and toxicity studies and effective laboratory analytical methods are limited to a small fraction of these compounds. This risk characterization is limited to quantitative assessment of PFAS6 compounds because they are the compounds with promulgated standards. The PFAS6 compounds are the components typically found in legacy AFFF.

10.7.2 Interim Updated PFOA and PFOS Health Advisories

EPA issued Interim Updated PFOA and PFOS Health Advisories on June 15, 2022, lowering the Health Advisory concentration for PFOA to 0.004 ppt and for PFOS to 0.02 ppt, significantly lower than the Massachusetts MCL or MCP GW-1 Standards. According to MassDEP,

“EPA’s health advisories are non-enforceable and non-regulatory and provide technical information to state agencies and other public health officials on health effects, analytical methods, and treatment technologies associated with drinking water contamination. . . . At this time, MassDEP is working to review the new EPA Interim Health Advisories and will determine next steps based upon that review.”

Tetra Tech conducted this risk characterization in accordance current MassDEP regulations, standards and guidance. Additional MCP response actions will be undertaken to assess, contain, and/or remove PFAS at the Site. Should MassDEP promulgate new regulations, standards or guidance in the future, these changes will be incorporated into risk characterizations to support future MCP submittals for the Site, as appropriate.

11.0 PUBLIC INVOLVEMENT

The public involvement notifications pursuant to 310 CMR 40.1403(3)(e) have been made, and include, but are not limited to those activities set forth at 40.1403(3)(a) and (f). Copies of these public notifications are included in Appendix I.

Also, notifications to owners of property within the boundaries of the Disposal Site was completed pursuant to 310 CMR 40.1406. The boundary of the Disposal Site is generally depicted on Figure 2 to the extent feasible given the available data, the complexities of groundwater flow and the presence of background sources of PFAS. The Disposal Site boundary, as depicted, includes many properties downgradient from MVY where sampling of private well water has been performed, and PFAS6 have not been detected above the MCP GW-1 standard of 20 ppt. Therefore, notices were not provided to the owners of these properties or where no data exists. Also, in some cases the owners of residential properties have not responded to prior requests for sampling, and therefore, no PFAS samples have been collected, which has been documented in prior IRA submittals. For these non-responsive property owners, a notice was submitted concurrent with other notices submitted pursuant to 310 CMR 40.1406, which included a request for access to sample the private water supply wells at these locations. To maintain privacy of the downgradient property owners, copies of these notifications will be provided directly to MassDEP via email. An example notification letter is included in Appendix I.

12.0 CONCLUSIONS AND PHASE II COMPLETION STATEMENT

Tetra Tech has prepared this Phase II Report to summarize the comprehensive site assessment activities completed pursuant to the MCP under 310 CMR 40.0830. This Phase II Report was prepared under the supervision of the LSP-of-Record for RTN 4-0027571 and conforms to the applicable requirements of the MCP. The investigations performed at the Site have identified the following key findings:

- The Site is an active commercial airport operated by MVAC. ARFF equipment is maintained for emergency response activities at the airport, including response to fuel spills and aircraft accidents. Prior to early 2018, MVAC performed testing of ARFF equipment that included discharge of AFFF formulations to the ground surface in certain areas at the Site. Because adverse human health and/or environmental effects of PFAS were unknown, this AFFF testing was generally unrestricted, and residuals and rinse waters were not collected for disposal. Several areas of AFFF testing were identified at MVY; however, the most significant testing area appears to be Area 1, which is located just west of the WWTP. However, other areas of AFFF use/testing were documented at MVY and have resulted in disperse aqueous phase impacts to the subsurface.
- The soils at Area 1 were found to have PFAS that leaches from groundwater at concentrations significantly higher than background conditions. Area 1 is currently unpaved, and precipitation and runoff may result in leaching of PFAS from soil to groundwater in this area.
- Discharges from septic systems serving residences and the MVY WWTP serving the airport and the airport business park are other sources of PFAS at the Site. It is not typically possible to distinguish between these other sources and AFFF and assess contribution.
- PFAS impacts, primarily associated with AFFF discharge at MVY to the ground surface, have migrated to groundwater. PFAS impacts to groundwater have been detected at MVY and in the residential area just downgradient from MVY at distances of approximately 3,500 feet downgradient from Area 1. The area directly south of Area 1 encompasses a total of 31 of the 45 residential properties where PFAS6 have been detected at concentrations above the MCP GW-1 standard of 20 ppt.
 - Further downgradient (south), PFAS-impacted groundwater with a higher ratio of PFOS was identified at two properties that is distinct compared to other residences in the vicinity. Based on assessment activities completed at the Site, the PFAS-impacted groundwater appears to encounter an area of geophysical/chemical restriction (likely lower permeability soils and/or denser groundwater from increasing salinity), and groundwater with higher ratios of PFOS migrates upward and is present at higher concentrations in the shallower groundwater at these locations. These properties where apparent upwelling of PFOS impacted groundwater has been observed are located up to approximately 6,600 feet south of Area 1.
 - PFAS impacts to private wells were also observed further to the south/southwest of the main grouping of PFAS6 impacted residential private wells. These downgradient locations have higher ratios of PFOA and/or PFHpA compared to other PFAS6 and are separated from the main grouping of PFAS6-impacted residences closer to Edgartown-West Tisbury Road by properties with private wells with no or low detectable PFAS6. The presence of this separate grouping of PFAS-impacted residential private wells may also be the result of

an area of geophysical/chemical restriction resulting in upwelling of PFAS impacted groundwater and/or transformation of PFAS precursors due to certain subsurface conditions at/near these locations.

- PFAS impacts to groundwater from disperse and more limited AFFF discharges in other areas of the airport, including near the MVY terminal building and the testing area proximate to monitoring well TT-5, have resulted in dissolved phase PFAS impacts to groundwater in the largely undeveloped areas just east of the terminal building and nearby airport business park. PFAS impacts have migrated southerly toward the Coffins Field Road residential development. This area includes 9 of the 45 properties where PFAS6 have been detected at concentrations above the MCP GW-1 standard of 20 ppt.
- Along the primary migration pathway south of MVY, low concentrations of PFHxS were detected at monitoring well TT-17D. However, pore water sampling further downgradient from this location did not detect PFAS, suggesting that significant impacts to the surface water of Long Pond are unlikely. Also, sampling of residential private wells to the south of the Coffins Field Road area have not detected significant PFAS concentrations, suggesting that significant PFAS migration to nearby surface water is unlikely.

A Method 2/Method 3 Risk Characterization was conducted to evaluate potential human health and environmental risk from AFFF releases at MVY. The Method 2/Method 3 Risk Characterization identified potential human and environmental receptors, identified soil and groundwater exposure points, developed EPCs from soil and groundwater analytical results from the Site, and compared the EPCs to Method 2 soil and groundwater standards to assess potential risks to human health. A Method 3 Stage I Environmental Screening was conducted to assess whether there is potential for exposure and to assess whether “apparent significant harm” has occurred to environmental receptors at the Site. The Method 2/Method 3 Risk Characterization concluded the following:

1. A condition of No Significant Risk does not exist for exposure to soil under current and future conditions at the Area 1 Exposure Point, Area 2 Exposure Point, or Hadley Hangar Exposure Point due to the potential for PFAS compounds to leach to GW-1 groundwater beneath the airport.
2. Soil EPCs on the airport property are below the direct contact exposure-based concentrations promulgated in 310 CMR 40.0985(6). The direct contact exposure-based standards are protective of risk to current airport workers, construction and utility workers, visitors, and trespassers at the airport.
3. A condition of No Significant Risk does exist for exposure to soil under current and future conditions at the residential exposure points south of the airport. A condition of No Significant Risk is maintained as long as continued monitoring shows that PFAS6 is not leaching from soil to groundwater on residential properties south of the airport.
4. Groundwater EPCs at the Site exceed the MCP Method 1 GW-1 standard for PFAS6 in 29 monitoring wells located within the Site and at 36 private wells on residential properties located south of the airport. Therefore, a condition of No Significant Risk to human health does not exist at the Site for groundwater. Note that no groundwater EPCs exceed the applicable GW-3 standards for any of the PFAS compounds.
5. Groundwater EPCs at the Site are all below applicable MCP Method 1 GW-3 Standards.

6. There are no complete environmental exposure pathways.
7. A condition of No Significant Risk of harm to safety exists at the Site.

Based on these findings, additional MCP response actions are necessary at the Site. Specifically, potential future risks to residential receptors from consumption of PFAS-impacted drinking water were identified. These risks are currently being addressed by the IRA, and there are no current significant risks to human health for residential receptors due to operation of POET systems. Also, several monitoring wells within GW-1 areas have PFAS6 concentrations that exceed the MCL and MCP GW-1 standard of 20 ppt and could represent future risks to drinking water source areas. Based on the findings of this Phase II Report, there are four potential migration pathways to be addressed to achieve a condition No Significant Risk at the Site:

1. The primary PFAS migration pathway of concern is from Area 1 to the south toward the Waldrons Bottom area. The Area 1 Exposure Point includes potential residual PFAS impacts to soil which likely represent a continuing source of PFAS impacts to groundwater. In December 2022, it is anticipated that the pilot-scale PlumeStop barrier will be installed downgradient of Area 1 to assess the effectiveness of this containment measure to reduce migration of PFAS in groundwater from Area 1.
2. A secondary migration pathway includes more disperse PFAS6 impacts to groundwater over a wide area from the airport terminal building to monitoring well TT-5 and areas south to the Coffins Field Road area. However, no significant residual continuing source of PFAS impacts to groundwater has been identified for this secondary PFAS migration pathway in the eastern portions of the MVY property.
3. A condition of No Significant Risk does not exist for exposure to soil under current and future conditions at the Area 2 Exposure Point, or Hadley Hangar Exposure Point due to the potential for PFAS compounds to leach to GW-1 groundwater beneath the airport.
4. Additional monitoring of the potential soil to groundwater migration pathway in the downgradient residential area is warranted to support the findings that PFAS6 impacts to soil are not a potential source of groundwater impacts to GW-1 areas in this residential area downgradient from MVY.

A Phase III Identification, Evaluation and Selection of Comprehensive Remedial Action Alternatives is necessary to select a remedial action alternative for the Site pursuant to 310 CMR 40.0850. A Phase III Report is due to MassDEP by November 20, 2023. In the interim, IRA activities will continue to be performed.

13.0 REFERENCES

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Table 1 - AFFF Source Material Analytical Data

CLIENT SAMPLE ID			AFFF Containment	AFFF Test UST	Fire Truck 941 Water Tank	AFFF-C301-2011	AFFF-C306-2017	AFFF-C306-2019
	Location		Containment UST	Containment UST	ARFF Truck Tank	C-301MS	C-306-MS-3	C-306-MS-C
SAMPLING DATE			12/13/2018	3/12/2020	1/21/2020	3/12/2020	3/12/2020	3/12/2020
LAB SAMPLE ID	CAS No.	Units	L1851578-01	L2011415-01	L2002938-02	L2011414-01	L2011414-02	L2011414-03
Perfluorinated Alkyl Acids by EPA 537								
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	<333	<500	<38.9	<50000	<50000	<50000
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	<333	255	<38.9	<50000	<50000	<50000
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	<333	<500	<38.9	<50000	<50000	<50000
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	<333	255	<38.9	<50000	20,000	<50000
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	<333	93.0	<38.9	<50000	<50000	<50000
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	<333	1,520	772	<50000	7,500	<50000
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<333	145	<38.9	<50000	<50000	<50000
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	3,070	25,400	3,810	236,000	1,930,000	398,000
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	<333	92.0	<38.9	<50000	<50000	<50000
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	<333	<500	<38.9	<50000	<50000	<50000
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	<333	1,560	239	12,000	182,000	<50000
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	<333	104	<38.9	<50000	<50000	<50000
Perfluorotridecanoic Acid (PFTTrDA)	72629-94-8	ng/l	<333	<500	<38.9	<50000	<50000	<50000
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	<333	<500	<38.9	<50000	<50000	<50000
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)		ng/l	ND	3,572	1,011	12,000	209,500	ND
Isotope Dilution Compounds								
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/l		8,220		328,000	538,000	48,100
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/l		6,240		65,000	50,300	16,000
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/l		801		<50000	<50000	<50000
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/l						
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/l						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/l		3,500		<50000	<50000	<50000
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/l						
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/l						
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/l						
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/l		141,000		1,180,000	1,700,000	367,000

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Blank indicates compound was not reported by the analytical method

ND indicates total PFAS6 concentration not detected

Table 2 - Wastewater Analytical Data

CLIENT SAMPLE ID SAMPLING LOCATION SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	PROPERTY D	WWTP-Effluent	WWTP-Effluent-3	WWTP IP Wet	Car Wash WW	VTA Bus Wash-	Airport	WWTP-INF
			(WWTP) Effluent	Effluent	Effluent	Well ABP Wet Well	WW	Laundromat-WW	WWTP-INF Influent	
			11/2/2018	12/7/2018	12/20/2018	12/20/2018	1/16/2019	1/16/2019	1/16/2019	3/14/2019
			L1845165-01	L1850508-03	L1852722-01	L1852722-02	L1902212-01	L1902212-02	L1902212-03	L1910259-02
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	4.41	2.27	<8.93	<10.0	<500	<500	<500	<23.9
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	20.8	10.6	12.6	<10.0	<500	<500	<500	<23.9
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	<1.88	4.47	<8.93	<10.0	<500	<500	<500	<23.9
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	57.6	38.0	25.8	33.5	<500	<500	<500	<23.9
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	<1.88	1.78	<8.93	<10.0	<500	<500	<500	<23.9
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	21.3	15.8	9.64	58.3	<500	<500	<500	<23.9
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<1.88	<1.76	<8.93	66.6	<500	<500	<500	<23.9
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	37.1	54.4	37.3	24.2	<500	<500	<500	<23.9
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	58.1	12.3	<8.93	88.4	<500	<500	<500	<23.9
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	10.6	8.05	<8.93	<10.0	<500	<500	<500	<23.9
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	118	138	62.4	134	<500	<500	<500	<23.9
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	<1.88	<1.76	<8.93	<10.0	<500	<500	<500	<23.9
Perfluorotridecanoic Acid (PFTTrDA)	72629-94-8	ng/l	<1.88	<1.76	<8.93	11.0	<500	<500	<500	<23.9
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	8.14	8.39	<8.93	<10.0	<500	<500	<500	<23.9
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)		ng/l	266	212	97.8	381	ND	ND	ND	ND

Notes:

< indicates compound not detected above laboratory analytical method detection limits

ND indicates total PFAS6 concentration not detected

Table 2 - Wastewater Analytical Data

CLIENT SAMPLE ID SAMPLING LOCATION SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	CWFRT-2019-03- WWTP-EFFLUENT-		WWTP INFLUENT	WWTP EFFLUENT	WWTP INFLUENT	WWTP INFLUENT	WWTP EFFLUENT	
			27	4	(TOP)	(TOP)	(TOP)	(TOP)	(TOP)	
			Effluent	Car Wash	Influent	Effluent	Influent	Influent (TOP)	Effluent	
			3/14/2019	3/27/2019	4/30/2019	5/9/2019	5/9/2019	8/8/2019	8/8/2019	
			L1910259-01	L1912653-01	L1918240-01	L1919614-01	L1919614-02	L1935831-02	L1937419-01	L1935831-01
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	<20.7	<50.0	2.51	<17.5	<18.1	<9.02	NA	2.76
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	<20.7	<50.0	11.2	<17.5	<18.1	<9.02	NA	8.71
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	<20.7	<50.0	<1.93	<17.5	<18.1	<9.02	<1.90	4.83
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	<20.7	<50.0	31.1	<17.5	<18.1	<9.02	<1.90	4.78
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	<20.7	<50.0	<1.93	<17.5	<18.1	<9.02	<1.90	<1.75
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	<20.7	<50.0	17.7	<17.5	<18.1	<9.02	<1.90	3.26
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<20.7	<50.0	<1.93	<17.5	<18.1	<9.02	6.86	<1.75
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	<20.7	<50.0	34.6	<17.5	24.8	<9.02	5.18	10.8
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	<20.7	<50.0	65.9	<17.5	22.3	<9.02	<1.90	3.34
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	<20.7	<50.0	10.9	<17.5	<18.1	<9.02	2.24	5.55
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	<20.7	<50.0	105	<17.5	45.1	<9.02	2.52	19.9
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	<20.7	<50.0	<1.93	<17.5	<18.1	<9.02	<1.90	<1.75
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l	<20.7	<50.0	<1.93	<17.5	<18.1	<9.02	<1.90	<1.75
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	<20.7	<50.0	5.06	<17.5	<18.1	<9.02	<1.90	<1.75
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)		ng/l	ND	ND	231	ND	67.4	ND	11.6	36.8

Notes:

< indicates compound not detected above laboratory analytical method detection limits

ND indicates total PFAS6 concentration not detected

Table 3 - Wastewater Treatment Plant Sludge Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	WWTP-SLUDGE 3/14/2019 L1910259-03
Perfluorinated Alkyl Acids by EPA 537			
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	28.4
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	26.0
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	<21.7
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	<21.7
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	31.7
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	<21.7
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<21.7
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	<21.7
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	<21.7
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	<21.7
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	<21.7
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	26.4
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	<21.7
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	<21.7
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	ND

Notes:

< indicates compound not detected above laboratory analytical method detection limits

ND indicates total PFAS6 concentration not detected

Table 4 - Background Soil Analytical Data

CLIENT SAMPLE ID						PROPERTY AB (0-0.5')	TT-11 (50')	MVY PLAYGROUND 0-0.5'	TT-11 0-0.5'	TT-12 0-0.5'	PROPERTY FY SOIL-0-6"
	Sample Depth (feet)		MCP Method 1	MCP Method 1	MCP Method 1	0-0.5'	50'	0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE		Standard	Standard	Standard	3/15/2022	3/14/2022	9/21/2022	9/22/2022	9/22/2022	9/22/2022	9/22/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2213647-01	L2214450-01	L2252841-15	L2252841-16	L2252841-17	L2252851-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	0.777	<0.485	<1.47	<1.43	<1.84	<0.635
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<0.307	<0.243	<0.736	<0.717	<0.918	<0.317
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	5.78	<0.243	<0.736	<0.717	<0.918	<0.317
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	2.62	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	<0.307	<0.243	<0.736	<0.717	<0.918	<0.317
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<0.307	<0.243	<0.736	<0.717	<0.918	<0.317
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	1.16	<0.243	<0.736	<0.717	<0.918	<0.317
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	13.1	<0.243	<0.736	<0.717	<0.918	0.384
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	0.738	<0.243	<0.736	<0.717	<0.918	<0.317
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	0.983	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	0.7	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	1.69	<0.485	<1.47	<1.43	<1.84	<0.635
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	20.8	ND	ND	ND	ND	0.384
Isotope Dilution Compounds											
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA	<1.23	<0.970	<2.94	<2.87	<3.67	<1.27
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA	<1.23	<0.970	<2.94	<2.87	<3.67	<1.27
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA	<1.23	<0.970	<2.94	<2.87	<3.67	<1.27
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA	<0.614	<0.485	<1.47	<1.43	<1.84	<0.635

Table 4 - Background Soil Analytical Data

CLIENT SAMPLE ID						PROPERTY AB (0-0.5')	TT-11 (50')	MVY PLAYGROUND 0-0.5'	TT-11 0-0.5'	TT-12 0-0.5'	PROPERTY FY SOIL-0-6"
	Sample Depth (feet)		MCP Method 1 Standard	MCP Method 1 Standard	MCP Method 1 Standard	0-0.5'	50'	0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE			Standard	Standard	Standard	3/15/2022	3/14/2022	9/21/2022	9/22/2022	9/22/2022	9/22/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2213647-01	L2214450-01	L2252841-15	L2252841-16	L2252841-17	L2252851-01
Total Organic Carbon											
Total Organic Carbon		%	NA	NA	NA		<0.010				
Grain Size Analysis											
Cobbles		%	NA	NA	NA		<0.100				
% Coarse Gravel		%	NA	NA	NA		4.50				
% Fine Gravel		%	NA	NA	NA		4.50				
% Total Gravel		%	NA	NA	NA		9.00				
% Coarse Sand		%	NA	NA	NA		15.5				
% Medium Sand		%	NA	NA	NA		44.7				
% Fine Sand		%	NA	NA	NA		25.7				
% Total Sand		%	NA	NA	NA		85.9				
% Total Fines		%	NA	NA	NA		5.10				
General Chemistry											
Solids, Total		%	NA	NA	NA	73.0	92.2	97.1	97.5	96.4	75.9
Moisture		%	NA	NA	NA		7.80				
Specific Gravity		NA	NA	NA	NA		2.80				
Density of Soil											
Bulk Density		lbs/ft3	NA	NA	NA		102				
Moisture Content		%	NA	NA	NA		7.40				
Dry Density		lbs/ft3	NA	NA	NA		94.9				

Notes:
 < indicates compound not detected above laboratory analytical method detection limits
 Blank indicates compound was not reported by the analytical method
 ND indicates total PFAS6 concentration not detected
 NA indicates no applicable standard or unit has been established
 Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						TT-1 (1-2')	TT-4 (1-2')	Boatyard Soil Sample (0-2')	Runway Soil-AFFF Area	Runway Soils-General	TT-1A-0-1
Sample Depth (feet)	MCP Method 1					1-2	1-2	0-2	stockpile	stockpile	0-1
SAMPLING DATE	Standard					3/12/2018	3/12/2018	3/13/2019	3/14/2019	3/14/2019	9/11/2019
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L1809219-02	L1809219-01	L1910438-08	L1910260-01	L1910260-02	L1942017-03
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	4.56	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	<1.07	1.69	<1.07	<1.08	<0.889	<4.96
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	<1.07	<1.68	<1.07	<1.08	<0.889	<4.96
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	4.56	<1.68	<1.07	<1.08	<0.889	<4.96
Isotope Dilution Compounds											
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA						
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA						<4.96
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA						
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA						
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA						
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA						28.4
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA						
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA						
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA						
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA						22.7

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						TT-1 (1-2')	TT-4 (1-2')	Boatyard Soil Sample (0-2')	Runway Soil-AFFF Area	Runway Soils-General	TT-1A-0-1
Sample Depth (feet)	MCP Method 1					1-2	1-2	0-2	stockpile	stockpile	0-1
SAMPLING DATE	Standard					3/12/2018	3/12/2018	3/13/2019	3/14/2019	3/14/2019	9/11/2019
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L1809219-02	L1809219-01	L1910438-08	L1910260-01	L1910260-02	L1942017-03
Total Organic Carbon											
Total Organic Carbon		%	NA	NA	NA						
Grain Size Analysis											
Cobbles		%	NA	NA	NA						
% Coarse Gravel		%	NA	NA	NA						
% Fine Gravel		%	NA	NA	NA						
% Total Gravel		%	NA	NA	NA						
% Coarse Sand		%	NA	NA	NA						
% Medium Sand		%	NA	NA	NA						
% Fine Sand		%	NA	NA	NA						
% Total Sand		%	NA	NA	NA						
% Total Fines		%	NA	NA	NA						
General Chemistry											
Solids, Total		%	NA	NA	NA						
Moisture		%	NA	NA	NA						
Specific Gravity		NA	NA	NA	NA						
Density of Soil											
Bulk Density		lbs/ft3	NA	NA	NA						
Moisture Content		%	NA	NA	NA						
Dry Density		lbs/ft3	NA	NA	NA						

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Blank indicates compound was not reported by the analytical method

ND indicates total PFAS6 concentration not detected

NA indicates no applicable standard or unit has been established

Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						TT-1A-26-28	TT-2A-0-1	TT-2A-30-32	WWTP-CLARIFIER (0-0.5)	WWTP-AFFF #1 (0-0.5)	WWTP-AFFF #2 (0-0.5)
Sample Depth (feet)	MCP Method 1					26-28	0-1	30-32	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE	Standard					9/11/2019	9/11/2019	9/11/2019	3/15/2022	3/15/2022	3/15/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L1942017-04	L1942017-01	L1942017-02	L2213637-01	L2213637-02	L2213637-03
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	<0.935	<1.04	<1.00	<0.549	<0.499	0.782
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<0.935	<1.04	<1.00	<0.549	<0.499	1.04
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<0.935	<1.04	<1.00	<0.549	<0.249	<0.254
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	<0.935	3.16	<1.00	0.596	<0.249	13.7
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	<0.935	<1.04	<1.00	<0.549	<0.499	7.38
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	<0.935	1.69	1.08	<0.549	<0.249	1.36
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<0.935	<1.04	<1.00	<0.549	<0.249	<0.254
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	<0.935	1.41	<1.00	<0.549	<0.499	2.02
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	<0.935	1.56	<1.00	0.338	<0.249	6.47
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	<0.935	<1.04	<1.00	3.74	<0.249	0.694
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	1.26	1.67	1.50	0.561	<0.249	3.52
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	<0.935	<1.04	<1.00	<0.549	<0.499	2.66
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	<0.935	1.52	<1.00	<0.549	<0.499	2.44
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	<0.935	1.77	<1.00	<0.549	<0.499	5.19
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	1.26	8.08	2.58	5.24	ND	25.74
Isotope Dilution Compounds											
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA				<0.549	<0.499	0.898
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA	<0.935	2.17	<1.00	<0.549	<0.499	2.830
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA				<0.549	<0.997	<1.02
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA				<0.549	<0.997	<1.02
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA				<0.549	<0.499	<0.508
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA	4.52	2.10	<1.00	<0.549	<0.499	<0.508
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA				<0.549	<0.997	<1.02
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA				<0.549	<0.499	0.962
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA				<0.549	<0.499	<0.500
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA	49.5	2.82	15.1	2.00	1.62	28.3

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						TT-1A-26-28	TT-2A-0-1	TT-2A-30-32	WWTP-CLARIFIER (0-0.5)	WWTP-AFFF #1 (0-0.5)	WWTP-AFFF #2 (0-0.5)
Sample Depth (feet)	MCP Method 1					26-28	0-1	30-32	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE	Standard					9/11/2019	9/11/2019	9/11/2019	3/15/2022	3/15/2022	3/15/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L1942017-04	L1942017-01	L1942017-02	L2213637-01	L2213637-02	L2213637-03
Total Organic Carbon											
Total Organic Carbon		%	NA	NA	NA						
Grain Size Analysis											
Cobbles		%	NA	NA	NA						
% Coarse Gravel		%	NA	NA	NA						
% Fine Gravel		%	NA	NA	NA						
% Total Gravel		%	NA	NA	NA						
% Coarse Sand		%	NA	NA	NA						
% Medium Sand		%	NA	NA	NA						
% Fine Sand		%	NA	NA	NA						
% Total Sand		%	NA	NA	NA						
% Total Fines		%	NA	NA	NA						
General Chemistry											
Solids, Total		%	NA	NA	NA				87.8	92.2	87.3
Moisture		%	NA	NA	NA						
Specific Gravity		NA	NA	NA	NA						
Density of Soil											
Bulk Density		lbs/ft3	NA	NA	NA						
Moisture Content		%	NA	NA	NA						
Dry Density		lbs/ft3	NA	NA	NA						

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Blank indicates compound was not reported by the analytical method

ND indicates total PFAS6 concentration not detected

NA indicates no applicable standard or unit has been established

Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						TT-13 (29')	TT-13 (0-0.5)	WWTP-AFFF #2 (0-0.5')	HADLEY SOIL 0-6"	AFFF-SA-1	AFFF-SA-2
	Sample Depth (feet)		MCP Method 1	MCP Method 1	MCP Method 1	29'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE		Standard	Standard	Standard	3/15/2022	3/15/2022	7/21/2022	9/20/2022	9/21/2022	9/21/2022	
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2214450-02	L2214450-03	L2239307-01	L2252841-01	L2252841-02	L2252841-03
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	<0.497	<0.554	<1.18	<1.35	<1.82	<1.51
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<0.497	<0.554	<1.18	<1.35	<1.82	<1.51
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<0.249	<0.277	<0.592	<0.676	<0.913	<0.753
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	<0.249	3.19	16.6	1.74	<0.913	7.83
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	<0.497	<0.554	13.7	<1.35	<1.82	7.02
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	<0.249	<0.277	5.25	<0.676	<0.913	4.66
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<0.249	<0.277	<0.592	<0.676	<0.913	<0.753
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	<0.497	<0.554	8.75	<1.35	<1.82	7.44
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	<0.249	1.49	6.43	<0.676	<0.913	3.26
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	0.254	<0.277	0.656	<0.676	<0.913	<0.753
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	0.622	1.27	9.16	<0.676	<0.913	4.73
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	<0.497	<0.554	4.6	<1.35	<1.82	5.08
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	<0.497	<0.554	3.28	<1.35	<1.82	2.41
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	<0.497	2.69	9.15	1.80	<1.82	4.39
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	0.876	5.95	38.1	1.74	ND	20.5
Isotope Dilution Compounds											
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA	<0.497	<0.554	2.77	<1.35	<1.82	2.39
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA	0.955	0.62	12.5	<1.35	<1.82	10.6
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA	<0.995	<1.11	<2.37	<2.70	<3.65	<3.01
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA	<0.995	<1.11	<2.37	<2.70	<3.65	<3.01
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA	<0.497	<0.554	<1.18	<1.35	<1.82	<1.51
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA	3.19	24.8	69.1	<1.35	<1.82	32.5
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA	<0.995	<1.11	<2.37	<2.70	<3.65	<3.01
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA	<0.497	<0.554	<1.18	<1.35	<1.82	<1.51
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA	<0.497	<0.554	<1.18	<1.35	<1.82	<1.51
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA	102	5.11	75.7	<1.35	<1.82	48

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						TT-13 (29')	TT-13 (0-0.5')	WWTP-AFFF #2 (0-0.5')	HADLEY SOIL 0-6"	AFFF-SA-1	AFFF-SA-2
Sample Depth (feet)	MCP Method 1					29'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE	Standard					3/15/2022	3/15/2022	7/21/2022	9/20/2022	9/21/2022	9/21/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2214450-02	L2214450-03	L2239307-01	L2252841-01	L2252841-02	L2252841-03
Total Organic Carbon											
Total Organic Carbon		%	NA	NA	NA	0.038					
Grain Size Analysis											
Cobbles		%	NA	NA	NA	<0.100					
% Coarse Gravel		%	NA	NA	NA	3.50					
% Fine Gravel		%	NA	NA	NA	5.70					
% Total Gravel		%	NA	NA	NA	9.20					
% Coarse Sand		%	NA	NA	NA	7.80					
% Medium Sand		%	NA	NA	NA	53.6					
% Fine Sand		%	NA	NA	NA	22.4					
% Total Sand		%	NA	NA	NA	83.8					
% Total Fines		%	NA	NA	NA	7.00					
General Chemistry											
Solids, Total		%	NA	NA	NA	93.5	83.0	71.3	97.9	96.1	84.0
Moisture		%	NA	NA	NA	6.50					
Specific Gravity		NA	NA	NA	NA	2.87					
Density of Soil											
Bulk Density		lbs/ft3	NA	NA	NA	106.8					
Moisture Content		%	NA	NA	NA	6.93					
Dry Density		lbs/ft3	NA	NA	NA	99.9					

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Blank indicates compound was not reported by the analytical method

ND indicates total PFAS6 concentration not detected

NA indicates no applicable standard or unit has been established

Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						AFFF-SA-3	AFFF-SA-4	AFFF-SA-5	AFFF-SA-6	AFFF-SA-7	AFFF-SA-8
Sample Depth (feet)	MCP Method 1					0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE	Standard					9/21/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2252841-04	L2252841-05	L2252841-06	L2252841-07	L2252841-08	L2252841-09
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	<1.85	<2.17	<1.48	<1.82	<1.61	<1.43
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<1.85	<2.17	<1.48	<1.82	<1.61	<1.43
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<0.924	<1.08	<0.740	<0.910	<0.806	<0.716
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	1.89	34.1	<0.740	<0.910	11.7	6.9
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	<1.85	15	<1.48	<1.82	6.27	12.8
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	1.48	21.3	<0.740	<0.910	5.7	3.6
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<0.924	<1.08	<0.740	<0.910	<0.806	<0.716
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	2.60	17.5	<1.48	<1.82	9.79	8.29
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	1.42	36.2	<0.740	<0.910	2.06	2.45
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	<0.924	<1.08	<0.740	<0.910	<0.806	<0.716
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	1.74	34.7	<0.740	<0.910	6.75	4.2
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	<1.85	4.73	<1.48	<1.82	2.21	9.17
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	<1.85	4.48	<1.48	<1.82	<1.61	4.73
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	2.87	16.3	<1.48	<1.82	6.29	6.57
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	6.5	126.3	ND	ND	26.2	17.2
Isotope Dilution Compounds											
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA	3.30	22.8	<1.48	<1.82	3.9	3.09
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA	5.63	46.5	<1.48	<1.82	12.4	11.1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA	<3.70	<4.34	<2.96	<3.64	<3.22	<2.86
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA	<3.70	<4.34	<2.96	<3.64	<3.22	<2.86
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA	<1.85	<2.17	<1.48	<1.82	<1.61	<1.43
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA	<1.85	543	<1.48	<1.82	29.2	158
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA	<3.70	<4.34	<2.96	<3.64	<3.22	<2.86
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA	<1.85	<2.17	<1.48	<1.82	<1.61	<1.43
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA	<1.85	<2.17	<1.48	<1.82	<1.61	<1.43
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA	<1.85	114	<1.48	<1.82	41.3	100

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						AFFF-SA-3	AFFF-SA-4	AFFF-SA-5	AFFF-SA-6	AFFF-SA-7	AFFF-SA-8
Sample Depth (feet)	MCP Method 1					0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE	Standard					9/21/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2252841-04	L2252841-05	L2252841-06	L2252841-07	L2252841-08	L2252841-09
Total Organic Carbon											
Total Organic Carbon		%	NA	NA	NA						
Grain Size Analysis											
Cobbles		%	NA	NA	NA						
% Coarse Gravel		%	NA	NA	NA						
% Fine Gravel		%	NA	NA	NA						
% Total Gravel		%	NA	NA	NA						
% Coarse Sand		%	NA	NA	NA						
% Medium Sand		%	NA	NA	NA						
% Fine Sand		%	NA	NA	NA						
% Total Sand		%	NA	NA	NA						
% Total Fines		%	NA	NA	NA						
General Chemistry											
Solids, Total		%	NA	NA	NA	94.1	81.6	93.8	93.9	91.9	95.0
Moisture		%	NA	NA	NA						
Specific Gravity		NA	NA	NA	NA						
Density of Soil											
Bulk Density		lbs/ft3	NA	NA	NA						
Moisture Content		%	NA	NA	NA						
Dry Density		lbs/ft3	NA	NA	NA						

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Blank indicates compound was not reported by the analytical method

ND indicates total PFAS6 concentration not detected

NA indicates no applicable standard or unit has been established

Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						AFFF-SA-9	AFFF-SA-10	ARFF-SOIL-0-0.5'
Sample Depth (feet)	MCP Method 1					0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE	Standard					9/21/2022	9/21/2022	9/21/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2252841-10	L2252841-13	L2252841-14
Perfluorinated Alkyl Acids by EPA 537								
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	<1.40	<1.46	<1.90
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<1.40	<1.46	<1.90
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<0.702	<0.731	<0.950
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	5.1	2.33	<0.950
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	2.07	7.79	<1.90
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	1.09	<0.731	<0.950
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<0.702	<0.731	<0.950
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	1.62	1.64	<1.90
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	0.809	<0.731	<0.950
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	<0.702	<0.731	<0.950
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	2.03	<0.731	<0.950
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	<1.40	5.1	<1.90
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	<1.40	2.29	<1.90
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	5.97	<1.46	<1.90
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	9.0	2.3	ND
Isotope Dilution Compounds								
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA	<1.40	<1.46	<1.90
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA	2.46	2.64	<1.90
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA	<2.81	<2.92	<3.80
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA	<2.81	<2.92	<3.80
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA	<1.40	<1.46	<1.90
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA	4.07	33.3	<1.90
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA	<2.81	<2.92	<3.80
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA	<1.40	<1.46	<1.90
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA	<1.40	<1.46	<1.90
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA	4.14	61.4	<1.90

Table 5 - MVY Soil Analytical Data

CLIENT SAMPLE ID						AFFF-SA-9	AFFF-SA-10	ARFF-SOIL-0-0.5'
Sample Depth (feet)	MCP Method 1					0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE	Standard					9/21/2022	9/21/2022	9/21/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2252841-10	L2252841-13	L2252841-14
Total Organic Carbon								
Total Organic Carbon		%	NA	NA	NA			
Grain Size Analysis								
Cobbles		%	NA	NA	NA			
% Coarse Gravel		%	NA	NA	NA			
% Fine Gravel		%	NA	NA	NA			
% Total Gravel		%	NA	NA	NA			
% Coarse Sand		%	NA	NA	NA			
% Medium Sand		%	NA	NA	NA			
% Fine Sand		%	NA	NA	NA			
% Total Sand		%	NA	NA	NA			
% Total Fines		%	NA	NA	NA			
General Chemistry								
Solids, Total		%	NA	NA	NA	95.6	96.3	93.2
Moisture		%	NA	NA	NA			
Specific Gravity		NA	NA	NA	NA			
Density of Soil								
Bulk Density		lbs/ft3	NA	NA	NA			
Moisture Content		%	NA	NA	NA			
Dry Density		lbs/ft3	NA	NA	NA			

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Blank indicates compound was not reported by the analytical method

ND indicates total PFAS6 concentration not detected

NA indicates no applicable standard or unit has been established

Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 6 - Downgradient Soil Analytical Data

CLIENT SAMPLE ID						PROPERTY DA (0-0.5')	PROPERTY AX (0-0.5')	PROPERTY J (0-0.5')	MW-AY (4')	PROPERTY B-0-6"	PROPERTY Y-0-6"
	Sample Depth (feet)		MCP Method 1	MCP Method 1	MCP Method 1	0-0.5'	0-0.5'	0-0.5'	4'	0-0.5'	0-0.5'
	SAMPLING DATE		Standard	Standard	Standard	3/15/2022	3/15/2022	3/15/2022	3/15/2022	9/19/2022	9/20/2022
	LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2213639-01	L2213648-01	L2213649-01	L2214454-01	L2252878-04
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	<0.605	<0.565	<0.567		<0.611	<0.698
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<0.605	<0.565	<0.567		<0.611	<0.698
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<0.303	<0.282	<0.284	<0.250	<0.306	<0.349
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	0.728	<0.282	<0.284	<0.250	<0.306	<0.349
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	<0.303	<0.282	<0.284	<0.250	<0.306	1.16
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<0.303	<0.282	<0.284	<0.250	<0.306	2.34
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	1.09
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	<0.303	<0.282	<0.284	<0.250	<0.306	<0.349
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	1.57	<0.282	2.07	<0.250	<0.306	9.10
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	<0.303	<0.282	<0.284	<0.250	<0.306	<0.349
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	2.30	ND	2.07	ND	ND	12.60
Isotope Dilution Compounds											
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA	<0.605	0.72	<0.567	<0.499	<0.611	1.69
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA	<1.21	<1.13	<1.13	<0.998	<1.22	<1.40
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA	<1.21	<1.13	<1.13	<0.998	<1.22	<1.40
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA	<1.21	<1.13	<1.13	<0.998	<1.22	<1.40
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.481	<0.698
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA	<0.605	<0.565	<0.567	<0.499	<0.611	<0.698

Table 6 - Downgradient Soil Analytical Data

CLIENT SAMPLE ID						PROPERTY DA (0-0.5')	PROPERTY AX (0-0.5')	PROPERTY J (0-0.5')	MW-AY (4')	PROPERTY B-0-6"	PROPERTY Y-0-6"
	Sample Depth (feet)		MCP Method 1	MCP Method 1	MCP Method 1	0-0.5'	0-0.5'	0-0.5'	4'	0-0.5'	0-0.5'
SAMPLING DATE			Standard	Standard	Standard	3/15/2022	3/15/2022	3/15/2022	3/15/2022	9/19/2022	9/20/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2213639-01	L2213648-01	L2213649-01	L2214454-01	L2252878-04	L2252868-04
Total Organic Carbon											
Total Organic Carbon		%	NA	NA	NA				0.063		
Grain Size Analysis											
Cobbles		%	NA	NA	NA				<0.100		
% Coarse Gravel		%	NA	NA	NA				2.20		
% Fine Gravel		%	NA	NA	NA				2.20		
% Total Gravel		%	NA	NA	NA				4.40		
% Coarse Sand		%	NA	NA	NA				14.0		
% Medium Sand		%	NA	NA	NA				59.8		
% Fine Sand		%	NA	NA	NA				12.8		
% Total Sand		%	NA	NA	NA				86.6		
% Total Fines		%	NA	NA	NA				9.00		
General Chemistry											
Solids, Total		%	NA	NA	NA	82.0	82.9	80.5	95.2	85.8	65.0
Moisture		%	NA	NA	NA				4.80		
Specific Gravity		NA	NA	NA	NA				2.54		
Density of Soil											
Bulk Density		lbs/ft3	NA	NA	NA				104.9		
Moisture Content		%	NA	NA	NA				12.2		
Dry Density		lbs/ft3	NA	NA	NA				93.5		

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Blank indicates compound was not reported by the analytical method

ND indicates total PFAS6 concentration not detected

NA indicates no applicable standard or unit has been established

Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 6 - Downgradient Soil Analytical Data

CLIENT SAMPLE ID						PROPERTY F- SOIL-0-6"	PROPERTY I SOIL 0-6"	PROPERTY CL- SOIL-0-6"
	Sample Depth (feet)		MCP Method 1	MCP Method 1	MCP Method 1	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE			Standard	Standard	Standard	9/21/2022	9/21/2022	9/23/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2252863-04	L2252858-04	L2252848-04
Perfluorinated Alkyl Acids by EPA 537								
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g	NA	NA	NA	<0.241	<0.263	<0.226
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	0.3	300	300	<0.241	<0.263	<0.226
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	0.5	300	300	<0.241	<0.263	<0.226
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	0.3	300	300	<0.241	<0.263	<0.226
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	NA	NA	NA	<0.526	<0.526	<0.451
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	0.32	300	300	<0.241	<0.263	<0.226
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	2	300	300	0.254	0.635	<0.226
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	0.72	300	300	<0.241	0.272	<0.226
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/g	NA	NA	NA	0.25	0.91	ND
Isotope Dilution Compounds								
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/g	NA	NA	NA	<0.962	<1.05	<0.902
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/g	NA	NA	NA	<1.05	<1.05	<0.902
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/g	NA	NA	NA	<0.962	<1.05	<0.902
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/g	NA	NA	NA	<0.481	<0.526	<0.451
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	NA	NA	NA	<0.481	<0.526	<0.451

Table 6 - Downgradient Soil Analytical Data

CLIENT SAMPLE ID						PROPERTY F- SOIL-0-6"	PROPERTY I SOIL 0-6"	PROPERTY CL- SOIL-0-6"
	Sample Depth (feet)		MCP Method 1	MCP Method 1	MCP Method 1	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE			Standard	Standard	Standard	9/21/2022	9/21/2022	9/23/2022
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	S-1/GW-2	S-1/GW-3	L2252863-04	L2252858-04	L2252848-04
Total Organic Carbon								
Total Organic Carbon		%	NA	NA	NA			
Grain Size Analysis								
Cobbles		%	NA	NA	NA			
% Coarse Gravel		%	NA	NA	NA			
% Fine Gravel		%	NA	NA	NA			
% Total Gravel		%	NA	NA	NA			
% Coarse Sand		%	NA	NA	NA			
% Medium Sand		%	NA	NA	NA			
% Fine Sand		%	NA	NA	NA			
% Total Sand		%	NA	NA	NA			
% Total Fines		%	NA	NA	NA			
General Chemistry								
Solids, Total		%	NA	NA	NA	85.8	85.8	80.9
Moisture		%	NA	NA	NA			
Specific Gravity		NA	NA	NA	NA			
Density of Soil								
Bulk Density		lbs/ft3	NA	NA	NA			
Moisture Content		%	NA	NA	NA			
Dry Density		lbs/ft3	NA	NA	NA			

Notes:

- < indicates compound not detected above laboratory analytical method detection limits
- Blank indicates compound was not reported by the analytical method
- ND indicates total PFAS6 concentration not detected
- NA indicates no applicable standard or unit has been established
- Bold indicates compound exceeds MCP Method 1 S-1/GW-1 standard

Table 7 - SPLP Testing Summary

CLIENT SAMPLE ID			WWTP-AFFF #2 (0-0.5')	AFFF-SA-8	PROPERTY AB-0-6"	PROPERTY CL-SOIL-0-6"
Sample Depth (feet)			0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE			7/21/2022	9/21/2022	9/20/2022	9/23/2022
LAB SAMPLE ID	CAS No.	Units	L2239307-01R	L2252841-09	L2252865-01	L2252848-04
Perfluorinated Alkyl Acids by EPA 537						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/L	<50.0	<1.77	<1.72	<1.74
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/L	<50.0	<1.77	<1.72	<1.74
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/L	<50.0	<1.77	<1.72	<1.74
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/L	188	169	<1.72	<1.74
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/L	<50.0	31.9	<1.72	<1.74
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/L	146	150	<1.72	<1.74
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/L	<50.0	<1.77	<1.72	<1.74
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/L	244	394	<1.72	<1.74
Perfluorononanoic Acid (PFNA)	375-95-1	ng/L	145	90.4	<1.72	<1.74
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/L	<50.0	<1.77	4.57	<1.74
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/L	245	165	1.99	<1.74
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/L	<50.0	6.26	<1.72	<1.74
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/L	<50.0	5.43	<1.72	<1.74
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/L	<50.0	37.4	<1.72	<1.74
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA)		ng/L	724	574	6.56	ND
Isotope Dilution Compounds						
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/L	92.1	126	<1.72	<1.74
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/L	363	476	<1.72	<1.74
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/L	<50.0	3.1	<1.72	<1.74
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/L	<50.0	<1.77	<1.72	<1.74
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/L	<50.0	<1.77	<1.72	<1.74
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/L	1970	2840	<1.72	<1.74
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/L	<50.0	<1.77	<1.72	<1.74
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/L	<50.0	<1.77	<1.72	<1.74
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/L	<50.0	<1.77	<1.72	<1.74
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/L	2400	4090	<1.72	<1.74

Notes:

< indicates compound not detected above laboratory analytical method detection limits

ND indicates total PFAS6 concentration not detected

Table 8 - September 2022 Site-Wide Groundwater Elevation Survey Data

Well ID	Top of Casing GPS Ground Elevation (ft.)	Top of Casing Elevation (ft.)	Depth to Water (ft.)	Depth to Bottom (ft.)	GW Elevation (ft.)
M-4	46.66	48.38	34.79	40.50	13.59
M-4D	46.49	48.09	34.72	64.04	13.37
RIZ-42	48.65	48.65	35.16	49.40	13.49
TMW-4	47.39	47.39	33.41	50.45	13.98
TMW-5D	50.93	52.09	38.88	73.10	13.21
RIZ-21	47.76	47.76	35.10	52.25	12.66
TT-05	55.84	55.84	40.20	41.55	15.64
TT-06	50.80	50.80	36.48	42.00	14.32
TT-04	46.26	46.26	31.68	39.15	14.58
RIZ-65	56.77	56.77	41.32	49.45	15.45
RIZ-12	51.67	51.67	37.75	51.00	13.92
TT-9	38.30	38.30	24.84	34.10	13.46
TT-11	71.07	71.07	52.93	72.70	18.14
TT-12	53.35	53.35	39.52	82.90	13.83

Notes:

1. Elevations surveyed by Tetra Tech on 9/19/2022 through 9/23/22
2. An Arrow Gold® RTK GNSS Receiver was used to survey the wells with a +/- 0.5-foot accuracy
3. Depth to water measured from the top of well casing on 9/19/22 through 9/23/2022
4. Elevations are in feet above mean seal level

Table 9 - October 2022 Source Area Groundwater Elevaiton Survey Data

Well ID	Top of Casing Elevation (ft.)	Depth to Water (ft.)	GW Elevation (ft.)
TT-1	44.11	30.30	13.81
TT-13	46.46	32.72	13.74
TT-18	43.07	29.28	13.79
TT-19	42.80	29.05	13.75
TT-20	42.81	29.18	13.63
TT-21	43.50	29.84	13.66
TT-22	48.45	34.84	13.61
TT-23	51.53	37.74	13.79
TT-24	45.47	31.70	13.77
RIZ-X	45.25	31.46	13.79

Notes:

1. Top of casing elevation for TT-13 measured via GPS using an Arrow Gold® GNSS Receiver, approximate vertical accuracy 0.016 m.
2. Tetra Tech surveyed elevations via transit-stadia relative to GPS elevation of TT-13 on October 27, 2022
3. Elevations are in feet above mean seal level
4. Depth to groundwater measured using an electronic water level meter on October 27, 2022

Table 10 - Monitoring Well Groundwater Analytical Data

Compound Name				Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamide (NEtFOSAA)	N-Methyl Perfluorooctanesulfonamide (NMeFOSAA)	Perfluorobutanesulfonic Acid (PFBS)	Perfluorodecanoic Acid (PFDA)	Perfluorododecanoic Acid (PFDDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorohexanoic Acid (PFHxA)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorotridecanoic Acid (PFTDA)	Perfluoroundecanoic Acid (PFUnA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)
CAS No.				2991-50-6	2355-31-9	375-73-5	335-76-2	307-55-1	375-85-9	355-46-4	307-24-4	375-95-1	1763-23-1	335-67-1	376-06-7	72629-94-8	2058-94-8		
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard															
M-10	3/14/2018	L1809217-03	1.72	ND	ND	4.27	2.08	ND	53.40	16.90	87.70	18.20	43.20	96.90	ND	ND	ND	230.68	
M-10	11/1/2018	L1845161-03	1.71	ND	ND	13.40	2.44	ND	176.00	11.50	349.00	14.60	36.10	101.00	ND	ND	ND	341.64	
M-10	9/8/2020	L2037973-04	1.93	ND	ND	5.65	2.84	ND	165.00	7.08	268.00	16.40	21.50	70.80	ND	ND	ND	283.62	
M-10	9/19/2022	L2252884-07	2.36	ND	ND	ND	ND	ND	108.00	4.71	203.00	2.70	10.50	38.20	ND	ND	ND	164.11	
M-11	3/14/2018	L1809217-01	1.72	ND	ND	ND	ND	ND	18.30	ND	65.90	ND	12.70	11.30	ND	ND	ND	42.30	
M-11	9/21/2022	L2252884-22	2.11	ND	ND	ND	ND	ND	55.40	3.45	168.00	ND	3.79	18.80	ND	ND	ND	81.44	
M-4	3/14/2018	L1809217-02	1.67	ND	ND	5.93	5.67	ND	1060.00	82.70	2860.00	39.20	118.00	240.00	ND	ND	ND	1545.57	
M-4	11/1/2018	L1845161-04	1.72	ND	ND	22.60	4.10	ND	212.00	77.70	478.00	22.70	219.00	151.00	ND	ND	ND	686.50	
M-4	3/13/2019	L1910438-07	8.77	ND	ND	ND	ND	ND	745.00	72.90	1880.00	55.70	150.00	343.00	ND	ND	ND	1366.60	
M-4	9/8/2020	L2037973-01	1.79	ND	ND	ND	5.51	ND	350.00	5.76	766.00	26.20	31.70	169.00	ND	ND	ND	588.17	
M-4	11/15/2021	L2163723-04	4.00	ND	ND	9.46	ND	ND	158.00	145.00	141.00	21.20	450.00	120.00	ND	ND	ND	894.20	
M4	9/19/2022	L2252884-01	1.88	ND	ND	ND	ND	ND	39.60	25.20	48.50	6.84	35.60	21.90	ND	ND	ND	129.14	
M-4D	3/13/2019	L1910438-06	1.70	ND	ND	ND	ND	ND	35.50	ND	74.10	4.64	ND	14.80	ND	ND	ND	54.94	
M-4D	9/8/2020	L2037973-02	1.83	ND	ND	ND	ND	ND	12.60	ND	25.40	2.55	ND	5.85	ND	ND	ND	21.00	
M-4D	11/15/2021	L2163723-05	1.84	ND	ND	ND	ND	ND	11.70	ND	23.10	1.97	ND	6.06	ND	ND	3.30	19.73	
M-4D	9/19/2022	L2252884-02	1.86	ND	ND	ND	ND	ND	16.50	ND	35.10	2.17	ND	6.58	ND	ND	2.56	25.25	
M-4E	3/13/2019	L1910438-05	1.76	ND	ND	ND	ND	ND	28.00	ND	56.20	2.91	ND	10.90	ND	ND	ND	41.81	
M-4E	9/8/2020	L2037973-03	1.91	ND	ND	ND	ND	ND	18.20	ND	25.90	2.71	ND	6.99	ND	ND	ND	27.90	
M-4E	11/15/2021	L2163723-06	1.84	ND	ND	ND	ND	ND	29.60	ND	29.40	2.02	ND	6.28	ND	ND	2.42	37.90	
M-4E	9/19/2022	L2252884-06	1.76	ND	ND	ND	ND	ND	18.30	ND	39.80	1.97	ND	5.40	ND	ND	ND	25.67	
M-6	3/15/2018	L1809217-10	1.72	ND	ND	ND	2.13	ND	12.20	ND	18.50	2.74	ND	10.70	ND	ND	ND	27.77	
M-6	9/11/2020	L2037973-20	1.83	ND	ND	ND	ND	ND	3.83	ND	4.61	ND	ND	5.79	ND	ND	ND	9.62	
M-6	9/20/2022	L2252884-10	1.89	ND	ND	ND	ND	ND	8.05	ND	7.06	ND	ND	10.70	ND	ND	ND	18.75	
M-6D	3/15/2018	L1809217-09	1.72	ND	ND	ND	1.90	ND	44.20	ND	66.40	4.69	ND	17.50	ND	ND	ND	68.29	
M-6D	11/1/2018	L1845161-02	1.76	ND	ND	ND	ND	ND	81.00	ND	118.00	ND	ND	22.70	ND	ND	ND	103.70	
M-6D	9/11/2020	L2037973-21	1.80	ND	ND	ND	ND	ND	44.50	ND	57.50	ND	ND	21.70	ND	ND	ND	66.20	
M-6D	9/20/2022	L2252884-11	1.87	ND	ND	ND	ND	ND	51.60	ND	49.60	ND	ND	36.20	ND	ND	ND	87.80	
MW-AYD	6/13/2022	L2232854-03	1.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-AYI	6/13/2022	L2232854-02	1.86	ND	ND	ND	ND	ND	3.27	2.58	2.25	ND	ND	5.24	ND	ND	ND	11.09	
MW-AYS	6/13/2022	L2232854-01	1.88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-BD	6/14/2022	L2232849-01	1.73	ND	ND	ND	ND	ND	11.80	ND	21.30	ND	ND	4.97	ND	ND	ND	16.77	
MW-BS	6/14/2022	L2232849-02	1.75	ND	ND	5.32	1.75	ND	462.00	2.29	787.00	15.40	11.20	204.00	ND	ND	ND	696.64	
MW-DAD	6/14/2022	L2232852-02	1.85	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-DAS	6/14/2022	L2232852-01	1.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-JM	3/13/2019	L1910438-02	1.72	ND	ND	ND	ND	ND	63.30	ND	127.00	ND	ND	11.40	ND	ND	ND	74.70	
MW-JM	9/10/2020	L2037973-13	1.86	ND	ND	ND	ND	ND	215.00	ND	260.00	ND	ND	25.50	ND	ND	ND	240.50	
MW-JM	11/15/2021	L2163723-01	1.98	ND	ND	ND	ND	ND	58.80	128.00	63.90	ND	146.00	17.70	ND	ND	ND	350.50	
MW-JS	3/13/2019	L1910438-01	1.75	ND	ND	4.04	ND	ND	88.20	234.00	146.00	3.17	57.00	17.80	ND	ND	ND	400.17	
MW-JS	9/10/2020	L2037973-14	1.89	ND	ND	ND	ND	ND	28.00	92.80	55.30	ND	106.00	10.40	ND	ND	ND	237.20	
MW-JS	11/15/2021	L2163723-02	4.00	ND	ND	ND	ND	ND	142.00	ND	199.00	ND	8.19	34.30	ND	ND	ND	184.49	
OW-B	12/13/2018	L1851578-03	1.89	ND	ND	ND	ND	ND	ND	ND	4.78	ND	3.06	3.18	ND	ND	ND	6.24	
OW-B	9/9/2020	L2037973-08	1.90	ND	ND	ND	ND	ND	ND	ND	4.61	ND	ND	2.05	ND	ND	ND	2.05	
RIZ-10	3/15/2018	L1809217-16	1.72	ND	ND	ND	ND	ND	36.20	ND	62.80	4.59	6.72	43.90	ND	ND	ND	91.41	

Table 10 - Monitoring Well Groundwater Analytical Data

				Compound Name																
				Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamide (NEtFOSAA)	N-Methyl Perfluorooctanesulfonamide (NMeFOSAA)	Perfluorobutanesulfonic Acid (PFBS)	Perfluorodecanoic Acid (PFDA)	Perfluorododecanoic Acid (PFDoA)	Perfluorooheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorohexanoic Acid (PFHxA)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorotridecanoic Acid (PFTrDA)	Perfluoroundecanoic Acid (PFUnA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	
				CAS No.																
				2991-50-6	2355-31-9	375-73-5	335-76-2	307-55-1	375-85-9	355-46-4	307-24-4	375-95-1	1763-23-1	335-67-1	376-06-7	72629-94-8	2058-94-8			
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard			20	20	20	20	20	20	20	20	20	20	20			
RIZ-12	3/16/2018	L1809217-18	1.78		ND	ND	ND	ND	ND	10.10	ND	17.40	ND	ND	ND	ND	ND	10.10		
RIZ-12_40'	9/21/2022	L2252884-24	1.85		ND	ND	ND	ND	ND	7.77	ND	9.49	ND	ND	ND	ND	ND	7.77		
RIZ-12_70'	9/21/2022	L2252884-25	1.98		ND	ND	ND	ND	ND	12.90	ND	16.90	ND	ND	ND	ND	ND	12.90		
RIZ-19	9/20/2022	L2252884-16	1.87		ND	ND	ND	ND	ND	3.10	ND	4.58	ND	ND	ND	ND	ND	3.10		
RIZ-21	9/20/2022	L2252884-17	1.84		ND	ND	ND	ND	ND	3.77	ND	4.02	ND	ND	ND	ND	ND	3.77		
RIZ-42	3/15/2018	L1809217-05	1.67		ND	ND	ND	ND	ND	12.30	ND	32.40	ND	ND	6.05	ND	ND	18.35		
RIZ-42	11/1/2018	L1845161-01	1.75		ND	ND	ND	ND	ND	15.90	ND	31.00	ND	ND	6.87	ND	ND	22.77		
RIZ-42	9/20/2022	L2252884-08	1.88		ND	ND	ND	ND	ND	19.40	ND	40.60	ND	2.73	14.40	ND	ND	36.53		
RIZ-5	3/15/2018	L1809217-14	1.72		ND	ND	ND	ND	ND	2.35	ND	2.86	ND	ND	ND	ND	ND	2.35		
RIZ-61	3/15/2018	L1809217-13	1.78		ND	ND	ND	ND	ND	38.60	2.04	87.80	ND	ND	10.40	ND	ND	51.04		
RIZ-61	9/9/2020	L2037973-07	1.87		ND	ND	ND	ND	ND	27.50	ND	73.10	ND	2.75	10.80	ND	ND	41.05		
RIZ-64	9/21/2022	L2252884-21	1.90		ND	ND	ND	ND	ND	29.50	ND	27.80	ND	3.20	14.00	ND	ND	46.70		
RIZ-X	9/21/2022	L2252884-30	1.87		ND	ND	ND	ND	ND	498.00	3.77	686.00	7.74	ND	93.50	ND	ND	603.01		
TMW-11	11/1/2018	L1845161-09	1.83		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
TMW-11	11/26/2018	L1848361-01	1.73		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
TMW-12	11/26/2018	L1848361-03	1.71		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.42	ND	ND	2.42		
TMW-13	11/26/2018	L1848361-02	1.71		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
TMW-2	3/15/2018	L1809217-15	1.67		ND	ND	ND	ND	ND	42.80	ND	74.20	5.64	8.19	52.80	ND	ND	109.43		
TMW-2	9/9/2020	L2037973-24	1.88		ND	ND	ND	ND	ND	21.30	ND	38.90	ND	ND	18.00	ND	ND	39.30		
TMW-4	3/14/2018	L1809217-04	1.72		ND	ND	ND	ND	ND	ND	ND	2.00	ND	ND	2.82	ND	ND	2.82		
TMW-4	9/20/2022	L2252884-09	1.83		ND	ND	ND	ND	ND	ND	ND	ND	ND	2.69	2.17	ND	ND	4.86		
TMW-5	3/15/2018	L1809217-07	1.72		ND	ND	ND	ND	ND	2.79	ND	7.96	ND	ND	2.31	ND	ND	5.10		
TMW-5	9/20/2022	L2252884-5	1.82		ND	ND	ND	ND	ND	24.20	ND	29.30	2.16	10.90	13.80	ND	ND	51.06		
TMW-5D	3/15/2018	L1809217-06	1.72		ND	ND	ND	ND	ND	12.40	ND	53.60	ND	ND	3.01	ND	ND	15.41		
TMW-5D	9/20/2022	L2252884-14	1.97		ND	ND	ND	ND	ND	7.20	ND	12.00	ND	ND	2.37	ND	ND	9.57		
TMW-6	3/15/2018	L1809217-08	1.78		ND	ND	ND	ND	ND	29.20	1.80	47.20	2.11	2.43	25.40	ND	ND	60.94		
TMW-6	9/9/2020	L2037973-05	1.81		ND	ND	ND	ND	ND	21.20	ND	36.60	2.07	1.95	17.60	ND	ND	42.82		
TMW-6	9/20/2022	L2252884-12	1.83		ND	ND	ND	ND	ND	15.40	2.51	18.40	ND	1.85	15.70	ND	ND	35.46		
TMW-6D	9/9/2020	L2037973-06	1.90		ND	ND	ND	ND	ND	118.00	ND	192.00	21.30	ND	77.30	ND	ND	216.60		
TMW-6D	9/20/2022	L2252884-13	1.93		ND	ND	ND	ND	ND	82.00	ND	102.00	5.58	ND	45.10	ND	ND	132.68		
TT-1	3/16/2018	L1809217-20	1.72		ND	ND	ND	27.90	ND	1900.00	1.93	3020.00	224.00	17.40	1790.00	ND	ND	3961.23		
TT-1	11/1/2018	L1845161-05	1.93		ND	ND	ND	19.90	ND	999.00	ND	1470.00	78.60	7.80	622.00	ND	ND	1727.30		
TT-1	8/8/2019	L1935832-02	1.86		ND	ND	ND	14.00	ND	392.00	ND	404.00	36.50	10.60	183.00	ND	ND	636.10		
TT-1-SHALLOW	9/13/2019	L1942369-06	1.92		2.78	ND	ND	5.70	ND	121.00	ND	125.00	9.21	4.71	59.60	ND	ND	200.22		
TT-1-MID	9/13/2019	L1942369-05	1.92		ND	ND	ND	5.02	ND	107.00	ND	117.00	8.72	4.48	54.80	ND	ND	180.02		
TT-1-DEEP	9/13/2019	L1942369-04	1.98		3.49	3.43	ND	6.13	ND	84.90	ND	101.00	8.24	5.45	45.50	ND	ND	150.22		
TT-1	9/10/2020	L2037973-16	1.92		ND	ND	ND	6.97	ND	94.70	ND	140.00	9.72	8.34	102.00	ND	ND	221.73		
TT-01	11/10/2021	L2162541-01	40.00		ND	ND	ND	ND	ND	412.00	ND	524.00	ND	ND	267.00	ND	ND	679.00		
TT-01	9/21/2022	L2252884-29	1.83		ND	ND	ND	3.74	ND	86.50	ND	152.00	16.00	10.50	101.00	ND	ND	217.74		
TT-2	3/16/2018	L1809217-19	1.78		ND	ND	ND	6.96	ND	1620.00	5.54	1200.00	309.00	4.11	1920.00	ND	ND	3865.61		
TT-2	8/8/2019	L1935832-04	1.85		ND	ND	ND	ND	ND	335.00	ND	354.00	79.70	2.17	293.00	ND	ND	709.87		
TT-2	9/10/2020	L2037973-17	1.81		ND	ND	ND	ND	ND	88.60	2.89	93.60	40.30	2.50	109.00	ND	ND	243.29		
TT-3	3/16/2018	L1809217-17	1.72		ND	ND	ND	3.14	ND	2090.00	3.76	9370.00	14.90	ND	342.00	ND	ND	2453.80		
TT-3	11/1/2018	L1845161-06	1.70		ND	ND	ND	ND	ND	178.00	ND	1370.00	13.40	ND	17.80	ND	ND	209.20		
TT-3	8/8/2019	L1935832-03	1.83		ND	ND	ND	ND	ND	603.00	ND	2060.00	21.00	ND	86.20	ND	ND	710.20		
TT-3	9/10/2020	L2037973-18	1.85		ND	ND	ND	ND	ND	231.00	ND	873.00	5.18	ND	57.70	ND	ND	293.88		
TT-03	11/16/2021	L2163723-07	4.00		ND	ND	ND	ND	ND	86.40	ND	533.00	ND	ND	11.40	ND	ND	97.80		
TT-03	9/22/2022	L2252884-32	1.91		ND	ND	ND	ND	ND	142.00	ND	878.00	2.34	ND	12.00	ND	ND	156.34		

Table 10 - Monitoring Well Groundwater Analytical Data

Compound Name				Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamide (NEtFOSAA)	N-Methyl Perfluorooctanesulfonamide (NMeFOSAA)	Perfluorobutanesulfonic Acid (PFBS)	Perfluorodecanoic Acid (PFDA)	Perfluorododecanoic Acid (PFDoA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorohexanoic Acid (PFHxA)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorotridecanoic Acid (PFTTrDA)	Perfluoroundecanoic Acid (PFUnA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)
CAS No.				2991-50-6	2355-31-9	375-73-5	335-76-2	307-55-1	375-85-9	355-46-4	307-24-4	375-95-1	1763-23-1	335-67-1	376-06-7	72629-94-8	2058-94-8		
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard															
TT-4	3/15/2018	L1809217-11	1.78	ND	ND	ND	2.37	ND	13.80	ND	18.10	3.64	3.20	11.80	ND	ND	3.88	34.81	
TT-4	9/10/2020	L2037973-12	1.91	ND	ND	ND	3.28	ND	30.40	ND	61.20	2.91	4.36	15.90	ND	ND	ND	56.85	
TT-04	9/21/2022	L2252884-20	1.84	ND	ND	ND	7.89	ND	16.60	ND	26.40	6.83	8.02	10.10	ND	ND	2.53	49.44	
TT-5	3/15/2018	L1809217-12	1.72	ND	ND	ND	5.83	ND	483.00	2.14	690.00	9.52	ND	98.70	ND	ND	ND	599.19	
TT-5	8/8/2019	L1935832-01	1.72	ND	ND	ND	10.80	ND	172.00	ND	262.00	19.60	ND	103.00	ND	ND	ND	305.40	
TT-5	9/10/2020	L2037973-11	1.82	ND	ND	ND	13.30	ND	580.00	ND	3410.00	8.46	ND	21.50	ND	ND	ND	623.26	
TT-05	11/15/2021	L2163723-03	10.00	ND	ND	ND	24.40	ND	257.00	ND	380.00	11.50	ND	74.50	ND	ND	ND	367.40	
TT-05	9/20/2022	L2252884-18	1.94	ND	ND	ND	21.20	ND	394.00	ND	813.00	13.80	ND	28.50	ND	ND	ND	457.50	
TT-6	3/13/2019	L1910438-03	1.75	ND	ND	ND	6.91	ND	7.10	ND	4.54	3.95	2.87	24.90	ND	ND	1.80	45.73	
TT-6	9/9/2020	L2037973-09	1.92	ND	ND	2.85	2.13	ND	7.06	ND	4.32	3.46	ND	11.40	ND	ND	2.95	24.05	
TT-06	9/20/2022	L2252884-19	1.85	ND	ND	3.97	5.48	2.43	7.03	ND	4.02	2.06	ND	13.40	ND	ND	2.78	27.97	
TT-7	3/13/2019	L1910438-04	1.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.89	ND	ND	ND	2.89	
TT-7	9/9/2020	L2037973-10	1.88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TT-8	9/13/2019	L1942369-07	1.79	ND	ND	ND	ND	ND	3.59	ND	16.60	ND	ND	ND	ND	ND	ND	3.59	
TT-08	9/21/2022	L2252884-31	1.86	ND	ND	ND	ND	ND	2.57	ND	5.56	ND	2.37	2.42	ND	ND	ND	7.36	
TT-9	9/13/2019	L1942369-03	1.85	ND	ND	ND	ND	ND	39.10	3.84	107.00	ND	5.80	33.20	ND	ND	ND	81.94	
TT-9	9/21/2022	L2252884-27	10.00	ND	ND	ND	ND	ND	29.40	ND	116.00	ND	ND	18.80	ND	ND	ND	48.20	
TT-10	9/13/2019	L1942369-02	1.92	ND	ND	ND	ND	ND	84.60	208.00	42.10	ND	ND	43.20	ND	ND	ND	335.80	
TT-10	9/10/2020	L2037973-15	1.89	ND	ND	ND	ND	ND	70.20	117.00	71.50	ND	ND	25.00	ND	ND	ND	212.20	
TT-10	9/21/2022	L2252884-26	1.86	ND	ND	ND	ND	ND	55.00	58.40	107.00	ND	ND	24.80	ND	ND	ND	138.20	
TT-11	6/15/2022	L2232847-02	1.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TT-12	6/14/2022	L2232847-01	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TT-13	6/15/2022	L2232847-03	1.81	ND	ND	ND	2.21	ND	2190.00	ND	3240.00	25.20	8.91	832.00	ND	ND	ND	3058.32	
TT-13-33'	7/21/2022	L2239305-01	50.00	ND	ND	ND	ND	ND	2230.00	ND	4010.00	ND	ND	1100.00	ND	ND	ND	3330.00	
TT-13-37'	7/21/2022	L2239305-02	500.00	ND	ND	ND	ND	ND	2430.00	ND	4340.00	ND	ND	1350.00	ND	ND	ND	3780.00	
TT-13	9/21/2022	L2252884-28	1.91	ND	ND	ND	ND	ND	1570.00	ND	2660.00	10.50	3.04	550.00	ND	ND	ND	2133.54	
TT-14	6/15/2022	L2232847-04	1.82	ND	ND	ND	ND	ND	198.00	5.24	241.00	12.50	11.00	48.90	ND	ND	ND	275.64	
TT-14-34'	7/21/2022	L2239305-03	20.00	ND	ND	ND	ND	ND	295.00	ND	416.00	ND	ND	37.50	ND	ND	ND	332.50	
TT-14-40'	7/21/2022	L2239305-04	20.00	ND	ND	ND	ND	ND	212.00	ND	300.00	ND	ND	29.60	ND	ND	ND	241.60	
TT-14	9/21/2022	L2252884-23	1.86	ND	ND	ND	ND	ND	24.30	5.01	35.40	2.32	7.22	7.96	ND	ND	ND	46.81	
TT-15D	6/13/2022	L2232856-02	1.80	ND	ND	ND	ND	ND	ND	ND	2.90	ND	ND	ND	ND	ND	ND	ND	
TT-15S	6/13/2022	L2232856-01	1.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TT-16D	6/13/2022	L2232856-04	1.74	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TT-16S	6/13/2022	L2232856-03	1.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
TT-17D	6/14/2022	L2232856-06	1.87	ND	ND	ND	ND	ND	ND	3.29	ND	ND	ND	ND	ND	ND	ND	3.29	
TT-17S	6/14/2022	L2232856-05	1.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

Units are in ng/L (parts per trillion)

ND indicates compound not detected above laboratory analytical method detection limit.

NA indicates that the sample was not analyzed for that compound.

Bold indicates compound detected above MCP Method 1 GW-1 standard

- PFAS6 > 20 ppt and < 70 ppt
- PFAS6 > 70 ppt and < 110 ppt
- PFAS6 > 110 ppt

Table 10 - Monitoring Well Groundwater Analytical Data

Compound Name				Isotope Dilution Compounds	Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	Perfluoropentanesulfonic Acid (PFPeS)	Perfluoroheptanesulfonic Acid (PFHpS)	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	Perfluorononanesulfonic Acid (PFNS)	Perfluorodecanesulfonic Acid (PFDS)	Perfluorooctanesulfonamide (FOSA)	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)
CAS No.					375-22-4	2706-90-3	757124-72-4	2706-91-4	375-92-8	39108-34-4	68259-12-1	335-77-3	754-91-6	27619-97-2
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit											
RIZ-12	3/16/2018	L1809217-18	1.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIZ-12_40'	9/21/2022	L2252884-24	1.85	4.82	14.80	ND	ND	ND	ND	ND	ND	ND	ND	31.60
RIZ-12_70'	9/21/2022	L2252884-25	1.98	8.48	27.50	ND	ND	ND	ND	ND	ND	ND	ND	ND
RIZ-19	9/20/2022	L2252884-16	1.87	2.84	8.21	ND	ND	ND	ND	ND	ND	ND	ND	5.48
RIZ-21	9/20/2022	L2252884-17	1.84	2.64	8.39	ND	ND	ND	ND	ND	ND	ND	ND	8.20
RIZ-42	3/15/2018	L1809217-05	1.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIZ-42	11/1/2018	L1845161-01	1.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIZ-42	9/20/2022	L2252884-08	1.88	18.80	71.50	ND	ND	ND	ND	ND	ND	ND	ND	79.60
RIZ-5	3/15/2018	L1809217-14	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIZ-61	3/15/2018	L1809217-13	1.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RIZ-61	9/9/2020	L2037973-07	1.87	28.50	108.00	ND	ND	ND	ND	ND	ND	ND	ND	233.00
RIZ-64	9/21/2022	L2252884-21	1.90	14.80	47.30	ND	ND	ND	ND	ND	ND	ND	ND	1070.00
RIZ-X	9/21/2022	L2252884-30	1.87	485.00	1380.00	ND	ND	ND	1.92	ND	ND	ND	ND	3860.00
TMW-11	11/1/2018	L1845161-09	1.83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-11	11/26/2018	L1848361-01	1.73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-12	11/26/2018	L1848361-03	1.71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-13	11/26/2018	L1848361-02	1.71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-2	3/15/2018	L1809217-15	1.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-2	9/9/2020	L2037973-24	1.88	19.40	72.70	ND	ND	ND	ND	ND	ND	ND	ND	395.00
TMW-4	3/14/2018	L1809217-04	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-4	9/20/2022	L2252884-09	1.83	2.82	2.25	ND	ND	ND	ND	ND	ND	ND	ND	8.98
TMW-5	3/15/2018	L1809217-07	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-5	9/20/2022	L2252884-5	1.82	14.10	43.90	ND	ND	ND	30.80	ND	ND	ND	ND	35.40
TMW-5D	3/15/2018	L1809217-06	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-5D	9/20/2022	L2252884-14	1.97	6.93	20.00	ND	ND	ND	ND	ND	ND	ND	ND	21.10
TMW-6	3/15/2018	L1809217-08	1.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-6	9/9/2020	L2037973-05	1.81	28.90	75.50	ND	ND	ND	ND	ND	ND	ND	ND	34.20
TMW-6	9/20/2022	L2252884-12	1.83	14.10	32.20	ND	ND	ND	ND	ND	ND	ND	ND	28.70
TMW-6D	9/9/2020	L2037973-06	1.90	141.00	367.00	ND	ND	ND	ND	ND	ND	ND	ND	704.00
TMW-6D	9/20/2022	L2252884-13	1.93	77.90	176.00	ND	ND	ND	ND	ND	ND	ND	ND	274.00
TT-1	3/16/2018	L1809217-20	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-1	11/1/2018	L1845161-05	1.93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-1	8/8/2019	L1935832-02	1.86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-1-SHALLOW	9/13/2019	L1942369-06	1.92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-1-MID	9/13/2019	L1942369-05	1.92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-1-DEEP	9/13/2019	L1942369-04	1.98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-1	9/10/2020	L2037973-16	1.92	113.00	266.00	ND	ND	ND	245.00	ND	ND	ND	ND	3640.00
TT-01	11/10/2021	L2162541-01	40.00	342.00	1030.00	ND	ND	ND	87.40	ND	ND	ND	ND	5130.00
TT-01	9/21/2022	L2252884-29	1.83	140.00	353.00	ND	ND	ND	104.00	ND	ND	ND	ND	2060.00
TT-2	3/16/2018	L1809217-19	1.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-2	8/8/2019	L1935832-04	1.85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-2	9/10/2020	L2037973-17	1.81	74.70	152.00	ND	ND	ND	10.80	ND	ND	ND	ND	242.00
TT-3	3/16/2018	L1809217-17	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-3	11/1/2018	L1845161-06	1.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-3	8/8/2019	L1935832-03	1.83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-3	9/10/2020	L2037973-18	1.85	312.00	1550.00	14.10	ND	ND	48.70	ND	ND	ND	ND	7570.00
TT-03	11/16/2021	L2163723-07	4.00	222.00	1130.00	6.89	ND	ND	51.40	ND	ND	ND	ND	642.00
TT-03	9/22/2022	L2252884-32	1.91	381.00	1850.00	12.50	ND	ND	76.80	ND	ND	ND	ND	2090.00

Table 10 - Monitoring Well Groundwater Analytical Data

Compound Name				Isotope Dilution Compounds	Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	Perfluoropentanesulfonic Acid (PFPeS)	Perfluoroheptanesulfonic Acid (PFHpS)	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	Perfluorononanesulfonic Acid (PFNS)	Perfluorodecanesulfonic Acid (PFDS)	Perfluorooctanesulfonamide (FOSA)	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)
CAS No.					375-22-4	2706-90-3	757124-72-4	2706-91-4	375-92-8	39108-34-4	68259-12-1	335-77-3	754-91-6	27619-97-2
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit											
TT-4	3/15/2018	L1809217-11	1.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-4	9/10/2020	L2037973-12	1.91	26.00	99.70	ND	ND	ND	2.63	ND	ND	ND	ND	14.40
TT-04	9/21/2022	L2252884-20	1.84	21.80	44.20	ND	ND	ND	ND	ND	ND	ND	ND	10.70
TT-5	3/15/2018	L1809217-12	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-5	8/8/2019	L1935832-01	1.72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-5	9/10/2020	L2037973-11	1.82	1200.00	4530.00	24.60	ND	ND	271.00	ND	ND	ND	ND	474.00
TT-05	11/15/2021	L2163723-03	10.00	229.00	864.00	ND	ND	ND	519.00	ND	ND	ND	ND	1560.00
TT-05	9/20/2022	L2252884-18	1.94	415.00	1080.00	ND	ND	ND	421.00	ND	ND	ND	ND	2000.00
TT-6	3/13/2019	L1910438-03	1.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-6	9/9/2020	L2037973-09	1.92	3.05	4.04	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-06	9/20/2022	L2252884-19	1.85	3.22	3.63	ND	ND	ND	ND	ND	ND	ND	ND	5.27
TT-7	3/13/2019	L1910438-04	1.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-7	9/9/2020	L2037973-10	1.88	2.65	4.08	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-8	9/13/2019	L1942369-07	1.79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-08	9/21/2022	L2252884-31	1.86	4.29	7.63	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-9	9/13/2019	L1942369-03	1.85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-9	9/21/2022	L2252884-27	10.00	67.10	293.00	ND	ND	ND	ND	ND	ND	ND	ND	35.20
TT-10	9/13/2019	L1942369-02	1.92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TT-10	9/10/2020	L2037973-15	1.89	32.80	122.00	ND	2.80	ND	ND	ND	ND	ND	ND	218.00
TT-10	9/21/2022	L2252884-26	1.86	38.90	108.00	ND	1.99	ND	ND	ND	ND	ND	ND	278.00
TT-11	6/15/2022	L2232847-02	1.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.69
TT-12	6/14/2022	L2232847-01	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-13	6/15/2022	L2232847-03	1.81	1530.00	6800.00	53.70	ND	ND	135.00	ND	ND	ND	ND	6110.00
TT-13-33'	7/21/2022	L2239305-01	50.00	1920.00	8680.00	68.00	ND	ND	108.00	ND	ND	ND	ND	121000.00
TT-13-37'	7/21/2022	L2239305-02	500.00	2080.00	9560.00	ND	ND	ND	ND	ND	ND	ND	ND	133000.00
TT-13	9/21/2022	L2252884-28	1.91	1490.00	6740.00	42.20	ND	ND	60.80	ND	ND	ND	ND	101000.00
TT-14	6/15/2022	L2232847-04	1.82	159.00	530.00	ND	ND	ND	69.80	ND	ND	ND	ND	3460.00
TT-14-34'	7/21/2022	L2239305-03	20.00	248.00	860.00	ND	ND	ND	53.80	ND	ND	ND	ND	3640.00
TT-14-40'	7/21/2022	L2239305-04	20.00	180.00	620.00	ND	ND	ND	68.00	ND	ND	ND	ND	2830.00
TT-14	9/21/2022	L2252884-23	1.86	20.20	62.80	ND	ND	ND	34.60	ND	ND	ND	ND	338.00
TT-15D	6/13/2022	L2232856-02	1.80	ND	3.29	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-15S	6/13/2022	L2232856-01	1.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-16D	6/13/2022	L2232856-04	1.74	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-16S	6/13/2022	L2232856-03	1.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TT-17D	6/14/2022	L2232856-06	1.87	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.90
TT-17S	6/14/2022	L2232856-05	1.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Units are in ng/L (parts per trillion)

ND indicates compound not detected above laboratory analytical method detection limit.

NA indicates that the sample was not analyzed for that compound.

Bold indicates compound detected above MCP Method 1 GW-1 standard

- PFAS6 > 20 ppt and < 70 ppt
- PFAS6 > 70 ppt and < 110 ppt
- PFAS6 > 110 ppt

Table 11 - Discrete Depth Groundwater Analytical Data

Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	Compound Name	CAS No.	MCP Method 1 GW-1 Standard	20	20	20	20	20	20	20	20	20	20	20	20	
				Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)														N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)
DD1-100	11/11/2021	L2162541-17	1.88	ND															
DD1-85	11/11/2021	L2162541-18	1.88	ND															
DD1-70	11/11/2021	L2162541-19	1.90	ND															
DD1-55	11/11/2021	L2162541-20	1.87	ND															
DD1-40	11/11/2021	L2162541-21	1.90	ND					2.77		47.60		262.00		4.67				55.04
DD2-100	11/16/2021	L2163723-08	1.87	ND															
DD2-85	11/16/2021	L2163723-09	10.00	ND															
DD2-70	11/16/2021	L2163723-10	1.91	ND															
DD2-55	11/16/2021	L2163723-11	1.95	ND							7.05		8.62	2.94		5.46			15.45
DD2-40	11/16/2021	L2163723-12	1.91	ND							18.90		14.60	9.07		24.00			51.97
DD3-100	11/10/2021	L2162541-02	1.85	ND							62.20		64.50			16.40			78.60
DD3-85	11/10/2021	L2162541-03	1.81	ND							13.40		17.20			5.14			18.54
DD3-70	11/10/2021	L2162541-04	1.88	ND							8.72		15.40			4.63			13.35
DD3-55	11/10/2021	L2162541-05	1.84	ND							10.30		17.50			5.60			15.90
DD3-40	11/10/2021	L2162541-06	1.89	ND							15.40		40.80			4.98			20.38
DD3-34	11/10/2021	L2162541-07	5.00	ND							32.60		53.90	10.20		39.20			82.00
DD4-100	11/10/2021	L2162541-08	1.84	ND							5.18		11.30			3.03			8.21
DD4-85	11/10/2021	L2162541-09	1.84	ND							9.99		18.30			2.88			12.87
DD4-70	11/10/2021	L2162541-10	1.82	ND							14.40		23.00			5.49			19.89
DD4-55	11/10/2021	L2162541-11	1.92	ND							14.20		23.80		3.98	6.58			24.76
DD4-40	11/10/2021	L2162541-12	71.40	ND							292.00	129.00	354.00		229.00	259.00			909.00
DD5-100	11/10/2021	L2162541-13	1.85	ND															
DD5-85	11/10/2021	L2162541-14	1.85	ND															
DD5-70	11/10/2021	L2162541-15	1.84	ND															
DD5-55	11/10/2021	L2162541-16	1.84	ND															
DD6-100	11/11/2021	L2162526-01	10.00	ND							10.00	140.00	47.60		601.00	11.80			762.80
DD6-85	11/11/2021	L2162526-02	1.86	ND							10.60	160.00	53.00		876.00	12.10			1058.70
DD6-70	11/11/2021	L2162526-03	1.86	ND							8.37		31.60	305.00	114.00		1130.00	31.60	1498.20
DD6-55	11/11/2021	L2162526-04	1.93	ND									22.80	15.30	46.10		71.20	14.30	123.60
DD6-40	11/11/2021	L2162526-05	1.98	ND							8.76	12.60	22.60		45.10	5.13			71.59
DD7-100	11/11/2021	L2162531-01	2.08	ND							17.00		14.40		ND	10.50	8.57		36.07
DD7-85	11/11/2021	L2162531-02	1.94	ND															
DD7-70	11/11/2021	L2162531-03	1.97	ND															
DD7-55	11/11/2021	L2162531-04	1.99	ND															
DD7-40	11/11/2021	L2162531-05	2.04	ND							3.74		3.55		2.41	2.79			8.94
DD8-100	11/9/2021	L2162537-01	10.00	ND															
DD8-85	11/9/2021	L2162537-02	1.85	ND															
DD8-70	11/9/2021	L2162537-03	1.86	ND															
DD8-55	11/9/2021	L2162537-03	1.85	ND							3.05		5.43						3.05
DD8-40	11/9/2021	L2162537-05	1.84	ND									23.30		28.80		15.00		38.30
DD9-100	11/11/2021	L2162539-01	1.85	ND															
DD9-85	11/11/2021	L2162539-02	1.85	ND															
DD9-70	11/11/2021	L2162539-03	1.85	ND															
DD9-55	11/11/2021	L2162539-04	1.89	ND															
DD9-40	11/11/2021	L2162539-05	1.87	ND									4.44						4.44

Table 11 - Discrete Depth Groundwater Analytical Data

				Compound Name	Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	Perfluorobutanesulfonic Acid (PFBS)	Perfluorodecanoic Acid (PFDA)	Perfluorododecanoic Acid (PFDoA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorohexanoic Acid (PFHxA)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorotridecanoic Acid (PFTTrDA)	Perfluoroundecanoic Acid (PFUnA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	
				CAS No.		2991-50-6	2355-31-9	375-73-5	335-76-2	307-55-1	375-85-9	355-46-4	307-24-4	375-95-1	1763-23-1	335-67-1	376-06-7	72629-94-8	2058-94-8		
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard					20		20	20		20	20	20					20
DD10-100	11/9/2021	L2162553-01	1.85		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DD10-85	11/9/2021	L2162553-02	1.84		ND	ND	ND	ND	ND	ND	7.51	ND	7.26	ND	ND	ND	ND	ND	ND	ND	7.51
DD10-70	11/9/2021	L2162553-03	1.86		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DD10-55	11/9/2021	L2162553-04	1.88		ND	ND	6.37	ND	ND	ND	ND	86.70	8.32	ND	557.00	4.43	ND	ND	ND	ND	648.13
DD10-40	11/9/2021	L2162553-05	1.86		ND	ND	ND	ND	ND	ND	ND	7.21	ND	ND	39.00	ND	ND	ND	ND	ND	46.21
D11-100	11/11/2021	L2162521-01	1.86		ND	ND	ND	2.14	ND	23.10	ND	48.60	4.15	4.63	10.40	ND	ND	ND	ND	ND	44.42
D11-85	11/11/2021	L2162521-02	1.84		ND	ND	ND	1.99	ND	18.80	ND	39.80	3.86	3.86	8.78	ND	ND	ND	ND	ND	37.29
D11-70	11/11/2021	L2162521-03	1.88		ND	ND	ND	ND	ND	15.80	ND	33.80	2.82	3.00	7.38	ND	ND	ND	ND	ND	29.00
D11-55	11/11/2021	L2162521-04	1.92		ND	ND	ND	ND	ND	13.20	ND	28.00	2.54	2.57	6.81	ND	ND	ND	ND	ND	25.12
D11-40	11/11/2021	L2162521-05	1.91		ND	ND	ND	ND	ND	8.54	ND	17.40	2.91	3.18	4.66	ND	ND	ND	ND	ND	19.29
DD12-100	11/11/2021	L2162523-01	1.84		ND	ND	ND	ND	ND	2.84	ND	3.52	ND	1.94	2.33	ND	ND	ND	ND	ND	7.11
DD12-85	11/11/2021	L2162523-02	16.70		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DD12-70	11/11/2021	L2162523-03	10.00		ND	ND	ND	ND	ND	49.90	ND	45.20	ND	ND	48.10	ND	ND	ND	ND	ND	98.00
DD12-55	11/11/2021	L2162523-04	1.85		ND	ND	ND	ND	ND	56.00	ND	151.00	2.61	ND	17.80	ND	ND	ND	ND	ND	76.41

Notes:

Units are in ng/L (parts per trillion)

ND indicates compound not detected above laboratory analytical method detection limit.

NA indicates that the sample was not analyzed for that compound.

Bold indicates compound detected above MCP Method 1 GW-1 standard

- PFAS6 > 20 ppt and < 70 ppt
- PFAS6 > 70 ppt and < 110 ppt
- PFAS6 > 110 ppt

Table 11 - Discrete Depth Groundwater Analytical Data

Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	Compound Name	CAS No.	Isotope Dilution Compounds	Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	Perfluoropentanesulfonic Acid (PFPeS)	Perfluoroheptanesulfonic Acid (PFHpS)	1H,1H,2H,2H-Perfluorodecane sulfonic Acid (8:2FTS)	Perfluorononanesulfonic Acid (PFNS)	Perfluorodecane sulfonic Acid (PFDS)	Perfluorooctanesulfonamide (FOSA)	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)
DD10-100	11/9/2021	L2162553-01	1.85	ND	375-22-4		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DD10-85	11/9/2021	L2162553-02	1.84	3.47	375-22-4		3.47	9.78	ND	ND	ND	ND	ND	ND	ND	ND
DD10-70	11/9/2021	L2162553-03	1.86	ND	375-22-4		ND	1.92	ND	ND	ND	ND	ND	ND	ND	ND
DD10-55	11/9/2021	L2162553-04	1.88	1.93	375-22-4		1.93	3.13	ND	6.23	2.69	ND	ND	ND	ND	ND
DD10-40	11/9/2021	L2162553-05	1.86	ND	375-22-4		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
D11-100	11/11/2021	L2162521-01	1.86	27.10	2706-90-3		27.10	74.30	ND	ND	ND	ND	ND	ND	ND	21.60
D11-85	11/11/2021	L2162521-02	1.84	24.00	2706-90-3		24.00	64.50	ND	ND	ND	ND	ND	ND	ND	22.20
D11-70	11/11/2021	L2162521-03	1.88	21.20	2706-90-3		21.20	59.20	ND	ND	ND	ND	ND	ND	ND	18.10
D11-55	11/11/2021	L2162521-04	1.92	15.80	2706-90-3		15.80	44.90	ND	ND	ND	ND	ND	ND	ND	13.10
D11-40	11/11/2021	L2162521-05	1.91	9.01	2706-90-3		9.01	24.70	ND	ND	ND	ND	ND	ND	ND	6.90
DD12-100	11/11/2021	L2162523-01	1.84	ND	2706-90-3		ND	6.39	ND	ND	ND	ND	ND	ND	ND	5.40
DD12-85	11/11/2021	L2162523-02	16.70	ND	2706-90-3		ND	25.10	ND	ND	ND	ND	ND	ND	ND	21.80
DD12-70	11/11/2021	L2162523-03	10.00	25.00	2706-90-3		25.00	82.10	ND	ND	ND	ND	ND	ND	ND	59.00
DD12-55	11/11/2021	L2162523-04	1.85	87.50	2706-90-3		87.50	335.00	ND	ND	ND	ND	ND	ND	ND	409.00

Notes:

Units are in ng/L (parts per trillion)

ND indicates compound not detected above laboratory analytical method detection limit.

NA indicates that the sample was not analyzed for that compound

Bold indicates compound detected above MCP Method 1 GW-1

- PFAS6 > 20 ppt and < 70 ppt
- PFAS6 > 70 ppt and < 110 ppt
- PFAS6 > 110 ppt

Table 12 - Private Well Analytical Data Summary

Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method MCP Method 1 GW-1 Standard	Detection Limit	Compound Name														PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)
					Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEFOSAA)	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	Perfluorobutanesulfonic Acid (PFBS)	Perfluorodecanoic Acid (PFDA)	Perfluorododecanoic Acid (PFDoA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorohexanoic Acid (PFHxA)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorotridecanoic Acid (PFTrDA)	
CAS No.															CAS No.				
Property A	11/2/2018	L1845163-01	1.72		ND	ND	ND	ND	ND	2.87	ND	12.40	ND	ND	ND	ND	ND	2.87	
Property AA	12/7/2018	L1850505-01	1.74		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AA-2-INF	6/5/2019	L1923934-02	1.75		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AA-INF	10/22/2020	L2046433-02	1.96		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AB	12/7/2018	L1850495-01	1.88		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AB	3/17/2020	L2012871-01	1.76		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AB	3/15/2022	L2214479-01	2.00		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AC	12/7/2018	L1850493-01	1.79		ND	ND	8.39	ND	ND	30.70	ND	52.30	2.02	ND	12.10	ND	ND	44.82	
Property AC-INF	3/14/2019	L1910264-01	2.02		ND	ND	6.18	ND	ND	28.00	ND	38.70	ND	ND	8.53	ND	ND	36.53	
Property AC-INF	6/3/2020	L2023497-02	1.90		ND	ND	4.77	ND	ND	19.20	ND	34.30	ND	2.50	15.40	ND	ND	37.10	
Property AC-INF	6/11/2021	L2131878-01	2.03		ND	ND	3.15	ND	ND	57.50	ND	64.40	ND	ND	37.90	ND	ND	95.40	
Property AC-INF	6/3/2022	L2230832-02	1.87		ND	ND	ND	ND	ND	86.80	ND	96.20	ND	ND	68.70	ND	ND	155.50	
Property AD	12/7/2018	L1850497-01	1.81		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AD-2	2/14/2019	L1906071-01	1.70		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AD-3	7/11/2019	L1930727-01	1.74		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AD-4	3/17/2020	L2012869-01	1.77		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AD	6/10/2021	L2131868-01	1.76		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AD	6/1/2022	L2230786-01	2.00		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AE	12/7/2018	L1850490-01	1.77		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AF	12/7/2018	L1850488-01	1.69		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AG	12/13/2018	L1851540-01	1.88		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AG-2	3/18/2020	L2012874-01	1.82		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AG	6/11/2021	L2131877-01	1.86		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AG	6/3/2022	L2230844-01	2.00		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AH	12/13/2018	L1851519-01	1.77		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AH-2	7/16/2020	L2030509-01	1.77		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AH	6/8/2021	L2131808-01	1.84		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AH	5/31/2022	L2230762-01	2.00		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AI	6/8/2021	L2131854-01	1.84		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AJ	12/7/2018	L1850486-01	1.82		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AJ-2	3/1/2019	L1910257-01	2.25		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AJ	10/22/2020	L2046434-01	1.77		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AJ	6/11/2021	L2131866-01	1.86		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AJ	6/7/2022	L2230754-01	2.00		ND	ND	ND	ND	ND	4.93	ND	3.73	ND	ND	ND	ND	ND	4.93	
Property AK	12/7/2018	L1850485-01	1.76		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Property AL	12/7/2018	L1850510-01	1.80		ND	ND	ND	ND	ND	40.20	ND	83.70	3.56	2.96	19.80	ND	ND	66.52	
Property AL-INF	4/30/2019	L1918188-02	1.78		ND	ND	ND	ND	ND	66.10	ND	129.00	4.91	1.85	33.40	ND	ND	106.26	
Property AL-INF	3/17/2020	L2012862-02	1.78		ND	ND	ND	ND	ND	40.40	ND	81.40	5.93	1.96	27.60	ND	ND	75.89	
Property AL-INF	9/9/2020	L2037986-02	1.76		ND	ND	ND	ND	ND	44.40	5.53	83.80	5.42	3.75	20.10	ND	ND	79.20	
Property AL-INF	6/29/2021	L2135534-02	1.81		ND	ND	ND	ND	ND	47.70	3.72	65.80	2.31	6.32	20.40	ND	ND	80.45	
Property AL-INF	10/19/2021	L2157512-02	2.00		ND	ND	ND	ND	ND	47.30	5.64	58.30	2.95	9.67	19.80	ND	ND	85.36	
Property AL-INF	6/8/2022	L2230741-03	1.83		ND	ND	ND	ND	ND	22.40	3.89	29.60	ND	5.90	12.20	ND	ND	44.39	
Property AL-INF	9/23/2022	L2252849-01	1.73		ND	ND	ND	ND	ND	38.50	8.23	56.20	1.85	8.61	19.20	ND	ND	76.39	
Property AM	12/7/2018	L1850492-01	1.77		4.04	3.95	ND	ND	2.29	ND	ND	ND	ND	ND	ND	1.96	2.05	0.00	
Property AM	7/21/2022	L2239303-01	2.00		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	
Amerigas Well	12/13/2018	L1851578-02	1.96		ND	ND	ND	ND	ND	ND	ND	4.93	ND	ND	ND	ND	ND	0.00	

Table 12 - Private Well Analytical Data Summary

Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	Compound Name	CAS No.	MCP Method 1 GW-1 Standard	20	20	20	20	20	20	20	1.80	ND	ND	0.00
				Perfluorinated Alkyl Acids by EPA 537	2991-50-6												
Property BD	12/13/2018	L1851523-01	1.74	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BD	3/18/2020	L2012873-01	1.94	ND	ND	ND	ND	ND	ND	ND	ND	1.98	4.63	ND	ND	ND	6.61
Property BD	12/15/2021	L2169386-01	2.00	ND	ND	ND	ND	ND	ND	ND	ND	2.64	7.50	ND	ND	ND	10.14
Property BD	6/1/2022	L2230777-01	2.00	ND	ND	2.45	ND	ND	ND	ND	ND	2.83	5.01	ND	ND	ND	7.84
Property BE	12/13/2018	L1851515-01	1.71	ND	ND	1.99	ND	ND	18.80	ND	27.40	ND	9.19	ND	ND	ND	27.99
Property BE-INF	6/17/2019	L1927304-02	1.82	ND	ND	ND	ND	7.12	ND	11.00	ND	ND	3.52	ND	ND	ND	10.64
Property BE-INF	3/17/2020	L2012867-02	1.73	ND	ND	ND	ND	2.04	13.80	ND	13.30	ND	4.33	ND	2.56	1.80	18.13
Property BE-INF	6/8/2021	L2131852-01	1.84	ND	ND	ND	ND	7.82	ND	9.67	ND	ND	3.94	ND	ND	ND	11.76
Property BE-INF	6/13/2022	L2232866-02	1.89	ND	ND	ND	ND	7.46	ND	6.27	ND	ND	2.31	ND	ND	ND	9.77
Property BF	12/13/2018	L1851521-01	1.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BF	3/16/2020	L2012852-01	1.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BG	12/13/2018	L1851514-01	1.92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BG	10/22/2020	L2046438-01	1.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BG	6/9/2021	L2131827-01	2.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BG	6/1/2022	L2230779-01	2.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BH	12/13/2018	L1851535-01	1.76	ND	ND	ND	ND	6.64	ND	12.40	ND	ND	7.57	ND	ND	ND	14.21
Property BH-2	9/12/2019	L1942363-01	1.80	ND	ND	ND	ND	2.15	ND	3.58	ND	ND	2.93	ND	ND	ND	5.08
Property BH	6/8/2021	L2131812-01	1.90	ND	ND	ND	ND	2.57	ND	6.20	ND	ND	2.98	ND	ND	ND	5.55
Property BH	6/3/2022	L2230842-01	2.00	ND	ND	ND	ND	4.93	ND	7.45	ND	ND	4.21	ND	ND	ND	9.14
Property BI	12/13/2018	L1851512-01	1.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.95	ND	ND	ND	1.95
Property BI-2	6/2/2020	L2023481-01	1.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BI	6/10/2021	L2131897-01	1.84	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BI	6/3/2022	L2230855-01	2.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BJ	12/13/2018	L1851522-01	1.74	ND	ND	ND	ND	148.00	ND	213.00	9.37	ND	84.20	ND	ND	ND	241.57
Property BJ-1-INF	3/14/2019	L1910262-03	1.82	ND	ND	ND	ND	130.00	ND	142.00	17.20	ND	82.70	ND	ND	ND	229.90
Property BJ-1-INF	4/30/2019	L1918192-03	1.98	ND	ND	ND	ND	71.80	ND	91.40	19.50	ND	49.20	ND	ND	ND	140.50
Property BJ-1-INF	9/9/2019	L1942012-01	1.85	ND	ND	ND	ND	103.00	ND	118.00	9.98	ND	38.10	ND	ND	ND	151.08
Property BJ-1-INF	3/18/2020	L2012878-03	2.25	ND	ND	ND	ND	106.00	ND	114.00	10.00	ND	67.20	ND	ND	ND	183.20
Property BJ-1-INF	9/9/2020	L2037979-03	2.06	ND	ND	ND	ND	96.70	ND	94.10	9.56	ND	31.70	ND	ND	ND	137.96
Property BJ-1-INF	6/10/2021	L2131887-01	1.83	ND	ND	ND	ND	119.00	ND	91.50	17.50	ND	84.80	ND	ND	ND	221.30
Property BJ-1-INF	9/9/2021	L2148700-03	2.00	ND	ND	ND	ND	168.00	ND	114.00	21.40	ND	65.90	ND	ND	ND	255.30
Property BJ-1-INF	6/16/2022	L2232833-03	1.83	ND	ND	ND	ND	129.00	ND	98.40	22.80	ND	64.30	ND	ND	ND	216.10
Property BJ-INF	9/19/2022	L2252877-01	1.86	ND	ND	ND	ND	56.80	ND	49.40	9.29	ND	44.20	ND	ND	ND	110.29
Property BK	12/13/2018	L1851534-01	1.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BL	12/13/2018	L1851511-01	1.72	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BM	12/13/2018	L1851530-01	1.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property BN	12/13/2018	L1851533-01	1.72	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.30	ND	ND	ND	3.30
Property BN	9/9/2020	L2037992-01	1.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.97	ND	ND	ND	6.97
Property BN	6/8/2021	L2131849-01	1.83	ND	ND	ND	ND	2.76	ND	ND	ND	ND	11.60	ND	ND	ND	14.36
Property BN	6/2/2022	L2230811-01	2.00	ND	ND	2.32	ND	ND	ND	2.82	ND	ND	6.04	ND	ND	ND	6.04
Property BO	12/13/2018	L1851510-01	2.00	ND	ND	ND	ND	171.00	ND	119.00	ND	ND	121.00	ND	ND	ND	292.00
Property BO-1-INF	4/29/2019	L1918180-01	1.87	ND	ND	ND	ND	164.00	ND	140.00	ND	ND	121.00	ND	ND	ND	285.00
Property BO-2-INF	4/29/2019	L1918180-04	2.03	ND	ND	ND	ND	162.00	ND	103.00	ND	ND	103.00	ND	ND	ND	265.00
Property BO-INF	9/10/2019	L1942016-01	2.38	ND	ND	ND	ND	179.00	ND	156.00	ND	ND	107.00	ND	ND	ND	286.00
Property BO-1-INF	6/5/2020	L2023520-03	2.08	ND	ND	ND	ND	249.00	ND	182.00	ND	ND	132.00	ND	ND	ND	381.00
Property BO-INF	9/9/2020	L2037974-03	2.34	ND	ND	ND	ND	239.00	ND	157.00	ND	ND	144.00	ND	ND	ND	383.00

Table 12 - Private Well Analytical Data Summary

				Compound Name	Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamide Acetic Acid (NEFOSAA)	N-Methyl Perfluorooctanesulfonamide Acetic Acid (NMeFOSAA)	Perfluorobutanesulfonic Acid (PFBS)	Perfluorodecanoic Acid (PFDA)	Perfluorododecanoic Acid (PFDoA)	Perfluorooheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorohexanoic Acid (PFHxA)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorotridecanoic Acid (PFTrDA)	Perfluoroundecanoic Acid (PFUnA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)		
				CAS No.		2991-50-6	2355-31-9	375-73-5	335-76-2	307-55-1	375-85-9	355-46-4	307-24-4	375-95-1	1763-23-1	335-67-1	376-06-7	72629-94-8	2058-94-8			
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard				20			20			20		20					20	
Property DV	3/14/2019	L1910261-01	1.95					3.83														0.00
Property DV	12/14/2020	L2056511-01	1.84					3.64														0.00
Property DW	3/14/2019	L1910252-01	1.76					ND														0.00
Property DW	11/15/2021	L2163716-01	2.00					ND														0.00
Property DX	3/26/2019	L1912654-01	1.76					ND														0.00
Property DY	3/14/2019	L1910254-01	1.83					ND														0.00
Property DZ	3/15/2019	L1910268-01	1.72					ND														0.00
Property E	11/2/2018	L1845162-01	1.72			4.15	2.97	ND			27.50	ND	53.20	2.38	2.14	13.50						45.52
Property E-2	1/16/2019	L1902194-01	1.82					ND			41.00	ND	93.30	2.13	2.28	21.50						66.91
Property E-INF	4/30/2019	L1918190-02	1.96					ND			56.30	4.98	101.00	3.35	3.12	39.40						107.15
Property E-INF	3/18/2020	L2012876-02	2.09					ND			20.30	ND	47.20	ND	ND	12.20						32.50
Property E-INF	6/9/2021	L2131853-02	2.00					ND			25.70	ND	59.30	2.04	5.44	17.50						50.68
Property E-INF	6/3/2022	L2230830-02	1.95					ND			20.80	ND	25.10	ND	ND	7.92						28.72
Property EA	3/15/2019	L1910400-01	1.86					ND			ND	ND	ND	ND	ND	4.77						4.77
Property EA	9/9/2020	L2037987-01	1.86					ND			ND	ND	ND	ND	ND	ND						0.00
Property EA	6/10/2021	L2131879-01	1.90					ND			ND	ND	ND	ND	ND	ND						0.00
Property EA	6/8/2022	L2230748-01	2.00					ND			ND	ND	ND	ND	ND	ND						0.00
Property EB	3/15/2019	L1910269-01	1.84					ND			ND	ND	ND	ND	ND	ND						0.00
Property EC	3/15/2019	L1910270-01	1.72					ND			ND	ND	ND	ND	ND	ND						0.00
Property ED	3/14/2019	L1910256-01	1.75					ND			19.60	5.08	38.00	ND	ND	10.10						34.78
Property ED	6/21/2019	L1927312-01	2.05					ND			9.23	ND	12.80	ND	ND	7.20						16.43
Property ED-INF	7/18/2019	L1930719-02	1.74					ND			15.10	11.80	39.80	ND	ND	9.19						36.09
Property ED-INF	7/16/2020	L2030503-02	1.79					ND			22.70	12.20	51.90	ND	ND	7.28						42.18
Property ED-INF	6/9/2021	L2131986-01	1.85					ND			38.40	6.60	87.80	ND	ND	15.80						60.80
Property ED-INF	6/4/2022	L2230857-02	1.80					ND			23.50	8.76	47.60	ND	ND	9.51						41.77
Property EE	3/15/2019	L1910271-01	1.86					ND			ND	ND	ND	ND	ND	ND						0.00
Property EF	3/15/2019	L1910272-01	1.82					ND			ND	ND	ND	ND	ND	13.20						13.20
Property EF	9/9/2020	L2037998-01	1.73					ND			ND	ND	ND	ND	ND	3.28						3.28
Property EG	3/15/2019	L1910397-01	1.77					ND			ND	ND	ND	ND	ND	ND						0.00
Property EG	9/9/2020	L2038230-01	1.83					ND			ND	ND	ND	ND	ND	ND						3.43
Property EG	6/10/2021	L2131895-01	1.82					ND			ND	ND	ND	ND	ND	2.83						2.83
Property EG	6/2/2022	L2230812-01	2.00					ND			ND	ND	ND	ND	ND	2.96						2.96
Property EH	3/15/2019	L1910398-01	1.91					ND			ND	ND	ND	ND	ND	ND						0.00
Property EI	3/14/2019	L1910253-01	1.98					ND			ND	ND	ND	ND	ND	ND						0.00
Property EJ	3/27/2019	L1912659-01	1.77					ND			ND	ND	ND	ND	ND	ND						0.00
Property EK	3/15/2019	L1910399-01	1.80					ND			ND	ND	ND	ND	5.13	5.08						10.21
Property EK-2	6/2/2020	L2023487-01	1.78					ND			10.30	ND	ND	ND	9.39	17.20						32.55
Property EK-INF	7/17/2020	L2030495-02	2.01					ND			7.98	ND	ND	ND	44.60	10.40						57.08
Property EK-INF	6/9/2021	L2131978-01	1.88					ND			3.48	ND	ND	ND	6.66	7.64						16.38
Property EK-INF	6/2/2022	L2230809-02	1.76					ND			3.46	ND	ND	ND	3.77	4.87						8.64
Property EL	3/13/2019	L1910243-01	1.83					ND			ND	ND	ND	ND	ND	ND						0.00
Property EM	3/13/2019	L1910245-01	1.81					ND			ND	ND	20.00	ND	ND	8.02						23.72
Property EM-INF	6/19/2019	L1927305-02	1.86					ND			ND	ND	13.40	ND	ND	7.77						19.37
Property EM-INF	3/18/2020	L2012879-02	1.98					ND			ND	ND	9.41	ND	ND	7.98						17.39
Property EM-1-INF	6/9/2021	L2131870-02	1.99					ND			ND	ND	11.70	ND	11.50	ND	10.40	13.00				35.10
Property EM-2-INF	3/2/2022	L2211297-02	1.87					ND			ND	ND	20.60	ND	19.30	ND	15.60	ND				36.20

Table 12 - Private Well Analytical Data Summary

Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	Compound Name	CAS No.	MCP Method 1 GW-1 Standard	20	20	20	20	20	20	20	20	20	20	20	20
				Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonic Amidoacetic Acid (NEFOSAA)													
Property GD	7/11/2019	L1930722-01	1.85	ND						2.98	ND	10.20	ND	ND	ND	ND	ND	2.98
Property GD	12/12/2019	L1959878-01	1.97	ND						2.00	ND	6.73	ND	ND	ND	ND	ND	2.00
Property GD	6/9/2021	L2131829-01	1.95	ND						ND	ND	2.21	ND	ND	ND	ND	ND	0.00
Property GD	6/8/2022	L2230739-01	2.00	ND						ND	ND	4.67	ND	ND	ND	ND	ND	0.00
Property GE	6/10/2021	L2131885-01	1.84	ND						ND	ND	7.42	ND	ND	ND	ND	ND	0.00
Property GF	8/8/2019	L1935826-01	1.78	ND						2.71	ND	ND	ND	ND	ND	ND	ND	0.00
Property GF-2	7/16/2020	L2030511-01	1.83	ND						3.41	ND	ND	ND	ND	ND	ND	ND	0.00
Property GF	6/7/2021	L2131858-01	1.90	ND						ND	ND	2.38	ND	ND	ND	ND	ND	0.00
Property GF	6/3/2022	L2230852-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GG	12/12/2019	L1959879-01	1.84	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GH	6/4/2020	L2023511-01	1.92	ND						2.38	ND	2.27	ND	ND	4.72	ND	ND	4.72
Property GH	6/8/2021	L2131824-01	1.82	ND						4.05	ND	2.55	ND	ND	2.57	ND	ND	2.57
Property GH	6/9/2022	L2230729-01	2.00	ND						5.88	ND	2.07	ND	ND	2.46	ND	ND	2.46
Property GI	8/8/2019	L1935833-01	1.77	ND						ND	ND	13.90	ND	ND	2.15	ND	ND	6.62
Property GI	9/9/2021	L2148696-01	2.00	ND						ND	ND	4.54	ND	ND	ND	ND	ND	4.54
Property GJ	6/4/2020	L2023513-01	1.92	ND						ND	ND	ND	ND	ND	2.92	ND	ND	2.92
Property GJ	6/7/2021	L2131807-01	1.78	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GJ	6/2/2022	L2230804-01	2.00	ND						ND	ND	2.34	ND	ND	ND	ND	ND	2.34
Property GK	9/9/2020	L2037977-01	1.86	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GL	3/24/2021	L2115103-01	1.94	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GL	8/4/2022	L2242158-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GM	3/2/2022	L2211290-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GN-1	3/16/2022	L2214480-01	2.00	ND						ND	ND	ND	ND	ND	3.11	ND	ND	3.11
Property GN-2	3/16/2022	L2214480-02	2.00	ND						ND	ND	ND	ND	ND	2.92	ND	ND	2.92
Property GO-1	3/16/2022	L2214480-03	2.00	ND						33.60	ND	69.80	2.09	ND	21.80	ND	ND	57.49
Property GO-1-INF	8/4/2022	L2242164-03	1.74	1.82						35.20	ND	83.40	2.86	2.76	23.80	ND	ND	64.62
Property GO-2	3/16/2022	L2214480-04	2.00	ND						8.12	ND	ND	ND	ND	ND	ND	ND	0.00
Property GP	6/1/2022	L2230803-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GQ	6/1/2022	L2230803-02	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GR	6/15/2022	L2232842-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GS	6/2/2022	L2230818-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GT	8/4/2022	L2242154-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property GU	8/4/2022	L2242157-01	2.00	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property H	11/27/2018	L1848364-01	1.79	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property H-2	12/7/2018	L1850500-01	1.84	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property H-3	3/14/2019	L1910258-01	2.09	ND						ND	ND	16.90	ND	ND	11.80	ND	ND	28.90
Property H-INF	4/29/2019	L1918183-02	1.77	ND						ND	ND	10.50	ND	ND	9.45	ND	ND	19.95
Property H-INF	3/17/2020	L2012870-02	1.84	ND						ND	ND	ND	ND	ND	2.20	ND	ND	2.20
Property H-INF	6/9/2021	L2131975-01	1.93	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property H-INF	6/1/2022	L2230787-02	1.89	ND						ND	ND	ND	ND	ND	ND	ND	ND	0.00
Property I	11/27/2018	L1848365-01	1.77	ND						474.00	ND	460.00	9.82	ND	151.00	ND	ND	634.82
Property I-INF	3/13/2019	L1910244-03	1.88	6.16	4.92					590.00	ND	452.00	9.96	ND	357.00	ND	ND	956.96
Property I-INF	6/3/2019	L1923946-03	1.82	ND						299.00	ND	278.00	9.73	ND	266.00	ND	ND	574.73
Property I-INF	9/13/2019	L1942370-01	1.89	ND						554.00	ND	434.00	14.30	ND	342.00	ND	ND	910.30
Property I-INF	12/12/2019	L1959877-03	1.80	ND						296.00	ND	218.00	10.50	ND	221.00	ND	ND	527.50
Property I-INF	3/19/2020	L2012882-03	2.05	ND						68.30	ND	42.80	5.37	ND	87.00	ND	ND	160.67
Property I-INF	6/4/2020	L2023515-03	1.92	ND						155.00	ND	158.00	7.49	ND	180.00	ND	ND	342.49
Property I-INF	9/9/2020	L2037981-03	1.94	ND						304.00	ND	334.00	8.00	ND	132.00	ND	ND	444.00

Table 12 - Private Well Analytical Data Summary

				Compound Name	Perfluorinated Alkyl Acids by EPA 537	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEFOSAA)	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	Perfluorobutanesulfonic Acid (PFBS)	Perfluorodecanoic Acid (PFDA)	Perfluorododecanoic Acid (PFDoA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorohexanoic Acid (PFHxA)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Perfluorotetradecanoic Acid (PFTA)	Perfluorotridecanoic Acid (PFTrDA)	Perfluoroundecanoic Acid (PFUnA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	
				CAS No.		2991-50-6	2355-31-9	375-73-5	335-76-2	307-55-1	375-85-9	355-46-4	307-24-4	375-95-1	1763-23-1	335-67-1	376-06-7	72629-94-8	2058-94-8		
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard																	
Property ZY-INF	10/29/2019	L1951314-01	1.75		ND	ND	ND	ND	ND	ND	3.75	ND	11.20	ND	ND	2.15	ND	ND	ND	ND	5.90
Property ZY-INF	6/1/2020	L2023466-02	1.93		ND	ND	ND	ND	ND	ND	ND	ND	3.13	ND	ND	ND	ND	ND	ND	ND	0.00
Property ZY-INF	10/23/2020	L2046427-02	1.80		ND	ND	ND	ND	ND	ND	3.36	ND	8.08	ND	ND	ND	ND	ND	ND	ND	3.36
Property ZY-INF	6/10/2021	L2131883-02	1.86		ND	ND	ND	ND	ND	ND	10.50	ND	29.00	ND	ND	5.13	ND	ND	ND	ND	15.63
Property ZY-INF	5/31/2022	L2230772-02	1.88		ND	ND	ND	ND	ND	ND	10.10	ND	25.30	ND	ND	2.74	ND	ND	ND	ND	12.84
Property ZZ	10/12/2018	L1841593-01	1.71		ND	ND	ND	ND	ND	ND	11.00	ND	31.50	ND	ND	5.38	ND	ND	ND	ND	16.38
Property ZZ-2-INF	6/3/2019	L1923950-01	1.76		2.37	ND	ND	ND	ND	ND	3.12	ND	6.74	ND	ND	4.48	ND	ND	ND	ND	7.60
Property ZZ-INF	10/29/2019	L1951313-01	1.79		ND	ND	ND	ND	ND	ND	6.25	ND	21.10	ND	ND	4.82	ND	ND	ND	ND	11.07
Property ZZ-INF	6/3/2020	L2023501-02	1.93		ND	ND	ND	ND	ND	ND	7.58	ND	20.60	ND	9.58	4.09	ND	ND	ND	ND	21.25
Property ZZ-INF	6/10/2021	L2131886-01	1.96		ND	ND	ND	ND	ND	ND	8.94	5.74	16.80	ND	2.80	6.61	ND	ND	ND	ND	24.09
Property ZZ-INF	6/8/2022	L2230737-02	1.86		ND	ND	ND	ND	ND	ND	9.32	7.39	20.80	ND	1.91	5.69	ND	ND	ND	ND	24.31
Property ZZ-INF	8/4/2022	L2242163-02	1.91		ND	ND	ND	ND	ND	ND	8.05	6.61	17.80	ND	ND	5.44	ND	ND	ND	ND	20.10

Notes:

Units are in ng/L (parts per trillion)

ND indicates compound not detected above laboratory analytical method detection limit.

NA indicates that the sample was not analyzed for that compound.

Bold indicates compound detected above MCP Method 1 GW-1 standard

- PFAS6 > 20 ppt and < 70 ppt
- PFAS6 > 70 ppt and < 110 ppt
- PFAS6 > 110 ppt

Table 12 - Private Well Analytical Data Summary

Compound Name				Isotope Dilution Compounds	Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	1H, 1H, 2H, 2H-Perfluorohexanesulfonic Acid (4:2FTS)	Perfluoropentanesulfonic Acid (PFPeS)	Perfluorohexanesulfonic Acid (PFHpS)	1H, 1H, 2H, 2H-Perfluorodecanesulfonic Acid (8:2FTS)	Perfluorononanesulfonic Acid (PFNS)	Perfluorodecanesulfonic Acid (PFDS)	Perfluorooctanesulfonamide (FOSA)	1H, 1H, 2H, 2H-Perfluorooctanesulfonic Acid (6:2FTS)
CAS No.					375-22-4	2706-90-3	757124-72-4	2706-91-4	375-92-8	39108-34-4	68259-12-1	335-77-3	754-91-6	27619-97-2
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit											
Property EM-2-INF	6/6/2022	L2230861-03	1.89		9.71	21.80	ND	ND	ND	ND	ND	ND	ND	ND
Property EN	3/26/2019	L1912655-01	1.84		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EN	7/15/2020	L2030508-01	1.74		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EO	3/26/2019	L1912656-01	1.70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EP	3/27/2019	L1912658-01	1.77		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EQ	3/14/2019	L1910255-01	1.83		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ER	3/28/2019	L1912660-01	1.71		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ER-2	6/2/2020	L2023478-01	1.73		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ER	12/14/2021	L2169389-01	2.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ER	6/13/2022	L2232869-01	2.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ES	12/14/2020	L2056504-01	1.80		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property ET	4/29/2019	L1918184-01	1.75		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ET-2	9/12/2019	L1942004-01	1.73		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ET	6/10/2021	L2131903-01	1.86		3.26	9.34	ND	ND	ND	ND	ND	ND	ND	ND
Property ET	6/10/2022	L2232860-01	2.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EU	4/30/2019	L1918191-01	1.78		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EU-2	6/18/2019	L1927302-01	1.80		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EU	6/8/2021	L2131838-01	1.95		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property EU	6/6/2022	L2230860-01	2.00		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property EU	7/21/2022	L2239302-01	2.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EV	4/29/2019	L1918185-01	1.84		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EV-2	7/11/2019	L1930728-01	1.69		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EV-3	6/2/2020	L2023488-01	1.84		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EV	6/8/2021	L2131830-01	1.76		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property EV	6/15/2022	L2232838-01	2.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EW	5/1/2019	L1918227-01	1.75		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EW	9/8/2020	L2037971-01	1.83		ND	1.89	ND	ND	ND	ND	ND	ND	ND	ND
Property EW	6/8/2021	L2131814-01	1.84		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property EW	6/15/2022	L2232844-01	2.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EX	4/29/2019	L1918186-01	1.82		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EY	4/30/2019	L1918241-01	1.78		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EY-INF	6/4/2020	L2023510-02	1.91		39.00	149.00	ND	ND	ND	ND	ND	ND	ND	124.00
Property EY-INF	6/29/2021	L2135535-02	1.80		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EY-INF	6/15/2022	L2232840-02	1.87		53.30	208.00	ND	ND	ND	ND	ND	ND	ND	519.00
Property EY-INF	6/20/2019	L1927308-02	1.91		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property EZ	4/29/2019	L1918181-01	1.81		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F	11/27/2018	L1848363-01	1.77		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F-1-INF	3/28/2019	L1912663-03	1.82		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F-1-INF	6/4/2019	L1923938-03	1.74		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F-2-INF	6/20/2019	L1927311-03	1.85		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F-1-INF	9/12/2019	L1942019-01	1.80		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F-1-INF	12/12/2019	L1959885-03	1.78		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F-1-INF	3/16/2020	L2012856-03	1.84		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property F-1-INF	6/2/2020	L2023495-03	1.96		89.90	219.00	ND	15.80	37.60	ND	ND	ND	ND	135.00
Property F-1-INF	9/10/2020	L2037991-03	1.90		43.20	111.00	ND	34.30	71.70	ND	ND	ND	ND	108.00
Property F-1-INF	12/14/2020	L2056512-03	1.79		22.00	59.10	ND	57.90	166.00	ND	ND	ND	ND	49.20

Table 12 - Private Well Analytical Data Summary

				Isotope Dilution Compounds	Perfluorobutanoic Acid (PFBA)	Perfluoropentanoic Acid (PFPeA)	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	Perfluoropentanesulfonic Acid (PFPeS)	Perfluoroheptanesulfonic Acid (PFHpS)	1H,1H,2H,2H-Perfluorodecane sulfonic Acid (8:2FTS)	Perfluorononanesulfonic Acid (PFNS)	Perfluorodecane sulfonic Acid (PFDS)	Perfluorooctanesulfonamide (FOSA)	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)
				CAS No.	375-22-4	2706-90-3	757124-72-4	2706-91-4	375-92-8	39108-34-4	68259-12-1	335-77-3	754-91-6	27619-97-2
Sample ID	Sampling Date	Lab Sample ID	Laboratory Analytical Method Detection Limit											
Property ZY-INF	10/29/2019	L1951314-01	1.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ZY-INF	6/1/2020	L2023466-02	1.93	ND	4.38	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property ZY-INF	10/23/2020	L2046427-02	1.80	4.96	14.70	ND	ND	ND	ND	ND	ND	ND	ND	11.60
Property ZY-INF	6/10/2021	L2131883-02	1.86	13.90	49.10	ND	ND	ND	ND	ND	ND	ND	ND	33.40
Property ZY-INF	5/31/2022	L2230772-02	1.88	10.20	36.10	ND	ND	ND	ND	ND	ND	ND	ND	5.01
Property ZZ	10/12/2018	L1841593-01	1.71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ZZ-2-INF	6/3/2019	L1923950-01	1.76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ZZ-INF	10/29/2019	L1951313-01	1.79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Property ZZ-INF	6/3/2020	L2023501-02	1.93	9.40	30.60	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property ZZ-INF	6/10/2021	L2131886-01	1.96	8.04	26.80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property ZZ-INF	6/8/2022	L2230737-02	1.86	11.30	36.80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Property ZZ-INF	8/4/2022	L2242163-02	1.91	10.70	33.50	ND	ND	ND	ND	ND	ND	ND	ND	1.93

Notes:

Units are in ng/L (parts per trillion)

ND indicates compound not detected above laboratory analytical method detection limit.

NA indicates that the sample was not analyzed for that compound.

Bold indicates compound detected above MCP Method 1 GW-1 standard

- PFAS6 > 20 ppt and < 70 ppt
- PFAS6 > 70 ppt and < 110 ppt
- PFAS6 > 110 ppt

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property B	2	2-GAC System	Quarterly	12/27/2018	1,181	33.6	<2.02	initial sample	0
				1/16/2019	923	<1.97	<1.91	445	445
				4/29/2019	69.3	<1.84	<1.77	516	961
				9/9/2019	471	<1.94	<1.94	34,657	35,618
				12/12/2019	91.2	<1.80	<2.01	1,867	37,486
				3/17/2020	84.9	<1.89	<1.95	1,426	38,911
				6/1/2020	104	<1.93	<2.03	3,319	42,230
				9/9/2020	197	<2.00	<1.99	14,421	56,651
				12/14/2020	60.4	<1.78	<1.88	4,744	61,395
				3/24/2021	48.5	<1.86	<1.83	3,502	64,897
				6/9/2021	337	<1.91	<1.82	30,419	95,315
				9/9/2021	268	<2.00	<2.00	116,302	211,618
				12/14/2021	640	<2.00	<2.00	55,005	266,622
				3/3/2022	no sample	no sample	no sample	1,093	267,715
				3/17/2022	242	<2.00	<2.00	961	268,676
6/3/2022	163	<2.00	<2.00	51,487	320,163				
9/19/2022	44.6	<2.00	<2.00	155,597	475,760				
Property J-1	3	2-GAC System	Quarterly	3/13/2019	1,762	<1.92	<1.91	96	96
				6/4/2019	1,270	<1.82	<1.92	5,457	5,553
				9/12/2019	873	<1.79	<1.89	11,783	17,336
				12/12/2019	1,010	<1.94	<2.11	6,454	23,789
				3/16/2020	1,445	<1.93	<2.16	6,182	29,971
				6/3/2020	932	<1.99	<2.13	5,636	35,607
				9/10/2020	639	<2.04	<2.02	8,636	44,242
				12/15/2020	991	<1.83	<1.82	6,973	51,216
				3/24/2021	1,166	<1.83	<1.94	6,558	57,773
				6/10/2021	1,036	<1.87	<2.00	4,155	61,928
				9/9/2021	1,490	<2.00		5,472	67,400
				12/14/2021	2,200	<2.00	<2.00	7,025	74,425
				3/3/2022	1,501	<2.00	<2.00	4,762	79,187
6/6/2022	1,331	<2.00	<2.00	7,035	86,222				
9/21/2022	675	<1.82	<1.92	9,219	95,440				

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property J-2	3	2-GAC System	Quarterly	3/13/2019	1,762	<1.91	<1.83	264	264
				6/4/2019	1,270	2.54	<1.96	9,949	10,213
				9/12/2019	873	<1.86	<1.82	15,689	25,902
				12/12/2019	1,010	<1.86	<1.92	11,140	37,042
				3/16/2020	1,445	<1.90	<2.00	8,683	45,725
				6/3/2020	932	<1.88	<1.94	8,341	54,066
				9/10/2020	639	<2.26	<2.22	15,027	69,093
				12/15/2020	991	<1.85	<1.78	9,994	79,087
				3/24/2021	1,166	<1.86	<1.81	8,023	87,110
				6/10/2021	1,036	<1.88	<1.90	8,454	95,564
				9/9/2021	1,490	<2.00		9,877	105,440
				12/14/2021	2,200	<2.00	<2.00	10,050	115,491
				3/3/2022	1,501	<2.00	<2.00	6,259	121,749
6/6/2022	1,331	<2.00	<2.00	8,632	130,382				
9/21/2022	675	<1.82	<1.78	12,980	143,362				
Property I	4	2-GAC System	Quarterly	3/13/2019	957	<1.89	<1.83	90	90
				6/3/2019	575	<1.92	<1.86	5,041	5,131
				9/13/2019	910	<1.85	<1.86	9,248	14,379
				12/12/2019	528	<1.86	<1.82	6,022	20,401
				3/19/2020	161	<2.02	<1.97	5,390	25,791
				6/4/2020	342	<1.90	<1.89	5,645	31,436
				9/10/2020	444	<1.83	<2.03	10,333	41,769
				12/15/2020	797	<1.87	<1.88	7,113	48,882
				3/25/2021	635	<1.84	<1.77	6,373	55,256
				6/7/2021	514	<1.85	<1.71	6,375	61,630
				12/14/2021	629	<2.00	<2.00	13,834	75,464
3/2/2022	400	<2.00	<2.00	3,586	79,050				
6/2/2022	339	<2.00	<2.00	5,844	84,895				
9/21/2022	210	<1.85	<1.76	9,489	94,383				
Property F-1	5	2-GAC System	Quarterly	3/28/2019	1,110	<1.93	<1.86	86	86
				6/4/2019	1,178	<1.95	<1.89	1,960	2,046
				9/12/2019	803	<1.86	<1.86	2,953	4,999
				12/12/2019	1,745	<1.92	<1.80	1,977	6,976
				3/16/2020	2,157	<2.16	<1.87	2,013	8,989
				6/2/2020	1,042	<1.91	<1.82	1,480	10,468
				9/10/2020	1,676	<2.00	<2.01	3,308	13,776
				12/14/2020	3,359	<1.83	<1.83	570	14,346
				3/24/2021	3,306	<1.86	<1.83	267	14,613
				6/7/2021	2,325	<1.83	<1.87	4,134	18,747
				9/8/2021	2,374	<2.00		14,853	33,600
				12/14/2021	2,455	<2.00	<2.00	17,319	50,919
6/10/2022	1,014	<2.00	<2.00	29,858	80,777				
9/21/2022	958	<1.78	<1.77	11,976	92,753				

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property F-2	5	2-GAC System	Quarterly	6/20/2019	1,076	<1.79	<1.82	213	213
				9/12/2019	803	<1.82	<1.84	56	269
				12/12/2019	1,745	<1.73	<1.88	32	301
				6/2/2020	1,042	<1.97	<1.98	131	432
				9/10/2020	1,676	<2.00	<1.96	77	509
				12/14/2020	3,359	<1.81	<1.88	57	566
				3/24/2021	3,306	<1.81	<1.89	48	614
				6/7/2021	2,325	<1.84	<1.76	42	656
				9/8/2021	2,374	<2.00		89	744
				12/14/2021	2,455	<2.00	<2.00	96	840
				6/10/2022	1,014	<2.00	<2.00	220	1,061
Property Y	6	2-GAC System	Quarterly	6/4/2019	490	<1.95	<1.86	15,390	15,390
				9/9/2019	585	<1.88	<1.98	37,799	53,189
				12/12/2019	428	<1.90	<1.74	13,635	66,824
				3/16/2020	426	<2.02	<1.99	21,635	88,459
				6/3/2020	852	22.7	<1.77	13,300	101,758
				9/9/2020	471	<1.86	<1.97	17,649	119,407
				12/14/2020	790	<1.79	<1.80	16,444	135,851
				3/25/2021	601	<1.80	<1.77	13,505	149,356
				6/11/2021	911	3.26	<1.86	12,694	162,050
				9/9/2021	455	<2.00		20,706	182,756
				12/14/2021	312	<2.00	<2.00	9,546	192,301
				6/2/2022	514	<2.00	<2.00	15,142	207,443
				9/20/2022	402	<2.00	<2.00	21,092	228,535
Property AY	7	2-GAC System	Quarterly	4/29/2019	265	<1.90	<1.89	41	41
				6/19/2019	219	<1.86	<1.93	1,507	1,548
				9/12/2019	280	<2.09	<1.97	7,869	9,417
				12/12/2019	357	<1.96	<1.85	1,041	10,459
				3/17/2020	184	<2.07	<2.14	776	11,235
				6/1/2020	265	<1.97	<1.85	9	11,244
				9/9/2020	177	<2.17	<2.24	14,373	25,617
				6/9/2021	170	<1.94	<1.83	15,057	40,674
				9/8/2021	156	<2.00		29,906	70,580
				6/3/2022	113	<2.00	<2.00	4,662	75,242
				9/21/2022	111	<2.00	<2.00	27,988	103,229
Property CL	8	2-GAC System	Semi-Annual	3/14/2019	154	<1.94	<1.88	170	170
				9/12/2019	162	<1.82	<1.85	10,142	10,312
				3/18/2020	117	<2.08	<2.02	8,309	18,621
				10/22/2020	197	<1.95	<1.86	18,651	37,272
				6/9/2021	122	<1.84	<1.83	861	38,133
				9/8/2021	118	<2.00		4,747	42,880
				6/8/2022	86	<2.00	<2.00	13,302	56,182
				9/23/2022	97	<2.00	<2.00	8,724	64,905

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property AX	9	2-GAC System	Semi-Annual	6/5/2019	86.9	<1.90	<1.80	3,611	3,611
				9/13/2019	95.8	<1.82	<1.92	11,539	15,150
				3/19/2020	136	<2.01	<1.77	16,073	31,223
				9/10/2020	45.6	<1.99	<1.74	25,796	57,019
				6/11/2021	43.8	<1.88	<1.89	108,361	165,380
				9/8/2021	45.0	<2.00		11,704	177,084
				6/1/2022	58.7	<2.00	<2.00	16,990	194,074
				9/19/2022	53.9	<2.00	<2.00	23,182	217,256
Property BJ-1	10	2-GAC System	Semi-Annual	3/14/2019	230	<1.92	<1.94	initial sample	0
				4/30/2019	141	<1.85	<1.85	9,015	9,015
				9/9/2019	151	<1.77	<1.78	22,077	31,092
				3/18/2020	183	<1.92	<1.95	35,819	66,911
				9/9/2020	138	<1.95	<2.00	36,076	102,987
				6/10/2021	221	<1.85	<1.87	57,303	160,290
				9/9/2021	255	<2.00		20,635	180,924
				6/16/2022	216	<2.00	<2.00	45,843	226,767
Property BJ-2	10	1-GAC System	Semi-Annual	9/19/2022	110	7.81	<2.00	11,431	238,198
				3/14/2019	230		<1.78	1,239	1,239
				4/30/2019	141		<1.92	10	1,249
				9/9/2019	151		<1.79	691	1,940
				3/18/2020	183		<2.11	15,728	17,668
				9/9/2020	138		<1.84	9,876	27,544
				6/10/2021	221		<1.84	15,586	43,130
				9/9/2021	255		<2.00	4,670	47,800
Property C	11	2-GAC System	Semi-Annual	6/16/2022	216		<2.00	16,254	64,054
				9/19/2022	110		<2.00	6,325	70,378
				3/28/2019	41.3	<1.89	<1.86	524	524
				9/9/2019	136	10.3	<1.92	34,666	35,190
				12/12/2019	178	8.32	<2.07	21,660	56,851
				3/16/2020	113	12.7	<2.00	23,483	80,333
				9/10/2020	71.9	<2.30	<2.08	51,084	131,418
				6/10/2021	90.3	<1.89	<1.87	102,809	234,226
9/8/2021	83.5	<2.00		34,174	268,400				
6/1/2022	28.2	<2.00	<2.00	67,528	335,928				
9/21/2022	49.4	<2.00	<2.00	10,037	345,965				

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property BO-1	12	2-GAC System	Semi-Annual	4/29/2019	285	<1.83	<1.90	194	194
				9/10/2019	286	<1.96	<1.85	14,406	14,600
				6/5/2020	381	<1.82	<1.84	error with meter	error with meter
				9/9/2020	383	<1.90	<1.89	error with meter	error with meter
				6/7/2021	211	<1.86	<1.88	10,178	24,778
				9/8/2021	196	<2.00		22,583	47,361
				6/16/2022	117	<2.00	<2.00	8,443	55,804
Property BO-2	12	2-GAC System	Semi-Annual	9/19/2022	87	<2.00	<2.00	22,943	78,746
				4/29/2019	265	<1.86	<1.90	40	40
				9/10/2019	286	<1.86	<1.84	4,198	4,237
				6/5/2020	381	<2.04	<2.03	1,045	5,283
				9/9/2020	383	<2.24	<1.90	10,692	15,974
				6/7/2021	211	<1.93	<1.92	956	16,930
				9/8/2021	196	<2.00		6,015	22,945
Property L	13	2-GAC System	Semi-Annual	6/16/2022	117	<2.00	<2.00	2,842	25,786
				9/19/2022	87	<2.00	<2.00	3,531	29,317
				3/13/2019	164	<1.84	<1.95	188	188
				9/12/2019	195	<1.80	<1.78	24,001	24,189
				3/16/2020	206	<1.96	<2.04	5,259	29,447
				9/8/2020	244	<1.84	<1.89	39,172	68,620
				6/8/2021	287	324	303	11,820	80,440
				6/29/2021	272	NM	<1.82	1,991	82,430
Property DA	14	2-GAC System	Semi-Annual	9/9/2021	252	NM	<2.00	18,563	100,993
				6/3/2022	210	204	<2.00	22,254	123,248
				9/19/2022	166	191	<2.00	25,877	149,125
				4/29/2019	373	<1.78	<1.83	294	294
				9/9/2019	350	<1.94	<1.82	64,205	64,499
				9/8/2020	258	<1.81	<1.90	5,301	69,799
				12/14/2020	611	<1.85	<1.82	15,212	85,011
				6/9/2021	337	<1.88	<1.86	7,922	92,933
Property G	15	2-GAC System	Semi-Annual	9/9/2021	312	<2.00		19,833	112,766
				6/3/2022	257	<2.00	<2.00	8,329	121,095
				9/20/2022	197	<2.00	<2.00	not measured	not measured
				6/20/2019	140	<1.88	<1.86	153	153
				6/1/2020	185	<2.02	<1.82	43,013	43,166
				12/15/2020	364	<1.89	<1.89	42,725	85,890
Property G	15	2-GAC System	Semi-Annual	6/9/2021	177	<1.89	<1.85	6,263	92,153
				5/31/2022	98	<2.00	<2.00	31,257	123,409
				9/23/2022	115	3.00	<2.00	27,242	150,652

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)				
					Influent	Midpoint	Effluent						
Property AS	16	1-GAC System	Semi-Annual	6/4/2019	158		<1.85	3,110	3,110				
				6/2/2020	68.8		<1.91	34,791	37,901				
				10/22/2020	85.0		<1.85	21,582	59,482				
				6/8/2021	61.1		<1.86	15,083	74,565				
				6/13/2022	36.2		<2.00	25,764	100,329				
Property AW	NA	1-GAC System	Semi-Annual	9/11/2020	72.6		5.77	161	161				
				10/22/2020	27.3		3.05	4,017	4,178				
				12/14/2020	20.4		<1.86	not measured	not measured				
				6/7/2021	19.3		<1.94	16,251	20,429				
				9/9/2021	18.4		<2.00	8,595	29,024				
				6/8/2022	14.0		<2.00	13,755	42,780				
Property AL	NA	2-GAC System	Semi-Annual	9/19/2022	20.6		<2.00	12,709	55,489				
				4/30/2019	106		<1.82	8,586	8,739				
				3/17/2020	75.9		<1.89	131,792	140,531				
				9/10/2020	79.2		<1.98	116,962	257,493				
				6/10/2021	78.5		94.9	72,229	329,722				
				6/29/2021	80.5		20.4	19,360	349,082				
				9/9/2021	NM		NM	42,483	391,565				
				10/19/2021	85.4		<2.00	3,643	395,207				
				6/8/2022	44.4	<2.00	12.2	20,431	415,638				
Property CF	NA	1-GAC System	Annual	7/21/2022	NM	NM	<2.00	not measured	not measured				
				9/23/2022	76.4	8.31	<2.00	20,269	456,176				
				3/28/2019	46.6		<1.84	86	86				
				3/18/2020	26.0		<2.01	33,703	33,789				
				6/10/2021	27.1		<1.84	49,803	83,592				
				6/2/2022	21.4		<2.00	68,243	151,835				
				Property AU	NA	1-GAC System	Annual	3/14/2019	<2.18		<1.75	463	463
								3/17/2020	26.6		<1.87	116,331	116,794
6/11/2021	47.7		<1.83					161,516	278,310				
6/14/2022	36.5		<2.00					109,563	387,873				
Property U	NA	1-GAC System	Annual	3/15/2019	9.26		<1.90	263	263				
				3/16/2020	<1.90		<1.90	33,824	34,087				
				6/8/2021	<1.84		<1.86	45,408	79,496				
				6/7/2022	<1.85		<2.00	39,616	119,112				
Property BZ	NA	1-GAC System	Annual	3/14/2019	18.3		<1.93	155	155				
				6/3/2020	11.1		<1.86	37,769	37,924				
				6/11/2021	30.7		<1.81	45,123	83,047				
				6/7/2022	39.0		<2.00	39,617	122,664				

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property Z	NA	1-GAC System	Annual	3/14/2019	77.6		<1.92	33	188
				3/16/2020	56.6		<2.01	7,387	7,575
				6/11/2021	41.2		<1.92	12,415	19,990
				6/2/2022	29.0		<2.00	9,577	29,567
Property BS	NA	1-GAC System	Annual	7/11/2019	32.0		<1.75	128	128
				3/18/2020	46.8		<1.95	1,590	1,718
				6/9/2021	28.9		<1.85	8,753	10,471
				5/31/2022	19.2		<2.00	4,944	15,414
Property E	NA	1-GAC System	Annual	4/30/2019	107		<1.98	1,443	1442.5
				3/18/2020	32.5		<1.97	18,902	20,344
				6/9/2021	50.7		<1.83	25,003	45,347
				6/3/2022	29.7		<2.00	53,411	98,758
Property AC	NA	1-GAC System	Annual	3/14/2019	36.5		<2.23	576	576
				6/3/2020	37.1		<2.08	8,015	8,591
				6/11/2021	95.4		<1.98	6,688	15,279
				6/3/2022	155.5		<2.00	6,401	21,681
Property P	NA	1-GAC System	Annual	6/3/2019	34.8		<1.82	394	394
				3/16/2020	38.8		<1.96	27,605	27,999
				6/7/2021	27.9		<1.90	30,378	58,377
				6/7/2022	26.4		<2.00	15,596	73,973
Property X	NA	1-GAC System	Annual	4/30/2019	66.8		<1.97	269	269
				3/17/2020	34.4		<2.20	12,468	12,737
				6/9/2021	29.9		<2.08	13,693	26,429
				6/7/2022	32.4		<2.00	13,764	40,193
Property BE	NA	1-GAC System	Annual	6/17/2019	10.6		<1.87	2,360	2,360
				3/17/2020	18.1		<1.92	14,107	16,467
				6/8/2021	11.8		<1.89	25,234	41,701
				6/13/2022	9.8		<2.00	16,722	58,423
Property DG	NA	1-GAC System	Annual	4/29/2019	37.1		<1.78	138	138
				3/17/2020	15.0		<2.01	840	978
				6/7/2021	21.0		<1.87	19,364	20,342
				5/31/2022	76.4		<2.00	17,304	37,646

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property H	NA	1-GAC System	Annual	4/29/2019	20.0		<1.89	3,596	3,596
				3/17/2020	2.20		<2.00	39,318	42,913
				6/9/2021	<1.93		<1.88	61,660	104,573
				6/1/2022	<1.89			41,167	145,740
Property EM-1	NA	1-GAC System	Annual	6/19/2019	19.4		<1.85	253	253
				3/18/2020	17.4		<1.92	21,081	21,334
				6/9/2021	35.1		<1.88	5,951	27,285
				6/6/2022	26.8		<2.00	22,074	49,359
Property EM-2	NA	1-GAC System	Annual	3/2/2022	36.2		<2.00	87	87
				6/6/2022	26.8		<2.00	6,847	7,021
Property ED	NA	1-GAC System	Annual	7/18/2019	36.1		<1.86	initial sample	0
				7/16/2020	42.2		<1.90	13,010	13,010
				6/9/2021	60.8		<1.94	6,148	19,158
				6/4/2022	41.8		<2.00	13,183	32,341
Property EY	NA	1-GAC System	Annual	6/20/2019	37.7		<1.91	257	257
				6/4/2020	28.5		<1.85	22,994	23,251
				6/7/2021	11.6		74	49,479	72,730
				6/29/2021	57.8		<1.82	167	72,897
Property FF	NA	1-GAC System	Annual	6/20/2019	34.4		<1.83	252	252
				6/1/2020	9.30		<1.74	21,630	21,882
				6/9/2021	15.8		11	19,360	41,242
				6/29/2021	10.0		<1.88	697	41,939
				6/8/2022	12.7		<2.00	19,119	61,058
Property FG	NA	1-GAC System	Annual	6/20/2019	42.1		<1.86	205	205
				7/16/2020	71.8		<2.07	14,692	14,897
				6/11/2021	15.8		<1.82	17,158	32,054
				6/9/2022	13.8		17.0	system bypass	system bypass
				8/4/2022	37.5		<2.0	5,916	37,971

Table 13 - POET System Performance Summary

Property ID	IRA RMR #	System Type	Sample Frequency	Date	Sum of 6 Target PFAS (ng/L)			Volume Treated ¹ (gallons)	Cumulative Volume Treated (gallons)
					Influent	Midpoint	Effluent		
Property FK	NA	1-GAC System	Annual	9/13/2019	10.0		<1.81	14,831	14,831
				6/10/2021	21.2		NA	22,512	37,343
				10/19/2021	22.9		<2.00	14,847	52,190
				5/31/2022	<1.84		<2.00	3,192	55,381
Property FO	NA	1-GAC System	Annual	6/20/2019	13.5		<1.97	152	152
				8/4/2022	<1.95		<2.00	6,647	6,799
Property FX	NA	1-GAC System	Annual	3/16/2020	59.5		<2.02	initial sample	0
				6/8/2021	40.0		28.1	24,318	24,318
				6/29/2021	28.5		<1.73	170	24,488
				6/3/2022	35.2		<2.00	22,251	46,739
Property AO	NA	1-GAC System	Annual	7/17/2020	12.9		3.78	699	699
				3/24/2021	7.6		5.83	76,467	77,166
				6/9/2021	14.4		<1.86	18,068	95,234
				5/31/2022	12.7		2.74	92,855	188,089
Property EK	NA	1-GAC System	Annual	7/17/2020	57.1		<2.00	309	309
				6/9/2021	16.4		<1.91	28,864	29,172
				6/2/2022	8.6		5.62	51,689	80,861
Property ZZ	NA	1-GAC System	Annual	6/3/2020	21.3		<1.92	no meter	no meter
				6/10/2021	24.1		<1.84	no meter	no meter
				6/8/2022	24.3		2.22	no meter	no meter
				8/4/2022	20.1		<2.00	no meter	no meter
Property CB	NA	1-GAC System	Annual	10/23/2020	26.0		<1.80	423	423
				6/10/2021	4.0		<1.89	37,288	37,711
				6/13/2022	4.0		<2.00	83,348	121,059
Property GO-1	NA	2-GAC System	Annual	8/4/2022	64.6	<2.00	<2.00	not measured	not measured
Property CS	NA	2-GAC System	Annual	9/22/2022	2.1	23.7	<2.00	not measured	not measured

Notes:

1. Volume treated measured at treatment system flow meter and indicates the volume of water treated since the previous sampling event.

Table 14 - Pore Water and Surface Water Analytical Data

CLIENT SAMPLE ID			LONG POND PORE	LONG POND SURFACE
SAMPLING LOCATION			TRUSTEES OF RESERVATION	TRUSTEES OF RESERVATION
SAMPLING DATE			3/15/2022	3/15/2022
LAB SAMPLE ID	CAS No.	Units	L2213634-01	L2213634-02
Perfluorinated Alkyl Acids by EPA 537				
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	<1.76	<1.81
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	<1.76	<1.81
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	<1.76	<1.81
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	<1.76	<1.81
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	<1.76	<1.81
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	<1.76	<1.81
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<1.76	<1.81
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	<1.76	1.85
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	<1.76	<1.81
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	<1.76	3.19
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	<1.76	<1.81
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	<1.76	<1.81
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l	<1.76	<1.81
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	<1.76	<1.81
PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)		ng/l	ND	3.19
Isotope Dilution Compounds				
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/l	<1.76	<1.81
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/l	<1.76	4.25
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	ng/l	<1.76	<1.81
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	ng/l	<1.76	<1.81
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	ng/l	<1.76	<1.81
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	ng/l	<1.76	<1.81
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	ng/l	<1.76	<1.81
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/l	<1.76	<1.81
Perfluorooctanesulfonamide (FOSA)	754-91-6	ng/l	<1.76	<1.81
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/l	<1.76	<1.81

Notes:

< indicates compound not detected above laboratory analytical method detection limits

ND indicates total PFAS6 concentration no detected

Table 15 - Quality Control Analytical Data

Location:		MVY	MVY	MVY	MVY	MVY	MVY	MVY	MVY	MVY
Sample Name:		FIELD BLANK-1	FIELD BLANK-2	FIELD BLANK	FIELD BLANK	FIELD BLANK-POET	EQUIPMENT BLANK	EQUIPMENT BLANK	TRIP BLANK	TRIP BLANK
Laboratory:		Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	Alpha	Alpha
Laboratory I.D.:		L2230878-01	L2232847-06	L2252884-05	L2252841-12	L2252848-05	L2232847-07	L2252884-04	L2252884-03	L2252841-11
Laboratory Analytical Detection Limit:		2.00 ng/L	1.87 ng/L	1.82 ng/L	1.78 ng/L	2.00 ng/L	1.82 ng/L	1.87 ng/L	1.80 ng/L	1.73 ng/L
Sample Date:		6/9/2022	6/15/2022	9/19/2022	9/21/2022	9/23/2022	6/15/2022	9/19/2022	9/13/2022	9/13/2022
Consultant:	Units	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanesulfonic Acid (PFBS)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic Acid (PFDA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic Acid (PFDoA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic Acid (PFHpA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonic Acid (PFHxS)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic Acid (PFHxA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonic Acid (PFOS)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic Acid (PFOA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic Acid (PFTA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic Acid (PFTrDA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic Acid (PFUnA)	ng/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isotope Dilution Compounds										
Perfluorobutanoic Acid (PFBA)	ng/l			ND	ND			ND	ND	ND
Perfluoropentanoic Acid (PFPeA)	ng/l			ND	ND			ND	ND	ND
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ng/l			ND	ND			ND	ND	ND
Perfluoropentanesulfonic Acid (PFPeS)	ng/l			ND	ND			ND	ND	ND
Perfluoroheptanesulfonic Acid (PFHpS)	ng/l			ND	ND			ND	ND	ND
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ng/l			ND	ND			ND	ND	ND
Perfluorononanesulfonic Acid (PFNS)	ng/l			ND	ND			ND	ND	ND
Perfluorodecanesulfonic Acid (PFDS)	ng/l			ND	ND			ND	ND	ND
Perfluorooctanesulfonamide (FOSA)	ng/l			ND	ND			ND	ND	ND
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ng/l			ND	ND			33.6	ND	1.99

Notes:

- ND indicates compound not detected above the laboratory analytical method detection limit
- Blank indicates compound was not reported by the analytical method
- RPD indicates relative percent difference
- NC indicates RPD not calculated since compounds were not detected.

Table 15 - Quality Control Analytical Data

Location:	MVY	MVY	MVY		MVY	MVY	
Sample Name:	TRIP BLANK	DUP-1	PROPERTY FG- INF	RPD	DUP-2	TT-11	RPD
Laboratory:	Alpha	Alpha	Alpha		Alpha	Alpha	
Laboratory I.D.:	L2252874-01	L2230878-02	L2230724-02		L2232847-05	L2232847-02	
Laboratory Analytical Detection Limit:	1.80 ng/L	1.95 ng/L	2.01 ng/L		1.82 ng/L	1.91 ng/L	
Sample Date:	9/13/2022	6/9/2022	6/9/2022		6/15/2022	6/15/2022	
Consultant:	Tetra Tech	Tetra Tech	Tetra Tech		Tetra Tech	Tetra Tech	
Perfluorinated Alkyl Acids by EPA 537							
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ND	NC	ND	ND	NC
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ND	NC	ND	ND	NC
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ND	NC	ND	ND	NC
Perfluorodecanoic Acid (PFDA)	ND	ND	ND	NC	ND	ND	NC
Perfluorododecanoic Acid (PFDoA)	ND	ND	ND	NC	ND	ND	NC
Perfluoroheptanoic Acid (PFHpA)	ND	14.7	13.8	-6.1%	ND	ND	NC
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ND	NC	ND	ND	NC
Perfluorohexanoic Acid (PFHxA)	ND	14.3	14.0	-2.1%	ND	ND	NC
Perfluorononanoic Acid (PFNA)	ND	ND	ND	NC	ND	ND	NC
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ND	NC	ND	ND	NC
Perfluorooctanoic Acid (PFOA)	ND	ND	ND	NC	ND	ND	NC
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ND	NC	ND	ND	NC
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ND	NC	ND	ND	NC
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ND	NC	ND	ND	NC
Isotope Dilution Compounds							
Perfluorobutanoic Acid (PFBA)	ND	7.78	7.34	-5.8%	ND	ND	NC
Perfluoropentanoic Acid (PFPeA)	ND	21.5	19.7	-8.7%	ND	ND	NC
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ND	NC	ND	ND	NC
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ND	NC	ND	ND	NC
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ND	NC	ND	ND	NC
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ND	NC	ND	ND	NC
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ND	NC	ND	ND	NC
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ND	NC	ND	ND	NC
Perfluorooctanesulfonamide (FOSA)	ND	ND	ND	NC	ND	ND	NC
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ND	NC	3.94	3.69	-6.6%

Notes:

ND indicates compound not detected above the laboratory analytical me

Blank indicates compound was not reported by the analytical method

RPD indicates relative percent difference

NC indicates RPD not calculated since compounds were not detected.

Table 16 - Method 2 Risk Characterization - Soil - Airport Property

			Area 1 Surface Soil Data											
CLIENT SAMPLE ID			TT-1 (1-2')	CLARIFIER (0-0.5)	WWTP-AFFF #2 (0-0.5)	WWTP-AFFF #2 (0-0.5')	TT-13 (0-0.5)	AFFF-SA-2	AFFF-SA-3	AFFF-SA-4	AFFF-SA-7	AFFF-SA-8	AFFF-SA-9	AFFF-SA-10
Sample Depth (feet)			1-2	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'
SAMPLING DATE			3/12/2018	3/15/2022	3/15/2022	7/21/2022	3/15/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022	9/21/2022
LAB SAMPLE ID	CAS No.	Units	L1809219-02	L2213637-01	L2213637-03	L2239307-01	L2214450-03	L2252841-03	L2252841-04	L2252841-05	L2252841-08	L2252841-09	L2252841-10	L2252841-13
Perfluorinated Alkyl Acids by EPA 537														
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	4.56	0.596	13.7	16.6	3.19	7.83	1.89	34.1	11.7	6.9	5.1	2.33
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	<1.07	<0.274	1.36	5.25	<0.277	4.66	1.48	21.3	5.7	3.6	1.09	<0.731
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<1.07	<0.549	<0.254	<0.592	<0.277	<0.753	<0.924	<1.08	<0.806	<0.716	<0.702	<0.731
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	<1.07	0.338	6.47	6.43	1.49	3.26	1.42	36.2	2.06	2.45	0.809	<0.731
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	<1.07	3.74	0.694	0.656	<0.277	<0.753	<0.924	<1.08	<0.806	<0.716	<0.702	<0.731
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	<1.07	0.561	3.52	9.16	1.27	4.73	1.74	34.7	6.75	4.2	2.03	<0.731
Total PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA		ng/g	4.56	5.24	25.74	38.1	5.95	20.5	6.5	126.3	26.2	17.2	9.0	2.3

Notes:

Units are in ng/g (parts per billion)

ND indicates compound not detected above laboratory analytical method detection limit in any sample in this Exposure Point.

< indicate compound not detected above the laboratory analytical method detection limit.

For compounds detected at least once above the detection limit, samples reported as not detected by the laboratory are assumed to have a concentration of one-half of the method detection limit for that sample in the average calculation.

NA indicates not applicable.

(1) Equal to Massachusetts Contingency Plan (MCP) Method 1 Soil Standards. Source: Massachusetts Department of Environmental Protection (DEP) 310 CMR 40.0000 The Massachusetts Contingency Plan, 12/27/2019

(2) Sanborn, Head & Associates, 2022. *Background Levels of PFAS and PAHs in Maine Shallow Soils*. Prepared for the Maine Department of Environmental Protection. April 2022.

(3) University of Vermont and Sanborn, Head & Associates, 2019. *PFAS Background in Vermont Shallow Soils*. February 8, 2019.

(4) Woodard & Curran, 2022. *PFAS in Massachusetts Soils: Establishing Background Conditions to Inform Regulatory Decision-Making*. Presentation to the Massachusetts Licensed Site Professionals Association (LSPA). October 25, 2022.

(5) The Exposure Point Concentration (EPC) is the 95th percentile upper confidence limit on the mean.

Bold indicates EPC is above MCP Method 1 S-1/GW-1, S-2/GW-1, and S-3/GW-1 Standard.

Table 16 - Method 2 Risk Characterization - Soil - Airport Property

			Area 1 Deep Soil Data		Area 1 Summary Statistics							Area 1 EPC
CLIENT SAMPLE ID			TT-1A-26-28	TT-13 (29')	Number	Number	Minimum	Maximum	Average	Average	95th Percentile	Exposure Point Concentration (EPC) ⁽⁵⁾
Sample Depth (feet)			26-28	29'	of Times	of Times	Concentration	Concentration	Concentration	Concentration	Standard Deviation	Upper Confidence Limit
SAMPLING DATE			9/11/2019	3/15/2022	Detected	Sought	Detected	Detected	Detected	Detected		
LAB SAMPLE ID	CAS No.	Units	L1942017-04	L2214450-02	0 to 3 feet	0 to 3 feet	0 to 3 feet	0 to 3 feet	0 to 3 feet	0 to 29 feet		0 to 3 feet
Perfluorinated Alkyl Acids by EPA 537												
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	<0.935	<0.249	12	12	0.596	34.1	9.0	7.8	9.3	14
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	<0.935	<0.249	8	12	1.09	21.3	3.8	3.3	5.9	7.1
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<0.935	<0.249	0	12	ND	ND	ND	ND	ND	ND
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	<0.935	<0.249	10	12	0.338	36.2	5.2	4.5	10	11
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	<0.935	0.254	3	12	0.656	3.74	0.72	0.67	0.96	1.3
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	1.26	0.622	10	12	0.561	34.7	5.8	5.1	9.5	11
Total PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA		ng/g	1.26	0.876	12	12	2.33	126.3	24	21	34	43

Notes:

Units are in ng/g (parts per billion)

ND indicates compound not detected above laboratory analytical method detection limit in any sample in this Exposure Point.

< indicate compound not detected above the laboratory analytical method detection limit.

For compounds detected at least once above the detection limit, samples reported as not detected by the laboratory are assumed to have a concentration of one-half of the method detection limit for that sample in the average calculation.

NA indicates not applicable.

(1) Equal to Massachusetts Contingency Plan (MCP) Method 1 Soil Standards. Source: Massachusetts Department of Environmental Protection (DEP) 310 CMR 40.0000 The Massachusetts Contingency Plan, 12/27/2019

(2) Sanborn, Head & Associates, 2022. *Background Levels of PFAS and PAHs in Maine Shallow Soils*. Prepared for the Maine Department of Environmental Protection. April 2022.

(3) University of Vermont and Sanborn, Head & Associates, 2019. *PFAS Background in Vermont Shallow Soils*. February 8, 2019.

(4) Woodard & Curran, 2022. *PFAS in Massachusetts Soils: Establishing Background Conditions to Inform Regulatory Decision-Making*. Presentation to the Massachusetts Licensed Site Professionals Association (LSPA). October 25, 2022.

(5) The Exposure Point Concentration (EPC) is the 95th percentile upper confidence limit on the mean.

Bold indicates EPC is above MCP Method 1 S-1/GW-1, S-2/GW-1, and S-3/GW-1 Standard.

Table 16 - Method 2 Risk Characterization - Soil - Airport Property

CLIENT SAMPLE ID	Sample Depth (feet)	SAMPLING DATE	LAB SAMPLE ID	CAS No.	Units	Area 2 EPC	Area 2 Deep	Hadley Hangar EPC	MCP Method 2 Soil Standards ⁽¹⁾						MCP UCL	Background Data Sets		
						TT-2A-0-1	TT-2A-30-32	HADLEY SOIL 0-6"	MCP Method 1 Standard	MCP Method 1 Standard	MCP Method 1 Standard	MCP Method 1 Standard	MCP Method 1 Standard	MCP Method 1 Standard	MCP UCL mg/kg	95% Upper Tolerance Limits (UTL)		
						0-1	30-32	0-0.5'	S-1/GW-1	S-1/GW-3	S-2/GW-1	S-2/GW-3	S-3/GW-1	S-3/GW-3		Maine ⁽²⁾	Vermont ⁽³⁾	Massachusetts ⁽⁴⁾
						9/11/2019	9/11/2019	9/20/2022										
						L1942017-01	L1942017-02	L2252841-01										
Perfluorinated Alkyl Acids by EPA 537																		
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	3.2	<1.00	1.7	0.3	300	0.3	400	0.3	400	4000	3.24	0.39	0.458			
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	1.7	1.1	<0.676	0.5	300	0.5	400	0.5	400	4000	0.246	0.84	1.44			
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<1.04	<1.00	<0.676	0.3	300	0.3	400	0.3	400	4000	Not Reported	0.38	Not Detected			
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	1.6	<1.00	<0.676	0.32	300	0.32	400	0.32	400	4000	1.93	0.44	0.698			
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	<1.04	<1.00	<0.676	2	300	2	400	2	400	4000	3.036	3.4	3.64			
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	1.7	1.5	<0.676	0.72	300	0.72	400	0.72	400	4000	2.18	1.6	2.15			
Total PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA		ng/g	8.1	2.6	1.7	NA	NA	NA	NA	NA	NA	NA						

Notes:

Units are in ng/g (parts per billion)

ND indicates compound not detected above laboratory analytical method detection limit in any sample in this Exposure Point.

< indicate compound not detected above the laboratory analytical method detection limit.

For compounds detected at least once above the detection limit, samples reported as not detected by the laboratory are assumed to have a concentration of one-half of the method detection limit for that sample in the average calculation.

NA indicates not applicable.

(1) Equal to Massachusetts Contingency Plan (MCP) Method 1 Soil Standards. Source: Massachusetts Department of Environmental Protection (DEP) 310 CMR 40.0000 The Massachusetts Contingency Plan, 12/27/2019

(2) Sanborn, Head & Associates, 2022. *Background Levels of PFAS and PAHs in Maine Shallow Soils*. Prepared for the Maine Department of Environmental Protection. April 2022.

(3) University of Vermont and Sanborn, Head & Associates, 2019. *PFAS Background in Vermont Shallow Soils*. February 8, 2019.

(4) Woodard & Curran, 2022. *PFAS in Massachusetts Soils: Establishing Background Conditions to Inform Regulatory Decision-Making*. Presentation to the Massachusetts Licensed Site Professionals Association (LSPA). October 25, 2022.

(5) The Exposure Point Concentration (EPC) is the 95th percentile upper confidence limit on the mean.

Bold indicates EPC is above MCP Method 1 S-1/GW-1, S-2/GW-1, and S-3/GW-1 Standard.

Table 17 - Method 2 Risk Characterization - Soil - Residential Properties

CLIENT SAMPLE ID												Background Data Sets			
	PROPERTY F- SOIL-0-6"	PROPERTY I SOIL 0-6"	PROPERTY J (0-0.5')	PROPERTY Y- 0-6"	PROPERTY AB (0-0.5')	PROPERTY DA (0-0.5')	PROPERTY FY SOIL-0-6"	MCP Method 2 ⁽¹⁾	MCP Method 2 ⁽¹⁾	MCP Method 2 ⁽¹⁾	95% Upper Tolerance Limits (UTL)				
Sample Depth (feet)	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	Direct Contact	Direct Contact	Direct Contact	Maine	Vermont	Massachusetts		
SAMPLING DATE	9/21/2022	9/21/2022	3/15/2022	9/20/2022	3/15/2022	3/15/2022	9/22/2022	Standard	Standard	Standard	⁽²⁾	⁽³⁾	⁽⁴⁾		
LAB SAMPLE ID	CAS No.	Units	L2252863-04	L2252858-04	L2213649-01	L2252868-04	L2213647-01	L2213639-01	L2252851-01	S-1	S-2	S-3			
Perfluorinated Alkyl Acids by EPA 537															
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	<0.241	<0.263	<0.284	<0.349	5.78	0.728	<0.317	300	400	400	3.24	0.39	0.458
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	<0.241	<0.263	<0.284	1.16	<0.307	<0.303	<0.317	300	400	400	0.246	0.84	1.44
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<0.241	<0.263	<0.284	2.34	<0.307	<0.303	<0.317	300	400	400	Not Reported	0.38	Not Detected
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	<0.241	<0.263	<0.284	<0.349	1.16	<0.303	<0.317	300	400	400	1.93	0.44	0.698
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	0.254	0.635	2.07	9.10	13.1	1.57	0.384	300	400	400	3.036	3.4	3.64
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	<0.241	0.272	<0.284	<0.349	0.738	<0.303	<0.317	300	400	400	2.18	1.6	2.15
Total PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA		ng/g	0.25	0.91	2.07	12.60	20.8	2.30	0.384	NA	NA	NA			

Notes:

Units are in ng/g (parts per billion)

< indicate compound not detected above the laboratory analytical method detection limit.

NA indicates not applicable.

(1) Source: Massachusetts Department of Environmental Protection (DEP) 310 CMR 40.0000 The Massachusetts Contingency Plan, 12/27/2019

(2) Sanborn, Head & Associates, 2022. *Background Levels of PFAS and PAHs in Maine Shallow Soils*. Prepared for the Maine Department of Environmental Protection. April 2022.

(3) University of Vermont and Sanborn, Head & Associates, 2019. *PFAS Background in Vermont Shallow Soils*. February 8, 2019.

(4) Woodard & Curran, 2022. *PFAS in Massachusetts Soils: Establishing Background Conditions to Inform Regulatory Decision-Making*. Presentation to the Massachusetts Licensed Site Professionals Association (LSPA). October 25, 2022.

Bold indicates EPC is above the MCP Method 2 S-1, S-2, or S-3 Direct Contact Standard.

Table 18 - Method 2 Risk Characterization - Groundwater - Monitoring Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
M-10	3/14/2018	1.72		2.08	53.4	16.9	18.2	43.2	96.9	231	
M-10	11/1/2018	1.71		2.44	176	11.5	14.6	36.1	101	342	
M-10	9/8/2020	1.93		2.84	165	7.08	16.4	21.5	70.8	284	
M-10	9/19/2022	2.36		1.18	108	4.71	2.7	10.5	38.2	164	
M-10	EPC (average of last 4 events)			2.1	126	10	13	28	77	255	No
M-11	3/14/2018	1.72		0.86	18.3	0.86	0.86	12.7	11.3	42	
M-11	9/21/2022	2.11		1.055	55.4	3.45	1.055	3.79	18.8	81	
M-11	EPC (max detected)			ND	55	3.5	ND	13	19	81	No
M-4	3/13/2019	8.77		4.385	745	72.9	55.7	150	343	1367	
M-4	9/8/2020	1.79		5.51	350	5.76	26.2	31.7	169	588	
M-4	11/15/2021	4.00		2	158	145	21.2	450	120	894	
M4	9/19/2022	1.88		0.94	39.6	25.2	6.84	35.6	21.9	129	
M-4	EPC (average of last 4 events)			3.2	323	62	27	167	163	745	No
M-4D	3/13/2019	1.70		0.85	35.5	0.85	4.64	0.85	14.8	55	
M-4D	9/8/2020	1.83		0.915	12.6	0.915	2.55	0.915	5.85	21	
M-4D	11/15/2021	1.84		0.92	11.7	0.92	1.97	0.92	6.06	20	
M-4D	9/19/2022	1.86		0.93	16.5	0.93	2.17	0.93	6.58	25	
M-4D	EPC (average of last 4 events)			ND	19	ND	2.8	ND	8.3	30	No
M-4E	3/13/2019	1.76		0.88	28	0.88	2.91	0.88	10.9	42	
M-4E	9/8/2020	1.91		0.955	18.2	0.955	2.71	0.955	6.99	28	
M-4E	11/15/2021	1.84		0.92	29.6	0.92	2.02	0.92	6.28	38	
M-4E	9/19/2022	1.76		0.88	18.3	0.88	1.97	0.88	5.4	26	
M-4E	EPC (average of last 4 events)			ND	24	ND	2.4	ND	7.4	33	No
M-6	3/15/2018	1.72		2.13	12.2	0.86	2.74	0.86	10.7	28	
M-6	9/11/2020	1.83		0.915	3.83	0.915	0.915	0.915	5.79	10	
M-6	9/20/2022	1.89		0.945	8.05	0.945	0.945	0.945	10.7	19	
M-6	EPC (max detected)			2.1	12	ND	2.7	ND	11	28	No
M-6D	3/15/2018	1.72		1.9	44.2	0.86	4.69	0.86	17.5	68	
M-6D	11/1/2018	1.76		0.88	81	0.88	0.88	0.88	22.7	104	
M-6D	9/11/2020	1.80		0.9	44.5	0.9	0.9	0.9	21.7	66	
M-6D	9/20/2022	1.87		0.935	51.6	0.935	0.935	0.935	36.2	88	
M-6D	EPC (average of last 4 events)			1.2	55	ND	1.9	ND	25	81	No
MW-AYI	6/13/2022	1.86		0.93	3.27	2.58	0.93	0.93	5.24	11	
MW-AYI	EPC (max detected)			ND	3.3	2.6	ND	ND	5.2	11	Yes
MW-BD	6/14/2022	1.73		0.865	11.8	0.865	0.865	0.865	4.97	17	
MW-BD	EPC (max detected)			ND	12	ND	ND	ND	5.0	17	Yes
MW-BS	6/14/2022	1.75		1.75	462	2.29	15.4	11.2	204	697	
MW-BS	EPC (max detected)			ND	462	2.3	15	11	204	697	No
MW-JM	3/13/2019	1.72		0.86	63.3	0.86	0.86	0.86	11.4	75	
MW-JM	9/10/2020	1.86		0.93	215	0.93	0.93	0.93	25.5	241	
MW-JM	11/15/2021	1.98		0.99	58.8	128	0.99	146	17.7	351	
MW-JM	EPC (max detected)			ND	215	128	ND	146	26	351	No

Table 18 - Method 2 Risk Characterization - Groundwater - Monitoring Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
MW-JS	3/13/2019	1.75		0.875	88.2	234	3.17	57	17.8	400	
MW-JS	9/10/2020	1.89		0.945	28	92.8	0.945	106	10.4	237	
MW-JS	11/15/2021	4.0		2	142	2	2	8.19	34.3	184	
MW-JS	EPC (max detected)			ND	142	234	3.2	106	34	400	No
OW-B	12/13/2018	1.89		0.945	0.945	0.945	0.945	3.06	3.18	6.2	
OW-B	9/9/2020	1.90		0.95	0.95	0.95	0.95	0.95	2.05	2.1	
OW-B	EPC (max detected)			ND	ND	ND	ND	3.1	3.2	6.2	Yes
RIZ-10	3/15/2018	1.72		0.86	36.2	0.86	4.59	6.72	43.9	91	
RIZ-10	EPC (max detected)			ND	36	ND	4.6	6.7	44	91	No
RIZ-12	3/16/2018	1.78		0.89	10.1	0.89	0.89	0.89	0.89	10	
RIZ-12_40'	9/21/2022	1.85		0.925	7.77	0.925	0.925	0.925	0.925	8	
RIZ-12_70'	9/21/2022	1.98		0.99	12.9	0.99	0.99	0.99	0.99	13	
RIZ-12	EPC (max detected)			ND	13	ND	ND	ND	ND	13	Yes
RIZ-19	9/20/2022	1.87		0.935	3.1	0.935	0.935	0.935	0.935	3.1	
RIZ-19	EPC (max detected)			ND	3.1	ND	ND	ND	ND	3.1	Yes
RIZ-21	9/20/2022	1.84		0.92	3.77	0.92	0.92	0.92	0.92	3.8	
RIZ-21	EPC (max detected)			ND	3.8	ND	ND	ND	ND	3.8	Yes
RIZ-42	3/15/2018	1.67		0.835	12.3	0.835	0.835	0.835	6.05	18	
RIZ-42	11/1/2018	1.75		0.875	15.9	0.875	0.875	0.875	6.87	23	
RIZ-42	9/20/2022	1.88		0.94	19.4	0.94	0.94	2.73	14.4	37	
RIZ-42	EPC (max detected)			ND	19	ND	ND	2.7	14	37	No
RIZ-5	3/15/2018	1.72		0.86	2.35	0.86	0.86	0.86	0.86	2.4	
RIZ-5	EPC (max detected)			ND	2.4	ND	ND	ND	ND	2.4	Yes
RIZ-61	3/15/2018	1.78		0.89	38.6	2.04	0.89	0.89	10.4	51	
RIZ-61	9/9/2020	1.87		0.935	27.5	0.935	0.935	2.75	10.8	41	
RIZ-61	EPC (max detected)			ND	39	2.0	ND	2.8	11	51	No
RIZ-64	9/21/2022	1.90		0.95	29.5	0.95	0.95	3.2	14	47	
RIZ-64	EPC (max detected)			ND	30	ND	ND	3.2	14	47	No
RIZ-X	9/21/2022	1.87		0.935	498	3.77	7.74	0.935	93.5	603	
RIZ-X	EPC (max detected)			ND	498	3.8	7.7	ND	94	603	No
TMW-12	11/26/2018	1.71		0.855	0.855	0.855	0.855	0.855	2.42	2.4	
TMW-12	EPC (max detected)			ND	ND	ND	ND	ND	2.42	2.4	Yes
TMW-2	3/15/2018	1.67		0.835	42.8	0.835	5.64	8.19	52.8	109	
TMW-2	9/9/2020	1.88		0.94	21.3	0.94	0.94	0.94	18	39	
TMW-2	EPC (max detected)			ND	43	ND	6	8	53	109	No
TMW-4	3/14/2018	1.72		0.86	0.86	0.86	0.86	0.86	2.82	2.8	
TMW-4	9/20/2022	1.83		0.915	0.915	0.915	0.915	2.69	2.17	4.9	
TMW-4	EPC (max detected)			ND	ND	ND	ND	2.7	2.8	4.9	Yes
TMW-5	3/15/2018	1.72		0.86	2.79	0.86	0.86	0.86	2.31	5.1	
TMW-5	9/20/2022	1.82		0.91	24.2	0.91	2.16	10.9	13.8	51	
TMW-5	EPC (max detected)			ND	24	ND	2.2	11	14	51	No
TMW-5D	3/15/2018	1.72		0.86	12.4	0.86	0.86	0.86	3.01	15	
TMW-5D	9/20/2022	1.97		0.985	7.2	0.985	0.985	0.985	2.37	10	

Table 18 - Method 2 Risk Characterization - Groundwater - Monitoring Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
TMW-5D	EPC (max detected)			ND	12	ND	ND	ND	3.0	15	Yes

Table 18 - Method 2 Risk Characterization - Groundwater - Monitoring Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
TMW-6	3/15/2018	1.78		0.89	29.2	1.8	2.11	2.43	25.4	61	
TMW-6	9/9/2020	1.81		0.905	21.2	0.905	2.07	1.95	17.6	43	
TMW-6	9/20/2022	1.83		0.915	15.4	2.51	0.915	1.85	15.7	35	
TMW-6	EPC (max detected)			ND	29	2.5	2.1	2.4	25	61	No
TMW-6D	9/9/2020	1.90		0.95	118	0.95	21.3	0.95	77.3	217	
TMW-6D	9/20/2022	1.93		0.965	82	0.965	5.58	0.965	45.1	133	
TMW-6D	EPC (max detected)			ND	118	ND	21	ND	77	217	No
TT-1	8/8/2019	1.86		14	392	0.93	36.5	10.6	183	636	
TT-1	9/10/2020	1.92		6.97	94.7	0.96	9.72	8.34	102	222	
TT-01	11/10/2021	40		20	412	20	20	20	267	679	
TT-01	9/21/2022	1.83		3.74	86.5	0.915	16	10.5	101	218	
TT-1	EPC (average of last 4 events, excl. 9/13/19)			11	246	5.7	21	12	163	439	No
TT-2	3/16/2018	1.78		6.96	1620	5.54	309	4.11	1920	3866	
TT-2	8/8/2019	1.85		0.925	335	0.925	79.7	2.17	293	710	
TT-2	9/10/2020	1.81		0.905	88.6	2.89	40.3	2.5	109	243	
TT-2	EPC (max detected)			7.0	1620	5.5	309	4.1	1920	3866	No
TT-3	8/8/2019	1.83		0.915	603	0.915	21	0.915	86.2	710	
TT-3	9/10/2020	1.85		0.925	231	0.925	5.18	0.925	57.7	294	
TT-03	11/16/2021	4.00		2	86.4	2	2	2	11.4	98	
TT-03	9/22/2022	1.91		0.955	142	0.955	2.34	0.955	12	156	
TT-3	EPC (average of last 4 events)			ND	266	ND	8	ND	42	315	No
TT-4	3/15/2018	1.78		2.37	13.8	0.89	3.64	3.2	11.8	35	
TT-4	9/10/2020	1.91		3.28	30.4	0.955	2.91	4.36	15.9	57	
TT-04	9/21/2022	1.84		7.89	16.6	0.92	6.83	8.02	10.1	49	
TT-4	EPC (max detected)			7.9	30	ND	6.8	8.0	16	57	No
TT-5	8/8/2019	1.72		10.8	172	0.86	19.6	0.86	103	305	
TT-5	9/10/2020	1.82		13.3	580	0.91	8.46	0.91	21.5	623	
TT-05	11/15/2021	10.00		24.4	257	5	11.5	5	74.5	367	
TT-05	9/20/2022	1.94		21.2	394	0.97	13.8	0.97	28.5	458	
TT-5	EPC (max detected)			17	351	ND	13	ND	57	438	No
TT-6	3/13/2019	1.75		6.91	7.1	0.875	3.95	2.87	24.9	46	
TT-6	9/9/2020	1.92		2.13	7.06	0.96	3.46	0.96	11.4	24	
TT-06	9/20/2022	1.85		5.48	7.03	0.925	2.06	0.925	13.4	28	
TT-6	EPC (max detected)			6.9	7.1	0.96	4.0	2.9	25	46	No
TT-7	3/13/2019	1.78		0.89	0.89	0.89	0.89	0.89	2.89	3	
TT-7	9/9/2020	1.88		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
TT-7	EPC (max detected)			ND	ND	ND	ND	ND	2.9	2.9	Yes
TT-8	9/13/2019	1.79		0.895	3.59	0.895	0.895	0.895	0.895	4	
TT-08	9/21/2022	1.86		0.93	2.57	0.93	0.93	2.37	2.42	7	
TT-8	EPC (max detected)			ND	3.6	ND	ND	2.4	2.4	7.4	Yes
TT-9	9/13/2019	1.85		0.925	39.1	3.84	0.925	5.8	33.2	82	
TT-9	9/21/2022	10		5	29.4	5	5	5	18.8	48	
TT-9	EPC (max detected)			ND	39	3.8	0.93	5.8	33	82	No

Table 18 - Method 2 Risk Characterization - Groundwater - Monitoring Wells

Compound Name	CAS No.	Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?	
			335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1			
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
TT-10	9/13/2019	1.92		<i>0.96</i>	84.6	208	<i>0.96</i>	<i>0.96</i>	43.2	336	
TT-10	9/10/2020	1.89		<i>0.945</i>	70.2	117	<i>0.945</i>	<i>0.945</i>	25	212	
TT-10	9/21/2022	1.86		<i>0.93</i>	55	58.4	<i>0.93</i>	<i>0.93</i>	24.8	138	
TT-10	EPC (max detected)			ND	85	208	0.96	0.96	43	336	No
TT-13	6/15/2022	1.81		2.21	2190	<i>0.905</i>	25.2	8.91	832	3058	
TT-13-33'	7/21/2022	50		25	2230	25	25	25	1100	3330	
TT-13-37'	7/21/2022	500		250	2430	250	250	250	1350	3780	
TT-13	9/21/2022	1.91		<i>0.955</i>	1570	<i>0.955</i>	10.5	3.04	550	2134	
TT-13	EPC (max detected)			2.2	2430	ND	25	8.9	1350	3780.0004	No
TT-14	6/15/2022	1.82		<i>0.91</i>	198	5.24	12.5	11	48.9	276	
TT-14-34'	7/21/2022	20		10	295	10	10	10	37.5	333	
TT-14-40'	7/21/2022	20		10	212	10	10	10	29.6	242	
TT-14	9/21/2022	1.86		<i>0.93</i>	24.3	5.01	2.32	7.22	7.96	47	
TT-14	EPC (max detected)			ND	295	5.2	13	11	49	333	No
TT-17D	6/14/2022	1.87		<i>0.935</i>	<i>0.935</i>	3.29	<i>0.935</i>	<i>0.935</i>	<i>0.935</i>	3.3	
TT-17D	EPC (max detected)			ND	ND	3.3	ND	ND	ND	3.3	Yes

Notes:

Units are in ng/L (parts per trillion)

EPC indicates Exposure Point Concentration. Average concentration selected as EPC if monitoring well has been sampled at least four times. Maximum detected concentration selected as EPC if monitoring well has been sampled less than four times.

ND indicates compound not detected above laboratory analytical method detection limit in any sample from this monitoring well.

Italics indicate compound not detected at the laboratory analytical method detection limit.

NA indicates not applicable.

(1) Source: Massachusetts Department of Environmental Protection (DEP) 310 CMR 40.0000 The Massachusetts Contingency Plan, 12/27/2019

For compounds detected at least once above the detection limit, samples reported as not detected (*italics*) by the laboratory are assumed to have a concentration

of one-half of the method detection limit for that sample in the average calculation.

Bold indicates EPC is above MCP Method 1 GW-1 Standard.

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property A	11/2/2018	1.72		0.86	2.9	0.86	0.86	0.86	0.86	2.9	
Property A	EPC (max detected)			ND	2.9	ND	ND	ND	ND	2.9	Yes
Property AC-INF	3/14/2019	0.00		0.0	28	0.0	0.0	0.0	8.5	37	
Property AC-INF	6/3/2020	1.90		0.95	19	0.95	0.95	2.5	15	37	
Property AC-INF	6/11/2021	2.03		1.0	58	1.0	1.0	1.0	38	95	
Property AC-INF	6/3/2022	1.87		0.94	87	0.94	0.94	0.94	69	156	
Property AC	EPC (average of last 4 events)			ND	48	ND	ND	1.1	33	81	No
Property AJ-2	3/1/2019	2.25		1.1	1.1	1.1	1.1	1.1	1.1	1.1	
Property AJ	10/22/2020	1.77		0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Property AJ	6/11/2021	1.86		0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Property AJ	6/7/2022	2.00		1.0	4.9	1.0	1.0	1.0	1.0	4.9	
Property AJ	EPC (max detected of last 4 events)			ND	4.9	ND	ND	ND	ND	4.9	Yes
Property AL-INF	6/29/2021	1.81		0.91	48	3.7	2.3	6.3	20	80	
Property AL-INF	10/19/2021	2.00		1.00	47	5.6	3.0	9.7	20	85	
Property AL-INF	6/8/2022	1.83		0.92	22	3.9	0.92	5.9	12	44	
Property AL-INF	9/23/2022	1.73		0.87	39	8.2	1.9	8.6	19	76	
Property AL	EPC (average of last 4 events)			ND	39	5.4	2.0	7.6	18	72	No
Amerigas Well	12/13/2018	1.96		0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Amerigas Well	EPC (max detected)			ND	ND	ND	ND	ND	ND	ND	Yes
Property AN	12/7/2018	1.87		0.94	4.5	3.1	0.94	5.0	5.5	18	
Property AN-2	6/3/2019	2.07		1.0	1.0	1.0	1.0	3.3	3.3	6.6	
Property AN	12/15/2021	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property AN	EPC (max detected)			ND	2.2	1.7	ND	3.1	3.3	8.6	Yes
Property AO-INF	7/17/2020	1.82		0.91	13	0.91	0.91	0.91	0.91	13	
Property AO-INF	3/24/2021	1.80		0.90	7.6	0.90	0.90	0.90	0.90	7.6	
Property AO-INF	6/9/2021	1.81		0.91	14	0.91	0.91	0.91	0.91	14	
Property AO-INF	5/31/2022	1.82		0.91	13	0.91	0.91	0.91	0.91	13	
Property AO	EPC (average of last 4 events)			ND	12	ND	ND	ND	ND	12	Yes
Property AS-INF	6/2/2020	1.85		0.93	50	0.93	0.93	0.93	19	69	
Property AS-INF	10/22/2020	1.82		0.91	66	0.91	0.91	0.91	19	85	
Property AS-INF	6/8/2021	1.83		0.92	39	3.5	0.92	0.92	19	61	
Property AS-INF	6/13/2022	1.81		0.91	26	0.91	0.91	0.91	9.9	36	
Property AS	EPC (average of last 4 events)			ND	45	1.6	ND	ND	17	63	No
Property AT	12/13/2018	1.84		0.92	9.4	0.92	0.92	0.92	0.92	9.4	
Property AT-2	6/3/2020	1.94		0.97	6.5	0.97	0.97	0.97	0.97	6.5	
Property AT	6/9/2021	1.90		0.95	9.9	0.95	0.95	0.95	0.95	9.9	
Property AT	6/3/2022	2.00		1.0	22	1.0	1.0	1.0	1.0	22	
Property AT	EPC (average of last 4 events)			ND	12	ND	ND	ND	ND	12	Yes

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property AU	12/13/2018	1.69		0.85	29	0.85	0.85	0.85	23	51	
Property AU-INF	3/17/2020	0.00		0.0	12	0.0	0.0	0.0	14	27	
Property AU-INF	6/11/2021	1.96		0.98	27	0.98	0.98	0.98	21	48	
Property AU-INF	6/14/2022	1.82		0.91	19	0.91	0.91	0.91	18	37	
Property AU	EPC (average of last 4 events, excl. 3/14/19)			ND	22	ND	ND	ND	19	41	No
Property AV	12/13/2018	1.82		0.91	0.91	0.91	0.91	1.9	4.4	6.3	
Property AV-2	6/2/2020	1.77		0.89	0.89	0.89	0.89	3.3	8.3	12	
Property AV	6/10/2021	2.07		1.0	1.0	1.0	1.0	2.6	6.4	9.0	
Property AV	6/6/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property AV	EPC (average of last 4 events)			ND	ND	ND	ND	2.2	5.0	7.0	Yes
Property AW-INF	6/7/2021	1.74		0.87	6.1	7.0	0.87	2.3	3.8	19	
Property AW-INF	9/9/2021	2.00		1.0	7.3	4.9	1.0	2.4	3.8	18	
Property AW-INF	6/8/2022	1.82		0.91	5.1	6.1	0.91	0.91	2.8	14	
Property AW-INF	9/19/2022	1.82		0.91	8.4	6.5	0.91	2.4	3.2	21	
Property AW	EPC (average of last 4 events)			ND	6.7	6.1	ND	2.0	3.4	18	Yes
Property AX-INF	6/11/2021	1.86		0.93	30	0.93	0.93	0.93	14	44	
Property AX-INF	9/8/2021	2.00		1.0	30	1.0	1.0	1.0	15	45	
Property AX-INF	6/1/2022	1.79		0.90	40	0.90	0.90	0.90	19	59	
Property AX-INF	9/19/2022	1.89		0.95	35	0.95	0.95	0.95	19	54	
Property AX	EPC (average of last 4 events)			ND	34	ND	ND	ND	17	50	No
Property AY-INF	6/9/2021	2.11		1.1	1.1	36	1.1	131	3.5	170	
Property AY-INF	9/8/2021	2.00		1.0	1.0	34	1.0	119	3.3	156	
Property AY-INF	6/3/2022	1.90		0.95	0.95	25	0.95	87	2.1	113	
Property AY-INF	9/21/2022	2.10		1.1	1.1	24	1.1	87	1.1	111	
Property AY	EPC (average of last 4 events)			ND	ND	29	ND	106	2.5	138	No
Property B-INF	12/14/2021	2.00		1.0	421	7.4	7.9	8.2	196	640	
Property B-INF	3/17/2022	1.76		0.88	143	0.88	3.4	11	85	242	
Property B-INF	6/3/2022	1.78		0.89	97	0.89	3.2	5.9	57	163	
Property B-INF	9/19/2022	1.75		0.88	28	0.88	2.6	0.88	14	45	
Property B	EPC (average of last 4 events)			ND	172	2.5	4.3	6.4	88	273	No
Property BA	12/13/2018	1.82		0.91	0.91	2.7	0.91	0.91	0.9	2.7	
Property BA-2	6/2/2020	1.81		0.91	0.91	3.1	0.91	0.91	0.91	3.1	
Property BA	6/10/2021	1.88		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Property BA	6/9/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property BA	EPC (max detected)			ND	ND	3.1	ND	ND	ND	3.1	Yes

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluorooheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property BD	12/13/2018	1.74		0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Property BD	3/18/2020	1.94		0.97	0.97	0.97	0.97	2.0	4.6	6.6	
Property BD	12/15/2021	2.00		1.0	1.0	1.0	1.0	2.6	7.5	10	
Property BD	6/1/2022	2.00		1.0	1.0	1.0	1.0	2.8	5.0	7.8	
Property BD	EPC (average of last 4 events)			ND	ND	ND	ND	2.1	4.5	6.4	Yes
Property BE-INF	6/17/2019	0.00		0.0	7.1	0.0	0.0	0.0	3.5	11	
Property BE-INF	3/17/2020	0.00		0.0	14	0.0	0.0	0.0	4.3	18	
Property BE-INF	6/8/2021	1.84		0.92	7.8	0.92	0.92	0.92	3.9	12	
Property BE-INF	6/13/2022	1.89		0.95	7.5	0.95	0.95	0.95	2.3	9.8	
Property BE	EPC (average of last 4 events)			ND	9.1	ND	ND	ND	3.5	13	Yes
Property BH	12/13/2018	1.76		0.88	6.6	0.88	0.88	0.88	7.6	14	
Property BH-2	9/12/2019	1.80		0.90	2.2	0.90	0.90	0.90	2.9	5.1	
Property BH	6/8/2021	1.90		0.95	2.6	0.95	0.95	0.95	3.0	5.6	
Property BH	6/3/2022	2.00		1.0	4.9	1.0	1.0	1.0	4.2	9.1	
Property BH	EPC (average of last 4 events)			ND	4.1	ND	ND	ND	4.4	8.5	Yes
Property BI	12/13/2018	1.78		0.89	0.89	0.89	0.89	0.89	2.0	2.0	
Property BI-2	6/2/2020	1.79		0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Property BI	6/10/2021	1.84		0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Property BI	6/3/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property BI	EPC (max detected)			ND	ND	ND	ND	ND	2.0	2.0	Yes
Property BJ-1-INF	6/10/2021	1.83		0.92	119	0.92	18	0.92	85	221	
Property BJ-1-INF	9/9/2021	2.00		1.0	168	1.0	21	1.0	66	255	
Property BJ-1-INF	6/16/2022	1.83		0.92	129	0.92	23	0.92	64	216	
Property BJ-INF	9/19/2022	1.86		0.93	57	0.93	9.3	0.93	44	110	
Property BJ	EPC (average of last 4 events)			ND	118	ND	ND	ND	65	201	No
Property BN	12/13/2018	1.72		0.86	0.86	0.86	0.86	0.86	3.3	3.3	
Property BN	9/9/2020	1.82		0.91	0.91	0.91	0.91	0.91	7.0	7.0	
Property BN	6/8/2021	1.83		0.92	2.8	0.92	0.92	0.92	12	14	
Property BN	6/2/2022	2.00		1.0	1.0	1.0	1.0	1.0	6.0	6.0	
Property BN	EPC (average of last 4 events)			ND	1.4	ND	ND	ND	7.0	7.7	Yes
Property BO-1-INF	6/16/2022	1.91		0.96	65	0.96	0.96	0.96	52	117	
Property BO-INF	9/19/2022	1.86		0.93	54	0.93	0.93	0.93	33	87	
Property BO-INF	4/29/2019	0.00		0.0	164	0.0	0.0	0.0	121	285	
Property BO-INF	4/29/2019	0.00		0.0	162	0.0	0.0	0.0	103	265	
Property BO	EPC (average of last 4 events)			ND	111	ND	ND	ND	77	188	No

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property BP	12/15/2020	1.84		0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Property BP	6/10/2021	1.86		0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Property BP	6/6/2022	2.00		1.0	1.0	1.0	1.0	7.7	1.0	7.7	
Property BP	8/4/2022	2.00		1.0	1.0	1.0	1.0	3.9	1.0	3.9	
Property BP	EPC (max detected of last 4 events)			ND	ND	ND	ND	7.7	ND	7.7	Yes
Property BS-INF	7/11/2019	0.00		0.00	14	0.00	0.00	0.00	18	32	
Property BS-INF	3/18/2020	0.00		0.00	27	0.00	0.00	0.00	20	47	
Property BS-INF	6/9/2021	1.77		0.89	14	0.89	0.89	0.89	15	29	
Property BS-INF	5/31/2022	1.83		0.92	9.8	0.92	0.92	0.92	9.4	19	
Property BS	EPC (average of last 4 events)			ND	16	ND	ND	ND	15	32	No
Property BW	12/19/2018	1.79		0.90	0.90	0.90	0.90	2.8	9.1	12	
Property BW	EPC (max detected)			ND	ND	ND	ND	2.8	9.1	12	Yes
Property BZ-INF	3/14/2019	0.00		0.00	12	0.0	0.00	0.00	5.9	18	
Property BZ-INF	6/3/2020	1.79		0.90	7.31	0.90	0.90	0.90	3.8	11	
Property BZ-INF	6/11/2021	1.86		0.93	20	0.93	0.93	0.93	11	31	
Property BZ-INF	6/7/2022	1.83		0.92	25	0.92	1.9	0.92	12	39	
Property BZ	EPC (max detected of last 4 events)			ND	25	ND	1.9	ND	12	39	No
Property C-INF	6/10/2021	1.83		0.92	54	0.92	0.92	0.92	36	90	
Property C-INF	9/8/2021	2.00		1.00	50	1.00	1.00	1.00	33	84	
Property C-INF	6/1/2022	1.82		0.91	16	0.91	0.91	0.91	12	28	
Property C-INF	9/21/2022	1.85		0.93	30	0.93	0.93	0.93	20	49	
Property C	EPC (average of last 4 events)			ND	38	ND	ND	ND	25	63	No
Property CB	9/8/2020	1.79		0.90	23	0.90	0.90	0.90	6.2	29	
Property CB-INF	10/23/2020	1.79		0.90	20	0.90	0.90	0.90	5.7	26	
Property CB-INF	6/10/2021	1.84		0.92	4.0	0.92	0.92	0.92	0.92	4.0	
Property CB-INF	6/13/2022	1.77		0.89	4.0	0.89	0.89	0.89	0.89	4.0	
Property CB	EPC (average of last 4 events)			ND	13	ND	ND	ND	3.4	16	Yes
Property CC	12/20/2018	1.76		0.88	0.88	1.8	0.88	0.88	0.88	1.8	
Property CC-2	6/2/2020	1.77		0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Property CC	6/7/2021	1.76		0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Property CC	6/1/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property CC	EPC (max detected of last 4 events)			ND	ND	1.8	ND	ND	ND	1.8	Yes
Property CF-INF	3/28/2019	0.00		0.0	22	0.0	3.8	7.2	13	47	
Property CF-INF	3/18/2020	0.00		0.0	13	0.0	2.5	3.7	6.8	26	
Property CF-INF	6/10/2021	1.82		0.91	15	0.91	2.2	3.5	6.3	27	
Property CF-INF	6/2/2022	1.79		0.90	13	0.90	0.90	1.9	6.4	21	
Property CF	EPC (average of last 4 events)			ND	16	ND	2.3	4.0	8.2	30	No

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property CG	12/20/2018	1.92		0.96	2.0	0.96	0.96	0.96	0.96	2.0	
Property CG-2	6/1/2020	1.94		0.97	2.5	0.97	0.97	0.97	0.97	2.5	
Property CG	6/7/2021	1.87		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Property CG	6/8/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property CG	EPC (max detected of last 4 events)			ND	2.5	ND	ND	ND	ND	2.5	Yes
Property CH-2	6/3/2019	1.79		3.4	0.90	0.90	0.90	0.9	3.1	6.5	
Property CH	10/22/2020	1.96		0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Property CH	6/9/2021	1.94		0.97	0.97	0.97	0.97	0.97	2.1	2.1	
Property CH	5/31/2022	2.00		6.4	1.0	1.0	1.0	1.0	3.9	10	
Property CH	EPC (average of last 4 events)			2.9	ND	ND	ND	ND	2.5	5.0	Yes
Property CJ	12/19/2018	1.76		0.88	1.9	0.88	0.88	0.88	0.88	1.85	
Property CJ-2	6/5/2020	1.94		0.97	0.97	0.97	0.97	0.97	2.6	2.6	
Property CJ	6/8/2021	1.89		0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Property CJ	6/7/2022	2.00		1.0	2.1	1.0	1.0	1.0	1.0	2.1	
Property CJ	EPC (average of last 4 events)			ND	1.5	ND	ND	ND	1.4	1.9	Yes
Property CK	12/19/2018	1.86		0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Property CK	10/22/2020	1.78		0.89	6.1	0.89	0.89	0.89	2.7	8.8	
Property CK	6/8/2021	1.79		0.90	2.4	0.90	0.90	0.90	0.90	2.4	
Property CK	6/8/2022	2.00		1.0	3.0	1.0	1.0	1.0	1.0	3.0	
Property CK	EPC (average of last 4 events)			ND	3.1	ND	ND	0.9	1.4	3.8	Yes
Property CL-INF	9/8/2021	2.00		13	52	1.0	17	6.6	30	118	
Property CL-INF	10/19/2021	2.00		1.0	47	5.6	3.0	9.7	20	85	
Property CL-INF	6/8/2022	1.76		8.3	41	0.88	9.2	5	22	86	
Property CL-INF	9/23/2022	1.82		7.6	47	0.91	11	5.3	26	97	
Property CL	EPC (average of last 4 events)			7.5	47	2.1	10	6.7	24	97	No
Property CM	12/19/2018	1.91		0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Property CM	12/13/2019	1.79		0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Property CM	6/8/2021	2.02		1.0	3.5	1.0	1.0	1.0	1.0	3.5	
Property CM	6/7/2022	2.00		1.0	2.9	1.0	1.0	1.0	1.0	2.9	
Property CM	EPC (max detected)			ND	3.5	ND	ND	ND	1.0	3.5	Yes
Property CN	12/19/2018	1.74		0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Property CN-2	8/8/2019	1.78		0.89	1.8	0.89	0.89	0.89	0.89	1.8	
Property CN	6/10/2021	1.84		0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Property CN	6/8/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property CN	EPC (max detected)			ND	1.8	ND	ND	ND	1.0	1.8	Yes
Property CO	12/20/2018	1.71		0.86	0.86	0.86	0.86	2.1	4.1	6.2	
Property CO-2	8/8/2019	1.80		0.90	3.7	0.90	0.90	0.9	5.4	9.1	
Property CO	6/10/2021	1.85		0.93	3.2	0.93	0.93	0.93	4.3	7.5	
Property CO	6/8/2022	2.00		1.0	4.2	1.0	1.0	1.0	5.9	10.1	
Property CO	EPC (average of last 4 events)			ND	3.0	ND	ND	1.2	4.9	8.2	Yes

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property CQ	12/27/2018	1.71		0.86	5.6	0.86	0.86	0.86	7.5	13.1	
Property CQ-2	6/1/2020	1.90		0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Property CQ	6/7/2021	1.79		0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Property CQ	6/3/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property CQ	EPC (max detected of last 4 events)			ND	5.6	ND	ND	ND	7.5	13.1	Yes
Property CS-2	6/4/2019	1.95		0.98	3.4	0.98	0.98	1.0	4.3	7.7	
Property CS	6/8/2021	1.88		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Property CS	6/8/2022	2.00		1.0	2.0	1.0	1.0	74	1.0	76.3	
Property CS-INF	9/22/2022	1.79		0.90	0.90	0.90	0.90	0.90	2.1	2.1	
Property CS	EPC (average of last 4 events)			ND	1.8	ND	ND	19	2.1	22	No
Property CX	1/16/2019	1.91		0.96	0.96	0.96	0.96	2.8	2.6	5.4	
Property CX-2	6/4/2020	1.92		0.96	0.96	0.96	0.96	2.3	2.5	4.8	
Property CX	6/8/2021	1.88		0.94	0.94	0.94	0.94	0.94	2.6	2.6	
Property CX	5/31/2022	2.00		1.0	1.0	1.0	1.0	1.0	2.0	2.0	
Property CX	EPC (average of last 4 events)			ND	ND	ND	ND	1.8	2.4	3.7	Yes
Property CZ	1/16/2019	1.86		0.93	0.93	0.93	0.93	2.1	3.1	5.2	
Property CZ	9/9/2020	2.16		1.1	1.1	1.1	1.1	1.1	1.1	1.1	
Property CZ	6/11/2021	2.11		1.1	1.1	1.1	1.1	2.6	2.9	5.5	
Property CZ	6/1/2022	1.85		0.9	0.9	0.9	0.9	2.8	2.4	5.2	
Property CZ	EPC (average of last 4 events)			ND	ND	ND	ND	2.1	2.4	4.2	Yes
Property DA-INF	6/9/2021	1.81		0.91	0.91	37	0.91	296	3.9	337	
Property DA-INF	9/9/2021	2.00		1.0	1.0	42	1.0	266	3.8	312	
Property DA-INF	6/3/2022	2.00		1.0	1.0	47	1.0	207	2.7	257	
Property DA-INF	9/20/2022	1.77		0.89	0.89	41	0.89	154	2.5	197	
Property DA	EPC (average of last 4 events)			ND	ND	42	ND	231	3.2	276	No
Property DD	1/16/2019	1.88		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Property DD-2	7/16/2020	1.89		0.95	9.8	0.95	0.95	0.95	0.9	9.8	
Property DD	6/7/2021	1.84		0.92	9.7	0.92	0.92	0.92	0.9	9.7	
Property DD	6/3/2022	2.00		1.0	5.2	1.0	1.0	1.0	1.0	5.2	
Property DD	EPC (average of last 4 events)			ND	6.4	ND	ND	ND	ND	6.4	Yes
Property DE-2	8/8/2019	1.78		0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Property DE	10/23/2020	1.96		0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Property DE	6/11/2021	1.86		0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Property DE	6/9/2022	2.00		1.0	3.5	1.0	1.0	1.0	1.0	3.5	
Property DE	EPC (max detected of last 4 events)			ND	3.5	ND	ND	ND	ND	3.5	Yes

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property DG-INF	4/29/2019	0.00		0.0	29	0.0	0.0	0.0	8.3	37	
Property DG-INF	3/17/2020	0.00		0.0	10	0.0	0.0	0.0	4.6	15	
Property DG-INF	6/7/2021	1.83		0.92	13	0.92	0.92	0.92	7.6	21	
Property DG-INF	5/31/2022	1.82		0.91	45	0.91	0.91	0.91	31	76	
Property DG	EPC (average of last 4 events)			ND	24	ND	ND	ND	13	37	No
Property DJ	2/14/2019	2.67		1.3	1.3	1.3	1.3	1.3	1.3	1.3	
Property DJ	10/22/2020	1.86		0.93	2.7	0.93	0.93	0.93	0.9	2.7	
Property DJ	6/9/2021	1.93		0.97	3.1	0.97	0.97	0.97	2.4	5.5	
Property DJ	6/3/2022	2.00		1.0	4.4	1.0	1.0	1.0	2.2	6.6	
Property DJ	EPC (average of last 4 events)			ND	2.9	ND	ND	ND	1.7	4.0	Yes
Property DK	2/14/2019	1.97		0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Property DK	6/9/2021	1.87		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Property DK	6/3/2022	2.00		1.0	1.0	2.3	1.0	1.0	1.0	2.3	
Property DK	EPC (max detected)			ND	ND	2.280	ND	ND	ND	2.3	Yes
Property DO	2/14/2019	1.72		0.86	3.1	0.86	0.86	1.8	0.86	5.0	
Property DO	9/10/2020	1.88		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Property DO	6/10/2021	1.77		0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Property DO	6/13/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property DO	EPC (max detected of last 4 events)			ND	3.1	ND	ND	1.8	ND	5.0	Yes
Property DQ	2/14/2019	1.92		0.96	5.3	0.96	0.96	0.96	4.9	10	
Property DQ-2	6/5/2020	1.80		0.90	3.3	0.90	0.90	0.90	2.6	5.9	
Property DQ	6/9/2021	1.94		0.97	0.97	0.97	0.97	0.97	1.0	1.0	
Property DQ	6/1/2022	2.00		1.0	1.0	1.0	1.0	1.0	2.2	2.2	
Property DQ	EPC (average of last 4 events)			ND	2.6	ND	ND	ND	2.7	4.8	Yes
Property E-INF	4/30/2019	0.00		0.0	56	5.0	3.4	3.1	39	107	
Property E-INF	3/18/2020	0.00		0.0	20	0.0	0.0	0.0	12	33	
Property E-INF	6/9/2021	2.00		1.0	26	1.0	2.0	5.4	18	51	
Property E-INF	6/3/2022	1.95		0.98	21	0.98	0.98	1.0	7.9	29	
Property E	EPC (average of last 4 events)			ND	31	1.7	1.6	2.4	19	55	No
Property EA	3/15/2019	1.86		0.93	0.93	0.93	0.93	0.93	4.8	4.8	
Property EA	9/9/2020	1.86		0.93	0.93	0.9	0.93	0.93	0.93	0.93	
Property EA	6/10/2021	1.90		0.95	0.95	1.0	0.95	0.95	0.95	0.95	
Property EA	6/8/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property EA	EPC (max detected of last 4 events)			ND	ND	ND	ND	ND	4.8	4.8	Yes
Property ED-INF	7/18/2019	0.00		0.00	15	12	0.00	0.0	9	36	
Property ED-INF	7/16/2020	1.79		0.90	23	12	0.90	0.90	7	42	
Property ED-INF	6/9/2021	1.85		0.93	38	6.6	0.93	0.93	16	61	
Property ED-INF	6/4/2022	1.80		0.90	24	8.8	0.90	0.90	9.5	42	
Property ED	EPC (average of last 4 events)			ND	25	9.8	ND	ND	10	45	No

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property EF	3/15/2019	1.82		0.91	0.91	0.91	0.91	0.91	13	13	
Property EF	9/9/2020	1.73		0.87	0.87	0.9	0.87	0.87	3.3	3.3	
Property EF	EPC (max detected)			ND	ND	ND	ND	ND	13	13	Yes
Property EG	3/15/2019	1.77		0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Property EG	9/9/2020	1.83		0.92	0.92	3.4	0.92	0.92	0.92	3.4	
Property EG	6/10/2021	1.82		0.91	0.91	0.91	0.91	0.91	2.8	2.8	
Property EG	6/2/2022	2.00		1.0	1.0	1.0	1.0	1.0	3.0	3.0	
Property EG	EPC (average of last 4 events)			ND	ND	1.6	ND	ND	1.9	2.5	Yes
Property EK-2	6/2/2020	1.78		0.89	3.8	2.2	0.89	9.4	17	33	
Property EK-INF	7/17/2020	2.01		1.0	2.1	1.0	1.0	45	10	57	
Property EK-INF	6/9/2021	1.88		0.94	2.1	0.94	0.94	6.7	7.6	16	
Property EK-INF	6/2/2022	1.76		0.88	0.88	0.88	0.88	3.8	4.9	8.6	
Property EK	EPC (average of last 4 events)			ND	2.2	1.3	ND	16	10	29	No
Property EM-INF	3/18/2020	0.00		0.0	9.4	0.0	0.0	0.0	8.0	17	
Property EM-1-INF	6/9/2021	1.99		1.0	12	1.0	1.0	10	13	35	
Property EM-2-INF	3/2/2022	1.87		0.94	21	0.94	0.94	0.94	16	36	
Property EM-2-INF	6/6/2022	1.89		0.95	14	0.95	0.95	0.95	12	27	
Property EM	EPC (average of last 4 events)			ND	14	ND	ND	3.1	12	29	No
Property ER	3/28/2019	1.71		0.86	0.86	0.86	0.86	2.1	2.6	4.7	
Property ER-2	6/2/2020	1.73		0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Property ER	12/14/2021	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property ER	6/13/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property ER	EPC (average of last 4 events)			ND	ND	ND	ND	1.2	1.4	1.9	Yes
Property ET	4/29/2019	1.75		0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Property ET-2	9/12/2019	1.73		0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Property ET	6/10/2021	1.86		0.93	2.5	0.93	0.93	0.93	0.93	2.5	
Property ET	6/10/2022	2.00		1.0	4.6	1.0	1.0	1.0	1.0	4.6	
Property ET	EPC (average of last 4 events)			ND	2.2	ND	ND	ND	ND	2.2	Yes
Property EU-2	6/18/2019	1.80		0.90	0.90	0.9	0.90	0.90	0.90	0.90	
Property EU	6/8/2021	1.95		0.98	0.98	2.6	0.98	0.98	1.0	2.6	
Property EU	6/6/2022	2.00		1.0	1.0	3.5	1.0	1.0	1.0	3.5	
Property EU	7/21/2022	2.00		1.0	1.0	2.8	1.0	1.0	1.0	2.8	
Property EU	EPC (average of last 4 events)			ND	ND	2.5	ND	ND	1.0	2.5	Yes
Property EV-2	7/11/2019	1.69		0.85	0.85	0.8	0.85	0.85	0.85	0.85	
Property EV-3	6/2/2020	1.84		0.92	0.92	0.92	0.92	0.92	2.7	2.7	
Property EV	6/8/2021	1.76		0.88	0.88	0.9	0.88	0.88	2.8	2.8	
Property EV	6/15/2022	2.00		1.0	1.0	1.0	1.0	1.0	2.2	2.2	
Property EV	EPC (average of last 4 events)			ND	ND	ND	ND	ND	2.1	2.1	Yes

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property EW	5/1/2019	1.75		0.88	0.88	3.9	0.88	0.88	2.2	6.1	
Property EW	9/8/2020	1.83		0.92	0.92	0.92	0.92	0.92	0.92	0.9	
Property EW	6/8/2021	1.84		0.92	0.92	2.7	0.92	0.92	3.0	5.7	
Property EW	6/15/2022	2.00		1.0	1.0	2.9	1.0	2.1	4.6	10	
Property EW	EPC (average of last 4 events)			ND	ND	2.6	ND	ND	2.7	5.5	Yes
Property EY-INF	6/4/2020	1.91		0.96	22	0.96	0.96	0.96	6.5	29	
Property EY-INF	6/29/2021	1.80		0.90	36	2.0	0.90	0.90	20	58	
Property EY-INF	6/15/2022	1.87		0.94	42	0.94	0.94	0.94	27	69	
Property EY-INF	6/20/2019	0.00		0.00	25	0.00	0.00	0.00	13	38	
Property EY	EPC (average of last 4 events)			ND	31	0.97	ND	ND	17	48	No
Property F-1-INF	9/8/2021	35.60		18	96	252	18	1950	76	2374	
Property F-1-INF	12/14/2021	17.30		8.7	116	259	8.7	1980	100	2455	
Property F-1-INF	6/10/2022	1.79		0.90	127	107	0.90	684	96	1014	
Property F-INF	9/21/2022	1.85		0.93	120	78	0.93	673	88	958	
Property F	EPC (average of last 4 events)			ND	115	174	ND	1322	90	1700	No
Property FC	5/1/2019	1.78		0.89	0.89	0.89	0.89	0.89	4.0	4.0	
Property FC	6/9/2021	1.82		0.91	0.91	0.91	0.91	2.0	0.91	2.0	
Property FC	5/31/2022	2.00		1.0	1.0	1.0	1.0	4.0	3.5	7.4	
Property FC	EPC (max detected)			ND	ND	ND	ND	4.0	4.0	7.4	Yes
Property FD	5/1/2019	1.77		0.89	0.9	0.89	0.89	0.89	0.89	0.89	
Property FD-2	6/4/2020	1.90		0.95	3.2	0.95	0.95	0.95	1.0	3.2	
Property FD	6/8/2021	1.88		0.94	6.9	0.94	0.94	0.94	2.5	9.4	
Property FD	6/8/2022	2.00		1.0	10	1.0	1.0	1.0	4.1	14	
Property FD	EPC (average of last 4 events)			ND	5.3	ND	ND	ND	2.1	6.9	Yes
Property FF-INF	6/20/2019	0.00		0.00	22	0.00	0.00	0.00	13	34	
Property FF-INF	6/1/2020	1.94		0.97	6.6	0.97	0.97	0.97	2.8	9.3	
Property FF-INF	6/29/2021	1.86		0.93	7.7	0.93	0.93	0.93	2.4	10	
Property FF-INF	6/9/2022	1.85		0.93	9.5	0.93	0.93	0.93	3.2	13	
Property FF	EPC (average of last 4 events)			ND	11	ND	ND	ND	5.2	17	Yes
Property FG-INF	7/16/2020	2.14		1.1	72	1.07	1.07	1.07	1.1	72	
Property FG-INF	6/11/2021	1.77		0.89	14	0.89	0.89	0.89	2.3	16	
Property FG-INF	6/9/2022	2.01		1.0	14	1.0	1.0	1.0	1.0	14	
Property FG-INF	8/4/2022	1.80		0.90	34	0.90	0.90	0.90	3.7	37	
Property FG	EPC (average of last 4 events)			ND	33	ND	ND	ND	2.0	35	No

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property FK-INF	9/13/2019	0.00		0.00	5.2	0.00	0.00	0.00	4.9	10	
Property FK-INF	6/10/2021	1.84		0.92	14	0.92	0.92	0.92	7.6	21	
Property FK-INF	10/19/2021	2.00		1.0	15	1.0	1.0	1.0	8.3	23	
Property FK-INF	5/31/2022	1.84		0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Property FK	EPC (average of last 4 events)			ND	8.6	ND	ND	ND	5.4	14	Yes
Property FO	6/4/2019	1.78		0.89	9.2	0.89	0.89	0.89	11	20	
Property FO-INF	6/20/2019	0.00		0.00	6.4	0.00	0.00	0.00	7.1	13	
Property FO-INF	8/4/2022	1.95		0.98	1.0	0.98	0.98	0.98	0.98	1.0	
Property FO	EPC (max detected)			ND	9.2	ND	ND	ND	11	20	No
Property FS	6/3/2019	1.86		0.93	0.93	0.93	0.93	0.93	2.2	2.2	
Property FS	9/9/2020	1.86		0.93	0.93	0.93	0.93	0.93	2.4	2.4	
Property FS	6/10/2021	1.84		0.92	0.92	0.92	0.92	0.92	2.2	2.2	
Property FS	5/31/2022	2.00		1.0	1.0	1.0	1.0	2.4	2.5	4.9	
Property FS	EPC (average of last 4 events)			ND	ND	ND	ND	ND	2.3	2.9	Yes
Property FT	6/5/2019	1.75		0.88	0.88	0.88	0.88	0.88	2.1	2.1	
Property FT	6/7/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property FT	EPC (max detected)			ND	ND	ND	ND	ND	2.1	2.1	Yes
Property FX-3	9/13/2019	1.71		0.86	24	0.86	0.86	0.86	0.86	24	
Property FX-INF	3/16/2020	0.00		0.00	60	0.00	0.00	0.0	0.0	60	
Property FX-INF	6/29/2021	1.75		0.88	29	0.88	0.88	0.88	0.88	29	
Property FX-INF	6/3/2022	1.88		0.94	33	0.94	0.94	0.94	2.2	35	
Property FX	EPC (average of last 4 events)			ND	36	ND	ND	ND	1.0	37	No
Property G-INF	12/15/2020	1.81		0.9	102	208	2.1	2.2	50	364	
Property G-INF	6/9/2021	1.83		0.92	87	49	0.92	0.9	40	177	
Property G-INF	5/31/2022	1.82		0.91	32	42	0.91	0.9	23	98	
Property G-INF	9/23/2022	1.84		0.92	43	49	0.92	0.9	23	115	
Property G	EPC (average of last 4 events)			ND	66	87	1.2	1.2	34	188	No
Property GD	7/11/2019	1.85		0.93	3.0	0.93	0.93	0.93	0.93	3.0	
Property GD	12/12/2019	1.97		0.99	2.0	0.99	0.99	0.99	0.99	2.0	
Property GD	6/9/2021	1.95		0.98	0.98	0.98	0.98	0.98	1.0	1.0	
Property GD	6/8/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property GD	EPC (max of last 4 events)			ND	3.0	ND	ND	ND	ND	3.0	Yes
Property GH	6/4/2020	1.92		0.96	0.96	0.96	0.96	0.96	4.7	4.7	
Property GH	6/8/2021	1.82		0.91	0.91	0.91	0.91	0.91	2.6	2.6	
Property GH	6/9/2022	2.00		1.0	1.0	1.0	1.0	1.0	2.5	2.5	
Property GH	EPC (max detected)			ND	ND	ND	ND	ND	4.7	4.7	Yes
Property GI	8/8/2019	1.77		0.89	4.5	0.89	0.89	0.89	2.2	6.6	
Property GI	9/9/2021	2.00		1.0	4.5	1.0	1.0	1.0	1.0	4.5	
Property GI	EPC (max detected)			ND	4.5	ND	ND	ND	2.2	6.6	Yes

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property GJ	6/4/2020	1.92		0.96	0.96	0.96	0.96	0.96	2.92	2.9	
Property GJ	6/7/2021	1.78		0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Property GJ	6/2/2022	2.00		1.0	1.0	2.3	1.0	1.0	1.0	2.3	
Property GJ	EPC (max detected)			ND	ND	2.34	ND	ND	ND	2.9	Yes
Property GN-1	3/16/2022	2.00		1.0	1.0	1.0	1.0	1.0	3.1	3.1	
Property GN-1	EPC (max detected)			ND	ND	ND	ND	ND	3.1	3.1	Yes
Property GN-2	3/16/2022	2.00		1.0	1.0	1.0	1.0	1.0	2.9	2.9	
Property GN-2	EPC (max detected)			ND	ND	ND	ND	ND	2.9	2.9	Yes
Property GO-1	3/16/2022	2.00		1.0	34	1.0	2.1	1.0	22	57	
Property GO-1-INF	8/4/2022	1.74		0.87	35	0.87	2.9	2.8	24	65	
Property GO-1	EPC (max detected)			ND	35	ND	2.9	2.8	24	65	No
Property H-INF	4/29/2019	0.00		0.0	10.5	0.0	0.0	0.0	9.45	19.95	
Property H-INF	3/17/2020	0.00		0.0	0.0	0.0	0.0	0.0	2.20	2.20	
Property H-INF	6/9/2021	1.93		0.97	0.97	0.97	0.97	0.97	1.0	1.0	
Property H-INF	6/1/2022	1.89		0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Property H	EPC (average of last 4 events)			ND	10.5	ND	ND	ND	9.45	19.95	Yes
Property I-INF	12/14/2021	2.00		1.0	394	1.0	10.7	1.0	224	629	
Property I-INF	3/2/2022	1.79		0.90	225	0.90	9.21	0.90	166	400	
Property I-INF	6/2/2022	1.84		0.92	222	0.92	4.46	0.92	113	339	
Property I-INF	9/21/2022	1.78		0.89	95	0.89	4.61	0.89	111	210	
Property I	EPC (average of last 4 events)			ND	234	ND	7.25	ND	154	395	No
Property J-1-INF	12/14/2021	2.00		1.0	24	317	1.0	1820	38	2200	
Property J-1-INF	3/3/2022	1.86		0.93	19	332	0.93	1120	30	1501	
Property J-1-INF	6/6/2022	1.80		0.90	50	258	0.90	971	52	1331	
Property J-INF	9/21/2022	1.89		0.95	99	66	0.95	426	84	675	
Property J	EPC (average of last 4 events)			ND	48	243	0.94	1084	51	1427	No
Property L-INF	6/29/2021	1.94		4.2	114	4.4	9.7	68	72	272	
Property L-INF	9/9/2021	2.00		5.0	94	4.4	9.1	76	64	252	
Property L-INF	6/3/2022	1.90		2.68	101	3.8	4.9	43	55	210	
Property L-INF	9/19/2022	1.74		0.87	68	4.1	3.9	45	46	166	
Property L	EPC (average of last 4 events)			ND	94	4.2	6.9	58	59	225	No
Property O-2	12/12/2019	1.80		0.90	0.90	0.90	0.90	0.90	2.9	2.9	
Property O	9/8/2020	1.88		0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Property O	6/9/2021	1.92		0.96	0.96	0.96	0.96	0.96	3.2	3.2	
Property O	6/9/2022	2.00		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property O	EPC (max of last 4 events)			ND	ND	ND	ND	ND	3.2	3.2	Yes
Property P-INF	6/3/2019	0.00		0.0	16	9.9	0.0	0.0	8.6	35	
Property P-INF	3/16/2020	0.00		0.0	19	8.4	0.0	0.0	11	39	
Property P-INF	6/7/2021	1.80		0.90	16	5.8	0.90	0.90	6.1	28	
Property P-INF	6/7/2022	1.80		0.90	13	7.1	0.90	0.90	6.3	26	
Property P	EPC (average of last 4 events)			ND	16	7.8	ND	ND	8.0	32	No

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property S	12/3/2018	1.85		0.9	0.9	0.9	0.9	1.9	0.9	1.9	
Property S	9/8/2020	1.87		0.9	0.9	0.9	0.9	2.0	2.0	4.0	
Property S	EPC (max detected)			ND	ND	ND	ND	2.0	2.0	4.0	Yes
StanleyWell	12/13/2018	1.92		1.0	2.9	1.0	1.0	1.0	1.0	2.9	
StanleyWell	EPC (max detected)			ND	2.9	ND	ND	ND	ND	2.9	Yes
Property U-INF	3/15/2019	0.00		0.0	5.2	0.0	0.0	0.0	4.1	9.3	
Property U-INF	3/16/2020	0.00		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Property U-INF	6/8/2021	1.84		0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Property U-INF	6/7/2022	1.85		0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Property U	EPC (max of last 4 events)			ND	5.2	ND	ND	ND	4.1	9.3	Yes
Property W	12/7/2018	1.78		0.89	0.89	0.89	0.89	0.89	2.1	2.1	
Property W-2	6/1/2020	1.85		0.93	0.93	0.93	0.93	0.93	2.1	2.1	
Property W	6/8/2021	1.87		0.94	0.94	0.94	0.94	0.94	0.94	0.9	
Property W	6/2/2022	2.00		1.00	1.00	1.00	1.00	1.00	1.0	1.0	
Property W	EPC (max of last 4 events)			ND	ND	ND	ND	ND	2.1	2.1	Yes
Property X-INF	4/30/2019	0.00		0.0	12	45	0.0	0.0	9.4	67	
Property X-INF	3/17/2020	0.00		0.0	9.4	17	0.0	0.0	7.7	34	
Property X-INF	6/9/2021	2.07		1.0	9.1	13	1.0	1.0	7.5	30	
Property X-INF	6/7/2022	1.86		0.93	11	16	0.93	0.93	5.7	32	
Property X-INF	EPC (average of last 4 events)			ND	10	23	ND	ND	7.6	41	No
Property Y-INF	9/9/2021	2.00		1.0	56	309	1.0	58	32	455	
Property Y-INF	12/14/2021	2.00		1.0	52	208	1.0	21	31	312	
Property Y-INF	6/2/2022	1.87		0.94	82	336	0.94	71	25	514	
Property Y-INF	9/20/2022	1.87		0.94	55	297	0.94	30	21	402	
Property Y-INF	EPC (average of last 4 events)			ND	61	288	ND	45	27	421	No
Property Z-INF	3/14/2019	0.00		0.0	14	53	0.0	2.6	8.2	78	
Property Z-INF	3/16/2020	0.00		0.0	15	36	0.0	0.0	5.7	57	
Property Z-INF	6/11/2021	1.78		0.89	11	23	0.89	0.89	7.0	41	
Property Z-INF	6/2/2022	1.92		0.96	7.1	14	0.96	3.9	3.8	29	
Property Z-INF	EPC (max of last 4 events)			ND	15	53	ND	3.9	8.2	78	No
Property ZY-INF	6/1/2020	1.93		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Property ZY-INF	10/23/2020	1.80		0.90	3.4	0.90	0.90	0.90	0.90	3.4	
Property ZY-INF	6/10/2021	1.86		0.93	11	0.93	0.93	0.93	5.1	16	
Property ZY-INF	5/31/2022	1.88		0.94	10	0.94	0.94	0.9	2.7	13	
Property ZY-INF	EPC (average of last 4 events)			ND	6.2	0.9	ND	0.9	2.4	8.2	Yes

Table 19 - Method 2 Risk Characterization - Groundwater - Private Wells

Compound Name			Perfluorinated Alkyl Acids by EPA 537	Perfluorodecanoic Acid (PFDA)	Perfluoroheptanoic Acid (PFHpA)	Perfluorohexanesulfonic Acid (PFHxS)	Perfluorononanoic Acid (PFNA)	Perfluorooctanesulfonic Acid (PFOS)	Perfluorooctanoic Acid (PFOA)	PFAS6 (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA)	Condition of No Significant Risk?
CAS No.				335-76-2	375-85-9	355-46-4	375-95-1	1763-23-1	335-67-1		
Sample ID	Sampling Date	Laboratory Analytical Method Detection Limit	MCP Method 1 GW-1 Standard ¹	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	see PFAS6	20	
			MCP Method 1 GW-2 Standard ¹	NA	NA	NA	NA	NA	NA	NA	
			MCP Method 1 GW-3 Standard ¹	40000000	40000000	500000	40000000	500000	40000000	NA	
			Upper Concentration Limit ¹	100000000	100000000	5000000	100000000	5000000	100000000	NA	
Property ZZ-INF	6/3/2020	1.93		<i>1.0</i>	<i>7.6</i>	<i>1</i>	<i>1.0</i>	<i>9.6</i>	<i>4.1</i>	21	
Property ZZ-INF	6/10/2021	1.96		<i>1.0</i>	<i>8.9</i>	<i>5.7</i>	<i>1.0</i>	<i>2.8</i>	<i>6.6</i>	24	
Property ZZ-INF	6/8/2022	1.86		<i>0.93</i>	<i>9.3</i>	<i>7.4</i>	<i>0.93</i>	<i>1.9</i>	<i>5.7</i>	24	
Property ZZ-INF	8/4/2022	1.91		<i>0.96</i>	<i>8.1</i>	<i>6.6</i>	<i>0.96</i>	<i>1.0</i>	<i>5.4</i>	20	
Property ZZ-INF	EPC (average of last 4 events)			ND	8.5	5.2	ND	3.8	5.5	22	No

Notes:

Units are in ng/L (parts per trillion)

EPC indicates Exposure Point Concentration.

ND indicates compound not detected above laboratory analytical method detection limit in any sample from this monitoring well.

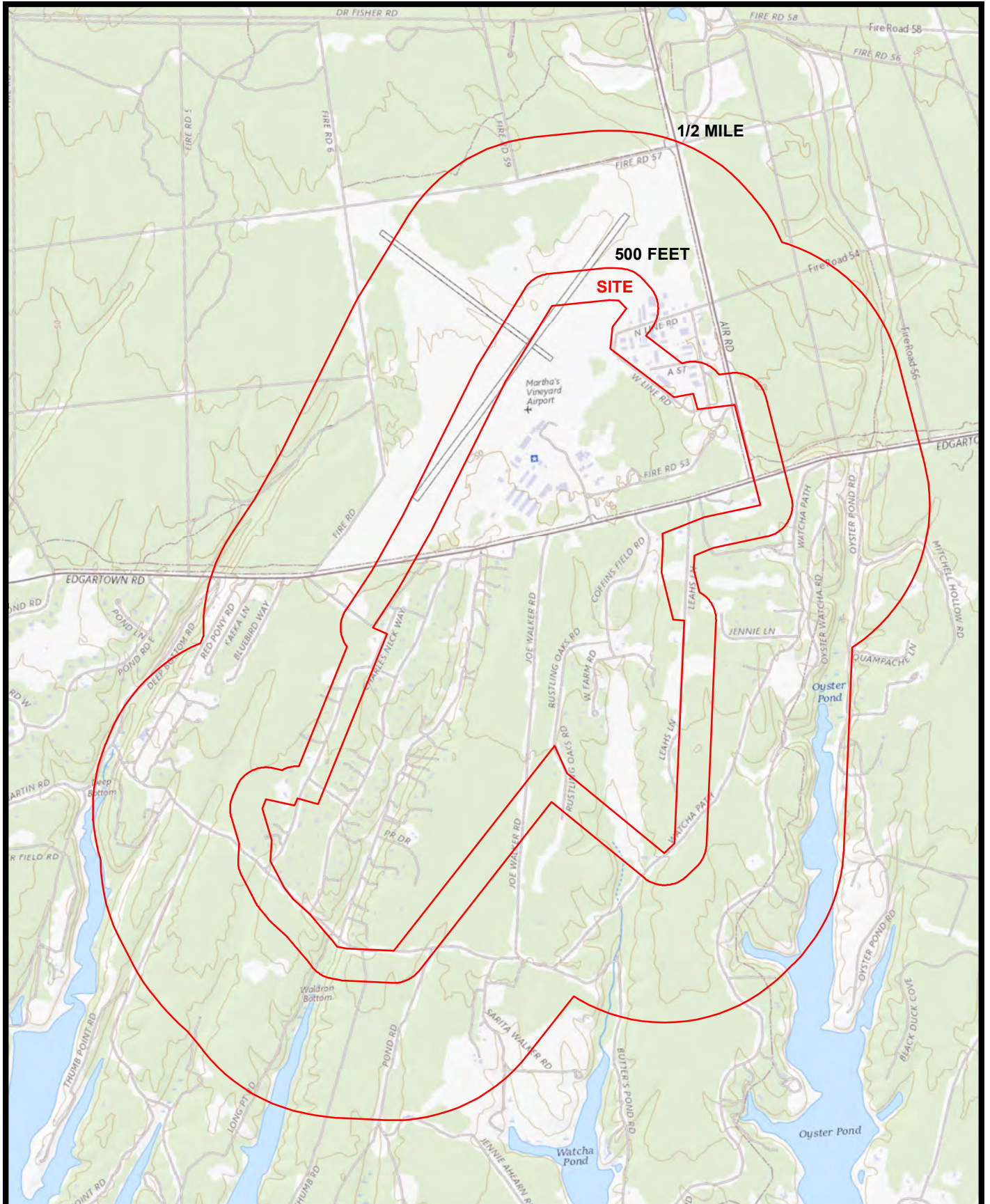
Italics indicate compound not detected at the laboratory analytical method detection limit.

NA indicates not applicable.

(1) Source: Massachusetts Department of Environmental Protection (DEP) 310 CMR 40.0000 The Massachusetts Contingency Plan, 12/27/2019

For compounds detected at least once above the detection limit, samples reported as not detected (*italics*) by the laboratory are assumed to have a concentration of one-half of the method detection limit for that sample in the average calculation.

Bold indicates EPC is above MCP Method 1 GW-1 Standard.



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0 1,000 2,000
Feet

"Information obtained from
USGS The National Map
Data Refreshed, May 2020"

Source:USGS

Martha's Vineyard Airport

Martha's Vineyard Airport
West Tisbury, Massachusetts

Site Locus Map

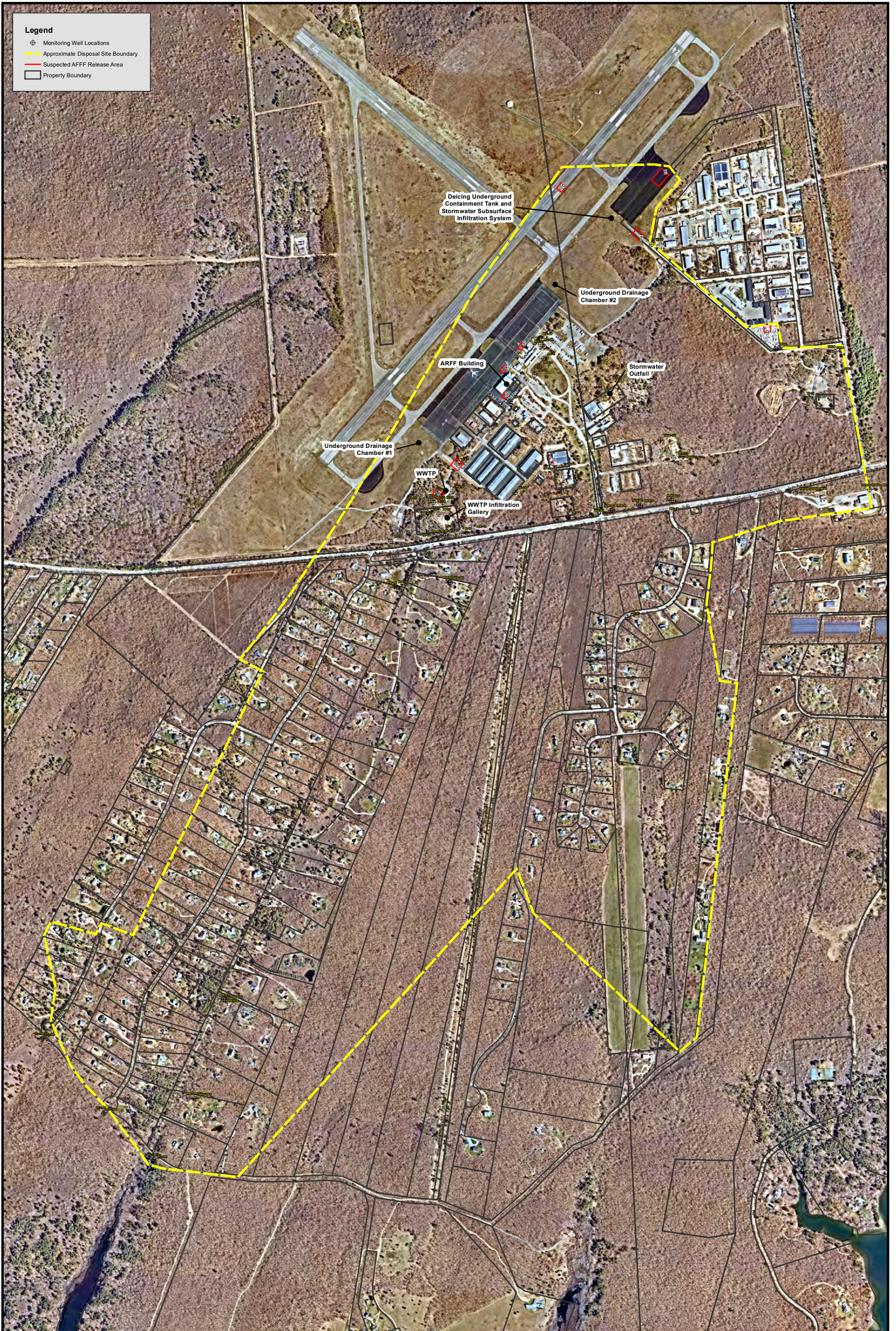
Project No.: 143-3953-22001

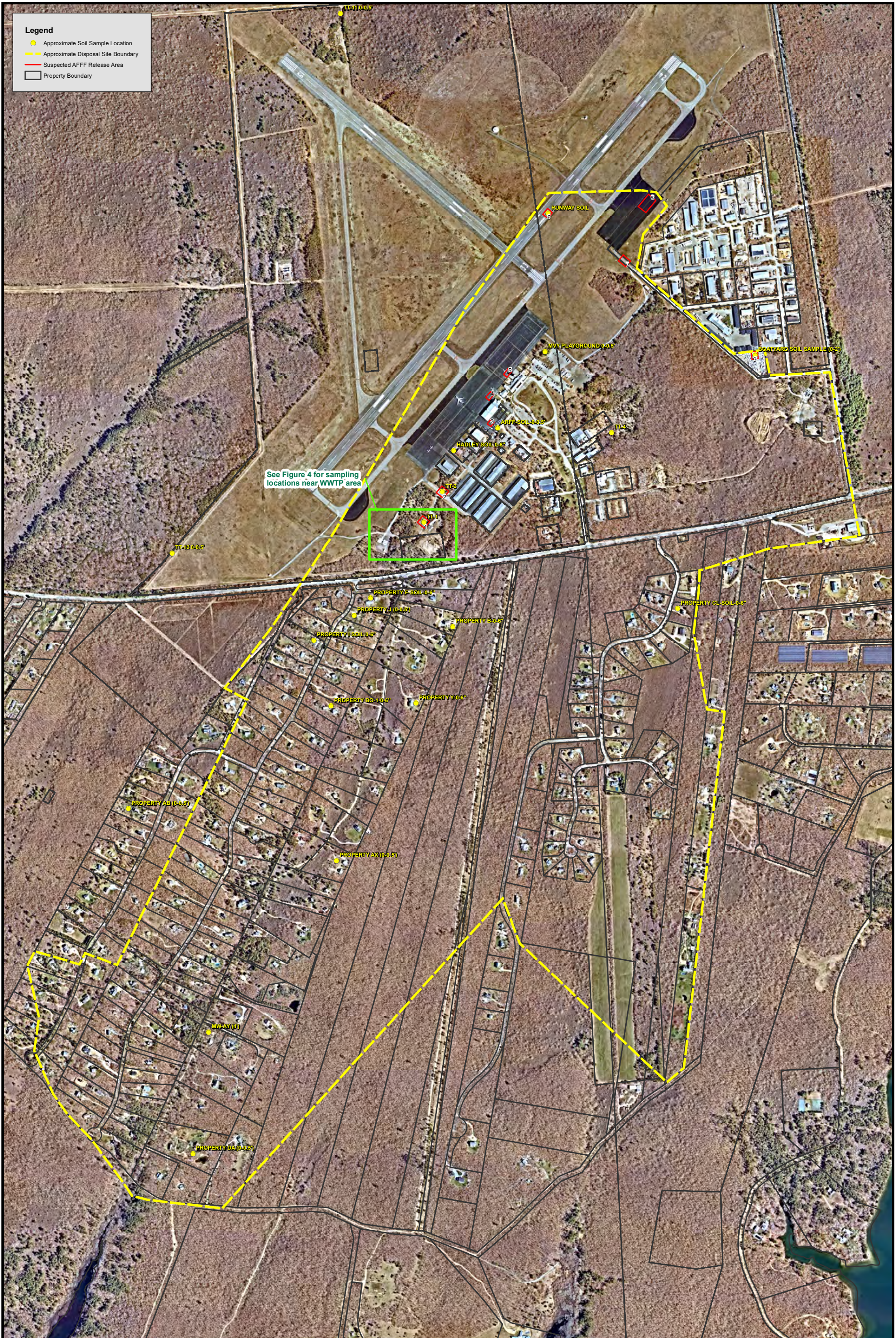
Date: November 17, 2022

Designed By: HSK

Figure

1











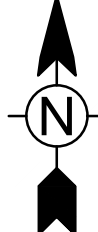
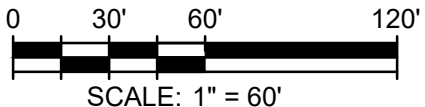
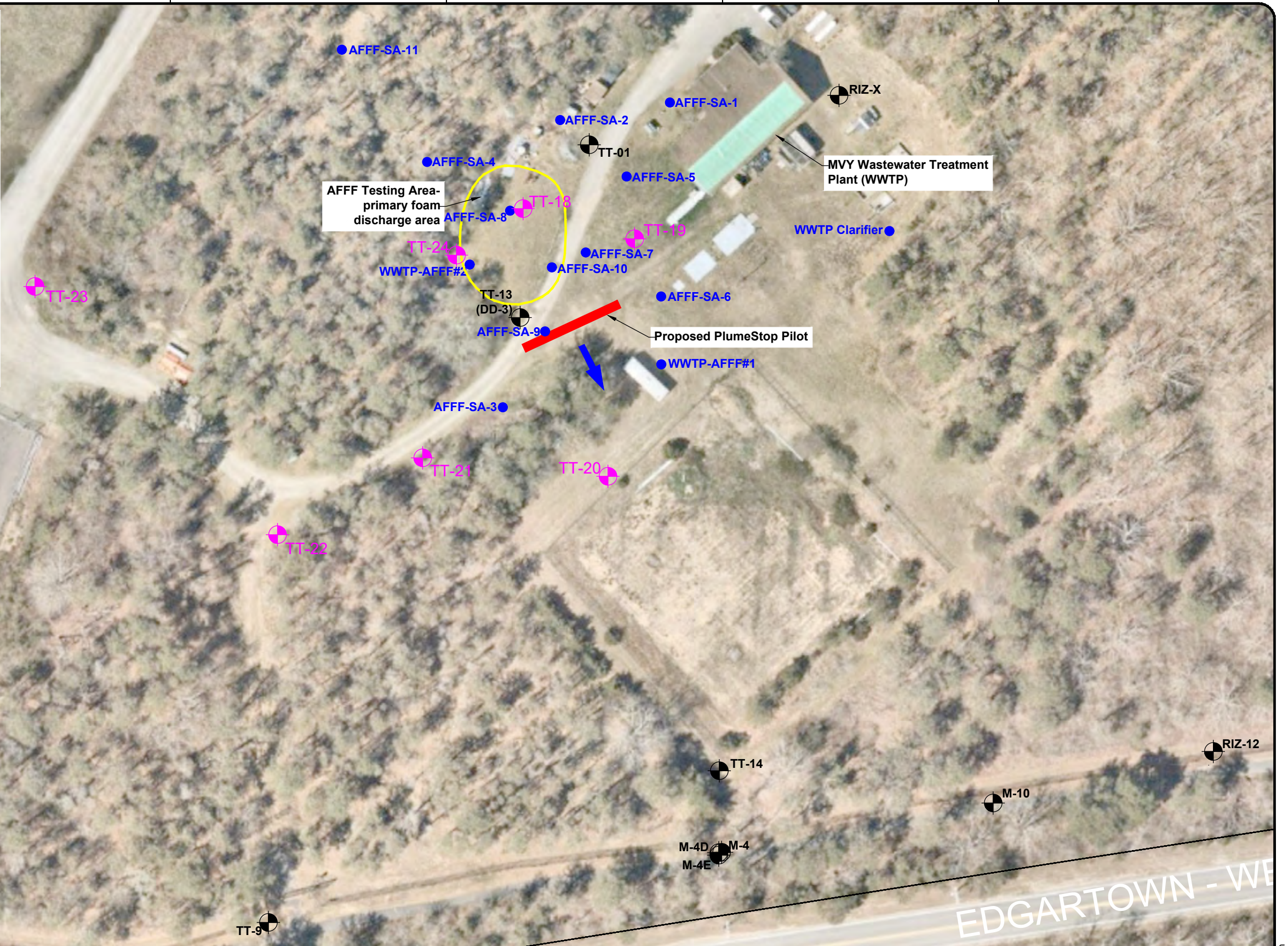
See Figure 4 for sampling locations near WWTP area

<p>100 Nickerson Road Marlborough, MA 01752 508.786.2200 www.tetrattech.com</p>		<p>Source: MassGIS, USGS, Nearmaps dated April 9, 2021</p>	<p>Martha's Vineyard Airport</p>	<p>Project No.: 143-3953-22001</p>
			<p>Martha's Vineyard Airport West Tisbury, Massachusetts</p>	<p>Date: November 17, 2022</p>
			<p>Soil Sampling Locations</p>	<p>Designed By: HSK</p>
			<p>Figure 3</p>	

10/31/2022 2:48:17 PM - P:\3953\143-3953-19007\CAD\SHEETFILES\PLUMESTOP PILOT TEST FIGURE.DWG - LEBLANC, KAITLYNE

LEGEND:

-  New monitoring wells
-  Existing monitoring well
-  Soil sample (0-0.5')
-  Proposed PlumeStop Pilot
-  AFFF Testing Area - primary discharge area
-  Inferred groundwater flow direction


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Aerial Source:
Nearmap dated April 20, 2022.

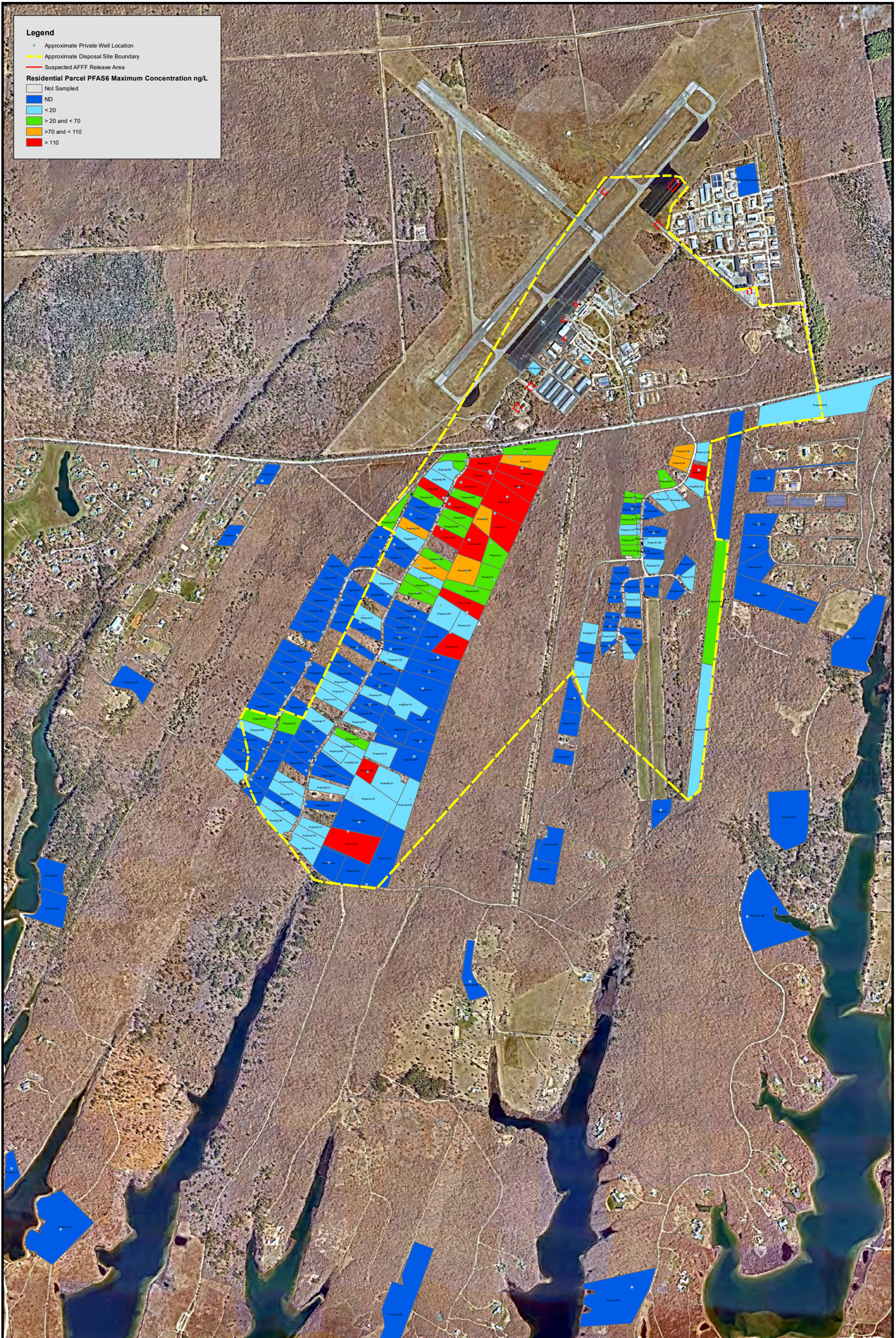
MARK	DATE	DESCRIPTION	BY

Martha's Vineyard Airport
Martha's Vineyard Airport
West Tisbury, Massachusetts
WWTP Area Soil Sampling Locations

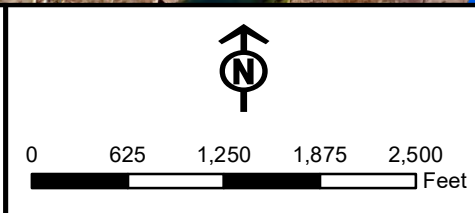
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Drawn By:	KML
Checked By:	REM
Figure:	4

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Bar Measures 1 inch



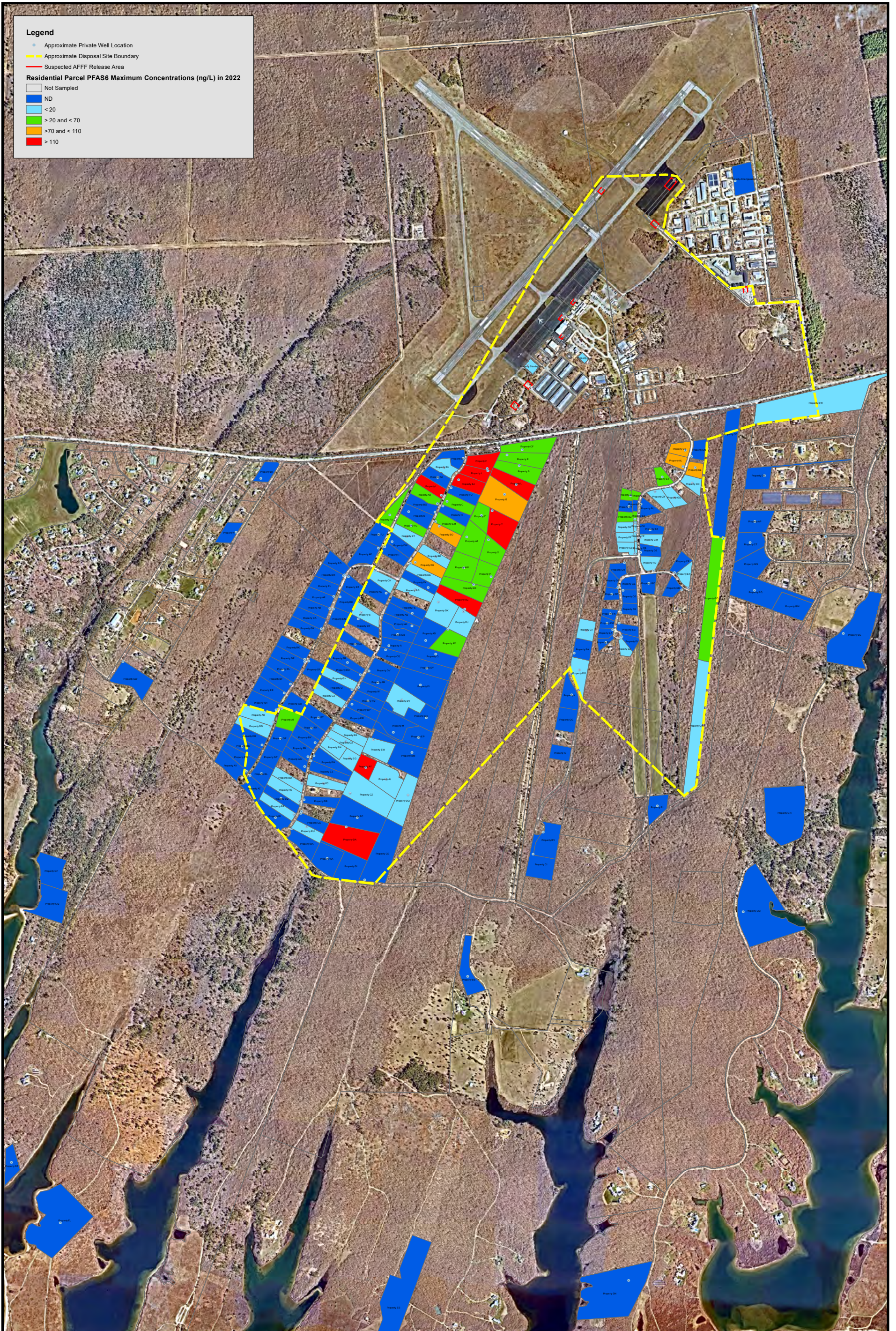
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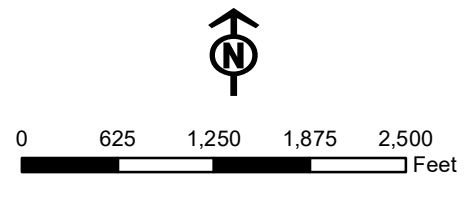
Source: MassGIS, USGS
 Nearmaps dated April 9, 2021

Martha's Vineyard Airport
 Martha's Vineyard Airport
 West Tisbury, Massachusetts
 Private Well Sampling Locations
 with Maximum PFAS6 Concentrations

Project No.: 143-3953-22001
 Date: November 17, 2022
 Designed By: HSK
 Figure **5A**



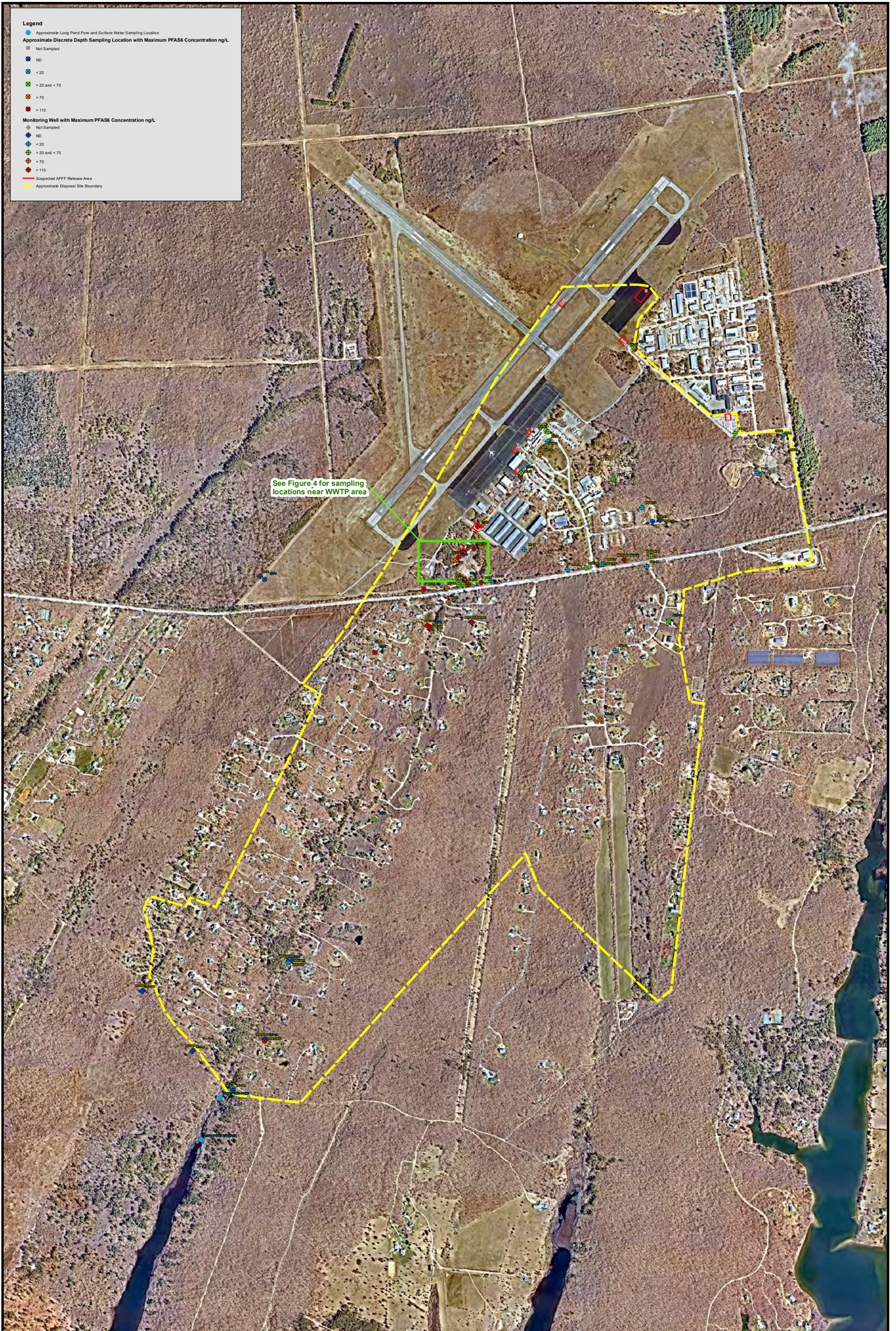
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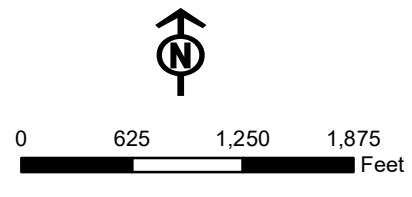
Source: MassGIS, USGS
 Nearmaps dated April 9, 2021
 Note: For private wells not sampled
 in 2022, the maximum PFAS6
 concentrations for the most recent
 sample are reported.

Martha's Vineyard Airport
 Martha's Vineyard Airport
 West Tisbury, Massachusetts
 Private Well Sampling Locations with
 2022 Maximum PFAS6 Concentrations

Project No.:	143-3953-22001
Date:	November 17, 2022
Designed By:	HSK
Figure	5B



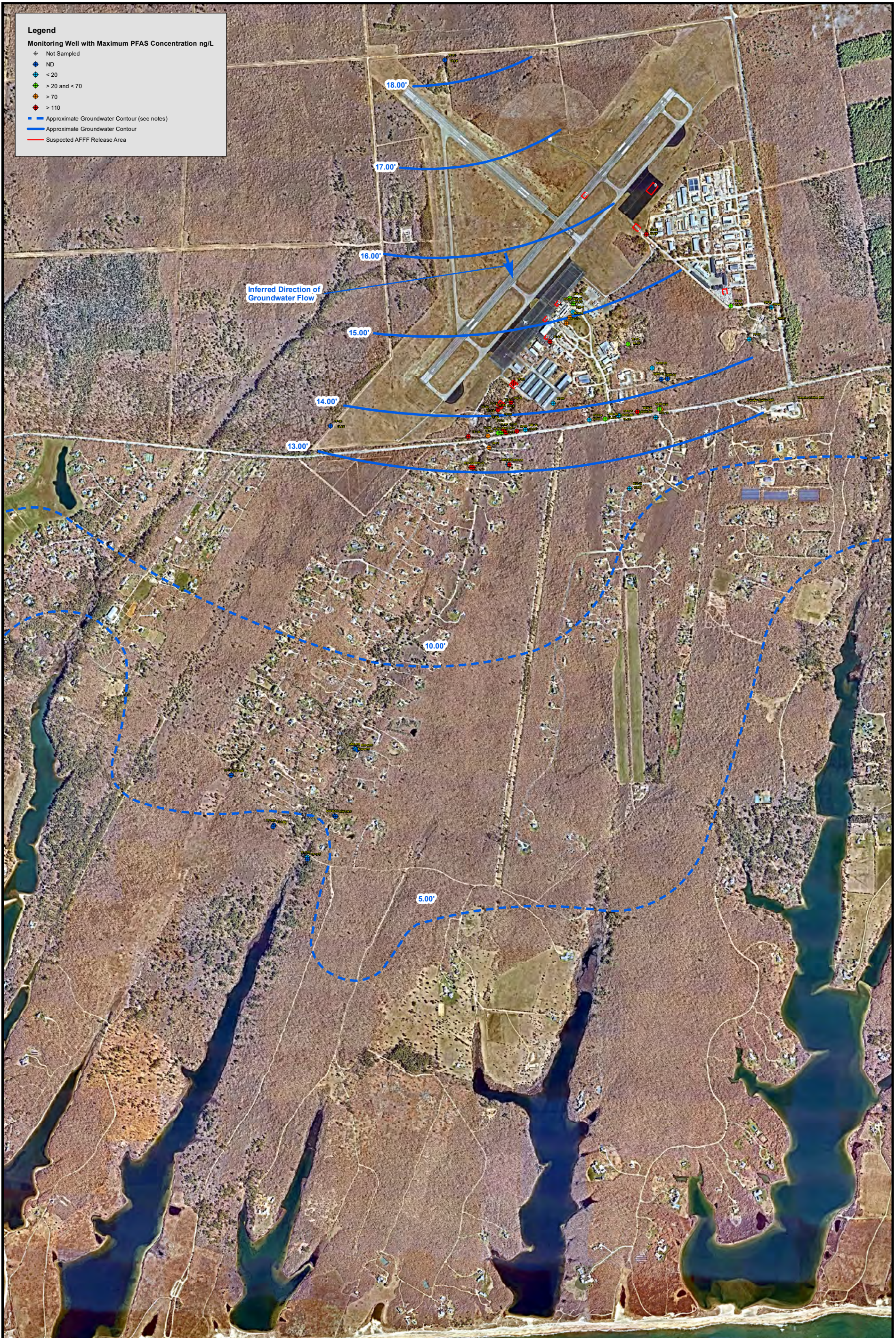
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 Nearmaps dated April 9, 2021

Martha's Vineyard Airport
 Martha's Vineyard Airport
 West Tisbury, Massachusetts
**Groundwater Monitoring
 Well Locations**

Project No.:	143-3953-22001
Date:	November 17, 2022
Designed By:	HSK
Figure	6



Legend

Monitoring Well with Maximum PFAS Concentration ng/L

- ⊕ Not Sampled
- ⊕ ND
- ⊕ < 20
- ⊕ > 20 and < 70
- ⊕ > 70
- ⊕ > 110

- - - - - Approximate Groundwater Contour (see notes)
- Approximate Groundwater Contour
- Suspected AFFF Release Area

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0 625 1,250 1,875 2,500 Feet

Source: MassGIS, USGS
Nearmaps dated April 9, 2021

Notes:
Approximate groundwater contour based on map from Ground-Water Hydrology of Martha's Vineyard, Massachusetts by David F. Delaney, Commonwealth of Massachusetts Water Resources Commission, 1980

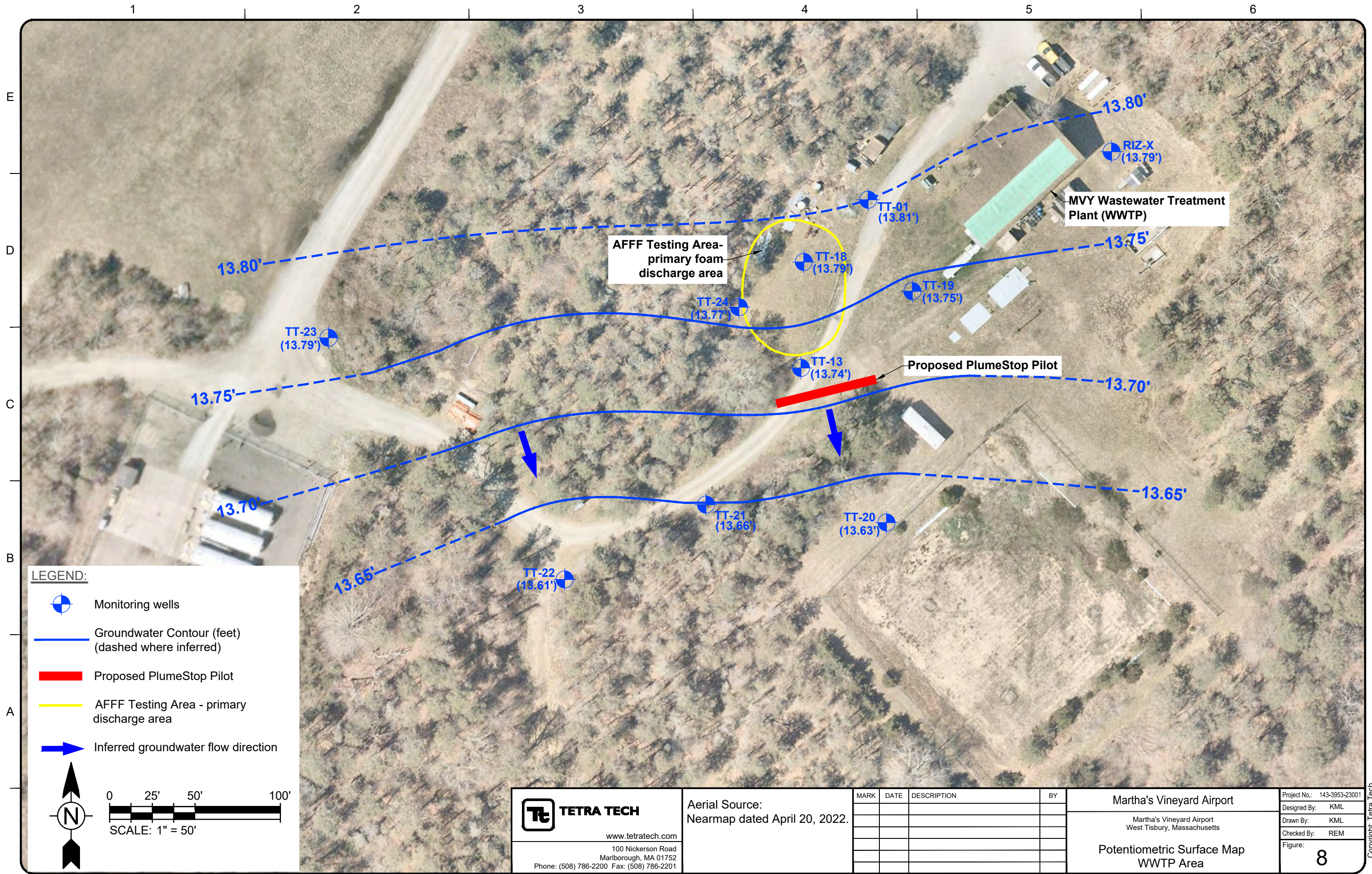
Martha's Vineyard Airport

Martha's Vineyard Airport
West Tisbury, Massachusetts

Groundwater Potentiometric Surface Map

Project No.:	143-3953-22001
Date:	November 4, 2022
Designed By:	HSK
Figure	7

11/1/2022 2:56:18 PM - P:\3953\143-3953-19007\CAD\ISHEET\FIGURE 4 POTENTIOMETRIC SURFACE MAP - WWTP AREA.DWG - LEBLANC, KAITLYNE



LEGEND:

- Monitoring wells
- Groundwater Contour (feet)
(dashed where inferred)
- Proposed PlumeStop Pilot
- AFFF Testing Area - primary discharge area
- Inferred groundwater flow direction

SCALE: 1" = 50'

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Aerial Source:
Nearmap dated April 20, 2022.

MARK	DATE	DESCRIPTION	BY

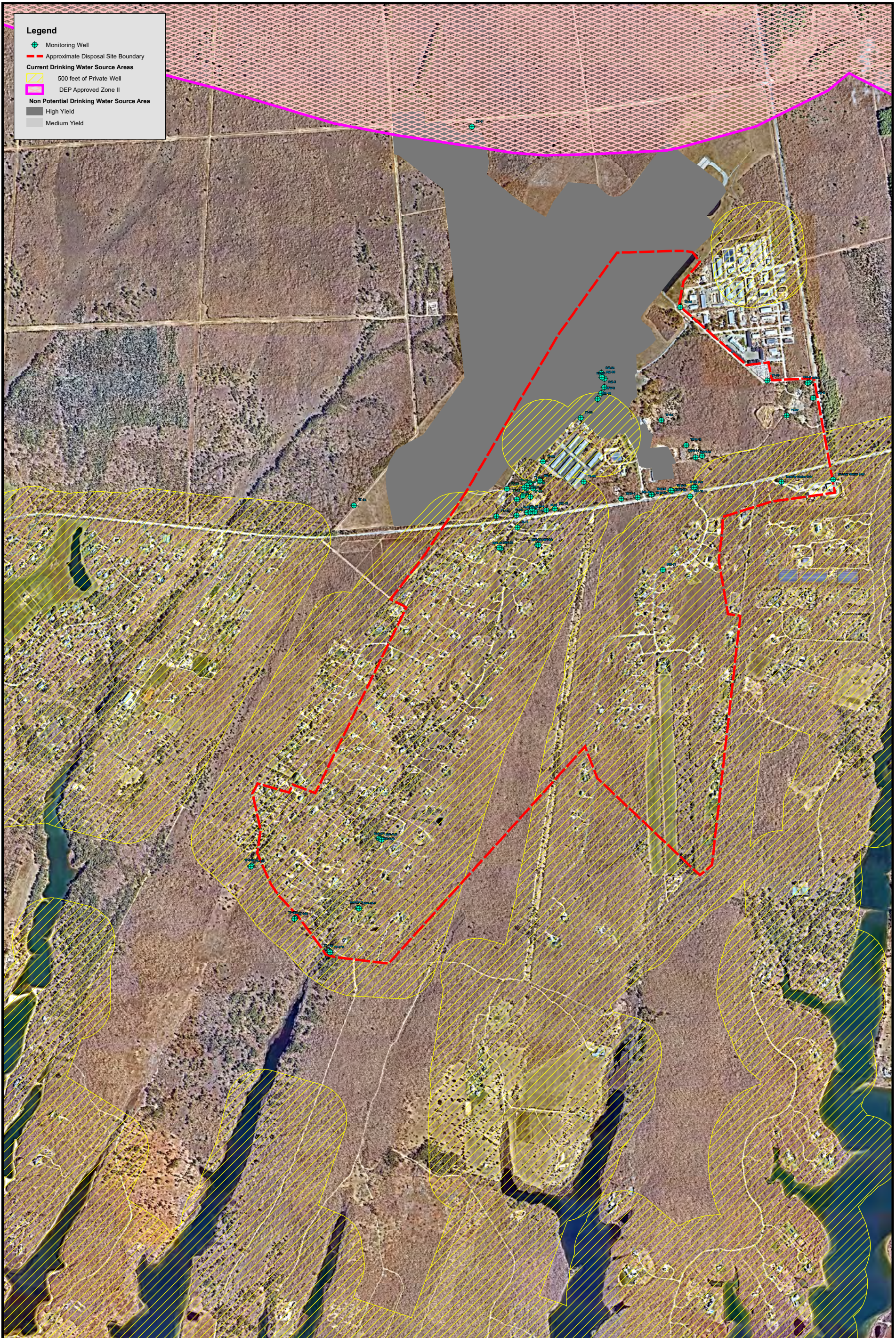
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West Tisbury, Massachusetts

**Potentiometric Surface Map
WWTP Area**

Project No.: 143-3953-23001
Designed By: KML
Drawn By: KML
Checked By: REM
Figure: 8

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Bar Measures 1 inch



Legend

- + Monitoring Well
- - - Approximate Disposal Site Boundary
- Current Drinking Water Source Areas**
- 500 feet of Private Well
- DEP Approved Zone II
- Non Potential Drinking Water Source Area**
- High Yield
- Medium Yield

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↑
N

0 625 1,250 1,875 2,500
Feet

Source: MassGIS, USGS
Nearmaps dated April 9, 2021.

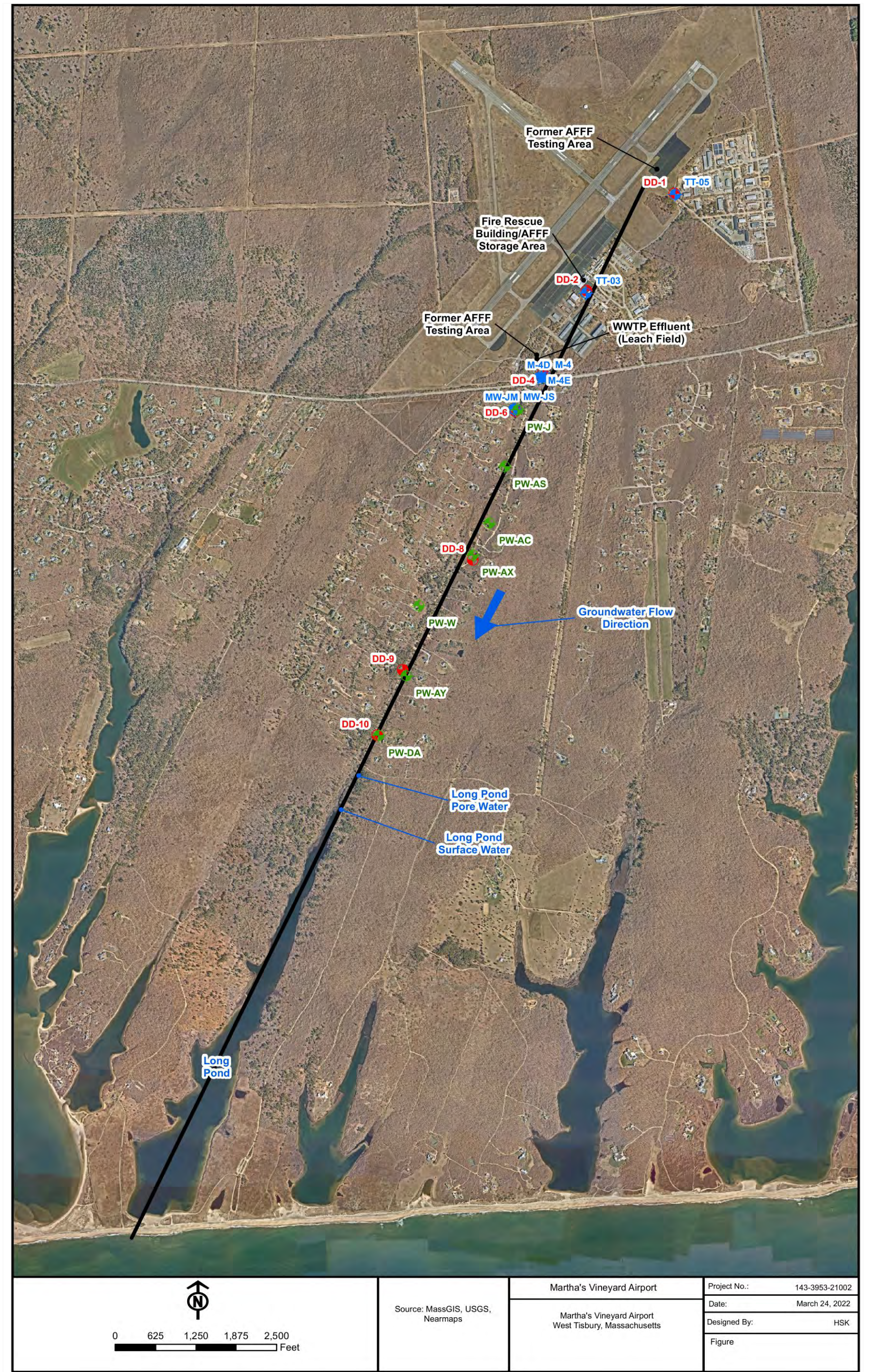
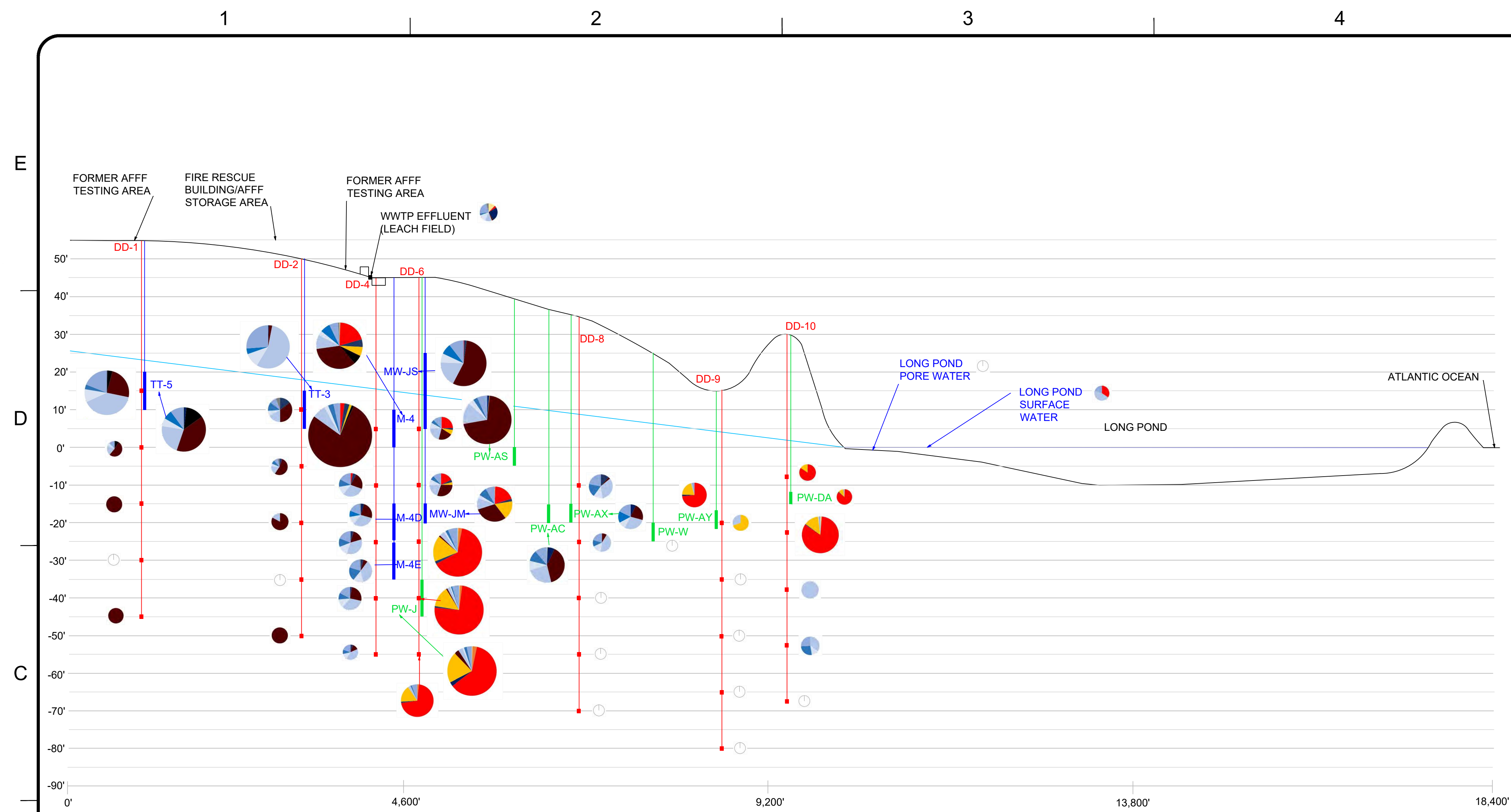
Martha's Vineyard Airport

Martha's Vineyard Airport
West Tisbury, Massachusetts

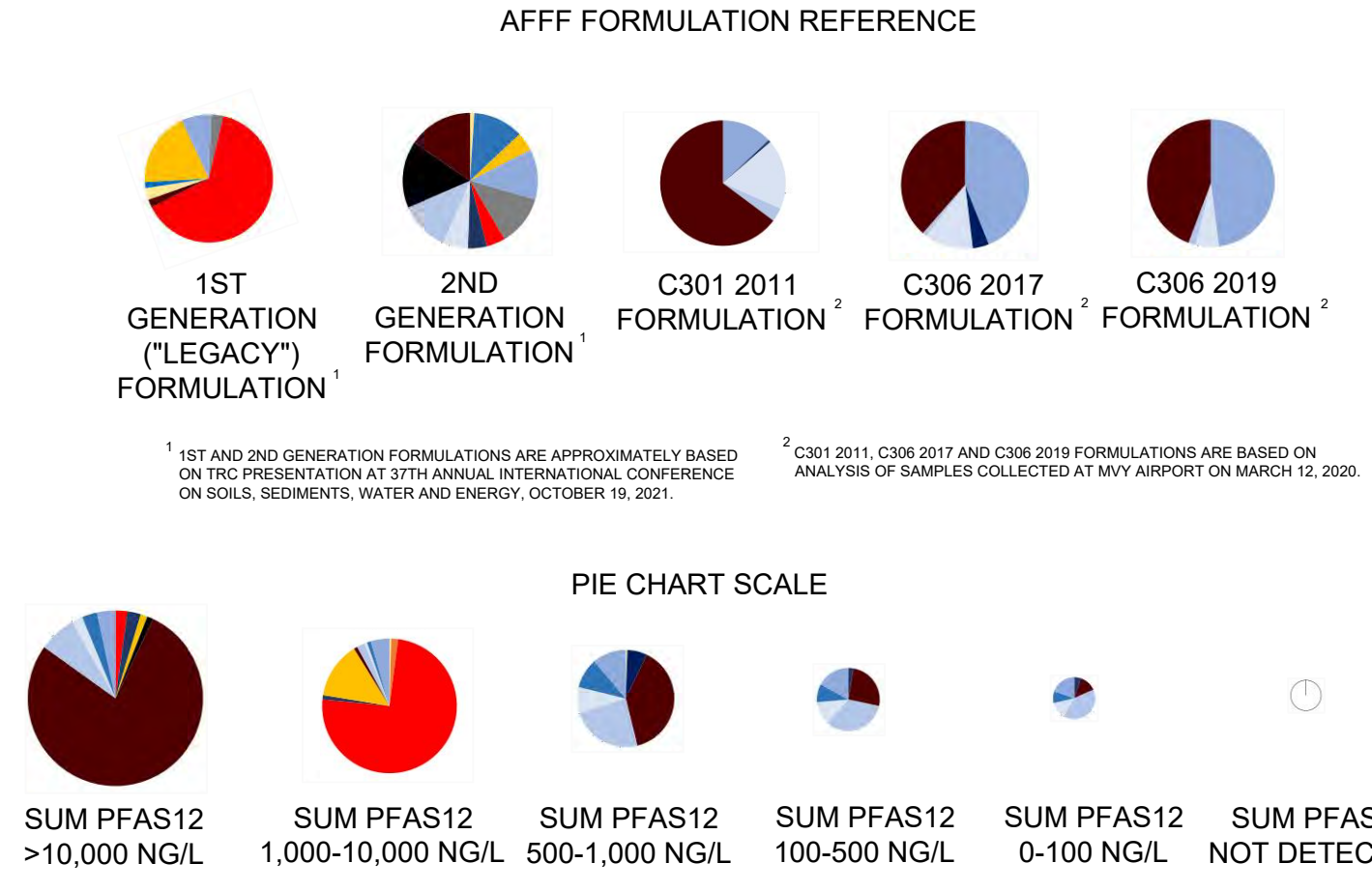
Site Plan with GW-1 Areas

Project No.:	143-3953-22001
Date:	November 17, 2022
Designed By:	HSK
Figure	9

11/18/2022 1:39:45 PM - P:\3953\143-3953-2\1002\CAD\ISHEETFILES\CROSS SECTION FIGURE.DWG - KING, HOLLY



- LEGEND**
- PFOS
 - PFHpS
 - PFHxS
 - PFBS
 - PFBA
 - PFPeA
 - PFHxA
 - PFHpA
 - PFOA
 - PFNA
 - 6:2FTS
 - 8:2FTS
 - NOT DETECTED
 - DD-4 DISCRETE DEPTH BORING
 - MW-JM MONITORING WELL
 - PW-W PRIVATE WELL
 - APPROXIMATE DISCRETE DEPTH SAMPLE LOCATION
 - APPROXIMATE WASTEWATER TREATMENT PLANT EFFLUENT SAMPLE LOCATION
 - APPROXIMATE MONITORING WELL SCREENING LOCATION
 - APPROXIMATE PRIVATE WELL SCREENING LOCATION
 - APPROXIMATE SURFACE ELEVATION
 - APPROXIMATE GROUNDWATER ELEVATION
 - APPROXIMATE SURFACE WATER ELEVATION



- NOTES**
- 1.) VERTICAL AND HORIZONTAL SCALES ARE APPROXIMATE.
 - 2.) ELEVATIONS ARE ESTIMATED BASED ON MASSGIS LIDAR TERRAIN DATA AND MEAN SEA LEVEL.
 - 3.) PRIVATE WELL SAMPLES COLLECTED IN JUNE 2021.
 - 4.) DEPTH DISCRETE AND MONITORING WELL SAMPLES COLLECTED IN NOVEMBER 2021.
 - 5.) WWTP EFFLUENT SAMPLE COLLECTED IN AUGUST 2020.
 - 6.) SCREEN DEPTH FOR PW-AX IS APPROXIMATED BASED ON TYPICAL WELL DEPTH IN THE AREA.
 - 7.) LOCATION FOR PW-AY IS ESTIMATED.

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MARK	DATE	DESCRIPTION	BY

Martha's Vineyard Airport
 Martha's Vineyard Airport
 West Tisbury, Massachusetts
**PFAS Impacts to
 Groundwater - Cross Section**

Project No.:	143-3953-22001
Designed By:	
Drawn By:	
Checked By:	
Figure:	10

Bar Measures 1 inch

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