Martha's Vineyard Airport Commission

Original

Phase I – Initial Site Investigation Report

71 Airport Road
West Tisbury, Massachusetts
RTN 4-0027571

TETRA TECH

#143-3953-19007
November 20, 2019

TETRA TECH

November 20, 2019

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

Re: Phase I - Initial Site Investigation Report
71 Airport Road
West Tisbury, Massachusetts
RTN 4-0027571

Dear Ms. Gallagher:

Tetra Tech has prepared this Phase I – Initial Site Investigation report for the above-referenced Disposal Site (the Site) on behalf of the Martha's Vineyard Airport Commission (MVAC). This report was prepared pursuant to the Massachusetts Contingency Plan (MCP) under 310 CMR 40.0483 and is subject to the attached limitations and conditions. This report and the transmittal forms BWSC-107, 107A and 107B are submitted electronically to the Massachusetts Department of Environmental Protection (MassDEP) via eDEP.

Very truly yours,

Ian S. Cannan, CHMM
Sr. Project Scientist

Ronald E. Myrick, Jr., P.E., L.S.P.
Director

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Marlborough Technology Park
100 Nickerson Road, Marlborough, MA 01752
Tel 508.786.2200 Fax 508.786.2201 tetratech.com

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1.0 INTRODUCTION

This Phase I – Initial Site Investigation Report (Phase I Report) was prepared by Tetra Tech on behalf of the Martha's Vineyard Airport Commission (MVAC), which operates the Martha's Vineyard Airport (MVY). Historic usage and releases of aqueous film-forming foam (AFFF) have been documented at MVY and resulted in the reporting of the presence of per- and polyfluoroalkyl substances (PFAS) in private drinking water supply wells downgradient from the MVY property. The Massachusetts Department of Environmental Protection (MassDEP) subsequently assigned Release Tracking Number (RTN) 4-0027571 to the release.

The Phase I Report was prepared in accordance with the Massachusetts Contingency Plan (MCP) under 310 CMR 40.0480, and Tier Classification of the Site was conducted in accordance with the MCP under 310 CMR 40.0500. This submittal is subject to the L.S.P. Statement of Limitations and Conditions included in Appendix A. The Phase I Report and Tier Classification Opinion were submitted to the MassDEP under Transmittal Forms BWSC-107, 107A and 107B via eDEP.

1.1 RELATIONSHIP OF PERSON CONDUCTING RESPONSE ACTIONS AT THE SITE

The Site is located at and to the south of MVY, an airport owned by Dukes County and operated by MVAC. The MVAC operates MVY, the airport business park (business park), the water distribution system, and the wastewater treatment plant.

1.2 PFAS REGULATORY STATUS

The use of AFFF for firefighting dates back to the mid-1960s when AFFF was developed by the US Navy for crash rescue firefighting. AFFF spreads rapidly across the surface of ignited hydrocarbon fuels forming a water film beneath the foam that extinguishes the fire. AFFF formulations are comprised of PFAS. PFAS, including the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), are a class of "emerging contaminants" that are believed to present adverse health effects to human receptors. Other than firefighting foams, PFAS have been used since the 1950s in stain-resistant, water-resistant, and non-stick products including food packaging, outdoor clothing, carpets, leather goods, and waxes.

Available studies referenced by MassDEP and/or the U.S. Environmental Protection Agency (EPA) indicate that exposure to sufficiently elevated levels of certain PFAS may cause a variety of health impacts including developmental effects in fetuses and infants, effects on the thyroid, liver, kidneys, certain hormones and the immune system. Some studies suggest a cancer risk may also exist in people exposed to higher levels of some PFAS.

In May 2016, EPA issued a lifetime Health Advisory (HA) of 70 parts per trillion (0.07 ug/L) for the combination of PFOS and PFOA in drinking water. In June 2018, due to similar health concerns, MassDEP established an Office of Research and Standards Guideline (ORSG) level for drinking water that extended the EPA advisory to include the following three additional PFAS compounds: perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS) and perfluoroheptanoic acid (PFHpA) because these compounds share very similar chemical structures, and the available data indicates that these compounds may exhibit similar toxicities to PFOS and PFOA. The ORSG level is 70

parts per trillion (ppt) and applies to the total summed concentration of all five compounds. Based on this ORSG, MassDEP recommends the following:

- Consumers in sensitive subgroups (pregnant women, nursing mothers and infants) not consume water when the level of the five PFAS substances, individually or in combination, is above 70 ppt.
- Public water suppliers take steps expeditiously to lower levels of the five PFAS, individually or in combination, to below 70 ppt for all consumers.

In April 2019, draft numerical standards for PFAS were established under a proposed revision to the MCP. The proposed GW-1 standard which, if promulgated, would be applicable to current and potential drinking water source areas including the Site, is 20 ppt for the sum of same 5 PFAS compounds in the ORSG (PFDA, PFHpA, PFHxS, PFOA, PFOS) as well as PFNA (perfluorononanoic acid). The public comment period regarding the draft standards ended on July 19, 2019; however, promulgated standards have not yet been established.

For clarity and to avoid replication within this report, references and comparison of PFAS concentrations to the ORSG apply to the sum of the 5 target PFAS and references to the proposed standards under the MCP apply to sum of the 6 target PFAS.

The information within this section was compiled in part from MassDEP's website for PFAS (https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas). Additional information may be obtained from this link.

2.0 GENERAL DISPOSAL SITE INFORMATION

The Site includes a portion of the MVY property which is comprised of two separate parcels of land in West Tisbury and Edgartown, Massachusetts: 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 plan showing details of the Site and downgradient properties is included as Figure 2.

2.1 SITE DESCRIPTION

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, 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 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 systems.

2.2 DESCRIPTION OF SURROUNDING AREA

The Site is in the south-central portion of Martha's Vineyard and is bounded by the Manuel F. Correllus State Forest to the north, east and west. To the south of the Site, the area is comprised of lightly-developed residential properties that include primarily single-family homes. The estimated residential population within a ½-mile radius of the Site is 1,200.

The surrounding area is not serviced by public water or sewer utilities. Numerous private water supply wells are located within the limits of the Site and surrounding area.

2.3 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 (Massachusetts Department of Environmental Protection, 2019), a review of information from the Massachusetts Division of Fisheries & Wildlife (MassWildlife), 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 B. 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 known and relevant private water supply wells are shown on Figure 2.
- The Manuel F. Correllus State Forest and associated bike path which abut the Site are designated as protected open space.
- 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), 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 Figure 2.

3.0 DISPOSAL SITE HISTORY

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 recent 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 (Location 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 (Locations 2, 3, 4, 7).
- AFFF testing prior to 2002 was reportedly infrequently performed but is believed to have occurred proximate to the ARFF building – unknown volume (Location 3).
- A large-scale AFFF test was reportedly performed in the early 1990s in the area north-northwest of the airport terminal building – unknown volume (Location 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 (Location 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 (Location 8).
- Firefighting incident at a boat storage yard in the business park in 2011 – estimated 500 to 1,000 gallons of 3% AFFF solution (Location 9).
- There have other been documented aircraft accidents at or near MVY (New England Aviation History, 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) in 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 and Reporting

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 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.

3.3 OIL AND/OR HAZARDOUS MATERIALS USE/STORAGE

According to 14 CFR Part 139 §139.315 and §139.317, operators of Part 139 airports (including MVY) must provide aircraft rescue and firefighting (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.

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 several totes of Chemguard 3% AFFF (C-301MS – manufactured 2/21/2011) and Chemguard 3% AFFF (C306-MS-3 – manufactured 3/2017). Copies of the Safety Data Sheets for these products are included in Appendix C. Totes of Chemguard 3% 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. Following testing, the truck tanks and dispensing equipment were flushed with domestic water at various hydrants to remove residual AFFF. As further detailed in Section 3.4, 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 either containing AFFF solutions during testing or using the approved non-discharge testing systems.

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 to be performed approximately annually to semi-annually to ensure that AFFF will perform as needed during an emergency. 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 that are currently listed under the MassDEP ORSG of 70 ppt for drinking water. AFFF discharged in recent years, based on current AFFF formulation in use at MVY, is believed to have contained predominantly Perfluorohexanoic Acid (PFHxA), a shorter-chained PFAS compound, which does not currently have an established MassDEP ORSG and is not on the list of 6 PFAS compounds with a proposed MassDEP standard.

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 tarmac. The containment area is a sloped and paved apron area at the southeast portion of the tarmac at MVY, as shown as Location 8 on Figure 2. A valve-operated piping system connects the containment area to a 10,000-gallon underground fiber reinforced containment tank (to contain residues during deicing and now AFFF testing) or a subsurface infiltration area (for normal stormwater discharges). AFFF testing may be performed within the paved and depressed area, and the control valves are set such that AFFF residues are contained and collected into the underground containment tank, as applicable.

On December 13 and December 20, 2018, Tetra Tech measured the liquid level in the collection tank where AFFF solutions were stored following the November 2018 testing event and confirmed no loss of liquid contents between the measurement dates. Subsequent AFFF testing solutions will either be contained within the underground tank, or recent FAA-approved non-discharge testing methods will be employed. The AFFF testing solutions collected in the underground tank will be either disposed off-site or treated and discharged on-site in accordance with the IRA Plan (or modification).

3.4.2 MVY Wastewater Management

Wastewater from MVY is managed by an on-site wastewater treatment plant (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. A plan detailing the area near the WWTP is provided as Figure 3. 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.

3.5 ENVIRONMENTAL PERMITS AND COMPLIANCE

A written Release Notification Form (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. The next IRA Status Report is due in December 2019.

As part of the IRA, point-of-entry treatment (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.

As part of unrelated construction activities at MVY, a National Pollutant Discharge Elimination System (NPDES) permit is currently active under the U.S. Environmental Protection Agency (EPA) Clean Water Act (U.S. Environmental Protection Agency, 2019). The Stormwater Construction General Permit is associated with identifier MAR1001NT.

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.

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. Other contributing sources of PFAS within the limits of the Site may be identified during this investigation such as discharges from septic systems and the wastewater treatment plant including upstream discharges into these systems. Therefore, the identification of additional PRPs for the conditions identified at the Site is possible.

4.0 PHASE I INVESTIGATION ACTIVITIES

The following sections describe these initial investigation activities including investigations performed prior to and following reporting of the PFAS release to MassDEP.

4.1 PFAS SOURCE ASSESSMENT ACTIVITIES

The following sections describe the investigation activities undertaken to assess and characterize potential sources of PFAS at the Site.

4.1.1 AFFF Source Material Analysis

On December 13, 2018, Tetra Tech collected an aqueous sample of the AFFF test liquid from the storage tank near the containment area. The aqueous sample is reportedly a mixture of Chemguard 3% AFFF and 2,000 to 3,000 gallons of flush water that were used to remove residual AFFF from truck tank and application equipment during the November 2018 AFFF test. 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 3,070 ppt. PFHxA is a shorter-chained PFAS compound (having six carbon atoms) and is not listed as one of the target PFAS compounds in the MassDEP ORSG or draft MCP standards. 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, concentrations of other PFAS may exist in this solution at concentrations less than 333 ppt that were not reported. These data are summarized in Table 1, and the laboratory certificate of analysis is provided in Appendix D.

Although testing did not detect concentrations of the PFAS compounds identified in the MassDEP ORSG or draft standards in the AFFF formulation used during the recent testing event, due to continued unknowns regarding the toxicity of PFAS, MVAC has committed to collecting and containerizing these AFFF solutions resulting from FAA-required testing and avoiding discharge whenever possible. Collected solutions will be subsequently treated prior to discharge or disposed at an appropriate off-site facility.

4.1.2 Wastewater Analysis

In addition to AFFF, additional potential sources of PFAS compounds were assessed including potential discharges to the wastewater system at MVY. To date this assessment has included sampling and laboratory analysis of wastewater from various sources at MVY, treated wastewater, and wastewater treatment sludge from the on-site wastewater treatment plant (WWTP). The WWTP includes approximately 2.4 miles of piping and services the airport facility and business park. The location of the WWTP is shown on Figure 2. Wastewater is treated via a rotating biological contactor prior to discharge to groundwater via a recharge gallery to the south of the airport on the portion of MVY in West Tisbury, Massachusetts.

Between November 2018 and August 2019, five (5) samples of the influent to the WWTP and six (6) samples of the effluent from the WWTP were collected and submitted for laboratory analysis of PFAS compounds via EPA Method 537 at Alpha. Also, 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; a car wash facility; a bus wash facility; and a laundromat. These samples were also submitted for laboratory analysis of PFAS compounds via EPA Method 537. One sample of the WWTP influent that was collected on August 8, 2019 was analyzed for PFAS via EPA Method 537 as well as total oxidizable precursors (TOP) assay, which provides an assessment of possible transformation of PFAS which may occur due to oxidation. The laboratory analytical data for wastewater sampling performed during the Phase I investigation are summarized in Table 2. Laboratory certificates of analysis are provided in Appendix D.

PFAS compounds 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 August 8, 2019 influent wastewater sample via TOP assay yielded detectable concentrations of PFHxS, PFHxA, PFOS and PFOA. This suggests that precursor constituents may be present in the influent wastewater and may transform into these quantifiable PFAS compounds following oxidation or WWTP processes.

Analysis of the effluent from the WWTP detected PFAS compounds ranging from <20.7 ppt to 208 ppt. Also, PFAS compounds were detected at the wet well in the business park with a concentration of the 347 ppt. However, laboratory analysis of wastewater samples from the identified potential PFAS sources at the business park did not report detectable concentrations of PFAS compounds above laboratory detection limits. We note that in some cases the detection limits achieved for these wastewater samples were elevated due to the limits of the method used to analyze the sample, and PFAS may be present in the wastewater at concentrations below the detection limits that were achieved.

A sample of the sludge from the WWTP was collected on March 14, 2019 and submitted for laboratory analysis of PFAS compounds via EPA Method 537 at Alpha. Laboratory analysis of the WWTP sludge did not detect PFAS compounds above laboratory detection limits; however, four non-target PFAS compounds were detected. The WWTP sludge data are summarized in Table 3, and the laboratory certificate of analysis for the WWTP sludge sample is also provided in Appendix D.

These data have been presented to representatives of MassDEP and are currently under review. We are continuing to monitor and evaluate potential PFAS impacts associated with wastewater at MVY in collaboration with MassDEP.

4.2 SOIL ASSESSMENT ACTIVITIES

On March 12, 2018 and March 14, 2018, Tetra Tech engaged New England Geotech, LLC of Jamestown, Rhode Island, to advance five (5) soil borings, each of which were completed as monitoring wells (TT-1, TT-2, TT-3, TT-4, and TT-5). Soil boring logs are provided in Appendix E. Four of the five assessment locations were located 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 that sources from the tarmac, apron and runway stormwater drainage system. The soil boring locations are shown on 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 below the ground surface (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 shallower interval from 31 to 32 feet bgs 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.

On March 13, 2019, a soil sample was collected 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 (Location 9 on Figure 2).

On March 14, 2019, two soil samples were collected from stockpiles of soil generated during construction-related excavation activities at MVY. One sample (sample ID: 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 (Location 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 based on past AFFF use at these locations. Shallow soil samples were collected at each location from the ground surface to 1-foot bgs. Also, soil samples were collected of the soils at the capillary fringe of the water table (26 to 28 feet bgs at TT-1 and 30 to 32 feet bgs at TT-2). The soil samples were submitted to Alpha for laboratory analysis of PFAS via EPA Method 537 modified by isotope dilution.

4.2.1 Soil Analytical Data Summary

The following summarizes the results of laboratory analysis of soil samples collected from the Site. Soil analytical data are summarized in Table 4. The soil analytical data are compared to the proposed MCP Method 1 standard for soil category S-1/GW-1 since there is currently no soil ORSG or other guideline value. The proposed soil standards are subject to change before being promulgated, and recent correspondence from MassDEP suggests that these draft values may increase when promulgated. Laboratory certificates of analysis are provided in Appendix D.

In March 2018, laboratory analysis detected PFAS compounds in the near surface soils including PFDA at a concentration of 4.56 nanogram/gram (ppt) at TT-1 and perfluoro dodecanoic acid (PFDoA) at a concentration of 1.69 ppt at TT-4. PFDA is included in the proposed MCP Method 1 S-1/GW-1 standard but was detected at 4.56 ppt, which is below the proposed MCP Method 1 S-1/GW-1 standard of 200 ppt.

In March 2019, laboratory analysis of the soil sample collected from soils generated during excavation proximate to Location 6 on Figure 2, where AFFF was applied in response to a gear-up landing in 1996 (sample ID: Runway Soils-AFFF area), did not report detectable concentrations of PFAS above the laboratory detection limits of 1.08 ppt. Laboratory analysis of the soil sample from the boat storage yard (sample ID: Boatyard Soil Sample (0-2')) did not report detectable concentrations of PFAS above the laboratory detection limits of 1.07 ppt. Also, the laboratory analysis of the general stockpiled construction-related soils from excavations in the area near the runway did not report detectable concentrations of PFAS above the laboratory detection limit of 0.889 ppt. The laboratory detection limits were below the proposed MCP Method 1 S-1/GW-1 standard of 200 ppt.

In September 2019, laboratory analysis of the shallow soils at the TT-1 and TT-2 locations detected different PFAS compared with the March 2018 sampling event. At TT-1A (0-1 foot bgs) the PFAS 1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS) and 1H,1H,2H,2H-Perfluorooctanesulfonic Acid (8:2FTS) were detected at concentrations of 22.7 ppt and 28.4 ppt, respectively. These PFAS are not targeted compounds within the proposed MCP Method 1 soil standards. Also, at TT-2A (0-1 foot bgs) several target PFAS were detected at a total concentration of 8.08 ppt, which is below the proposed MCP Method 1 S-1/GW-1 standard of 200 ppt.

The sampling and analysis of soils at the capillary fringe in September 2019 also detected certain PFAS substances. At TT-1A (26-28 feet bgs) PFOA was detected at a concentration of 1.26 ppt, which is below the proposed MCP Method 1 S-1/GW-1 standard. Also, the PFAS compounds 6:2FTS and 8:2FTS, which are not included in the 6 target PFAS compounds, were detected at TT-1A at concentrations of 49.5 ppt and 4.52 ppt, respectively. At TT-2A (30 to 32 feet bgs) the PFAS compounds were reported at a concentration of 2.58 ppt due to detections of Perfluoroheptanoic Acid (PFHpA) and PFOA; however, the total concentration is below the proposed MCP Method 1 S-1/GW-1 standard. Also, 6:2FTS was detected at a concentration of 15.1 ppt.

Particle size analysis of the soil from the two soil depth intervals at the monitoring well M-4 location are presented in Appendix F. The results of particle size analysis indicate that both soils are classified as

poorly graded sand (SP) per the ASTM Method. The shallower soils (31 to 32 feet bgs) contain approximately 88.6% sand, 10% gravel, and 1.4% silt/clay, with the particles described as angular and hard. The deeper soils (45 to 46 feet bgs) contain approximately 95.7% sand, 2.8% silt/clay, and 1.5% gravel.

Based on observations during drilling, stratified layers of sand with variations in grain size exist at the Site. Based on the sieve analysis data, coarser grained soils layers exist that likely exhibit higher hydraulic conductivity and potential preferred flow and higher velocity pathways for groundwater containing PFAS compared to the less coarse soils layers. The stratified and variable grain size sand layers have been confirmed by environmental investigations at MVY to a depth of least 100 feet but likely extend significantly deeper.

4.3 GROUNDWATER ASSESSMENT ACTIVITIES

Previous investigations at the Site included the installation of groundwater monitoring wells for various other environmental investigations. To the extent possible to facilitate an initial assessment of conditions related to the AFFF releases at the Site, some of the existing monitoring wells were sampled between March 2018 and September 2019. The available groundwater monitoring well construction diagrams for previously installed monitoring wells that were sampled as part of the Phase I for the Site are provided in Appendix E.

On March 12, 2018 and March 14, 2018, Tetra Tech engaged New England Geotech to install monitoring wells TT-1, TT-2, TT-3, TT-4, and TT-5 at the Site. The locations of these monitoring wells were selected based on known locations of AFFF use at MVY. The monitoring well locations are shown on Figure 2. Groundwater monitoring well construction diagrams for these wells are provided in Appendix E.

On March 11 and 12, 2019, Tetra Tech engaged New England Geotech to install monitoring wells TT-6, TT-7, M4-E, MW-JS and MW-JM. Monitoring wells TT-6 and TT-7 were installed downgradient from the location of a fire at the boat storage yard where AFFF was reportedly used in 2011 (Location 9 on Figure 2). Monitoring well M-4E was installed to supplement wells M-4 and M-4D with additional vertical assessment data at this location where the highest concentrations of PFAS were detected in groundwater at the southerly limit of MVY. Monitoring well M-4E was screened at an interval of 75-80 feet bgs. Also, at Property J, where the highest concentrations of PFAS were detected during private well sampling in November 2018, two monitoring wells were installed to facilitate vertical assessment of PFAS impacts in groundwater at this location. According to available well drilling records, the Property J water supply is screened from approximately 81 to 86 feet bgs. The two monitoring wells at Property J were screened from 23 to 38 feet bgs (MW-JS) and 60 to 65 feet bgs (MW-JD). Groundwater monitoring well construction diagrams for these wells are provided in Appendix E.

On September 10 and 11, 2019, Tetra Tech engaged New England Geotech to install monitoring wells TT-8, TT-9, and TT-10. Monitoring well TT-8 was installed south of the hanger buildings to assess groundwater migration pathways between the ARFF building and the downgradient area. Monitoring wells TT-9 and TT-10 were installed to the west of the M-4 monitoring well group to assess PFAS migration toward Waldrons Bottom Road, Vineyard Meadow Farms Road and Charles Neck Way. The monitoring well locations are shown on Figure 2. Groundwater monitoring well construction diagrams for these wells are provided in Appendix E.

Several rounds of groundwater sampling from monitoring wells have been completed as part of the Initial Site Assessment activities at the Site. With the exception of 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. The monitoring well sample from OW-B in December 2018 and the samples collected in August 2019 were collected using dedicated polyethylene bailers following purging to remove at least 3 well volumes of water. Groundwater samples were collected and submitted for analysis of PFAS compounds via EPA Method 537. Groundwater analytical data are summarized in Table 5. The laboratory certificates of analysis for groundwater samples are provided in Appendix D.

On March 14 to 16, 2018, Tetra Tech personnel collected groundwater samples from select groundwater monitoring wells at the Site (M-4, M-6, M-6D, M-10, M-11, RIZ-5, RIZ-10, RIZ-12, RIZ-42, RIZ-61, TMW-2, TMW-4, TMW-5, TMW-5D, TMW-6, TT-1, TT-2, TT-3, TT-4, and TT-5). The groundwater samples were analyzed for PFAS via EPA Method 537

On November 1, 2018, Tetra Tech personnel collected groundwater samples from M-4, M-6D, M-10, RIZ-42, TMW-11, TT-1, and TT-3. The groundwater samples were analyzed for PFAS via EPA Method 537.

On March 13, 2019, Tetra Tech personnel collected groundwater samples from M-4, M-4D, M-4E, TT-6, TT-7, MW-JS and MW-JM. The groundwater samples were analyzed for PFAS via EPA Method 537. Also, monitoring wells M-4, M-4E, TT-6, TT-7, MW-JS, and MW-JM were analyzed for nitrogen nitrate via EPA Method 4500.

On September 13, 2019, Tetra Tech personnel collected groundwater samples from TT-1, TT-8, TT-9, and TT-10. At monitoring well TT-1, groundwater samples were collected from 3 depth intervals representing the shallow, intermediate and deep portions of the screened interval of the well. These depth-discrete samples were collected with the pump intake set near the top of the water column (shallow) in the approximate middle of the water column (mid) and approximately one foot above the bottom of the well (deep). The groundwater samples were analyzed for PFAS via EPA Method 537.

4.3.1 Groundwater Analytical Data Summary

A graphical depiction of the PFAS impacts to groundwater based on the investigation activities to-date is represented on Figure 2. Groundwater analytical data are summarized in Table 5. The groundwater PFAS data are compared to the current MassDEP ORSG as well as the proposed MCP Method 1 standards for groundwater category GW-1. Laboratory certificates of analysis are provided in Appendix D.

In general, the groundwater analytical data suggested that the highest concentrations of PFAS at MVY occur proximate to and to the southwest of the ARFF building. Elevated concentrations of PFAS were also identified at TT-05 to the south of an area of past AFFF discharges during equipment flushing activities. In addition, PFAS compounds appear to have migrated in groundwater to the property boundary along Edgartown-West Tisbury Road near TT-10, TT-9, M-4 and M-10, which are located south-southwest (downgradient) of TT-1 and TT-2 and the MVY WWTP facility, and at monitoring well M-6D opposite of Coffins Field Road. Also, detectable concentrations of PFAS were reported in groundwater samples collected from other monitoring wells along Edgartown-West Tisbury Road (monitoring wells RIZ-12, TMW-4 RIZ-42, TMW-5, TMW-5D, TMW-6 and M-6) and to the south of Edgartown-West Tisbury Road (M-11, MW-JS, and MW-JM). The following describes the results of groundwater sampling and laboratory analysis of monitoring wells along the primary migration pathways identified at the Site.

The highest concentrations of PFAS in groundwater were detected in the samples from monitoring wells located proximate to known locations of past AFFF releases including TT-2 (3,636 ppt) and TT-1 (2,421 ppt) in March 2018. At monitoring well TT-1 depth discrete sampling in September 2019 suggests higher concentrations of PFAS occur in the shallower portions of the screened interval of this well; however, the concentrations in all samples in September 2019 were lower compared to prior sampling events. Also, at monitoring well TT-3, PFAS were detected at a concentration of 1,704 ppt in March 2018. PFAS exceed the MassDEP ORSG of 70 ppt at each of these monitoring wells, and PFAS also exceed the proposed MCP Method 1 GW-1 standard of 20 ppt. Replicate samples from monitoring wells TT-1, TT-2 and TT-3 demonstrate higher variability compared to data from replicate samples collected at other monitoring wells at the Site.

Further downgradient from suspected AFFF release locations, PFAS were detected in monitoring wells M-4 (1,425 ppt) and M-10 (231 ppt) in March 2018 suggesting that PFAS migrates in groundwater to the south of AFFF release locations. Replicate samples from these locations demonstrate less variability compared to groundwater samples collected proximate to AFFF release locations with PFAS concentrations at M-4 ranging from 687 ppt to 1,425 ppt, and concentrations at M-10 ranging from 231 ppt to 342 ppt. To the southwest PFAS were detected at elevated concentrations at TT-9 (81.9 ppt) and TT-10 (336 ppt). At each of these locations, the concentrations of PFAS in groundwater exceed both the MassDEP ORSG of 70 ppt and the proposed MCP Method 1 GW-1 standard of 20 ppt.

Monitoring wells M-11, MW-JS, and MW-JM are installed within the residential development downgradient from the M-4 and M-10 locations near Waldrons Bottom Road and Vineyard Meadow Farms Road. At monitoring well M-11, groundwater sampling in March 2018 reported PFAS at a concentration of 42.3 ppt, which is below the MassDEP ORSG of 70 ppt but exceeds the proposed MCP Method 1 GW-1 standard of 20 ppt. At monitoring well MW-JS (installed at Property J as shown on Figure 2), PFAS were reported at a concentration of 400 ppt, which exceeds both the MassDEP ORSG and proposed MCP Method 1 GW-1 standard. At monitoring well MW-JM, PFAS were reported at 74.7 ppt, which also exceeds both the MassDEP ORSG and proposed MCP Method 1 GW-1 standard. These data suggest that significant variability in PFAS concentrations can exist at depth at a given location which is likely associated with preferential flow paths within the stratified soils that connect to upgradient PFAS release areas.

The assessment of groundwater at monitoring well TT-5, which is downgradient from the current AFFF testing area (Location 8 on Figure 2) and a former AFFF flushing/washout area (Location 7 on Figure 2), reported PFAS at 599 ppt in March 2018 and 305 ppt in August 2019. Also, downgradient from the location of a fire at the boat storage yard where AFFF was deployed in 2011 (Location 9 on Figure 2) lower concentrations of PFAS were detected at TT-06 (38.8 ppt) and were lower at OW-B (6.24 ppt) and TT-7 (2.89 ppt). These data suggest that the release of AFFF at the boat storage yard did not result in significant impacts of target or detectable PFAS to groundwater in this area.

4.3.2 Groundwater Gauging and Elevation Survey

Based on prior environmental investigations at MVY, a southerly direction of groundwater has been documented across MVY. 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. A more comprehensive groundwater elevation survey will be completed as part of the Phase II.

The depth to groundwater and measured elevations are summarized in Table 6. Using the measured groundwater elevations at the Site, a groundwater potentiometric surface map was generated, which is included as Figure 4. The groundwater potentiometric surface map suggests a southerly groundwater migration pathway with a gradient of approximately 0.001 feet/foot within the targeted area.

4.4 PRIVATE WELL SAMPLING

In response to interim guidance issued by MassDEP on June 19, 2018 and the discovery of PFAS impacts to groundwater at MVY at concentrations above the MassDEP ORSG of 70 ppt near the southerly limit of MVY, MVAC and Tetra Tech performed additional assessment of downgradient private wells.

To assess whether PFAS compounds in groundwater at MVY had impacted the downgradient private wells, water samples were initially collected from two properties on Coffins Field Road in October 2018. These locations were selected based on prior hydrogeological information that suggested a possible connection to areas of upgradient MVY airport or tenant operations areas since these properties had previously been affected by a prior release (RTN 4-12087) of chlorinated solvents (tetrachloroethene) from a former dry-cleaning tenant located near the MVY terminal building. On October 12, 2018, Tetra Tech collected water samples from the private wells at Property ZY and Property ZZ on Coffins Field Road for laboratory analysis of PFAS via EPA Method 537. The water samples were obtained following purging the water system for 15 minutes prior to sampling, in general conformance with the recommended sampling procedures in the Private Well Guidelines documented published by the MassDEP Drinking Water Program (last updated in July 2018).

On October 17, 2018, written notices were sent to nearby residents in a targeted area to the south of Edgartown-West Tisbury Road near Waldrons Bottom Road and Vineyard Meadow Farms Road in West Tisbury, Massachusetts. The distribution area for this notice was initially focused on this area based on the results of groundwater assessment activities which identified PFAS in groundwater at monitoring wells M-4 and M-10 above the MassDEP ORSG guidance level. Subsequently between November 2, 2018 and December 27, 2018, Tetra Tech and MVAC coordinated a public outreach effort to contact nearby residents and obtain permission to collect and analyze water samples from private wells in the area. This outreach effort expanded and advanced following the initial detection of elevated concentrations in the private well sample that was collected from Property B on November 2, 2018, which necessitated reporting to MassDEP.

Between November 2, 2018 and August 8, 2019, 190 additional private wells were sampled and analyzed for PFAS via EPA Method 537. The locations of the private wells sampled are shown on Figure 2. Prior to sampling, water was purged for approximately 10-15 minutes. Following purging a sample of the water was collected from a sampling point (tap) located as close as possible to where the well water enters the building. In some cases, it was not feasible to enter the building to collect the water samples, and in these instances, water samples were collected from an outside spigot. The private well water samples were submitted for laboratory analysis of PFAS via EPA Method 537. The laboratory analytical data are summarized in Table 7. The groundwater analytical data are compared to the current MassDEP ORSG and proposed MCP Method 1 standards. Laboratory certificates of analysis are provided in Appendix D.

4.4.1 Sampling of Private Wells at MVY

MVY has three private water supply wells (for commercial properties) that were “grandfathered” for use at locations where the water supply is not connected to the airport’s public water system. One of these

private wells at the airport is a non-potable private well located within MVY at the Airport Laundry facility, located at 1 Flight Path in West Tisbury, MA. A sample from the Airport Laundry well was collected on November 2, 2018. Samples from the two other on-site private wells (Stanley Well and the Amerigas Well) were collected on December 13, 2018. The on-site private wells were analyzed for PFAS via EPA Method 537. Laboratory analysis of the each of the samples from the on-site private wells detected low concentrations of PFAS below the MassDEP ORSG and proposed MCP 1 standards. These data suggest that PFAS has not significantly affected the on-site private wells at MVY. The results of laboratory analysis of water samples from these private wells are summarized in Table 7. Laboratory certificates of analysis are provided in Appendix D.

4.4.2 Private Well Analytical Data Summary

A total of 193 private wells have been sampled as part of the initial Site assessment activities completed to date, including 190 private wells at downgradient properties and 3 private wells at MVY. PFAS were detected in 84 of the 193 private wells sampled. The detected concentrations of the target 5 PFAS ranged from 1.80 ppt to 1,762 ppt. A total of 14 private wells that were sampled had reported concentrations of PFAS compounds above the MassDEP ORSG of 70 ppt. Concentrations of PFAS in private wells were below the detection limit (typically between 1 and 2 ppt) in 109 of the 193 private wells sampled.

The horizontal distribution of PFAS in groundwater (as determined based on results of samples of private wells) identified the highest concentrations of PFAS within approximately 1,000 feet of the MVY property boundary at Edgartown-West Tisbury Road. The horizontal extent (based on property boundaries) and distribution of PFAS impacts to groundwater, as currently understood, are shown on Figure 2. Based on a review of the horizontal distribution of PFAS impacts from private well sampling data, there were a few anomalous findings which will be further evaluated as part of Phase II activities. Most notably, at Property AY and Property DA elevated concentrations of PFAS were detected in groundwater from private wells at locations in the southerly portion of the study area where only low PFAS concentrations were detected in surrounding private wells.

Replicate samples were collected from 17 private wells to verify the results of the initial samples, and three private wells have been sampled three times. The results of replicate sampling identified some variability in the data; however, with two exceptions the PFAS concentrations were similar, and the results did not alter response action decisions. At Property H the private well was sampled three times due to its location relative to other locations with elevated PFAS. PFAS was detected at a concentration of 28.9 ppt in one of the three samples analyzed. In the two prior samples of water at Property H, PFAS compounds were not detected above the laboratory detection limit. Also, the replicate water sample from Property FX in September 2019 reported target PFAS compounds at a concentration of 23.9 ppt compared to the initial sample from June 2019 with a PFAS concentration of 17.4 ppt. We will continue to periodically sample private wells located proximate to locations where elevated PFAS has been detected to verify prior findings and further assess concentration trends and variability over time.

4.5 ASSESSMENT OF PUBLIC WATER SUPPLIES

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 compounds above the laboratory detection limits (typically 10 to 40 ppt) in the various U.S. EPA samples from these public water supplies.

On December 7, 2018, water samples were collected 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 airport 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), the MassDEP ORSG, or the proposed MCP Method 1 GW-1 standard. These data suggested that PFAS had not significantly affected the public water supplies in the area. The results of laboratory analysis of water samples from these public water supplies are summarized in Table 8. Laboratory certificates of analysis are provided in Appendix D.

4.6 PFAS SOURCE ASSESSMENT – DATA REVIEW AND FINGERPRINT ANALYSIS

The results of soil, groundwater and private well sampling at the Site suggest that the ratios of various individual PFAS compounds varied considerably at different locations at the Site. This suggests that multiple PFAS sources exist including different AFFF formulations that were released over time and/or that PFAS compounds are transformed in the subsurface, or by other means, as they migrate downgradient from the Site. In order to review the data and discern potential PFAS sources and migration pathways, Tetra Tech has reviewed data statistics and performed a fingerprint analysis of normalized data for the Site.

A basic statistical analysis of the private well data set was performed using the EPA software ProUCL version 5.11 (U.S. Environmental Protection Agency, 2019) and the data for the sum of the 5 target PFAS compounds in the MassDEP ORSG. The monitoring wells at MVY were excluded from this analysis since the selected locations were often biased whereas the private well data distribution is more random compared to suspected PFAS release locations. PFAS compounds were detected in 84 of the 193 private wells sampled at concentrations ranging from 1.8 ppt to 1,358 ppt. These data have a mean of 89.66, a standard deviation of 220 and are right-skewed. Goodness of fit testing indicated that the data are not normally distributed and are not gamma distributed. However, the data do fit a lognormal distribution at 5% significance level. Environmental data sets are often gamma or lognormally distributed. A series of outlier tests were performed using ProUCL and this data. Potential outliers were identified at a 5% significance level at sample points where the concentration of the sum of the 5 target PFAS compounds was above 66.5 ppt. A review of the data with no outliers indicates that there are 69 private wells with concentrations ranging from 1.8 ppt to 66.5 ppt. These data have a mean of 16.9, a standard deviation of 16.95 and are less right-skewed compared to the full data set. Goodness of fit testing indicates that the data set with no outliers fits a gamma and lognormal distribution at a 5% significance level. The results of this statistical review of the private well data at the Site indicate that private wells with concentrations of the sum of the 5 target PFAS concentrations above approximately 66.5 ppt are outliers to the expected distribution and may indicate locations that have been affected by a PFAS release to groundwater, areas of preferred migration, or other statistical anomalies. A summary of the statistical evaluation and copies of histograms for the data sets are provided in Appendix G.

To further analyze the distribution of the PFAS data for the Site and look for patterns and connections, Tetra Tech has evaluated the data according to the EPA FALCON fingerprinting process (U.S. Environmental Protection Agency, 2019). This process involves normalizing the data to a decimal percent

and plotting the normalized data in a visual format. The visual plots can be compared for similarities between sample locations. Further, two data sets can be compared via statistical assessment for pattern reproducibility can be performed using regression analysis. These results can be used to differentiate sources of contamination from background, differentiate multiple sources, demonstrate whether contamination detected at some distance from the Site is related to the source, map contaminate migration pathways and/or evaluate mixed plumes. The analysis of these data is not complete at this time; however, the current graphical data representations are provided in Appendix G. A more comprehensive analysis of these data will be presented in the Phase II Comprehensive Site Assessment and/or forthcoming IRA Status Reports. The graphical representations include both fingerprint bar-graph plots and radar-plots to depict the distribution of 6 individual PFAS compounds. The compounds evaluated were selected based on frequency of detection at the Site and whether they were included in the list of PFAS compounds with proposed MCP Method 1 standards. Based on our review of these data, the following preliminary findings are made:

- Various formulations of AFFF have been created by various manufacturers and include different PFAS compounds. In general, AFFF that was manufactured from the 1960s through around 2002 contained a higher concentration of PFOS; AFFF formulations that were manufactured from 2002 until approximately 2016 contained some longer chain PFAS that break down to PFOA; and modern AFFF formulations are comprised of primarily shorter chained PFAS which do not break down to PFOS or PFOA.

- As indicated by the analysis of the AFFF and wash water contained within the deicing containment area storage tank, the AFFF product used more recently at MVY are likely comprised of primarily shorter chained PFAS compound, including PFHxA, which does not currently have an established MassDEP ORSG or proposed MCP Method 1 standards.

- Soil sampling was performed at several locations; however, the soil analytical data do not demonstrate strong similarities between their PFAS fingerprints. The PFAS fingerprints for the soil samples collected proximate to monitoring wells TT-1 and TT-2 at the capillary fringe are similar; however, these fingerprints are not similar to the PFAS fingerprints of the corresponding monitoring wells. These data suggest that PFAS compounds that are sorbed to soil are present at different relative concentrations compared to those PFAS compounds that migrate in groundwater. This may be attributable to varying organic carbon content of the soils and preferential adherence of certain PFAS compounds to organic matter in the soil matrix.

- The PFAS fingerprint of the water sample from the wash water in the AFFF containment tank demonstrates a relatively strong correlation to the groundwater sample from monitoring well M-10 and is similar to the PFAS fingerprint at monitoring well TT-3. Due to similarities with the fingerprint of the water from the AFFF containment tank, these findings suggest that groundwater in the vicinity of TT-3 and M-10 is likely primarily impacted by recent releases of AFFF (post-2016).

- The PFAS fingerprint at monitoring well TT-3 appears strongly correlated to M-4 and M-11, primarily due to similar ratios of PFHxA and PFHpA. Monitoring well M-4 has a PFAS fingerprint that is well correlated to groundwater at monitoring wells M-11 and MW-JM and water at the private well of Property B. Due to similarities with the fingerprint of the water from the AFFF containment tank, these findings suggest that these downgradient locations are impacted by more recent AFFF releases, possibly sourcing from the TT-3 area.

- The PFAS fingerprints of monitoring wells TT-1 and TT-4 demonstrate a strong correlation, primarily related to approximately equally-proportional concentrations of PFHxA (from newer AFFF formulations), PFHpA and PFOA (from older AFFF). Also, the PFAS fingerprints of TT-1 and TT-4 are well correlated to the fingerprint of TT-9. These findings suggest that releases of older AFFF formulations and newer AFFF formulations comingle in groundwater at these locations.

- The groundwater at monitoring well TT-9 has a PFAS fingerprint that is well correlated to the signature of monitoring well M-11 and is very similar to monitoring well MW-JM. Also, the PFAS fingerprint of TT-9 is well correlated to the water sample from the private well at Property B. These data suggest that the mixed plume of older AFFF and newer AFFF releases is present at the residential area to the south of MVY.

- At monitoring well TT-10 the PFAS fingerprint does not demonstrate similarity to other source area monitoring wells but is well correlated to monitoring well MW-JS due to the high relative ratios of PFHxS, low PFOS and low PFOA. TT-10 does appear to be similar to Property Y and may suggest preferential migration of PFHxS in groundwater in this area. However, the PFAS fingerprint of TT-10 does not suggest similarities with other downgradient monitoring wells or private wells.

- Properties F, J, DA and DY have PFAS fingerprints which are well correlated to one another due to high ratios of PFOS; however, these signatures do not correlate well with source area groundwater monitoring wells. The higher ratio of PFOS suggests impacts from release of older formulations of AFFF. The radar plots of Property Y, Property DA and Property AY are similar and may suggest a co-mingling of two sources of PFAS and/or preferential migration through the subsurface.

- The PFAS fingerprint of monitoring well TT-5 demonstrates a strong correlation to the signatures from monitoring well M-6D, and the private wells at Properties CL and AL along Coffins Field Road. The higher ratios of PFHxA suggest that these releases are more likely associated with newer AFFF formulations; however, the shape of the radar plots suggests that some mixing with releases of older AFFF formulations is possible.

- The PFAS fingerprint for the wastewater effluent from the MVY WWTP demonstrates a unique signature compared to other source area groundwater monitoring wells and downgradient private wells with generally higher concentrations of PFOA. At this time, the wastewater treatment plant effluent discharges do not appear to significantly contribute to the presence PFAS in private wells at downgradient properties.

The fingerprint and source assessment evaluation will be further advanced as part of the Phase II Comprehensive Site Assessment.

5.0 IMMEDIATE RESPONSE ACTION SUMMARY

Due to the detection of PFAS at concentrations that necessitated reporting to MassDEP as a potential Imminent Hazard (IH), IRA actions were implemented at the Site. In addition to the assessment activities described above, the following sections summarize the IRA activities completed to date.

5.1 PRELIMINARY IMMINENT HAZARD EVALUATIONS

Tetra Tech performed a preliminary Imminent Hazard Evaluation (IHE) to characterize the potential health risks associated with PFAS compounds detected in residential private well samples in the area downgradient from MVY. Tetra Tech conducted this IHE as part of the IRA and in conformance with the requirements of the MCP, 310 CMR 40.0950. This assessment was submitted to MassDEP in the January 2019 IRA Plan. Subsequently, as additional private well analytical data were received and reviewed, additional screening IHEs were performed and presented in IRA Status Report submittals.

The results of the IHE found that a potential IH to human health may exist at 6 of the residential properties located downgradient from MVY including Properties B, F, I, J, Y and AY. These locations are shown on Figure 2.

5.2 IRA OBJECTIVES

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.

5.3 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.

5.3.1 AFFF Testing Discharge Elimination

The FAA continues to require AFFF formulation testing to be performed approximately semi-annually to annually to ensure that AFFF will perform as needed during an emergency. Prior AFFF used at MVY may have included longer-chained PFAS compounds including 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 compounds including PFHxA which does not currently have an established MassDEP ORSG.

As previously discussed, beginning in November 2018, as a conservative measure to mitigate further releases of AFFF to the subsurface, FAA-required tests of AFFF have been and will continue to be contained, and residual AFFF solutions recovered for proper disposal. The AFFF testing events are now performed within the deicing containment area. The containment area is a sloped and paved apron area at the southeast portion of the tarmac at MVY, as shown on Figure 2. A valve-operated piping system connects the containment area to an underground containment tank (to contain residues during deicing and now AFFF testing) or a subsurface infiltration area (for normal stormwater discharges). AFFF testing

is performed within the paved and depressed area, and the control valves are set such that residues are contained and collected into the underground containment, as applicable.

Further, the FAA recently issued a National Part 139 CertAlert that documented the approval of non-discharge AFFF testing systems, and MVY is now performing AFFF testing by either containing AFFF solutions during testing or using the approved non-discharge testing systems.

Subsequent AFFF testing solutions will either be contained within the underground tank, or recent FAA-approved non-discharge testing methods will be employed. The AFFF testing solutions collected in the underground tank will be either disposed off-site or treated and discharged on-site in accordance with the IRA Plan (or modification).

5.3.2 Source Area Soil Assessment

As described in Section 4.2.1, elevated PFAS concentrations have not been identified in source area soils. Therefore, at this time no IRA actions related to soil remediation are proposed.

5.4 IRA ACTIVITIES TO MITIGATE IMMINENT HAZARD AND CRITICAL EXPOSURE PATHWAY

A potential IH to human health has been identified at six private wells. In addition, PFAS compounds have been found to be present above the MassDEP ORSG level of 70 ppt in seven additional private wells. Therefore, pursuant to 310 CMR 40.0414(3), IRA actions are required to eliminate and/or mitigate those conditions where a Critical Exposure Pathway (CEP) presents a potential IH to human health. Also, the MCP requires mitigation or elimination of a CEP, to the extent feasible. As presented in IRA Status Report #2 (March 2019), it is infeasible to eliminate the CEP for lower concentrations of PFAS approaching the presumed background of 20 ppt. Therefore, exposure pathway mitigation/elimination measures are required for 37 properties with private water supply wells with detected PFAS concentrations above 20 ppt.

Immediately upon identification of a potential IH to human health due to PFAS in drinking water and notification of MassDEP of the initial potential IH, arrangements were made for the delivery of bottled water to the affected residences. The occupants of affected residences where a potential IH to human health may exist were verbally notified of the results of the analysis with a recommendation to cease consumption of water from their private wells. Subsequently, a written letter was provided to the affected residents summarizing the results of sampling and laboratory analysis with a recommendation to cease consuming water from the private well and use bottled water for consumption.

As an initial measure to eliminate the Critical Exposure Pathway (CEP), bottled water was offered at residences with private wells where PFAS compounds were detected at concentrations exceeding or approaching (but below) the 70 ppt MassDEP ORSG, which is identified as above 20 ppt. A representative sample of the bottled water from the supplier was collected on December 7, 2018 and analyzed for PFAS at Alpha Analytical via EPA Method 537. The results of laboratory analysis of the bottled water did not report detectable concentrations of PFAS above the laboratory detection limit (1.72 ppt) or the MassDEP ORSG. The analytical data for the bottled water sample is provided in Table 8.

5.4.1 Point of Entry Treatment Systems

As a more permanent mitigation measure, point-of-entry treatment (POET) was selected as a feasible exposure pathway mitigation/elimination approach for the six (6) private wells where a potential IH to

human health may exist in the near term. POET systems were also installed at thirty (31) additional properties where PFAS compounds in private wells has been documented to exceed or approach the MassDEP ORSG (i.e. exceeds 20 ppt). Following installation and successful demonstration of the initial POET in December 2018, additional treatment system installations began in mid-March 2019, and the installation and initial sampling of most POET systems were completed by July 11, 2019. One additional POET was installed at Property FX on October 29, 2019 after PFAS was detected in a replicate sample at a concentration of 23.9 ppt. The private well at this property had been targeted for multiple sampling events due to its location proximate to MVY and other affected private wells. Also, PFAS was detected in a sample collected from a prior sampling event from this well at a concentration of 17.4 ppt.

A summary of the treatment system installations and performance sampling is provided in Table 8. As noted on Table 8, two separate POET systems were required at four properties due to the presence of multiple structures on a property that were connected to the private well via separate water lines.

The POET systems are comprised of 12” x 42” upflow type polyethylene vessels with 55 pounds of granular activated carbon (GAC), a cartridge filter (DGD-5005-20 sediment filter), and a flow totalizer. The POET systems installed at locations where concentrations of PFAS exceeded the MassDEP ORSG of 70 ppt included two GAC units connected in series. The POET systems installed at locations where the concentrations of PFAS were less than 70 ppt include one GAC unit. The POET system summary in Table 8 describes the number of GAC units installed at each property.

Performance sampling for the eight POET systems at six properties where private well sampling identified a potential IH to human health is performed quarterly according to the IRA. Semi-annual performance sampling is performed at properties where private well sampling indicated concentrations of PFAS compounds above the MassDEP ORSG. Finally, annual performance sampling is performed for POET systems installed at properties with PFAS at concentrations above 20 ppt.

Based on the findings of performance sampling, the POET systems were found to be effective at reducing the target PFAS compounds in the potable water to levels well below the concentrations that may cause a potential IH to human health and also well below the MassDEP ORSG. Further, the POET systems effectively reduced the target PFAS compounds in the effluent (treated) water to below laboratory detection limits. This demonstrates that the exposure pathway is eliminated via use of the POET systems. Therefore, bottled water is no longer being provided to residents at locations where private well sampling identified PFAS compounds at elevated concentrations, and POET systems were subsequently installed.

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 17 meters (about 55 feet) above the National Geodetic Vertical Datum (NGVD). Toward the Edgartown/West Tisbury Road, shallow depressions can be observed which were likely formed by Pleistocene stream valleys in the glacial outwash plain. A shallow depression (also referred to as bottoms) identified as Waldron Bottom drains toward Long Pond and apparently affect drainage proximate to the Site. The Site is in close proximity to two smaller and connected shallow depressions not directly associated with either of the main

topographic features. These unnamed bottoms 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 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 Martha's Vineyard island. These deposits consist of stratified sand and gravel deposited by glacial melt water streams toward the latter stages of the Pleistocene Glaciation (Pleistocene deposits). According to prior reports, 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 Plan during the Upper Cretaceous Period. At the site these deeper finer-grained deposits have not been observed during subsurface investigations where samples have been collected at depths of approximately 100 feet bgs. 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.

6.2.1 Bedrock Geology

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.

6.3 HYDROGEOLOGY

Hydrogeology is likely influenced by surface drainage 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 is estimated at approximately 0.001 feet/foot. The groundwater potentiometric surface map is provided as Figure 4. 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 the greatest effect on groundwater migration from AFFF release locations at the Site. It is likely that groundwater flows toward Long Cove, and to a lesser extent Homer Pond and Watcha Pond to the south/southwest of the Site.

Prior assessments at MVY (Tetra Tech, 2012) have indicated an estimated groundwater flow velocity at the Site of 0.4 feet per day to the south.

7.0 NATURE AND EXTENT OF CONTAMINATION

The following sections present information on the known nature and extent of PFAS contamination at the Site.

7.1 SOURCE AND NATURE OF OHM RELEASED AT THE SITE

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 discrete areas where one or more releases of PFAS impacted these areas as follows:

- Past release of suspect older (legacy) AFFF formulations have come to be located at monitoring well TT-10 and in the downgradient area. These past releases are associated with relatively higher ratios of PFOS compared to other PFAS compounds. Downgradient monitoring well MW-JS and downgradient private wells at Properties F, J, Y, DA, and AY appear to be impacted by with a similar distribution of PFAS compounds and contain concentrations of PFAS compounds above the MassDEP ORSG of 70 ppt and draft Method 1 standards.

- More recent releases of AFFF containing a greater portion of PFHxA, a shorter chained PFAS compound that is not included in the list of the 5 PFAS compounds associated with the MassDEP ORSG nor in the list of the 6 PFAS compounds with proposed MCP Method 1 standards, are identified at MVY. This PFAS fingerprint profile group is matched with the collected and tested water contained within the AFFF containment tank which has strong correlation to groundwater samples from monitoring wells TT-3 and M-10. These monitoring wells are also well correlated with monitoring wells M-4 and M-11. However, further downgradient of these wells, groundwater appears to include increased concentrations of target PFAS compounds including PFHpA and to a lesser extent PFOA and PFOS. Monitoring well M-11 is well correlated to MW-JM at the downgradient residential area. Also, this PFAS fingerprint profile appears to be associated with private wells at Properties E, B, L, and AS which all contain concentrations of PFAS compounds above the MassDEP ORSG of 70 ppt.

- A third PFAS fingerprint profile group is identified which is associated with an approximate equal blend of apparent newer AFFF (primarily PFHxA) and older AFFF (higher PFHpA). Monitoring wells TT-1, TT-2, TT-4 and TT-5 appear well correlated with a similar PFAS fingerprint. Also, there is some correlation between the soils at the capillary fringe proximate to monitoring wells TT-1 and TT-2.

    - The PFAS fingerprint of the groundwater at monitoring wells TT-1 demonstrates a similar PFAS fingerprint compared to monitoring wells TT-9 and M-4. Also, the PFAS fingerprints of downgradient private wells at Properties I, BJ, G, C, BO, and AX, where concentrations of PFAS exceed the MassDEP ORSG, are similar to this profile.

    - The PFAS fingerprint of the groundwater at monitoring well TT-5 demonstrates a strong correlation to monitoring well M-6D as well as the downgradient private wells along Coffins Field Road including Properties CL and AL, where concentrations of PFAS exceed the MassDEP ORSG.

- The water from the WWTP demonstrates a unique fingerprint profile and likely contains precursor PFAS compounds that transform to target PFAS compounds, including PFOA. However, the profile of the WWTP effluent samples do not demonstrate correlation to downgradient monitoring wells or private wells. Therefore, based on available information at this time, the WWTP is not believed to be a significant source of PFAS impacts to the downgradient area.

7.2 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. The horizontal extent of PFAS impacts to groundwater have not been fully delineated by the Phase I investigation activities; however, based on data collected from private wells and monitoring wells, some general data trends have been identified. At this time it appears that higher concentrations of PFAS compounds are present in the shallower portions of the saturated unconsolidated soil unit (shallow groundwater) on MVY proximate to suspected AFFF release areas with generally decreasing PFAS concentrations with increased vertical depth as well as increased horizontal distance to the south.

8.0 MIGRATION PATHWAYS AND EXPOSURE POTENTIAL

The following sections describe and evaluate the known and potential contaminant migration pathways and exposure points, to the extent that such information is currently understood at the Site.

8.1 EVIDENCE OF MIGRATION PATHWAYS

The Site has been impacted by past releases of AFFF which contained PFAS compounds included in the list of the 5 target compounds in the MassDEP ORSG and the more recently established list of 6 PFAS compounds identified in the proposed MCP Method 1 standards.

One or more of the target PFAS compounds have been identified in soil; however, the maximum concentrations of PFAS compounds (8.08 ppt) is significantly below the proposed MCP Method 1 S-1/GW-1 standard of 200 ppt. Although these proposed MCP reportable concentrations or Method 1 standards have not yet been promulgated, this finding suggests that although impacts to soil have been identified, these impacts are not significant and are unlikely to contribute significantly to migration pathways at the Site.

PFAS compounds have been identified in groundwater from monitoring wells installed at MVY proximate to known or suspected AFFF release locations. Therefore, groundwater is a confirmed migration pathway at the Site. At this time there are no promulgated MCP reportable concentrations or Method 1 standards for PFAS in groundwater; however, the reported concentrations exceed the MassDEP ORSG of 70 ppt, and the proposed MCP Method 1 GW-1 standard of 20 ppt. The maximum detected concentration of PFAS compounds do not exceed their respective proposed MCP Method 1 GW-3 standards (40,000 µg/L for PFDA, PFHpA, PFNA and PFOA and 500 µg/L for PFHxS and PFOS). Therefore, migration from groundwater to surface water is not considered a likely migration pathway of concern at this time. Also, there are no established or proposed MCP Method 1 GW-2 standards for PFAS compounds; therefore, migration in air is not a likely migration pathway at the Site.

PFAS compounds have been identified in water samples from private water supply wells in the area downgradient from MVY at concentrations above the MassDEP ORSG of 70 ppt. Also, PFAS compounds

have been identified in private well samples at concentrations above the proposed MCP Method 1 GW-1 standard which would be applicable for groundwater that is a source of drinking water. Based on these findings drinking water is a confirmed migration pathway at the Site.

8.2 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, humans are present at the Site, and access to soils is currently minimally restricted. There is a security fence and access restriction to MVY in most areas where PFAS is identified in shallow soil.

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 compounds have been detected in private drinking water supply wells at the Site. However, response actions have been implemented under an IRA Plan to mitigate human exposure to PFAS via drinking water at the Site.

8.3 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, and no environmental receptors are present at MVY that would be exposed to PFAS compounds 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 compounds have been identified in groundwater, the concentrations of the detected compounds are significantly below the proposed MCP Method 1 GW-3 standards, which would be protective of migration from groundwater to surface water. Therefore, at this time we believe the exposure pathways to environmental receptors are incomplete; however, further assessment will be proposed under the Phase II Scope of Work.

9.0 EVALUATION FOR THE NEED FOR IMMEDIATE RESPONSE ACTIONS

Sampling of private wells located south of MVY on Waldrons Bottom Road and Vineyard Meadow Farms Road in November 2018 identified PFAS compounds at concentrations above the MassDEP ORSG concentration and at concentrations that necessitated reporting to MassDEP as a potential IH based on a Method 3 risk characterization using groundwater analytical data for a private well. 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 IRA activities that had been orally-approved by MassDEP. These activities included providing bottled water to impacted residents, installing point-of-entry treatment

systems, and performing an extensive private well sampling and public notification program within the potentially-impacted area.

10.0 CONCLUSIONS AND PHASE I REPORT COMPLETION STATEMENT

Phase I – Initial Site Investigation activities have been completed at the Site. The results of soil and groundwater investigations have provided evidence of PFAS impacts to primarily groundwater at the Site. The following summarizes the findings and conclusions of the Phase I Report:

- Apparent past releases of AFFF at MVY have resulted in the presence of PFAS substances in soil and groundwater at the Site. These releases have migrated in groundwater to the south and affected residential developments proximate to Vineyard Meadow Farms Road, Waldrons Bottom Road, and Coffins Field Road.
- The residences downgradient from MVY utilize private water supply wells as a source of potable water. Some of those private wells located in the area downgradient from MVY have been found to have detectable concentrations of PFAS compounds at concentrations above the current MassDEP ORSG and above the proposed MCP Method 1 GW-1 standard. IRA actions have been implemented to identify private wells that may be affected by PFAS compounds, mitigate exposure to PFAS via the drinking water pathway, and control/eliminate the critical exposure pathway, to the extent feasible.

This Phase I Report has been prepared to present the results of Preliminary Response Actions undertaken at the Site in accordance with 310 CMR 40.0400. This Phase I Report conforms with the applicable requirements of the MCP under 310 CMR 40.0480. The data generated during the Phase I investigations indicate that additional Comprehensive Response Actions are necessary at the Site, and a Tier Classification of the Site pursuant to the provisions of 310 CMR 40.0500 is necessary. A Phase I Report Completion Statement and MassDEP Transmittal Form BWSC-107 are submitted via eDEP with this report. The findings of this Phase I Report have been used in the Tier Classification of the Site as presented below.

11.0 TIER CLASSIFICATION OPINION

Using the data and information presented in the Phase I Report, Tetra Tech has completed a Tier Classification of the Site in accordance with 310 CMR 40.0500. It is our opinion that the data and information in the Phase I Report are adequate to evaluate the Site conditions and complete the Tier Classification. The Tier I Inclusionary Criteria listed under 310 CMR 40.0520(2) were reviewed in comparison to the conditions identified at the Site. Based on our review of these criteria, the Site is classified as a Tier I Site 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. The Tier Classification Transmittal Forms (BWSC-107, 107A and 107B) are submitted via eDEP with this report. Comprehensive Response Actions are necessary at the Site and will be conducted according to the deadlines and requirements specified for Tier I Disposal Sites under 310 CMR 40.0560.

12.0 PUBLIC NOTIFICATIONS

The public notification requirements of 310 CMR 40.1403(3)(e), 310 CMR 40.1403(3)(a) and 310 CMR 40.1403(4)(f) have been completed. In addition, since the Site was classified a Tier I Disposal Site, the public notification requirements of 310 CMR 40.1403(6) were conducted, and a public notice will be published in the Martha's Vineyard Times. Copies of public notices are provided in Appendix H. A tear sheet of the public notice published in the Martha's Vineyard Times will be provided to MassDEP following its publication. In addition, as a voluntary measure of public notification the MVAC has directed Tetra Tech to produce and distribute a letter summarizing this Phase I Report and its findings for distribution to those residences who have expressed interest in being kept informed of the investigation and response efforts.

13.0 REFERENCES

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Table 1 - AFFF Containment Water Analytical Data

CLIENT SAMPLE ID			AFFF Containment
SAMPLING DATE			12/13/2018
LAB SAMPLE ID	CAS No.	Units	L1851578-01
Perfluorinated Alkyl Acids by EPA 537			
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	<333
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	<333
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	<333
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	<333
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	<333
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	<333
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<333
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	3,070
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	<333
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	<333
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	<333
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	<333
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l	<333
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	<333
Total PFOA, PFOS, PFNA, PFHxS and PFHpA			<333

Notes:
< indicates compound not detected above laboratory analytical method detection limits

Table 2 - Wastewater Analytical Data

CLIENT SAMPLE ID SAMPLING LOCATION SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	PROPERTY D (WWTP) Effluent 11/2/2018 L1845165-01	WWTP-Effluent Effluent 12/7/2018 L1850508-03	WWTP-Effluent-3 Effluent 12/20/2018 L1852722-01	WWTP-INF Influent 3/14/2019 L1910259-02	WWTP-EFF Effluent 3/14/2019 L1910259-01	WWTP-EFFLUENT-4 Effluent 4/30/2019 L1918240-01	WWTP INFLUENT Influent 5/9/2019 L1919614-01	WWTP EFFLUENT Effluent 5/9/2019 L1919614-02
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	4.41	2.27	<8.93	<23.9	<20.7	2.51	<17.5	<18.1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	20.8	10.6	12.6	<23.9	<20.7	11.2	<17.5	<18.1
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	<1.88	4.47	<8.93	<23.9	<20.7	<1.93	<17.5	<18.1
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	57.6	38.0	25.8	<23.9	<20.7	31.1	<17.5	<18.1
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	<1.88	1.78	<8.93	<23.9	<20.7	<1.93	<17.5	<18.1
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	21.3	15.8	9.64	<23.9	<20.7	17.7	<17.5	<18.1
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<1.88	<1.76	<8.93	<23.9	<20.7	<1.93	<17.5	<18.1
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	37.1	54.4	37.3	<23.9	<20.7	34.6	<17.5	24.8
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	58.1	12.3	<8.93	<23.9	<20.7	65.9	<17.5	22.3
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	10.6	8.05	<8.93	<23.9	<20.7	10.9	<17.5	<18.1
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	118	138	62.4	<23.9	<20.7	105	<17.5	45.1
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	<1.88	<1.76	<8.93	<23.9	<20.7	<1.93	<17.5	<18.1
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l	<1.88	<1.76	<8.93	<23.9	<20.7	<1.93	<17.5	<18.1
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	8.14	8.39	<8.93	<23.9	<20.7	5.06	<17.5	<18.1
Total PFOA, PFOS, PFNA, PFHxS and PFHpA			208	174	72.0	<23.9	<20.7	200	<17.5	67.4

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Table 2 - Wastewater Analytical Data

CLIENT SAMPLE ID			WWTP INFLUENT	WWTP INFLUENT (TOP)	WWTP EFFLUENT	WWTP IP Wet Well	Car Wash WW	CWFRT-2019-03-27	VTA Bus Wash-WW	Airport Laundromat-WW
SAMPLING LOCATION			Influent	Influent (TOP)	Effluent	ABP Wet Well	Car Wash	Car Wash	Bus Wash	Laundromat
SAMPLING DATE			8/8/2019	8/8/2019	8/8/2019	12/20/2018	1/16/2019	3/27/2019	1/16/2019	1/16/2019
LAB SAMPLE ID	CAS No.	Units	L1935831-02	L1937419-01	L1935831-01	L1852722-02	L1902212-01	L1912653-01	L1902212-02	L1902212-03
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l	<9.02	NA	2.76	<10.0	<500	<50.0	<500	<500
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l	<9.02	NA	8.71	<10.0	<500	<50.0	<500	<500
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l	<9.02	<1.90	4.83	<10.0	<500	<50.0	<500	<500
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	<9.02	<1.90	4.78	33.5	<500	<50.0	<500	<500
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l	<9.02	<1.90	<1.75	<10.0	<500	<50.0	<500	<500
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	<9.02	<1.90	3.26	58.3	<500	<50.0	<500	<500
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<9.02	6.86	<1.75	66.6	<500	<50.0	<500	<500
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	<9.02	5.18	10.8	24.2	<500	<50.0	<500	<500
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	<9.02	<1.90	3.34	88.4	<500	<50.0	<500	<500
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	<9.02	2.24	5.55	<10.0	<500	<50.0	<500	<500
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	<9.02	2.52	19.9	134	<500	<50.0	<500	<500
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l	<9.02	<1.90	<1.75	<10.0	<500	<50.0	<500	<500
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l	<9.02	<1.90	<1.75	11.0	<500	<50.0	<500	<500
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l	<9.02	<1.90	<1.75	<10.0	<500	<50.0	<500	<500
Total PFOA, PFOS, PFNA, PFHxS and PFHpA			<9.02	11.62	32.1	347	<500	<50.0	<500	<500

Notes:

< indicates compound not detected above laboratory analytical method detection limits

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
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/g	<21.7

Notes:

< indicates compound not detected above laboratory analytical method detection limits

Table 4 - Soil Analytical Data

CLIENT SAMPLE ID			Proposed [1] MCP	TT-1 (1-2')	TT-1A-0-1	TT-1A-26-28	TT-4 (1-2')	Boatyard Soil Sample (0-2')	Runway Soil-AFFF Area	Runway Soils-General
Sample Depth (feet)			Method 1	1-2	0-1	26-28	1-2	0-2	stockpile	stockpile
SAMPLING DATE			Standard	3/12/2018	9/11/2019	9/11/2019	3/12/2018	3/13/2019	3/14/2019	3/14/2019
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	L1809219-02	L1942017-03	L1942017-04	L1809219-01	L1910438-08	L1910260-01	L1910260-02
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g		4.56	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g		<1.07	<4.96	<0.935	1.69	<1.07	<1.08	<0.889
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g		<1.07	<4.96	1.26	<1.68	<1.07	<1.08	<0.889
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g		<1.07	<4.96	<0.935	<1.68	<1.07	<1.08	<0.889
Perfluoropentanoic Acid (PFPeA)		ng/g			<4.96	<0.935				
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)		ng/g			22.7	49.5				
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)		ng/g			28.4	4.52				
Total PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA		ng/g	200	4.56	<4.96	1.26	<1.68	<1.07	<1.08	<0.889

Notes:
< indicates compound not detected above laboratory analytical method detection limits
Blank indicates compound was not reported by the analytical method
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 4 - Soil Analytical Data

CLIENT SAMPLE ID			Proposed [1]	TT-2A-0-1	TT-2A-30-32
Sample Depth (feet)			MCP Method 1	0-1	30-32
SAMPLING DATE			Standard	9/11/2019	9/11/2019
LAB SAMPLE ID	CAS No.	Units	S-1/GW-1	L1942017-01	L1942017-02
Perfluorinated Alkyl Acids by EPA 537					
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/g		<1.04	<1.00
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/g		<1.04	<1.00
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/g		<1.04	<1.00
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g		3.16	<1.00
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/g		<1.04	<1.00
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g		1.69	1.08
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g		<1.04	<1.00
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g		1.41	<1.00
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g		1.56	<1.00
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g		<1.04	<1.00
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g		1.67	1.50
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/g		<1.04	<1.00
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/g		1.52	<1.00
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/g		1.77	<1.00
Perfluoropentanoic Acid (PFPeA)		ng/g		2.17	<1.00
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)		ng/g		2.82	15.1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)		ng/g		2.10	<1.00
Total PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA		ng/g	200	8.08	2.58

Notes:
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Blank indicates compound was not reported by the analytical method
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Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	M-4 3/14/2018 L1809217-02	M-4 11/1/2018 L1845161-04	M-4 3/13/2019 L1910438-07	M-4D 3/13/2019 L1910438-06	M-4E 3/13/2019 L1910438-05	M-6 3/15/2018 L1809217-10
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.67	<1.72	<8.77	<1.70	<1.76	<1.72
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.67	<1.72	<8.77	<1.70	<1.76	<1.72
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			5.93	22.6	<8.77	<1.70	<1.76	<1.72
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			5.67	4.10	<8.77	<1.70	<1.76	2.13
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.67	<1.72	<8.77	<1.70	<1.76	<1.72
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		**1060**	**212**	**745**	35.5	28.0	12.2
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		**82.7**	**77.7**	**72.9**	<1.70	<1.76	<1.72
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			2860	478	1,880	74.1	56.2	18.5
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		39.2	22.7	55.7	4.64	2.91	2.74
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		**118**	**219**	**150**	<1.70	<1.76	<1.72
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		**240**	**151**	**343**	14.8	10.9	10.7
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.67	<1.72	<8.77	<1.70	<1.76	<1.72
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.67	<1.72	<8.77	<1.70	<1.76	<1.72
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.67	<1.72	<8.77	<1.70	<1.76	<1.72
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**1540**	**682**	**1367**	54.9	41.8	25.6
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	1546	687	1367	54.9	41.8	27.8
Nitrogen, Nitrate		mg/l					1.08		0.501	

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
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Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	M-6D 3/15/2018 L1809217-09	M-6D 11/1/2018 L1845161-02	M-10 3/14/2018 L1809217-03	M-10 11/1/2018 L1845161-03	M-11 3/14/2018 L1809217-01	OW-B 12/13/2018 L1851578-03
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.72	<1.76	<1.72	<1.71	<1.72	<1.89
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.72	<1.76	<1.72	<1.71	<1.72	<1.89
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	<1.76	4.27	13.4	<1.72	<1.89
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			1.90	<1.76	2.08	2.44	<1.72	<1.89
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.76	<1.72	<1.71	<1.72	<1.89
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		44.2	**81.0**	53.4	**176**	18.3	<1.89
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.72	<1.76	16.9	11.5	<1.72	<1.89
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			66.4	118	87.7	349	65.9	4.78
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		4.69	<1.76	18.2	14.6	<1.72	<1.89
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.72	<1.76	43.2	36.1	12.7	3.06
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		17.5	22.7	**96.9**	**101**	11.3	3.18
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.76	<1.72	<1.71	<1.72	<1.89
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.76	<1.72	<1.71	<1.72	<1.89
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.76	<1.72	<1.71	<1.72	<1.89
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		66.4	**104**	**229**	**339**	42.3	6.24
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	68.3	104	231	342	42.3	6.24
Nitrogen, Nitrate		mg/l								

Notes:
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Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	RIZ-10 3/15/2018 L1809217-16	RIZ-12 3/16/2018 L1809217-18	RIZ-42 3/15/2018 L1809217-05	RIZ-42 11/1/2018 L1845161-01	RIZ-5 3/15/2018 L1809217-14	RIZ-61 3/15/2018 L1809217-13
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		36.2	10.1	12.3	15.9	2.35	38.6
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.72	<1.78	<1.67	<1.75	<1.72	2.04
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			62.8	17.4	32.4	31.0	2.86	87.8
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		4.59	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		6.72	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		43.9	<1.78	6.05	6.87	<1.72	10.4
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.78	<1.67	<1.75	<1.72	<1.78
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**91.4**	10.1	18.4	22.8	2.35	51.0
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	91.4	10.1	18.4	22.8	2.4	51.0
Nitrogen, Nitrate		mg/l								

Notes:
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Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	TMW-11 11/1/2018 L1845161-09	TMW-2 3/15/2018 L1809217-15	TMW-4 3/14/2018 L1809217-04	TMW-5 3/15/2018 L1809217-07	TMW-5D 3/15/2018 L1809217-06	TMW-6 3/15/2018 L1809217-08
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.83	42.8	<1.72	2.79	12.4	29.2
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.83	<1.67	<1.72	<1.72	<1.72	1.80
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.83	74.2	2.00	7.96	53.6	47.2
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.83	5.64	<1.72	<1.72	<1.72	2.11
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.83	8.19	<1.72	<1.72	<1.72	2.43
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.83	52.8	2.82	2.31	3.01	25.4
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.83	<1.67	<1.72	<1.72	<1.72	<1.78
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.83	**109**	2.82	5.10	15.4	60.9
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.83	109	2.82	5.10	15.4	60.9
Nitrogen, Nitrate		mg/l								

Notes:
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Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	TT-1 3/16/2018 L1809217-20	TT-1 11/1/2018 L1845161-05	TT-1 8/8/2019 L1935832-02	TT-1-SHALLOW 9/13/2019 L1942369-06	TT-1-MID 9/13/2019 L1942369-05	TT-1-DEEP 9/13/2019 L1942369-04
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.72	<1.93	<1.86	2.78	<1.92	3.49
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.72	<1.93	<1.86	<1.92	<1.92	3.43
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	<1.93	<1.86	<1.92	<1.92	<1.98
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			27.9	19.9	14.0	5.70	5.02	6.13
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.93	<1.86	<1.92	<1.92	<1.98
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		**1,900**	**999**	**392**	**121**	**107**	**84.9**
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		1.93	<1.93	<1.86	<1.92	<1.92	<1.98
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			3,020	1,470	404	125	117	101
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		**224**	**78.6**	36.5	9.21	8.72	8.24
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		17.4	7.80	10.6	4.71	4.48	5.45
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		**1,790**	**622**	**183**	59.6	54.8	45.5
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.93	<1.86	<1.92	<1.92	<1.98
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.93	<1.86	<1.92	<1.92	<1.98
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.93	<1.86	<1.92	<1.92	2.52
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**3933**	**1707**	**622**	**195**	**175**	**144**
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	3961	1727	636	200	180	150
Nitrogen, Nitrate		mg/l								

Notes:
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	TT-2 3/16/2018 L1809217-19	TT-2 8/8/2019 L1935832-04	TT-3 3/16/2018 L1809217-17	TT-3 11/1/2018 L1845161-06	TT-3 8/8/2019 L1935832-03	TT-4 3/15/2018 L1809217-11
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.78	<1.85	<1.72	<1.70	<1.83	<1.78
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.78	<1.85	<1.72	<1.70	<1.83	<1.78
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.78	<1.85	<1.72	<1.70	<1.83	<1.78
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			6.96	<1.85	3.14	<1.70	<1.83	2.37
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.78	<1.85	<1.72	<1.70	<1.83	<1.78
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		**1,620**	**335**	**2,090**	**178**	**603**	13.8
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		5.54	<1.85	3.76	<1.70	<1.83	<1.78
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			1,200	354	9,370	1,370	2,060	18.1
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		**309**	**79.7**	14.9	13.4	21.0	3.64
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		4.11	2.17	<1.72	<1.70	<1.83	3.2
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		**1,920**	**293**	**342**	17.8	**86.2**	11.8
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.78	<1.85	<1.72	<1.70	<1.83	<1.78
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.78	<1.85	<1.72	<1.70	<1.83	<1.78
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.78	<1.85	<1.72	<1.70	<1.83	3.88
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**3859**	**710**	**2451**	**209**	**710**	32.4
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	3866	710	2454	209	710	34.8
Nitrogen, Nitrate		mg/l								

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
< indicates compound not detected above laboratory analytical method detection limits
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	TT-5 3/15/2018 L1809217-12	TT-5 8/8/2019 L1935832-01	TT-06 3/13/2019 L1910438-03	TT-07 3/13/2019 L1910438-04	TT-8 9/13/2019 L1942369-07	TT-9 9/13/2019 L1942369-03
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.72	<1.72	<1.75	<1.78	<1.79	<1.85
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.72	<1.72	<1.75	<1.78	<1.79	<1.85
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	<1.72	<1.75	<1.78	<1.79	<1.85
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			5.83	10.8	6.91	<1.78	<1.79	<1.85
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.72	<1.75	<1.78	<1.79	<1.85
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		**483**	**172**	7.10	<1.78	3.59	39.1
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		2.14	<1.72	<1.75	<1.78	<1.79	3.84
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			690	262	4.54	<1.78	16.6	107
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		9.52	19.6	3.95	<1.78	<1.79	<1.85
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.72	<1.72	2.87	<1.78	<1.79	5.80
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		**98.7**	**103**	24.9	2.89	<1.79	33.2
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.72	<1.75	<1.78	<1.79	<1.85
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.72	<1.75	<1.78	<1.79	<1.85
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.72	1.80	<1.78	<1.79	<1.85
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**593**	**295**	38.8	2.89	3.59	**81.9**
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	599	305	45.7	2.89	3.59	81.9
Nitrogen, Nitrate		mg/l					0.703	0.160		

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 5 - Groundwater Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	TT-10 9/13/2019 L1942369-02	MW-JS 3/13/2019 L1910438-01	MW-JM 3/13/2019 L1910438-02
Perfluorinated Alkyl Acids by EPA 537							
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.92	<1.75	<1.72
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.92	<1.75	<1.72
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.92	4.04	<1.72
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.92	<1.75	<1.72
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.92	<1.75	<1.72
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		**84.6**	**88.2**	63.3
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		**208**	**234**	<1.72
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			42.1	146	127
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.92	3.17	<1.72
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.92	57.0	<1.72
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		43.2	17.8	11.4
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.92	<1.75	<1.72
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.92	<1.75	<1.72
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.92	<1.75	<1.72
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**336**	**400**	**74.7**
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	336	400	74.7
Nitrogen, Nitrate		mg/l				0.604	0.770

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
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Table 6 - Groundwater Elevation Survey Data

Well ID	Casing Elevation (ft.)	Depth to Water (ft.)	GW Elevation (ft.)
M-4	107.67	32.88	74.79
TT-1	103.11	27.14	75.97
TT-2	107.58	31.03	76.55
TT-8	109.45	33.54	75.91
TT-9	97.72	22.02	75.70
TT-10	109.74	34.76	74.98

Notes:
1. Elevations surveyed by Tetra Tech on 9/12/19
2. Depth to water measured from the top of well casing on 9/13/19

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Amerigas Well 12/13/2018 L1851578-02	Stanley Well 12/13/2018 L1851579-01	Property A 11/2/2018 L1845163-01	Property D-2 12/7/2018 L1850511-01	Property B 11/2/2018 L1845164-01	Property C 11/2/2018 L1845160-01
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.96	<1.92	<1.72	<1.71	<1.74	5.33
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.96	<1.92	<1.72	<1.71	<1.74	3.48
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.96	<1.92	<1.72	<1.71	4.98	<1.78
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.96	<1.92	<1.72	<1.71	2.58	<1.78
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.96	<1.92	<1.72	<1.71	<1.74	<1.78
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.96	2.92	2.87	<1.71	**285**	50.0
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.96	<1.92	<1.72	<1.71	9.93	<1.78
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			4.93	3.27	12.4	8.63	607	48.1
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.96	<1.92	<1.72	<1.71	29.2	<1.78
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.96	<1.92	<1.72	<1.71	50.3	<1.78
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.96	<1.92	<1.72	<1.71	**170**	35.2
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.96	<1.92	<1.72	<1.71	<1.74	<1.78
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.96	<1.92	<1.72	<1.71	<1.74	<1.78
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.96	<1.92	<1.72	<1.71	<1.74	<1.78
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.96	2.92	2.87	<1.71	**544**	**85.2**
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.96	2.92	2.87	<1.71	547	85.2

Notes:
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property E 11/2/2018 L1845162-01	Property E-2 1/16/2019 L1902194-01	Property F 11/27/2018 L1848363-01	Property G 11/27/2018 L1848362-01	Property H 11/27/2018 L1848364-01	Property H-2 12/7/2018 L1850500-01	Property H-3 3/14/2019 L1910258-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			4.15	<1.82	<1.77	<1.83	<1.79	<1.84	<2.09
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			2.97	<1.82	<1.77	<1.83	<1.79	<1.84	<2.09
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	<1.82	4.40	<1.83	<1.79	<1.84	<2.09
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.72	<1.82	<1.77	<1.83	<1.79	<1.84	<2.09
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.82	<1.77	<1.83	<1.79	<1.84	<2.09
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		27.5	41.0	**174**	**96.1**	<1.79	<1.84	17.1
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.72	<1.82	**113**	55.4	<1.79	<1.84	<2.09
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			53.2	93.3	196	85.0	<1.79	<1.84	16.9
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		2.38	2.13	<1.77	2.45	<1.79	<1.84	<2.09
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		2.14	2.28	**481**	<1.83	<1.79	<1.84	<2.09
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		13.5	21.5	**93.1**	51.7	<1.79	<1.84	11.8
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.82	<1.77	<1.83	<1.79	<1.84	<2.09
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.82	<1.77	<1.83	<1.79	<1.84	<2.09
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.82	<1.77	<1.83	<1.79	<1.84	<2.09
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		45.5	66.9	**861**	**206**	<1.79	<1.84	28.9
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	45.5	66.9	861	206	<1.79	<1.84	28.9

Notes:
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property I 11/27/2018 L1848365-01	Property J 11/27/2018 L1848367-01	Property K 11/27/2018 L1848366-01	Property L 12/3/2018 L1849406-01	Property M 12/3/2018 L1849407-01	Property N 12/3/2018 L1849405-01	Property O 12/3/2018 L1849403-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.77	<1.89	<1.78	<2.11	<1.98	<1.86	<2.14
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.77	<1.89	<1.78	<2.11	<1.98	<1.86	<2.14
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.77	7.91	<1.78	<2.11	<1.98	<1.86	<2.14
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.77	<1.89	<1.78	3.59	<1.98	<1.86	<2.14
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.77	<1.89	<1.78	<2.11	<1.98	<1.86	<2.14
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		**474**	**163**	<1.78	**72.6**	<1.98	<1.86	<2.14
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.77	**186**	<1.78	5.19	<1.98	<1.86	<2.14
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			460	174	<1.78	469	<1.98	<1.86	<2.14
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		9.82	<1.89	<1.78	15.4	<1.98	<1.86	<2.14
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.77	**917**	<1.78	**88.6**	<1.98	<1.86	<2.14
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		**151**	**91.7**	<1.78	63.2	<1.98	<1.86	2.35
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.77	<1.89	<1.78	<2.11	<1.98	<1.86	<2.14
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.77	<1.89	<1.78	<2.11	<1.98	<1.86	<2.14
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.77	<1.89	<1.78	<2.11	<1.98	<1.86	<2.14
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**635**	**1358**	<1.78	245	<1.98	<1.86	2.35
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	635	1358	<1.78	249	<1.98	<1.86	2.35

Notes:
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property P 12/3/2018 L1849402-01	Property Q 12/3/2018 L1849401-01	Property R 12/3/2018 L1849408-01	Property S 12/3/2018 L1849409-01	Property T 12/7/2018 L1850506-01	Property U 12/7/2018 L1850513-01	Property V 12/7/2018 L1850501-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			1.91	3.35	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		26.8	<2.23	<1.92	<1.85	<1.86	25.5	<1.69
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		3.69	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			64.9	2.72	<1.92	<1.85	<1.86	34.8	<1.69
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.85	<2.23	<1.92	1.93	<1.86	<1.84	<1.69
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		7.94	<2.23	<1.92	<1.85	<1.86	19.2	<1.69
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.85	<2.23	<1.92	<1.85	<1.86	<1.84	<1.69
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		38.4	<2.23	<1.92	1.93	<1.86	44.7	<1.69
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	38.4	<2.23	<1.92	1.93	<1.86	44.7	<1.69

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
< indicates compound not detected above laboratory analytical method detection limits
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property W 12/7/2018 L1850512-01	Property X 12/7/2018 L1850498-01	Property Y 12/7/2018 L1850509-01	Property Z 12/7/2018 L1850507-01	Property AA 12/7/2018 L1850505-01	Property AA-2-INF 6/5/2019 L1923934-02	Property AB 12/7/2018 L1850495-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.78	2.46	3.72	<1.77	<1.74	<1.75	<1.88
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.78	12.7	45.8	12.9	<1.74	<1.75	<1.88
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.78	7.25	**445**	5.63	<1.74	<1.75	<1.88
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.78	22.4	72.3	27.8	<1.74	<1.75	<1.88
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.78	<1.72	**341**	1.78	<1.74	<1.75	<1.88
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		2.14	8.91	15.7	5.16	<1.74	<1.75	<1.88
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.78	<1.72	<1.75	<1.77	<1.74	<1.75	<1.88
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		2.14	28.9	**848**	25.5	<1.74	<1.75	<1.88
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	2.14	28.9	848	25.5	<1.74	<1.75	<1.88

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property AC 12/7/2018 L1850493-01	Property AD 12/7/2018 L1850497-01	Property AD-2 2/14/2019 L1906071-01	Property AD-3 7/11/2019 L1930727-01	Property AE 12/7/2018 L1850490-01	Property AF 12/7/2018 L1850488-01	Property AG 12/13/2018 L1851540-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			8.39	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		30.7	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			52.3	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		2.02	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		12.1	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.79	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		44.8	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	44.8	<1.81	<1.70	<1.74	<1.77	<1.69	<1.88

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property AH 12/13/2018 L1851519-01	Property AJ 12/7/2018 L1850486-01	Property AJ-2 3/14/2019 L1910257-01	Property AK 12/7/2018 L1850485-01	Property AL 12/7/2018 L1850510-01	Property AM 12/7/2018 L1850492-01
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	4.04
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	3.95
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	<1.77
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	<1.77
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	2.29
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.77	<1.82	<2.25	<1.76	40.2	<1.77
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.77	<1.82	<2.25	<1.76	<1.80	<1.77
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.77	<1.82	<2.25	<1.76	83.7	<1.77
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.77	<1.82	<2.25	<1.76	3.56	<1.77
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.77	<1.82	<2.25	<1.76	2.96	<1.77
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.77	<1.82	<2.25	<1.76	19.8	<1.77
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	<1.77
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	1.96
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.77	<1.82	<2.25	<1.76	<1.80	2.05
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.77	<1.82	<2.25	<1.76	66.5	<1.77
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.77	<1.82	<2.25	<1.76	66.5	<1.77

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property AN 12/7/2018 L1850496-01	Property AN-2 6/3/2019 L1923948-01	Property AO 12/7/2018 L1850504-01	Property AP 12/7/2018 L1850499-01	Property AQ 12/7/2018 L1850489-01	Property AR 12/7/2018 L1850487-01	Property AS 12/13/2018 L1851526-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		4.50	<2.07	1.80	<1.86	<1.86	<1.77	38.4
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		3.12	<2.07	<1.79	<1.86	<1.86	<1.77	3.19
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			7.60	2.73	2.99	<1.86	<1.86	<1.77	139
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		5.02	3.26	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		5.54	3.31	<1.79	<1.86	<1.86	<1.77	19.8
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.87	<2.07	<1.79	<1.86	<1.86	<1.77	<1.73
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		18.2	6.57	1.80	<1.86	<1.86	<1.77	61.4
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	18.2	6.57	1.80	<1.86	<1.86	<1.77	61.4

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property AT 12/13/2018 L1851539-01	Property AU 12/13/2018 L1851527-01	Property AV 12/13/2018 L1851538-01	Property AW 12/13/2018 L1851518-01	Property AW-2 6/5/2019 L1923951-01	Property AX 12/13/2018 L1851524-01
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.84	<1.69	<1.82	4.64	3.37	<1.84
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		9.43	28.7	<1.82	4.29	4.99	**71.2**
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.84	<1.69	<1.82	2.60	2.48	<1.84
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			13.8	26.7	2.78	10.2	17.0	82.6
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.84	<1.69	1.86	2.58	<1.84	<1.84
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.84	22.6	4.39	4.85	3.80	27.3
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.84	<1.69	<1.82	<1.82	<1.84	<1.84
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		9.43	51.3	6.25	14.3	11.3	**98.5**
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	9.43	51.3	6.25	14.3	11.3	98.5

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property AY 12/13/2018 L1851517-01	Property AY-2 12/20/2018 L1852716-01	Property AZ 12/13/2018 L1851528-01	Property BA 12/13/2018 L1851537-01	Property BB 12/13/2018 L1851516-01	Property BC 12/13/2018 L1851529-01	Property BD 12/13/2018 L1851523-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.97	5.03	<1.75	<1.82	<1.78	<1.77	<1.74
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.97	4.82	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			10.4	8.23	<1.75	23.6	<1.78	<1.77	<1.74
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.97	<1.88	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.97	<1.88	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		2.60	2.36	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		**148**	**118**	<1.75	2.67	<1.78	<1.77	<1.74
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			13.6	12.4	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.97	<1.88	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		**427**	**421**	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		8.15	7.39	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.97	<1.88	<1.75	<1.82	<1.78	<1.77	1.80
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.97	<1.88	<1.75	<1.82	<1.78	<1.77	<1.74
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.97	<1.88	<1.75	<1.82	<1.78	<1.77	<1.74
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**586**	**549**	<1.75	2.67	<1.78	<1.77	<1.74
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	586	549	<1.75	2.67	<1.78	<1.77	<1.74

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property BE 12/13/2018 L1851515-01	Property BF 12/13/2018 L1851521-01	Property BG 12/13/2018 L1851514-01	Property BH 12/13/2018 L1851535-01	Property BH-2 9/12/2019 L1942363-01	Property BI 12/13/2018 L1851512-01	Property BJ 12/13/2018 L1851522-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			1.99	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		18.8	<1.77	<1.92	6.64	2.15	<1.78	**148**
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			27.4	<1.77	<1.92	12.4	3.58	<1.78	213
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	9.37
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		9.19	<1.77	<1.92	7.57	2.93	1.95	**84.2**
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.71	<1.77	<1.92	<1.76	<1.80	<1.78	<1.74
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		28.0	<1.77	<1.92	14.2	5.08	1.95	**242**
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	28.0	<1.77	<1.92	14.2	5.08	1.95	242

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
< indicates compound not detected above laboratory analytical method detection limits
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property BK 12/13/2018 L1851534-01	Property BL 12/13/2018 L1851511-01	Property BM 12/13/2018 L1851530-01	Property BN 12/13/2018 L1851533-01	Property BO 12/13/2018 L1851510-01	Property BP 12/13/2018 L1851513-01	Property BQ 12/13/2018 L1851536-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.80	<1.72	<1.71	<1.72	**171**	<1.72	<1.73
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.80	<1.72	<1.71	<1.72	<2.00	1.80	<1.73
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.80	<1.72	<1.71	<1.72	119	<1.72	<1.73
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.80	<1.72	<1.71	3.30	**121**	2.08	<1.73
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.80	<1.72	<1.71	<1.72	<2.00	<1.72	<1.73
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.80	<1.72	<1.71	3.30	**292**	3.88	<1.73
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.80	<1.72	<1.71	3.30	292	3.88	<1.73

Notes:
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property BR 12/13/2018 L1851532-01	Property BS 12/13/2018 L1851520-01	Property BT 12/13/2018 L1851531-01	Property BU 12/19/2018 L1852725-01	Property BV 12/19/2018 L1852723-01	Property BW 12/19/2018 L1852729-01	Property BX 12/19/2018 L1852728-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.80	37.7	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.80	21.9	<1.77	1.86	<1.71	1.87	<1.82
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.80	<1.79	<1.77	<1.74	<1.71	2.82	<1.82
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.80	23.5	<1.77	<1.74	<1.71	9.07	<1.82
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.80	<1.79	<1.77	<1.74	<1.71	<1.79	<1.82
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.80	61.2	<1.77	<1.74	<1.71	11.9	<1.82
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.80	61.2	<1.77	<1.74	<1.71	11.9	<1.82

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property BY 12/20/2018 L1852735-01	Property BZ 12/19/2018 L1852724-01	Property CA 12/20/2018 L1852721-01	Property CB 12/20/2018 L1852715-01	Property CC 12/20/2018 L1852714-01	Property CD 12/20/2018 L1852718-01	Property CE 12/19/2018 L1852737-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.75	<1.72	<1.80	<1.71	2.19	<1.71	<1.79
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.75	27.6	<1.80	10.9	<1.76	<1.71	<1.79
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.75	4.26	<1.80	<1.71	1.84	<1.71	<1.79
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.75	73.1	<1.80	35.8	<1.76	<1.71	<1.79
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.75	8.72	<1.80	2.51	<1.76	<1.71	<1.79
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.75	<1.72	<1.80	<1.71	<1.76	<1.71	<1.79
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.75	40.6	<1.80	13.4	1.84	<1.71	<1.79
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.75	40.6	<1.80	13.4	1.84	<1.71	<1.79

Notes:

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property CF 12/20/2018 L1852720-01	Property CG 12/20/2018 L1852719-01	Property CH 12/20/2018 L1852717-01	Property CH-2 6/3/2019 L1923945-01	Property CI 12/19/2018 L1852734-01	Property CJ 12/19/2018 L1852726-01	Property CK 12/19/2018 L1852727-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.84	6.65	<1.77	<1.79	<1.82	<1.76	<1.86
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.84	5.40	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.84	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.84	<1.92	5.30	3.36	<1.82	<1.76	<1.86
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.84	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		37.7	2.00	<1.77	<1.79	<1.82	1.85	<1.86
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.84	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			82.2	38.9	<1.77	<1.79	<1.82	7.41	<1.86
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		4.53	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		2.53	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		15.0	<1.92	2.95	3.10	<1.82	<1.76	<1.86
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.84	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.84	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.84	<1.92	<1.77	<1.79	<1.82	<1.76	<1.86
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		59.8	2.00	2.95	3.10	<1.82	1.85	<1.86
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	59.8	2.00	8.25	6.46	<1.82	1.85	<1.86

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property CL 12/19/2018 L1852732-01	Property CM 12/19/2018 L1852731-01	Property CN 12/19/2018 L1852746-01	Property CN-2 8/8/2019 L1953828-01	Property CO 12/20/2018 L1852730-01	Property CO-2 8/8/2019 L1935829-01
Perfluorinated Alkyl Acids by EPA 537										
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			5.31	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		**99.9**	<1.91	<1.74	1.81	<1.71	3.74
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			182	3.13	<1.74	4.50	2.37	7.38
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		22.2	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		5.45	<1.91	<1.74	<1.78	2.14	<1.80
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		30.1	<1.91	<1.74	<1.78	4.10	5.38
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.91	<1.74	<1.78	<1.71	<1.80
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		**158**	<1.91	<1.74	1.81	6.24	9.12
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	163	<1.91	<1.74	1.81	6.24	9.12

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property CP 12/20/2018 L1852736-01	Property CP-2 8/8/2019 L1935834-01	Property CQ 12/27/2018 L1853285-01	Property CR 12/27/2018 L1853291-01	Property CS 12/27/2018 L1853288-01	Property CS-2 6/4/2019 L1924190-01	Property CT 12/27/2018 L1853289-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.76	<1.74	5.63	<1.75	7.17	3.41	<1.75
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.76	<1.74	4.79	<1.75	12.7	7.05	<1.75
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.76	<1.74	7.51	<1.75	5.42	4.27	<1.75
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.76	<1.74	<1.71	<1.75	<1.75	<1.95	<1.75
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.76	<1.74	13.1	<1.75	12.6	7.68	<1.75
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.76	<1.74	13.1	<1.75	12.6	7.68	<1.75

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property CU 1/16/2019 L1902196-01	Property CV 1/16/2019 L1902197-01	Property CW 1/16/2019 L1902198-01	Property CX 1/16/2019 L1902199-01	Property CY 1/16/2019 L1902195-01	Property CZ 1/16/2019 L1902202-01	Property DA 1/16/2019 L1902204-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	1.94
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	25.6
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.75	<1.72	<1.75	2.79	<1.72	2.05	**113**
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.75	<1.72	<1.75	2.56	<1.72	3.12	<1.71
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.75	<1.72	<1.75	<1.91	<1.72	<1.86	<1.71
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.75	<1.72	<1.75	5.35	<1.72	5.17	**139**
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.75	<1.72	<1.75	5.35	<1.72	5.17	139

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
< indicates compound not detected above laboratory analytical method detection limits
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property DB 1/16/2019 L1902205-01	Property DC 1/16/2019 L1902206-01	Property DD 1/16/2019 L1902201-01	Property DE 1/30/2019 L1904209-01	Property DE-2 8/8/2019 L1935830-01	Property DF 1/30/2019 L1904208-01	Property DG 2/14/2019 L1906066-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	19.2
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.82	<1.79	<1.88	1.86	<1.78	<2.17	12.2
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	3.93
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	<1.77
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	23.1
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.82	<1.79	<1.88	<1.86	<1.78	<2.17	23.1

Notes:

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property DH 2/14/2019 L1906060-01	Property DI 2/14/2019 L1906065-01	Property DJ 2/14/2019 L1906064-01	Property DK 2/14/2019 L1906067-01	Property DL 2/14/2019 L1906063-01	Property DM 2/14/2019 L1906062-01	Property DN 2/14/2019 L1906061-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.84	<1.99	<2.67	2.25	<1.82	<1.74	<1.78
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.84	<1.99	<2.67	<1.97	<1.82	<1.74	<1.78

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property DO 2/14/2019 L1906068-01	Property DP 2/14/2019 L1906072-01	Property DQ 2/14/2019 L1906069-01	Property DR 3/14/2019 L1910249-01	Property DS 3/14/2019 L1910250-01	Property DT 3/14/2019 L1910265-01	Property DU 3/14/2019 L1910251-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.72	<1.80	<1.92	3.5	<1.89	<2.28	<1.84
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.72	<1.80	<1.92	2.4	<1.89	<2.28	<1.84
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		3.12	<1.80	5.29	<1.73	<1.89	<2.28	<1.84
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			15.7	<1.80	5.83	<1.73	<1.89	<2.28	<1.84
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		1.84	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.72	<1.80	4.92	<1.73	<1.89	<2.28	<1.84
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.80	<1.92	<1.73	<1.89	<2.28	<1.84
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		4.96	<1.80	10.2	<1.73	<1.89	<2.28	<1.84
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	4.96	<1.80	10.2	<1.73	<1.89	<2.28	<1.84

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property DV 3/14/2019 L1910261-01	Property DW 3/14/2019 L1910252-01	Property DX 3/26/2019 L1912654-01	Property DY 3/14/2019 L1910254-01	Property DZ 3/15/2019 L1910268-01	Property EA 3/15/2019 L1910400-01	Property EB 3/15/2019 L1910269-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			3.83	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.95	<1.76	<1.76	<1.83	<1.72	4.77	<1.84
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.95	<1.76	<1.76	<1.83	<1.72	<1.86	<1.84
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.95	<1.76	<1.76	<1.83	<1.72	4.77	<1.84
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.95	<1.76	<1.76	<1.83	<1.72	4.77	<1.84

Notes:

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property EC 3/15/2019 L1910270-01	Property ED 3/14/2019 L1910256-01	Property ED 6/21/2019 L1927312-01	Property EE 3/15/2019 L1910271-01	Property EF 3/15/2019 L1910272-01	Property EG 3/15/2019 L1910397-01	Property EH 3/15/2019 L1910398-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.72	2.06	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.72	19.6	9.23	<1.86	<1.82	<1.77	<1.91
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.72	5.08	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.72	38.0	12.8	<1.86	<1.82	<1.77	<1.91
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.72	10.1	7.20	<1.86	13.2	<1.77	<1.91
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.72	<1.75	<2.05	<1.86	<1.82	<1.77	<1.91
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.72	34.8	16.4	<1.86	13.2	<1.77	<1.91
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.72	34.8	16.4	<1.86	13.2	<1.77	<1.91

Notes:
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(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property EI 3/14/2019 L1910253-01	Property EJ 3/27/2019 L1912659-01	Property EK 3/15/2019 L1910399-01	Property EL 3/13/2019 L1910243-01	Property EM 3/13/2019 L1910245-01	Property EN 3/26/2019 L1912655-01	Property EO 3/26/2019 L1912656-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.98	<1.77	<1.80	<1.83	15.7	<1.84	<1.70
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.98	<1.77	<1.80	<1.83	20.0	<1.84	<1.70
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.98	<1.77	5.13	<1.83	<1.81	<1.84	<1.70
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.98	<1.77	5.08	<1.83	8.02	<1.84	<1.70
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.98	<1.77	<1.80	<1.83	<1.81	<1.84	<1.70
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.98	<1.77	10.2	<1.83	23.7	<1.84	<1.70
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.98	<1.77	10.2	<1.83	23.7	<1.84	<1.70

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property EP 3/27/2019 L1912658-01	Property EQ 3/14/2019 L1910255-01	Property ER 3/28/2019 L1912660-01	Property ET 4/29/2019 L1918184-01	Property ET-2 9/12/2019 L1942004-01	Property EU 4/30/2019 L1918191-01	Property EU-2 6/18/2019 L1927302-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	3.06	<1.80
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	2.33	<1.80
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.77	<1.83	<1.71	3.68	2.82	<1.78	<1.80
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.77	<1.83	2.08	<1.75	<1.73	<1.78	<1.80
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.77	<1.83	2.64	<1.75	<1.73	<1.78	<1.80
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.77	<1.83	<1.71	<1.75	<1.73	<1.78	<1.80
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.77	<1.83	4.72	<1.75	<1.73	<1.78	<1.80
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.77	<1.83	4.72	<1.75	<1.73	<1.78	<1.80

Notes:
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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property EV 4/29/2019 L1918185-01	Property EV-2 7/11/2019 L1930728-01	Property EW 5/1/2019 L1918227-01	Property EX 4/29/2019 L1918186-01	Property EY 4/30/2019 L1918241-01	Property EZ 4/29/2019 L1918181-01	Property FA 4/29/2019 L1918234-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.84	<1.69	<1.75	<1.82	2.56	<1.81	<2.01
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.84	<1.69	<1.75	<1.82	1.78	<1.81	<2.01
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.84	<1.69	<1.75	<1.82	21.9	<1.81	<2.01
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.84	<1.69	3.91	<1.82	<1.78	<1.81	<2.01
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			12.8	<1.69	<1.75	<1.82	76.3	<1.81	<2.01
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		4.04	<1.69	2.15	<1.82	9.67	<1.81	<2.01
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.84	<1.69	<1.75	<1.82	<1.78	<1.81	<2.01
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		4.04	<1.69	6.06	<1.82	31.6	<1.81	<2.01
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	4.04	<1.69	6.06	<1.82	31.6	<1.81	<2.01

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CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property FB 4/30/2019 L1918239-01	Property FC 5/1/2019 L1918229-01	Property FD 5/1/2019 L1918231-01	Property FE 5/1/2019 L1918232-01	Property FF 5/1/2019 L1918233-01	Property FG 4/30/2019 L1918224-01	Property FH 5/1/2019 L1918230-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.86	<1.78	<1.77	<1.78	5.67	<1.86	<1.73
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.86	<1.78	<1.77	<1.78	4.38	<1.86	<1.73
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.86	<1.78	<1.77	<1.78	16.8	39.4	<1.73
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.86	<1.78	4.38	2.07	82.5	67.1	<1.73
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.86	3.95	<1.77	<1.78	5.26	3.52	<1.73
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.86	<1.78	<1.77	<1.78	<1.81	<1.86	<1.73
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.86	3.95	<1.77	<1.78	22.1	42.9	<1.73
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.86	3.95	<1.77	<1.78	22.1	42.9	<1.73

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CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property FI 4/29/2019 L1918238-01	Property FJ 4/30/2019 L1918189-01	Property FK 5/9/2019 L1919612-01	Property FL 6/5/2019 L1923932-01	Property FM 6/4/2019 L1923944-01	Property FN 6/4/2019 L1923939-01	Property FO 6/4/2019 L1923952-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.73	<1.77	13.0	<1.87	<1.78	<1.89	9.23
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<1.73	<1.77	19.6	<1.87	<1.78	4.03	15.8
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.73	<1.77	8.76	<1.87	<1.78	<1.89	11.1
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.73	<1.77	<1.73	<1.87	<1.78	<1.89	<1.78
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.73	<1.77	21.8	<1.87	<1.78	<1.89	20.3
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.73	<1.77	21.8	<1.87	<1.78	<1.89	20.3

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property FP 6/3/2019 L1923949-01	Property FQ 6/3/2019 L1923931-01	Property FR 6/4/2019 L1923943-01	Property FS 6/3/2019 L1923947-01	Property FT 6/5/2019 L1923935-01	Property FU 6/5/2019 L1923937-01	Property FV 7/11/2019 L1930714-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<2.05	<1.78	<1.78	2.21	2.06	<1.89	<1.77
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<2.05	<1.78	<1.78	<1.86	<1.75	<1.89	<1.77
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<2.05	<1.78	<1.78	2.21	2.06	<1.89	<1.77
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<2.05	<1.78	<1.78	2.21	2.06	<1.89	<1.77

Notes:

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Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property FW 6/5/2019 L1923936-01	Property FX 6/3/2019 L1923953-01	Property FX-3 9/13/2019 L1942366-01	Property FY 6/18/2019 L1927303-01	Property FZ 6/18/2019 L1927534-01	Property GA 7/11/2019 L1930724-01	Property GB 7/11/2019 L1930721-01
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.75	17.4	23.9	<1.98	<1.74	<1.90	<1.76
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			6.98	31.8	31.0	3.47	<1.74	<1.90	<1.76
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.75	<1.78	<1.71	<1.98	<1.74	<1.90	<1.76
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.75	17.4	23.9	<1.98	<1.74	<1.90	<1.76
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.75	17.4	23.9	<1.98	<1.74	<1.90	<1.76

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< indicates compound not detected above laboratory analytical method detection limits
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property GC 7/11/2019 L1930723-01	Property GD 7/11/2019 L1930722-01	Property GF 8/8/2019 L1935826-01	Property GI 8/8/2019 L1935833-01	Property ZY 10/12/2018 L1841597-01	Property ZY 12/19/2018 L1852733-01	Property ZY-2-INF 6/4/2019 L1923940-02
Perfluorinated Alkyl Acids by EPA 537											
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.74	<1.85	<1.78	<1.77	<1.71	<1.79	<1.87
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.74	<1.85	<1.78	<1.77	<1.71	<1.79	<1.87
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.74	<1.85	2.71	<1.77	<1.71	<1.79	<1.87
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.74	<1.85	<1.78	<1.77	<1.71	<1.79	<1.87
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.74	<1.85	<1.78	<1.77	<1.71	<1.79	<1.87
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		<1.74	2.98	<1.78	4.47	9.58	8.16	5.36
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.74	<1.85	<1.78	<1.77	1.73	1.92	<1.87
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			6.74	10.2	<1.78	13.9	29.4	23.6	18.0
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.74	<1.85	<1.78	<1.77	1.73	<1.79	<1.87
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.74	<1.85	<1.78	<1.77	1.94	2.37	<1.87
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		<1.74	<1.85	<1.78	2.15	3.93	4.40	3.85
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.74	<1.85	<1.78	<1.77	<1.71	<1.79	<1.87
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.74	<1.85	<1.78	<1.77	<1.71	<1.79	<1.87
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.74	<1.85	<1.78	<1.77	<1.71	<1.79	<1.87
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		<1.74	2.98	<1.78	6.62	18.9	16.9	9.21
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	<1.74	2.98	<1.78	6.62	18.9	16.9	9.21

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
< indicates compound not detected above laboratory analytical method detection limits
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 7 - Private Well Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Proposed [1] MCP Standard GW-1	Property ZZ 10/12/2018 L1841593-01
Perfluorinated Alkyl Acids by EPA 537					
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l			<1.71
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l			<1.71
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l			<1.71
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l			<1.71
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l			<1.71
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l		11.0
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l		<1.71
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l			31.5
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l		<1.71
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l		<1.71
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l		5.38
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l			<1.71
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l			<1.71
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l			<1.71
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l		16.4
Total PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA		ng/l		20 ng/l	16.4

Notes:
BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.
< indicates compound not detected above laboratory analytical method detection limits
Highlight indicates exceedance of the proposed MCP Method 1 GW-1 standard
(1) The proposed MCP Method 1 standard has not been finalized and is subject to change

Table 8 - Public Water Supply Analytical Data

CLIENT SAMPLE ID SAMPLING DATE LAB SAMPLE ID	CAS No.	Units	MassDEP ORSG	Water Supply Start 12/7/2018 L1850508-01	Water Supply End 12/7/2018 L1850508-02	Edgartown-40890000-76 12/13/2018 L1851577-01	Property AI (Bottled Water) 12/7/2018 L1850494-01
Perfluorinated Alkyl Acids by EPA 537							
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	ng/l		<1.70	<1.72	<1.89	<1.72
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	ng/l		<1.70	<1.72	<1.89	<1.72
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	ng/l		<1.70	<1.72	<1.89	<1.72
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l		<1.70	<1.72	<1.89	<1.72
Perfluorododecanoic Acid (PFDoA)	307-55-1	ng/l		<1.70	<1.72	<1.89	<1.72
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	70 ng/l	<1.70	<1.72	<1.89	<1.72
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	70 ng/l	<1.70	<1.72	<1.89	<1.72
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l		<1.70	<1.72	<1.89	<1.72
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	70 ng/l	<1.70	<1.72	<1.89	<1.72
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	70 ng/l	<1.70	<1.72	<1.89	<1.72
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	70 ng/l	<1.70	<1.72	<1.89	<1.72
Perfluorotetradecanoic Acid (PFTA)	376-06-7	ng/l		<1.70	<1.72	<1.89	<1.72
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	ng/l		<1.70	<1.72	<1.89	<1.72
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	ng/l		<1.70	<1.72	<1.89	<1.72
Total PFOA, PFOS, PFNA, PFHxS and PFHpA		ng/l	70 ng/l	<1.70	<1.72	<1.89	<1.72

Notes:

BOLD indicated exceedance of the MassDEP ORSG of 70 ng/l.

< indicates compound not detected above laboratory analytical method detection limits

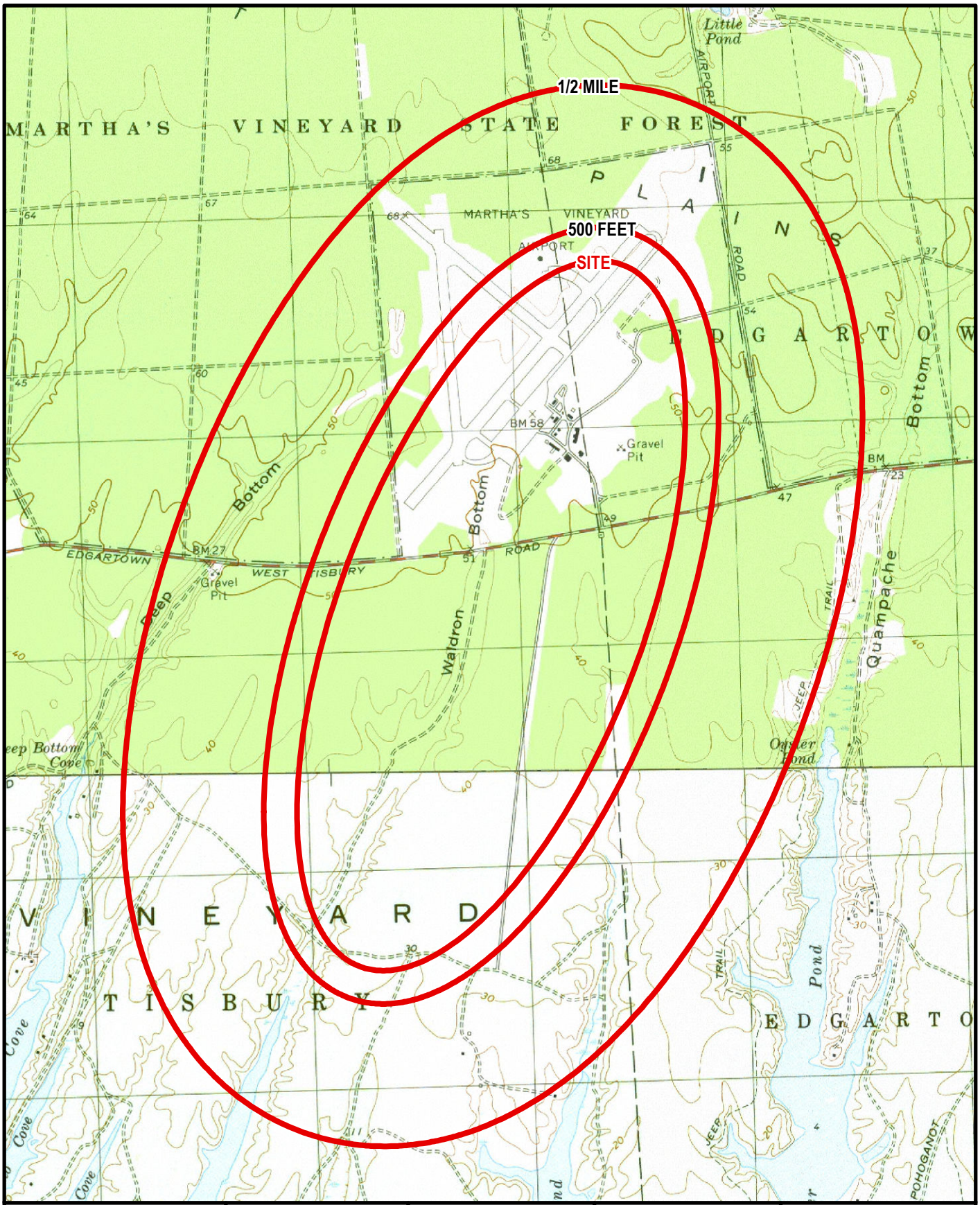
Table 9 - Martha's Vineyard Airport - POET System Performance Summary

Property ID	IRA RMR #	System Type	Date	Sum of 5 Target PFAS (ng/L)			Volume Treated [1] (gallons)	Cumulative Volume Treated [2] (gallons)
				Influent	Midpoint	Effluent		
Property B	2	2-GAC System	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	66.0	<1.84	<1.77	516	961
			9/9/2019	467	<1.94	<1.94	34,657	35,618
Property J-1	3	2-GAC System	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
Property J-2	4	2-GAC System	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
Property I	5	2-GAC System	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
Property F-1	6	2-GAC System	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
Property F-2	9	2-GAC System	6/20/2019	1,076	<1.79	<1.82	213	213
			9/12/2019	803	<1.82	<1.84	56	269
Property Y	7	2-GAC System	6/4/2019	490	<1.95	<1.86	15,390	15,390
			9/9/2019	585	<1.88	<1.98	37,799	53,189
Property AY	8	2-GAC System	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
Property CL	NA	2-GAC System	3/14/2019	148	<1.94	<1.88	170	170
			9/12/2019	158	<1.82	<1.85	10,142	10,312
Property AX	NA	2-GAC System	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
Property BJ-1	NA	2-GAC System	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
Property BJ-2	NA	1-GAC System	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
Property C	NA	2-GAC System	3/28/2019	41.3	<1.89	<1.86	524	524
			9/9/2019	136	10.3	<1.92	34,666	35,190
Property BO-1	NA	2-GAC System	4/29/2019	285	<1.83	<1.90	194	194
			9/10/2019	286	<1.96	<1.85	14,406	14,600
Property BO-2	NA	2-GAC System	4/29/2019	265	<1.86	<1.90	40	40
			9/10/2019	286	<1.86	<1.84	4,198	4,237
Property L	NA	2-GAC System	3/13/2019	161	<1.84	<1.95	188	188
			9/12/2019	189	<1.80	<1.78	24,001	24,189
Property DA	NA	2-GAC System	4/29/2019	373	<1.78	<1.83	294	294
			9/9/2019	350	<1.94	<1.82	64,205	64,499
Property G	NA	2-GAC System	6/20/2019	140	<1.88	<1.86	153	
Property AL	NA	1-GAC System	4/30/2019	106		<1.82	8,739	
Property CF	NA	1-GAC System	3/28/2019	46.6		<1.84	86	
Property AU	NA	1-GAC System	3/14/2019	<2.18		<1.75	463	
Property U	NA	1-GAC System	3/15/2019	9.26		<1.90	263	
Property BZ	NA	1-GAC System	3/14/2019	18.3		<1.93	155	
Property Z	NA	1-GAC System	3/14/2019	77.6		<1.92	188	
Property AS	NA	1-GAC System	6/4/2019	158		<1.85	3,110	
Property BS	NA	1-GAC System	not installed					
Property E	NA	1-GAC System	4/30/2019	107		<1.98	1,443	
Property AC	NA	1-GAC System	3/14/2019	36.5		<2.23	576	
Property P	NA	1-GAC System	6/3/2019	34.8		<1.82	394	
Property X	NA	1-GAC System	4/30/2019	66.8		<1.97	269	
Property BE	NA	1-GAC System	6/17/2019	10.6		<1.87	2,360	
Property DG	NA	1-GAC System	4/29/2019	37.1		<1.78	138	
Property H	NA	1-GAC System	4/29/2019	20.0		<1.89	3,596	
Property EM	NA	1-GAC System	6/19/2019	19.4		<1.85	253	
Property ED	NA	1-GAC System	7/18/2019	36.1		<1.86	initial sample	
Property EY	NA	1-GAC System	6/20/2019	37.7		<1.91	257	
Property FF	NA	1-GAC System	6/20/2019	34.4		<1.83	252	
Property FG	NA	1-GAC System	6/20/2019	42		<1.86	205	
Property FK	NA	1-GAC System	9/13/2019	10.0	NA	<1.81	14,831	14,831
Property FO	NA	1-GAC System	6/20/2019	13.5		<1.97	152	

Notes:

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

Date: 9/26/2019
Path: \\TTS011FS1\Projects\3953\143-3953-19007\GIS\Figure 1 Locus.mxd



TETRA TECH
www.tetratech.com
100 Nickerson Road
Marlborough, MA 01752
Phone (508) 786-2200 Fax: (508) 786-2201

N

0 1,000 2,000 Feet

"Information obtained from the USGS Topographic Quadrangles of Vineyard Haven and Tisbury Great Pond, Massachusetts, dated 1972-1979"

Source: MassGIS, USGS

Site Locus Plan

Martha's Vineyard Airport
West Tisbury, Massachusetts

Site Locus Map

Project No.:	143-3953-19007
Date:	September 26, 2019
Designed By:	JWF
Figure	1

LEGEND:

- Suspected AFFF Release Areas
- Inferred groundwater flow direction
- Private Well
- Monitoring Well (total PFAS concentration range below)
  - Not Sampled
  - PFAS > 250 ng/L
  - PFAS > 70 ng/L
  - PFAS > 20 ng/L and < 70 ng/L
  - PFAS <20 ng/L
  - PFAS Not Detected

RESIDENTIAL PARCEL PFAS CONCENTRATION COLOR CODE
TOTAL OF FIVE TARGET PFAS COMPOUNDS:

- PFAS at IH Concentration
- PFAS > 70 ng/L
- PFAS > 20 ng/L and < 70 ng/L
- PFAS < 20 ng/L
- Not Detected

APPROXIMATE DISPOSAL SITE BOUNDARY

Former Amerigas Private Well
Business Park Wet Well Pump Station
TT-05
MVY Terminal Building
RIZ-61
RIZ-5
TMW-2
RIZ-10
ARFF Building
TT-03
TT-06
OW-A
OW-B
OW-D
TT-07
Former C&W Building
TT-04
Takemmy Laundry Private Well
Property A
Property D-2
Stanley Private Well
TMW-12
TMW-11
TMW-13
TT-02
TT-01
MVY Wastewater Treatment Plant (WWTP)
TT-8
RIZ-51
TMW-6D
TMW-5D
TMW-5
TMW-6
M-6
M-6D
Transfer Station MW
Transfer Station Private Well
TMW-4
RIZ-42
TT-10
TT-9
M-4D
M-4E
M-4
M-10
RIZ-12
M-11
MW-JS
MW-JM

Project No.:	143-3953-19007
Designed By:	JWF
Drawn By:	JWF
Checked By:	REM
Figure:	2

Martha's Vineyard Airport

Martha's Vineyard Airport
West Tisbury, Massachusetts

Site and Downgradient Properties

MARK	DATE	DESCRIPTION	BY

N

0 560' 1120'
SCALE: 1" = 560'

Bar Measures 1 Inch

TETRA TECH
www.tetratech.com
100 Nickerson Road
Marlborough, Massachusetts 01752
Phone: (508)786-2200 Fax: (508)786-2201

1 2 3 4 5 6

E D C B A

LEGEND:

Suspected AFFF Release Areas

Monitoring Well
(total PFAS concentration range below)

- Not Sampled
- PFAS > 250 ng/L
- PFAS > 20 ng/L and < 70 ng/L
- PFAS <20 ng/L

N

0 100' 200'

SCALE: 1" = 100'

TT-02

2

TT-01

1

TT-8

MVY Wastewater Treatment Plant (WWTP)

TT-10

TT-9

M-4E

M-4D

M-4

M-10

RIZ-12

EDGARTOWN - WEST TISBURY ROAD

TETRA TECH
www.tetratech.com
100 Nickerson Road
Marlborough, MA 01752
Phone: (508) 786-2200 Fax: (508) 786-2201

MARK	DATE	DESCRIPTION	BY

Martha's Vineyard Airport

Martha's Vineyard Airport
West Tisbury, Massachusetts

Site Plan with Waste Water Treatment Plant Area

Project No.:	143-3953-19007
Designed By:	JWF
Drawn By:	JWF
Checked By:	REM
Figure:	3

Bar Measures 1 inch

10/17/2019 12:41:36 PM - P:\13953\143-3953-19007\CAD\SHEETFILES\FIGURE 3 GARAGE AREA_2019-09-26.DWG - FIORE, JON

LEGEND:

- Suspected AFFF Release Areas
- Groundwater Elevation Contour (dashed where inferred)
- Groundwater Flow Direction
- Monitoring Well (total PFAS concentration range below)
  - Not Sampled
  - PFAS > 250 ng/L
  - PFAS > 20 ng/L and < 70 ng/L
  - PFAS <20 ng/L

0 100' 200'

SCALE: 1" = 100'

N

(76.55')
TT-02
2
76.3'
76.5'
76.1'
76.3'
75.9'
76.1'
(75.97')
TT-01
1
75.7'
75.5'
TT-8
(75.91')
75.9'
MVY Wastewater Treatment Plant (WWTP)
75.3'
75.1'
TT-10
(74.98')
75.1'
75.3'
75.5'
(75.70')
TT-9
75.7'
M-4E
M-4D
M-4
M-10
RIZ-12
EDGARTOWN - WEST TISBURY ROAD

TETRA TECH
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Marlborough, MA 01752
Phone: (508) 786-2200 Fax: (508) 786-2201

MARK	DATE	DESCRIPTION	BY

Martha's Vineyard Airport

Martha's Vineyard Airport
West Tisbury, Massachusetts

Groundwater Potentiometric Surface Map - September 2019

Project No.:	143-3953-19007
Designed By:	JWF
Drawn By:	JWF
Checked By:	REM
Figure:	4

Bar Measures 1 inch

Appendix A

L.S.P. Statement of Limitations and Conditions

Statement of Limitations and Conditions

Attachment to Opinion of Massachusetts Licensed Site Professional

Tetra Tech, Inc.

Name of Licensed Site Professional:	Ronald E. Myrick, Jr., P.E., L.S.P.
LSP Registration Number:	2715
Date of Opinion:	November 20, 2019
Client to Whom Opinion was Rendered:	Martha's Vineyard Airport
Date of Agreement between Tetra Tech and Client pursuant to which Opinion was Rendered:	June 23, 2019
Response Tracking No./Site No.:	4-0027571

This Statement of Limitations and Conditions is an integral part of, and is incorporated by reference into, the Opinion of Massachusetts Licensed Site Professional referenced above.

Limitations

1. Purpose of Opinion

A. This Opinion is being provided in compliance with the requirements set forth in the Massachusetts Contingency Plan ("MCP"), 310 CMR 40.0000 et seq. Specifically, the LSP has prepared this Opinion at the request of the Client identified above as part of an Phase I Initial Site Investigation Report submittal. This stated purpose has been a significant factor in determining the scope and level of services required to render this Opinion.

B. Should the purpose for which this Opinion is to be used change, this Opinion shall no longer be valid.

2. General

A. This Opinion was prepared for the sole and exclusive use of the Client, subject to the provisions of the MCP. No other party is entitled to rely in any way on the conclusions, observations, specifications, or data contained herein without the express written consent of Tetra Tech, Inc. and the LSP who rendered this opinion. Any use of this Opinion by anyone other than Client, or any use of this Opinion by Client or others for any purpose other than the stated purpose set forth above, without the LSP's review and the written authorization of Tetra Tech, Inc. and the LSP, shall be at the user's sole risk, and neither Tetra Tech, Inc. nor the LSP shall have any liability or responsibility therefor.

B. This Opinion was prepared pursuant to an Agreement between Tetra Tech, Inc. and the Client referenced above which defines the scope of work and sets out agreements regarding waivers of consequential damages, limitations on liability, and other important conditions and restrictions

pursuant to which the Opinion is rendered. All uses of the Opinion are subject to and deemed acceptance of the conditions and restrictions contained in such Agreement. A copy of the Agreement or relevant excerpts from the Agreement will be made available upon requests to any authorized person seeking to use the Opinion.

3. Scope of Services

The observations and conclusions described in this Opinion are based solely on the Services provided pursuant to the Agreement with the Client and any approved additional services authorized by Client. Without limitation of any other applicable limitations or conditions, neither Tetra Tech, Inc. nor the LSP shall be liable for the existence of any condition, the discovery of which would have required the performance of services not authorized under the Agreement. To the best of the knowledge and belief of Tetra Tech, Inc. and the LSP who signed this Opinion, no inquiry of an attorney-at-law having being made, no laws, regulations, orders, permits or approvals are applicable to the response actions to which this opinion relates except, if and to the extent applicable, M.G.L. c. 21A, Sections 19-19J, 309 CMR, M.G.L. c. 21 E and 310 CMR 40.0000. Accordingly, this opinion is not intended to and does not address compliance with any other laws, regulation, orders, permits or approvals.

4. Changed Circumstances

The passage of time may result in changes in technology, economic conditions or regulatory standards, manifestations of latent conditions, or the occurrence of future events which would render this Opinion inaccurate or otherwise inapplicable. Neither Tetra Tech, Inc. nor the LSP shall be liable or responsible for the consequences of any such changed circumstances or conditions on the accuracy of this Opinion. In addition, under no circumstances shall the Client nor any other person or entity rely on the information or conclusions contained in this Opinion after six months from its date of submission without the express written consent of Tetra Tech, Inc. and the LSP. Reliance on the Opinion after such period of time shall be at the user's sole risk.

5. Should Tetra Tech, Inc. or the LSP be required or requested to review or authorize others to use this Opinion after its date of submission, Tetra Tech, Inc. shall be entitled to additional compensation at then existing rates or such other terms as may be agreed upon between Tetra Tech, Inc. and the Client. Nothing herein contained shall be deemed to require Tetra Tech, Inc. or the LSP to undertake any such review or authorize others to use this Opinion.

6. The conclusions stated in this Opinion are based upon:

- Visual inspection of existing physical conditions;
- Review and interpretation of site history and site usage information which was made available or obtained within the scope of work authorized by the Client;
- Information provided by the Client;
- Information and/or analyses for designated substances or parameters provided by an independent testing service or laboratory on a limited number of samples; and
- A limited number of subsurface explorations made on dates indicated in documentation supporting this Opinion;

upon which the LSP has relied and presumed accurate, and upon which the LSP is entitled to reasonably rely. The LSP was not authorized and did not attempt to independently verify the accuracy

or completeness of information or materials received from the Client and/or from laboratories and other third parties during the performance of its services. Neither Tetra Tech, Inc. nor the LSP shall be liable for any condition, information, or conclusion, the discovery of which required information not available to the LSP or for independent investigation of information provided to the LSP by the Client and/or independent third parties.

7. This Opinion is rendered for the limited purpose stated above, and is not and should not be deemed to be an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation. No warranty or guarantee, whether express or implied, is made by this opinion, and any implied warranties of merchantability or fitness for a particular purpose are expressly disclaimed. Without limiting the generality of the foregoing, no warranty or guarantee is made that all contamination at a site or sources or contamination has been detected or identified, that any action or recommended action will achieve all of its objectives, or that this Opinion or any action as to which this Opinion relates will be upheld by any audit conducted by the DEP or any other party.

P:\3953\143-3953-19007\Docs\Reports\Phase_I_ISI\Appendices\LSP_Limitations.doc

Appendix B

Natural Resource Area References

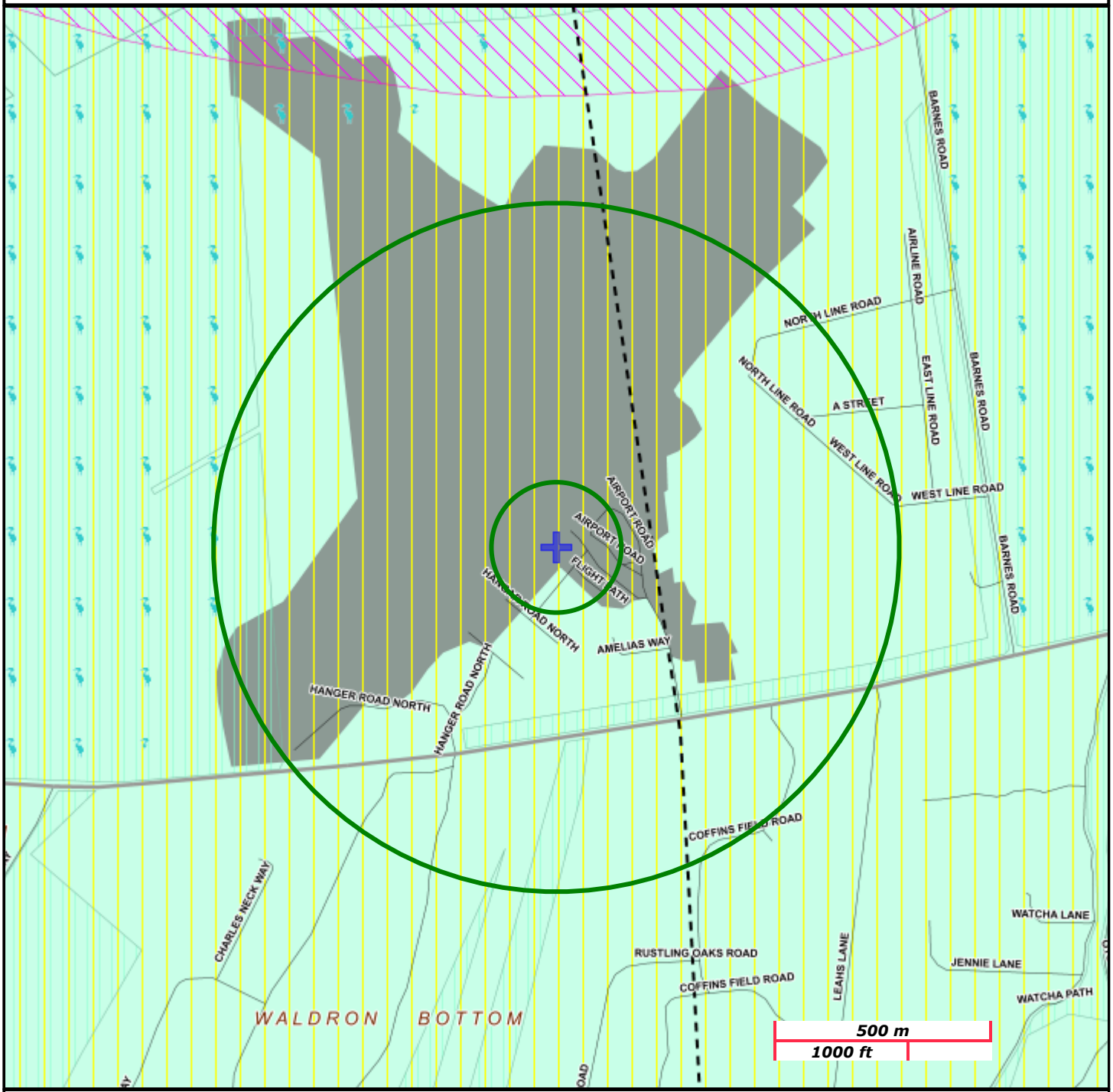
MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
MV AIRPORT
71 AIRPORT RD. WEST TISBURY, MA
4-000027571
NAD83 UTM Meters:
4583168mN , 365145mE (Zone: 19)
September 20, 2019

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

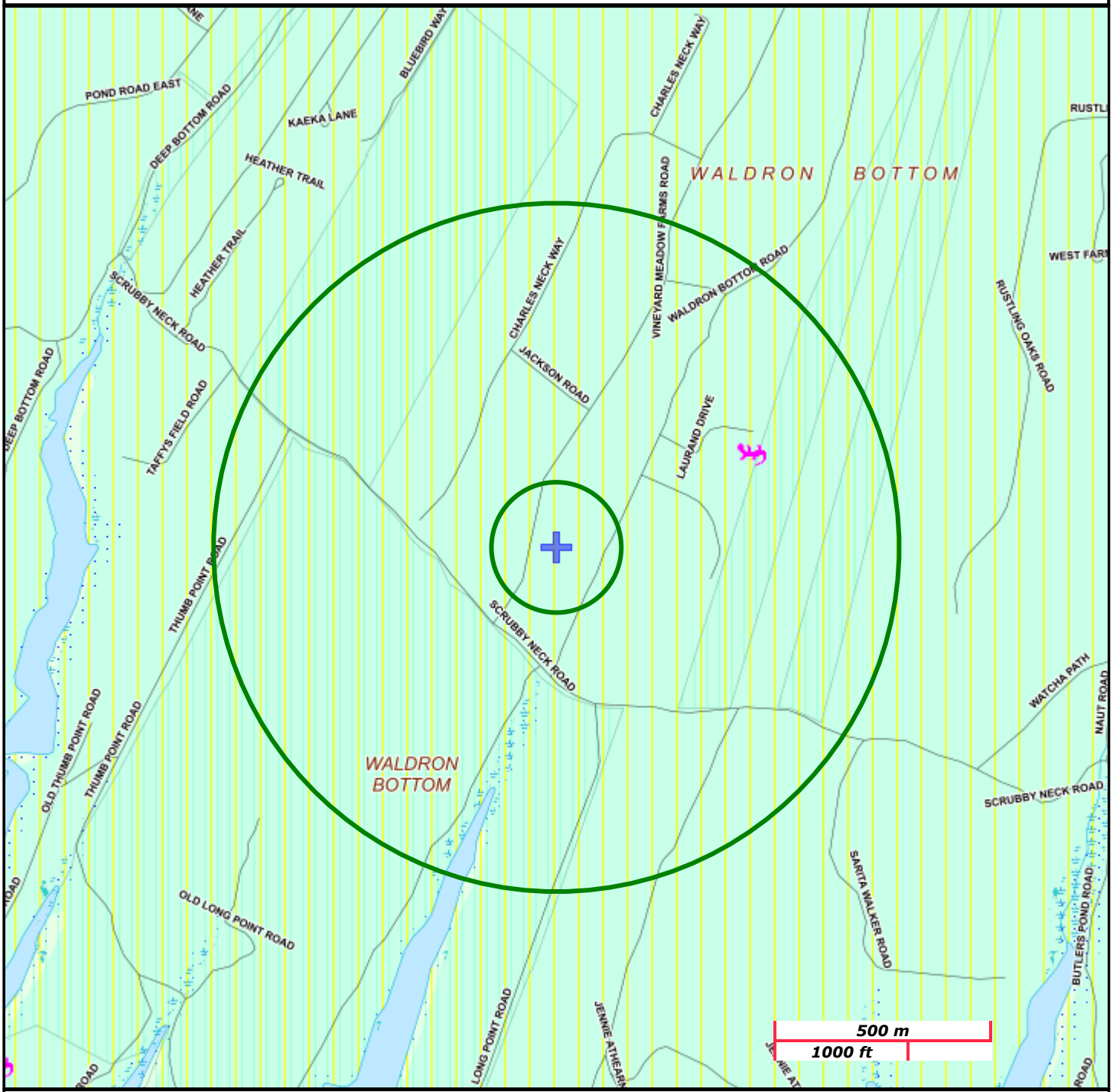
MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
MV AIRPORT
71 AIRPORT RD. WEST TISBURY, MA
4-000027571
NAD83 UTM Meters:
4581214mN , 364086mE (Zone: 19)
September 20, 2019

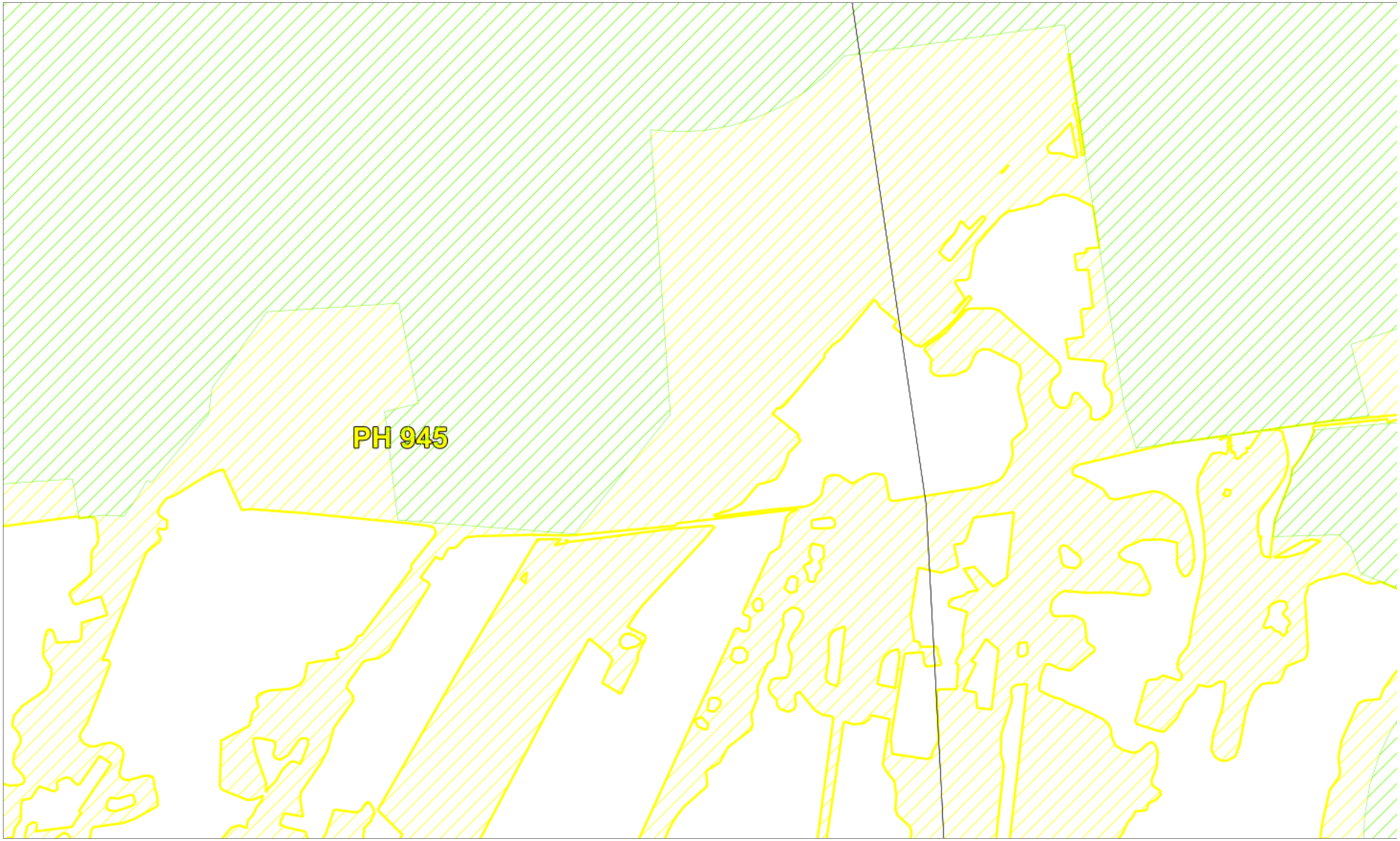
The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

MVY MassWildlife Habitat



Martha's Vineyard FR

Updated Contact Information
Michael Hill • (617) 918-1398

(Cite as: 53 FR 3451)

NOTICES

ENVIRONMENTAL PROTECTION AGENCY

[FRL-3324-5]

Sole Source Aquifer Designation for the Aquifer System of Martha's Vineyard, MA

Friday, February 5, 1988

***3451 AGENCY:** Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: In response to a petition from the Martha's Vineyard Commission, notice is hereby given that the Regional Administrator, Region I, of the U.S. Environmental Protection Agency (EPA) has determined that the Martha's Vineyard Regional Aquifer satisfies all determination criteria for designation as a Sole Source Aquifer, pursuant to section 1424(e) of the Safe Drinking Water Act. Satisfying the designation criteria resulted in the following findings: the Martha's Vineyard Regional Aquifer is the sole source of drinking water for the Island's residents and visitors; there are no viable alternative sources of sufficient supply; the boundaries of the designated area and project review area have been reviewed and approved by EPA; and if contamination were to occur, it would pose a significant public health hazard and a serious financial burden to the Island's residents. As a result of this action, all Federal financially assisted projects proposed for construction on Martha's Vineyard will be subject to EPA review to ensure that these projects are designed and constructed such that they do not bring about, or in any way contribute to, conditions creating a significant hazard to public health.

DATES: This determination shall be promulgated for purposes of judicial review at 1:00 p.m. Eastern time two weeks after the date of publication in the Federal Register.

ADDRESSES: The data upon which these findings are based are available to the public and may be inspected during normal business hours at the U.S. Environmental Protection Agency, Region I, John F. Kennedy Federal Building,

Water Management Division, WGP-2113, Boston, MA 02203. The designation petition submitted may also be inspected during normal business hours at the Martha's Vineyard Commission office in Oak Bluffs or at the Public Library in Edgartown, MA 02557.

FOR FURTHER INFORMATION CONTACT: Robert E. Adler, Groundwater Management Section, EPA Region I, John F. Kennedy Federal Building, WGP-2113, Boston MA 02203, (617) 565-3601.

SUPPLEMENTARY INFORMATION:

I. Background

Section 1424(e) of the Safe Drinking Water Act (42 U.S.C. 300h-3(e), Pub. L. 93-523) states:
If the Administrator determines on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, shall publish notice of that determination in the Federal Register. After publication of any such notice, no commitment for Federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for Federal financial assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer. On June 16, 1987, EPA received a petition from Martha's Vineyard Commission (MVC) requesting designation of the Martha's Vineyard Regional Aquifer as a sole source aquifer. EPA determined that the petition, after receipt and review of additional requested information from the MVC on August 28, 1987, fully satisfied the Completeness Determination Checklist. A public hearing was then scheduled and held on September 23, 1987, on Martha's Vineyard, in accordance with all applicable notification and procedural requirements. Unanimously favorable comments were received during the 30-day public comment period.

II. Basis for Determination

Among the factors considered by the Regional Administrator as part of the detailed review and technical verification process for designating an area under section 1424(e) were: (1) Whether the aquifer is the sole or principal source (more than 50%) of drinking water for the defined aquifer service area, and that the volume of water from an alternative source is insufficient to replace the petitioned aquifer; (2) whether contamination of the aquifer would create a significant hazard to public health; and (3) whether the boundaries of the aquifer, its recharge area and streamflow source area(s), the project designation area, and the project review area are appropriate. On the basis of technical information available to EPA at this time, the Regional Administrator has made the following findings in favor of designating Marth's Vineyard as a sole source aquifer:

1. The Martha's Vineyard Regional Aquifer is the sole source of drinking water to all of the residents of, and visitors to, the Island of Martha's Vineyard.
2. There exists no reasonable alternative drinking water source or combination of sources of sufficient quantity to supply the designated service area, nor is there any cost-effective future source or combination of future sources

available to serve Martha's Vineyard due to its physical separation from the mainland.

3. EPA has found that the MVC has appropriately delineated the boundaries of the aquifer recharge area, project designation area and project review area.
4. Although the quality of the Island's ground water is rated as good to excellent (refer to Appendix D of Petition), it is highly vulnerable to contamination due to the Island's geological characteristics and land-use patterns. The silica sands of the outwash plain, comprising the dominant medium through which percolating precipitation infiltrates in the primary recharge area, are of particular concern due to their low cation exchange capacity, low organic content and high permeability. For these reasons, contaminants can be rapidly introduced into the aquifer system from a number of sources with minimal assimilation. This may include contamination from chemical spills, highway, urban and rural runoff, septic systems, leaking storage tanks, both above and underground, road salting operations, saltwater intrusion, and landfill leachate. Already in the past four years, there have been three separate instances of contamination of sources of drinking water on Martha's Vineyard: the Up-Island Gasoline Station spill in Tisbury; the Barnes Road leak from an abandoned underground storage tank in Oak Bluffs; and the precautionary closing of the Machaket well due to a leak from an above- ground heating fuel tank at the Edgartown Water Company. Since all Island residents and visitor trade are dependent upon the aquifer for their drinking water, a serious contamination incident could pose a significant public health hazard and place a severe financial burden on the Island's residents.

III. Description of the Martha's Vineyard Regional Aquifer System, Designated Area and Project Review Area

Due to its geologic characteristics and the fact that it is an oceanic island, the entire land area of Martha's Vineyard constitutes the recharge area to the island's aquifer system. The island consists of two distinct geologic deposits: the terminal moraines (Gay Head Moraine and Martha's Vineyard Moraine), and the outwash plain. The terminal moraines occupy approximately 40% of the Island's land area and are composed of a variety of soils with perched water tables, springs and brooks. The outwash plain comprises the primary recharge area and consists of layered sands and silts in one continuous, unconfined aquifer and it encompasses the remaining 60% of the Island. Thus, the designated area is coterminous with the entire land area of the Island (including Chappaquiddick) landward of mean low tide. This area is also fully coincident with the proposed project review area, in which federal financially assisted projects will be subject to review to determine if, by contaminating the aquifer, they pose a significant hazard to public health.

IV. Information Utilized in Determination

The information utilized in this determination included the Martha's Vineyard Commission's petition, which included field analyses and technical hydrogeologic maps in the petition's appendices, U.S. Geological Survey's hydrologic map, and written and verbal comments submitted by the public. These materials are available to the public and may be inspected during normal business hours at the addresses listed previously.

V. Project Review

EPA Region I is working with the Federal agencies most likely to provide financial assistance to projects in the project review area. Interagency procedures and Memoranda of Understanding have been developed through which EPA will be notified of proposed commitments by Federal agencies for projects which could contaminate the Martha's Vineyard Regional Aquifer. EPA will evaluate such projects and, where necessary, conduct an in-depth review, including soliciting public comments where appropriate. Should the Regional Administrator determine that a project may contaminate the aquifer through its recharge zone so as to create a significant hazard to public health, no commitment for federal financial assistance may be entered into. However, a commitment for federal financial assistance may, if authorized under another provision of law, be entered into plan or design the project to ensure that it will not contaminate the aquifer. Included in the review of any federal financially assisted project will be the coordination with state and local agencies and the project's developers. Their comments will be given full consideration and EPA's review will attempt to complement and support state and local ground water protection mechanisms. Although the project review process cannot be delegated, EPA will rely to the maximum extent possible on any existing or future state and/or local control mechanisms to protect the quality of ground water in the Martha's Vineyard Regional Aquifer.

VI. Summary and Discussion of Public Comments

None of the issues expressed during the public comment period developed into controversial issues. All of the mail received during the public comment period was unanimously in favor of the Island's designation as a sole source aquifer. The comments and questions raised at the public hearing were primarily attributable to unfamiliarity among Island residents with the implications of such a designation. Information was sought concerning the following general questions: (1) What types of land development projects would fall under Federal review, (2) would FHA-supported mortgages for private homes be subject to review, and (3) would Federal review jurisdiction be applied to state financed or constructed projects In general, all the comments favored designation.

Michael R. Deland,

Regional Administrator.

[FR Doc. 88-2448 Filed 2-4-88; 8:45 am]

BILLING CODE 6560-50-M

53 FR 3451-01, 1988 WL 276476 (F.R.)

END OF DOCUMENT

LAST UPDATED ON APRIL 10, 2017

Appendix C

AFFF Safety Data Sheets

Safety Data Sheet

This safety data sheet complies with the requirements of: 2012 OSHA Hazard Communication Standard (29CFR 1910.1200)

Product name CHEMGUARD 3% AFFF C306-MS-C

1. Identification

1.1. Product Identifier

Product name CHEMGUARD 3% AFFF C306-MS-C

1.2. Other means of identification

Product code 770811
Synonyms None
Chemical Family No information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use Fire extinguishing agent.
Uses advised against Consumer use.

1.4. Details of the Supplier of the Safety Data Sheet

Company Name Tyco Fire Protection Products
One Stanton Street
Marinette, WI 54143-2542
Telephone: 715-735-7411
Contact point Product Stewardship at 1-715-735-7411
E-mail address psra@tycofp.com

1.5. Emergency Telephone Number

Emergency telephone CHEMTREC 001-800-424-9300 or 001-703-527-3887

2. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation - Category 1
Skin Sensitization - Category 1B

2.2. Label Elements

Signal Word
DANGER

Hazard Statements
Causes serious eye damage
May cause an allergic skin reaction

Precautionary Statements

Prevention
Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Disposal
Dispose of contents/container to an approved waste disposal plant.

2.3. Hazards Not Otherwise Classified (HNOC)
Not Applicable.

2.4. Other Information

3. Composition/information on Ingredients

3.1. Mixture
The following component(s) in this product are considered hazardous under applicable OSHA(USA)

Chemical name	CAS No.	weight-%
2-(2-Butoxyethoxy)ethanol	112-34-5	10 - 30
Laurylamidopropyl betaine	4292-10-8	1 - 5
Caprylcaprilyl glucoside	68515-73-1	1 - 5
Polyfluorinated alkyl polyamide	Proprietary	1 - 5
Octylphenoxypolyethoxyethanol	9036-19-5	1 - 5
Polyfluorinated alkyl quaternary amine chloride	Proprietary	0.1 - 1

4. First aid measures

4.1. Description of first aid measures
Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water. Get medical attention if irritation develops and persists.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. (Get medical attention immediately if symptoms occur.).

Ingestion Rinse mouth. Do not induce vomiting without medical advice. If swallowed, call a poison control center or physician immediately.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed
Symptoms No information available.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed
Note to physicians Treat symptomatically.

5. Fire-fighting measures

5.1. Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Unsuitable Extinguishing Media
None.

5.3. Specific Hazards Arising from the Chemical
None known.

Hazardous Combustion Products	Carbon oxides, Fluorinated oxides, Nitrogen oxides (NOx), Oxides of sulfur

5.4. Explosion Data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

5.5. Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions	Ensure adequate ventilation, especially in confined areas.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental Precautions

Environmental Precautions	Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1. Precautions for Safe Handling

Advice on safe handling	Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible Materials	Strong oxidizing agents. Strong acids. Strong bases.

8. Exposure Controls/Personal Protection

8.1. Control Parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL
2-(2-Butoxyethoxy)ethanol 112-34-5	TWA: 10 ppm inhalable fraction and vapor	-	-	-

ACGIH (American Conference of Governmental Industrial Hygienists) OSHA (Occupational Safety and Health Administration of the US Department of Labor) NIOSH IDLH Immediately Dangerous to Life or Health

8.2. Appropriate Engineering Controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

8.3. Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes. Tight sealing safety goggles.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Ventilation Use local exhaust or general dilution ventilation to control exposure with applicable limits

8.4. General hygiene considerations

Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State Liquid
Odor Characteristic **Color** Light yellow
Odor Threshold No data available

Property	Values	Remarks • Method
pH	7- 8.5	
Melting point/freezing point	No data available	
Boiling point / boiling range	No data available	
Flash Point	No data available	
Evaporation Rate	No data available	
Flammability (solid, gas)	No data available	
Flammability limit in air		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific gravity	No data available	
Water Solubility	No data available	
Solubility in Other Solvents	No data available	
Partition coefficient	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Kinematic viscosity	No data available	

Density 1.02

10. Stability and Reactivity

10.1. Chemical Stability

Stable under recommended storage conditions.

10.2. Reactivity

No data available

10.3. Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

10.4. Conditions to Avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur. Fluorinated oxides.

11. Toxicological Information

11.1. Information on Likely Routes of Exposure

Product information

Inhalation No data available.

Eye Contact Corrosive to the eyes and may cause severe damage including blindness.

Skin contact May cause allergic skin reaction.

Ingestion No data available.

Component Information

Acute Toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-(2-Butoxyethoxy)ethanol 112-34-5	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-
Laurylamidopropyl betaine 4292-10-8	> 2000 mg/kg (Rat)	-	-
Polyfluorinated alkyl polyamide	>2000 mg/kg	>2000 mg/kg	>5.11 mg/l
Octylphenoxypolyethoxyethanol 9036-19-5	= 1700 mg/kg (Rat) = 4190 mg/kg (Rat)	-	-
Polyfluorinated alkyl quaternary amine chloride	>300 - <2000 mg/kg	-	-

11.2. Information on Toxicological Effects

Symptoms No information available.

11.3. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Component Information					
Polyfluorinated alkyl quaternary amine chloride					
Method	species	Exposure Route	Effective dose	Exposure time	Results
OECD Test No. 439: In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method	EPISKIN™	in vitro			Non-irritant

Serious eye damage/eye irritation Risk of serious damage to eyes.

Component Information					
Polyfluorinated alkyl polyamide					
Method	species	Exposure Route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	eye			Class 4 on a 1 to 8 scale according to a modified Kay and Calandra classification system. Mild eye irritation

Sensitization May cause sensitization by skin contact.

Component Information			
Polyfluorinated alkyl polyamide			
Method	species	Exposure Route	Results
OECD Test No. 429: Skin Sensitisation: Local Lymph Node Assay	mouse	dermal	sensitizing

Polyfluorinated alkyl quaternary amine chloride			
Method	species	Exposure Route	Results
OECD Test No. 429: Skin Sensitisation: Local Lymph Node Assay	mouse	dermal	sensitizing

Component Information		
Polyfluorinated alkyl polyamide		
Method	species	Results
OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test	in vitro	Non-clastogenic to human lymphocytes in vitro.

Carcinogenicity No information available.
Reproductive Toxicity No information available.
STOT - Single Exposure No information available.
STOT - Repeated Exposure No information available.
Aspiration Hazard No information available.

11.4. Numerical Measures of Toxicity - Product information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 11648 mg/kg
ATEmix (dermal) 12061 mg/kg
ATEmix (inhalation-dust/mist) 223.9 mg/l

12. Ecological Information

12.1. Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
2-(2-Butoxyethoxy)ethanol 112-34-5	EC50 (96h) > 100 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1300 mg/L Lepomis macrochirus	EC50 (48h) > 100 mg/L Daphnia magna EC50 (24h) = 2850 mg/L

			Daphnia magna
2-Methyl-2,4-pentanediol 107-41-5	-	LC50 (96h) static = 10700 mg/L Pimephales promelas LC50 (96h) flow-through = 8690 mg/L Pimephales promelas LC50 (96h) flow-through 10500 - 11000 mg/L Pimephales promelas LC50 (96h) static = 10000 mg/L Lepomis macrochirus	EC50 (48h) 2700 - 3700 mg/L Daphnia magna
t-Butanol 75-65-0	EC50 (72h) > 1000 mg/L Desmodesmus subspicatus	LC50 (96h) flow-through 6130 - 6700 mg/L Pimephales promelas	EC50 (48h) = 933 mg/L Daphnia magna EC50 (48h) Static 4607 - 6577 mg/L Daphnia magna
Polyethylene Glycol 25322-68-3	-	LC50 (24h) > 5000 mg/L Carassius auratus	-
Sodium chloride 7647-14-5	-	LC50 (96h) static = 12946 mg/L Lepomis macrochirus LC50 (96h) static 6020 - 7070 mg/L Pimephales promelas LC50 (96h) flow-through 5560 - 6080 mg/L Lepomis macrochirus LC50 (96h) static 6420 - 6700 mg/L Pimephales promelas LC50 (96h) semi-static = 7050 mg/L Pimephales promelas LC50 (96h) flow-through 4747 - 7824 mg/L Oncorhynchus mykiss	EC50 (48h) Static 340.7 - 469.2 mg/L Daphnia magna EC50 (48h) = 1000 mg/L Daphnia magna
4,4'-bis-(sulfostyryl)-biphenyl disodium salt 27344-41-8	EC50 (72h) = 10 mg/L Desmodesmus subspicatus EC50 (96h) 10.0 - 11.0 mg/L Desmodesmus subspicatus	LC50 (96h) static = 76 mg/L Brachydanio rerio	EC50 (48h) = 1000 mg/L Daphnia magna

Polyfluorinated alkyl polyamide					
Method	Species	Endpoint type	Effective dose	Exposure time	Results
OECD Test No. 203: Fish, Acute Toxicity Test	Oncorhynchus mykiss (rainbow trout)	LC50	>14 mg/l	96h	NOEC: 14 mg/L No toxic effects at saturation.
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Algae	ErC50	>15 mg/l	72h	Growth rate >15, Yield 13. NOEC: 4.0 mg/L, LOEC: 8.5 mg/L
OECD Test No. 202: Daphnia sp., Acute Immobilization Test	Daphnia magna	EC50	>20 mg/l	48h	NOEC: 20 mg/L No toxic effects at saturation.

Polyfluorinated alkyl quaternary amine chloride					
Method	Species	Endpoint type	Effective dose	Exposure time	Results
OECD Test No. 211: Daphnia magna Reproduction Test	Daphnia magna	NOEC	5.38 mg/L	21 days	
OECD Test No. 202: Daphnia sp., Acute Immobilization Test	Daphnia magna	EC50	2.6 mg/L	48h	
OECD Test No. 210: Fish, Early-Life Stage Toxicity Test	Pimephales promelas	NOEC	11.8 mg/L	33 days	
OECD Test No. 203: Fish, Acute Toxicity Test	Cyprinus carpio	LC50	98 mg/L	96h	
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	EC50	788 mg/L	96h	

12.2. Persistence and Degradability

No information available.

12.3. Bioaccumulation
No information available.

12.4. Other Adverse Effects
No information available

13. Disposal Considerations

13.1. Waste Treatment Methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Do not reuse container.

14. Transport Information

DOT	NOT REGULATED
TDG	NOT REGULATED
MEX	NOT REGULATED
ICAO (air)	NOT REGULATED
IATA	NOT REGULATED
IMDG	NOT REGULATED

15. Regulatory Information

15.1. International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
2-(2-Butoxyethoxy)ethanol - 112-34-5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic health hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

15.3. US State Regulations

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
2-(2-Butoxyethoxy)ethanol 112-34-5	X	-	X

16. Other information, including date of preparation of the last revision

NFPA	**Health Hazards** 2	**Flammability** 0	**Instability** 0	**Physical and chemical properties** -
HMIS	**Health Hazards** 2	**Flammability** 0	**Physical Hazards** 0	**Personal Protection** X

Revision date 09-Apr-2018
Revision note SDS sections updated, 2, 11, 12.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Chemguard C301MS

MATERIAL SAFETY DATA SHEET

Date Prepared: 1/7/2011
Supersedes Date: 9/17/2009

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Chemguard C301MS**

Chemical Family: Surfactant mixture, fire fighting foam concentrate.

Company Identification: Chemguard, Inc.
204 South 6th Avenue
Mansfield, Texas 76063 USA
(817) 473-9964 (For Product Information)
(817) 473-9964 (For Emergency Information)
www.chemguard.com

For a transport accident or leak, fire or major spill, call CHEMTREC, (800) 424-9300.
For International CHEMTREC assistance, call (703) 527-3887 (collect calls accepted).

2. COMPOSITION / INFORMATION ON INGREDIENTS

CONTAINING: HAZARDOUS AND/OR REGULATED COMPONENTS

Chemical Name	Percentage	CAS Number	OSHA Hazard
Diethylene glycol mono butyl ether	0 - 8%	112-34-5	YES
Magnesium sulfate	0.5 – 1.5 %	7487-88-9	YES
Ethylenediamine tetra acetic acid	0.5 -1.5%	64-02-8	YES
Hydrocarbon Surfactant	Proprietary %	Proprietary	YES
Fluorosurfactant	Proprietary %	Proprietary	YES

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
WARNING! MAY CAUSE EYE AND/OR SKIN IRRITATION

Routes of Exposure:

Eye Contact: Exposure during the handling or mixing may cause immediate or delayed irritation or inflammation.

Skin Contact: Exposure during the handling or mixing may cause immediate or delayed irritation or inflammation.

Ingestion: Ingestion of large quantities may cause abdominal cramps, nausea, vomiting, diarrhea.

Inhalation: Exposure to this product in excess of the applicable TVL or PEL may cause or aggravate other lung conditions. Exposure to this product may cause irritation to the nose, throat, and upper respiratory system.

Chronic: None known

Medical Conditions which May be Aggravated by Inhalation or Dermal Exposure: Persons with unusual (hyper) sensitivity to chemicals may experience adverse reactions to this product.

Carcinogenic Potential: This product and its ingredients are not listed as a carcinogen by NTP, OSHA, ACGIH or IARC.

4. FIRST AID MEASURES

Eyes: Immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids. Seek immediate medical attention.

Skin: In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation or redness occurs. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.

Ingestion: If victim is conscious and alert, give 2 – 3 glasses of water to drink. Do not induce vomiting without medical advice. Do not induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

Inhalation: If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues. If breathing is difficult, give oxygen. If breathing as ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. FIRE FIGHTING MEASURES

Flash Point – No flash to boil

Lower Explosive Limit – Not Applicable
Upper Explosive Limit – Not Applicable
Hazardous Combustion Products – None known
Unusual Fire & Explosion Hazards – None known

Extinguishing Media – Water, Foam, Carbon Dioxide, Dry Chemical, Halon
Special fire fighting Procedures – None
Auto Ignition Temperature – Not Applicable

6. ACCIDENTAL RELEASE MEASURES

Wear appropriate protective gear for the situation. See Personal Protection information in section 8.

Containment of Spill: Dike or retain dilution water or water from firefighting for later disposal. Follow procedure described below under cleanup and disposal of spills.

Cleanup and Disposal of Spill: Vacuum or pump into an appropriate storage container. For smaller spills use absorbent materials and dispose of properly. Washing area with water will create large amounts of foam.

Environmental and Regulatory Reporting: Runoff from fire control or dilution water may cause pollution. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperature: Store at temperatures of 35ºF - 120ºF.
If material freezes, it may be thawed without loss of performance.

Handling: Use with adequate ventilation.

Storage: Store in an area that is dry, well ventilated and in closed containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure techniques may be used to effectively minimize employee exposures.

Eye Protection: When engaged in activities where product could contact the eye, wear safety glasses with side shields, goggles, or face shield.

Skin Protection: Skin contact should be minimized through use of latex gloves and suitable long sleeved clothing. Consideration must be given both to durability as well as permeation resistance.

Respiratory Protection: Avoid actions that cause dust exposure to occur. Use local or general ventilation to control exposures below applicable exposure limits. NIOSH or MSHA approved particulate filter respirators should be used in the context of respiratory protection program meeting the requirements of the OSHA respiratory protection standard [29 CFR 1910.134] to control exposures when ventilation or other controls are inadequate or discomfort or irritation is experienced. Respirator and/or filter cartridge selection should be based on American National Standards Institute (ANSI) Standards Z88.2 Practices for Respiratory Protection.

Ventilation: Use local exhaust or general dilution ventilation to control exposure within applicable limits.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

(1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
(2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
(3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance – Clear yellow liquid
Odor – Faint chemical odor
Physical State – Liquid
Specific Gravity (H2O=1) – 1.079
pH 7.7-8.7

Vapor Pressure – Not Evaluated
Density – Not Evaluated
Boiling Point – 212ºF
Melting Point – 32ºF
Solubility in Water – 100% Soluble

10. STABILITY AND REACTIVITY

Stability: Stable.

Conditions to avoid: Unintentional contact with water.

Hazardous Polymerization: Hazardous polymerization will not occur.

Incompatibility with other materials: Strong oxidizers

Hazardous Decomposition: Oxides of nitrogen, sulfur, carbon.

11. TOXICOLOGICAL INFORMATION

Acute Eye and Skin Toxicity Data:
Toxicological Information and Interpretation:

Eye Irritation: (Rabbit) mild irritant
Skin Irritation: (Rabbit) minimal irritant
Inhalation Toxicity: Not evaluated
Sensitization: Not evaluated
Teratology: Not evaluated
Mutagenicity: Not evaluated
Reproduction: Not evaluated
Acute Oral Effects (Rats): Not evaluated

Chronic Toxicity:
This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

12. ECOLOGICAL INFORMATION

	Concentration	Solution (As Used)
Chemical Oxygen Demand:	260,544 mg/l	7,816 mg/l
Biological Oxygen Demand (20 Day)	330,890 mg/l	9,927 mg/l
Biodegradability (B.O.D./C.O.D.)	99.90%	99.90%
Total Organic Carbon:	Not Determined	Not Determined
LC50 (96 hour pimephales promelas)	1,134 mg/l	37,800 mg/l
LC50 (48 hour, daphnia magna)	1,016 mg/l	33,870 mg/l

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Dispose of waste material according to local, state and federal regulations. Discharge to waste treatment facilities only with permission. Anti-foam agents may be used to reduce foaming in the waste streams. Do not incinerate.

14. TRANSPORTATION INFORMATION

Hazardous Materials Description/Proper Shipping Name: NOT REGULATED

Hazard Class: Not Applicable

Identification Number: Not Applicable

Required Label Text: Not Applicable

Hazardous Substances/Reportable Quantities: Not Applicable

15. REGULATORY INFORMATION

FEDERAL REGULATORY STATUS:

Status under OSHA Hazard Communication Standard, 29 CFR 1910.1200: This product is considered a

"hazardous chemical" under this regulation, and should be included in the employer's hazard communication program.

Reportable Quantities Under the Clean Water Act, CERCLA, and EPCRA, 40 CFR 117, 302 and 355:
The product contains no component regulated under section 304 (40 CFR 370).

Hazard Category and Applicability of EPCRA Hazardous Substance Inventory Reporting, 40 CFR 370:
Not listed

Applicability of EPCRA Toxic Chemical Release Inventory (TRI) Reporting. 40 CFR 372:
Not subject to TRI reporting

Status Under the Toxic Substances Control Act, 40 CFR 710:
All chemical(s) comprising this product are either exempt or listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard:	NO
Reactive Hazard:	NO
Release of Pressure:	NO
Acute Health Hazard:	YES
Chronic Health Hazard:	NO

State Regulations:

California:
This product does not contain any components that are regulated under California Proposition 65.

Pennsylvania:
This product does not contain any components on the Pennsylvania Right to Know List.

16. OTHER INFORMATION

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **0**

Label Requirements:

WARNING! MAY CAUSE EYE AND/OR SKIN IRRITATION

Hazardous Material Information System (HMIS):	**Health**	**1**
	Flammability	**0**
	Reactivity	**0**
	Personal Protection	**A**

NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme
Protective Equipment: Safety glasses, gloves

ADDITIONAL INFORMATION:

The information contained in this document is given in good faith and based on our current knowledge. It is only an indication and is in no way binding, notably as regards infringement of, or prejudice to third parties through the

use of our products. Chemguard guarantees that its products comply with its sales specifications. This information must on no account be used as a substitute for necessary prior tests which alone can ensure that a product is suitable for a given use. Users are responsible for ensuring compliance with local legislation and for obtaining the necessary certifications and authorizations.

END OF MSDS

Appendix D

Laboratory Certificates of Analysis

Appendix D will be submitted separately due to the large number of pages and large file size

Appendix E

Soil Boring Logs and Groundwater Monitoring Well Construction Diagrams

WELL NUMBER TT-1

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/12/18 **COMPLETED** 3/12/18
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				Roadbox Solid Riser Native Sand Pack Slotted Screen
10				
20				
30				

WELL NUMBER TT-2

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/12/18 **COMPLETED** 3/12/18
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

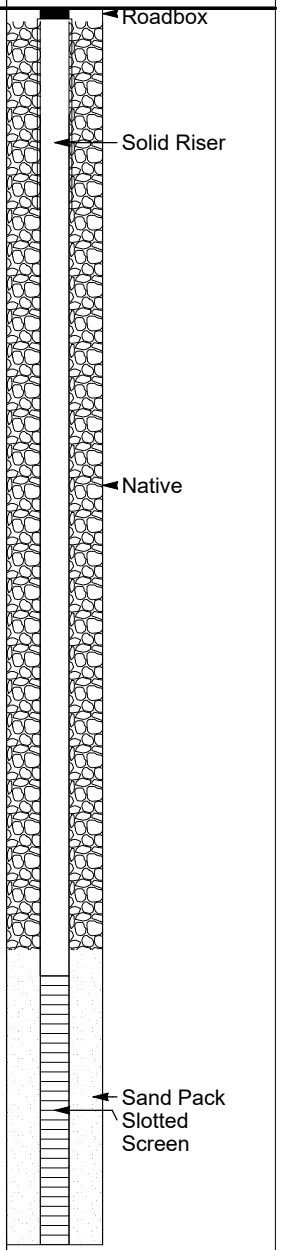
DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				Roadbox Solid Riser Native Sand Pack Slotted Screen
10				
20				
30				

WELL NUMBER TT-3

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/12/18 **COMPLETED** 3/12/18
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				
10				
20				
30				
40				
50				



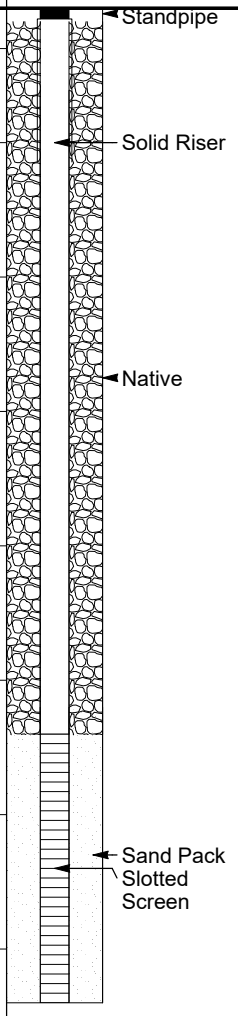
WELL NUMBER TT-4

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/12/18 **COMPLETED** 3/12/18
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION
0			Dark brown SILTY SAND, wet.
1.5			Brown-reddish brown fine to coarse SAND, trace gravel, dry.
5.0			Brown-reddish brown fine to coarse SAND, trace gravel, dry.
10.0			Brown-reddish brown fine to coarse SAND, trace gravel, dry.
15.0			Brown-reddish brown fine to coarse SAND, trace gravel, dry.
20.0			Brown-reddish brown fine to coarse SAND, trace gravel, dry.
25.0			Brown-reddish brown fine to coarse SAND, trace gravel, wet towards the bottom of the sleeve.
30.0			Brown-reddish brown fine to coarse SAND, trace gravel, wet.
35.0			Bottom of hole at 40.0 feet.
40			

WELL DIAGRAM



WELL NUMBER TT-5

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/12/18 **COMPLETED** 3/12/18
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				Roadbox
				Solid Riser
10				
				Native
20				
30				Sand Pack Slotted Screen
40				

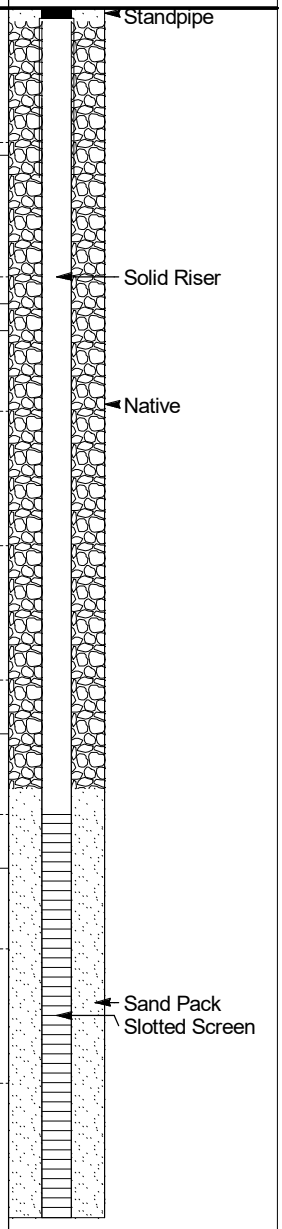
WELL NUMBER TT-06

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/12/19 **COMPLETED** 3/12/19
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	GRAPHIC LOG	MATERIAL DESCRIPTION
0				
	PS SS-1	50		Orange-brown fine to coarse SAND, trace Gravel, trace Silt, moist.
				5.0
	PS SS-2	90		5.5 Tan fine to medium SAND, trace Gravel, moist.
				Brown with alernating black and orange mottling medium to coarse SAND, trace fine Sand, trace Gravel, moist.
10				10.0
	PS SS-3	80		11.0 Brown fine to coarse SAND, trace Gravel, trace Silt, moist.
				12.0 Tan-orange medium to coarse SAND, trace fine Sand, trave Gravel, moist.
				Light tan medium to coarse SAND, trace fine Sand, trace Gravel, moist.
				15.0
	PS SS-4	50		Light tan with orange mottling medium to coarse SAND, trace fine Sand, trace Gravel, moist.
20				20.0
	PS SS-5	60		Light tan with orange mottling medium to coarse SAND, trace fine Sand, trace Gravel, moist.
				25.0
	PS SS-6	90		Tan-brown fine to coarse SAND, trace Gravel, moist.
				27.0
				Tan-orange medium to coarse SAND, trace fine Sand, little Gravel, moist.
30				30.0
	PS SS-7	60		Tan-brown with some orange fine to coarse SAND, trace Gravel, moist.
				32.0
				Light tan medium to coarse SAND, trace fine Sand, trace Gravel, wet.
				35.0
	PS SS-8	40		Tan-orange medium to coarse SAND, trace fine Sand, trace Gravel, wet.
40				40.0
				Bottom of hole at 45.0 feet.

WELL DIAGRAM



GENERAL BH / TP / WELL MARCH 2018 BORING LOGS.GPJ GINT STD US LAB.GDT 6/18/19

WELL NUMBER TT-07

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/12/19 **COMPLETED** 3/12/19
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	GRAPHIC LOG	MATERIAL DESCRIPTION
0				Tan-orange fine to coarse SAND, trace Gravel, trace Silt, moist.
	PS SS-1	70		2.5
				3.0 Tan-gray SILTY SAND, wet.
				Tan fine to medium SAND, little Silt, moist.
				5.0
	PS SS-2	80		5.5 Tan fine to medium SAND, little Silt, moist.
				Tan-orange medium to coarse SAND, trace fine Sand, trace Gravel, moist.
10				10.0
	PS SS-3	90		Brown-orange medium-coarse SAND, trace fine Sand, trace Gravel, moist.
				11.5
				Light tan with orange medium to coarse SAND, trace fine Sand, trace Gravel, moist.
				15.0
	PS SS-4	80		16.0 Brown medium to coarse SAND, trace fine Sand, trace Gravel, moist.
				Light tan with orange medium to coarse SAND, trace Gravel, trace fine Sand, moist.
20				20.0
	PS SS-5	80		Light tan with orange medium to coarse SAND, trace Gravel, trace fine Sand, moist.
	PS SS-6	60		
30				30.0
	PS SS-7	60		Light tan with orange medium to coarse SAND, trace fine Sand, trace Gravel, wet at 2.5'.
				35.0
	PS SS-8	60		36.0 Light tan fine to coarse SAND, trace Gravel, wet.
				Brown-orange medium to coarse SAND, trace Gravel, trace fine Sand, wet.
40				40.0
				Bottom of hole at 45.0 feet.

WELL DIAGRAM: Standpipe; Solid Riser; Native; Sand Pack; Slotted Screen

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WELL NUMBER MW-4E

TETRA TECH

CLIENT Martha's Vineyard Airport **PROJECT NAME** MVA

PROJECT NUMBER 143-3953-19005 **PROJECT LOCATION** 71 Airport Road

DATE STARTED 3/12/19 **COMPLETED** 3/12/19 **GROUND ELEVATION** _____ **HOLE SIZE** _____

DRILLING CONTRACTOR NEGT **GROUND WATER LEVELS:**

DRILLING METHOD GEO PROBE 7822DT **AT TIME OF DRILLING** ---

LOGGED BY AMR **CHECKED BY** _____ **AT END OF DRILLING** ---

NOTES _____ **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				
	PS SS-1		1.0 Brown fine to medium SAND, little Silt, trace Gravel, moist. 2.0 Tan fine to coarse SAND, little Gravel, moist.	Standpipe
			5.0 Tan-orange medium to coarse SAND, little Gravel, trace fine Sand, moist.	
	PS SS-2		6.0 Orange-tan medium to coarse SAND, trace Gravel, trace fine Sand, moist. 7.0 Tan fine to medium SAND, trace Gravel, moist.	
10			10.0 Tan medium to coarse SAND, trace fine Sand, trace Gravel, moist.	
	PS SS-3		Tan with orange mottling fine to medium SAND, trace Gravel, moist.	
			15.0	Solid Riser
	PS SS-4		Brown-tan with orange fine to medium SAND, trace Gravel, moist.	
20			20.0	
	PS SS-5		22.0 Brown-tan fine to medium SAND, trace Gravel, moist. Tan-orange medium to coarse SAND, little Gravel, trace fine Sand, moist.	
			25.0	
	PS SS-6		26.5 Brown fine to medium SAND, moist. 27.0 Orange medium to coarse SAND, little Gravel, moist. 29.0 Tan-orange fine to medium SAND, trace Gravel, moist.	
30			30.0	
	PS SS-7		31.0 Tan medium to coarse SAND, little Gravel, trace fine Sand, wet. Tan fine to medium SAND, wet.	
			35.0 Brown-orange medium to coarse SAND, trace fine Sand, trace Gravel, wet.	
	PS SS-8		Tan fine to medium SAND, trace Gravel, 1.5" lens of orange medium to coarse Sand with little Gravel at 1', wet.	Native
40			40.0	
	PS SS-9		Orange transitioning to tan fine to coarse SAND, little Gravel, wet.	
			45.0	
	PS SS-10		46.0 Tan fine to medium SAND, trace Gravel, wet. Tan-orange fine to coarse SAND, little Gravel, wet.	
50			50.0	
	PS SS-11		Tan-orange fine to coarse SAND, trace Gravel, wet.	
			55.0	
	PS SS-12		Tan-orange fine to coarse SAND, trace Gravel, wet.	
60			60.0	
	PS SS-13			
	PS SS-14		Tan with orange mottling fine to medium SAND, wet.	
70			70.0	
				Sand Pack Slotted Screen
80			Bottom of hole at 80.0 feet.	

GENERAL BH / TP / WELL MARCH 2018 BORING LOGS.GPJ GINT STD US LAB.GDT 6/18/19

WELL NUMBER MW-JM

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/11/19 **COMPLETED** 3/11/19
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					
	PS SS-1	50		Brown fine to coarse SAND, some Gravel, moist. (2.0) Brown-tan fine to coarse SAND, trace Gravel, moist. (5.0)	Roadbox
	PS SS-2	80		Tan fine to coarse SAND, little Gravel, moist. (10.0)	
10	PS SS-3	70		Tan fine to coarse SAND, trace Gravel, moist. (15.0)	
	PS SS-4	70		Brown fine to coarse SAND, trace Gravel, moist. (15.5) Brown fine to coarse SAND, little Gravel, moist. (20.0)	Solid Riser
20	PS SS-5	80		Tan fine to coarse SAND, little Gravel, moist. (22.0) Tan fine to medium SAND, trace Gravel, moist. (22.5) Tan fine to coarse SAND, trace Gravel, moist. (25.0)	
	PS SS-6	80		Tan fine to coarse SAND, trace Gravel, wet. (30.0)	
30	PS SS-7	60		Tan fine to coarse SAND, trace Gravel, wet. (35.0)	Native
	PS SS-8	50		Tan fine to coarse SAND, trace Gravel, wet. (37.0) Tan-orange medium to coarse SAND, trace Gravel, wet. (40.0)	
40	PS SS-9	60		Tan-orange fine to coarse SAND, trace Gravel, wet. (45.0)	
	PS SS-10	60		Tan-orange fine to coarse SAND, trace Gravel, wet. (50.0)	
50	PS SS-11	40		Tan-orange fine to coarse SAND, trace Gravel, wet. (55.0)	
	PS SS-12	40		Tan fine to medium SAND, little coarse Sand, trace Gravel, wet. (60.0)	
60	PS SS-13	40		Tan-orange fine to medium SAND, trace coarse Sand, trace Gravel, wet. (65.0)	Sand Pack Slotted Screen
	PS SS-14	60		Bottom of hole at 65.0 feet.	

GENERAL BH / TP / WELL MARCH 2018 BORING LOGS.GPJ GINT STD US LAB.GDT 6/18/19

WELL NUMBER MW-JS

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 3/11/19 **COMPLETED** 3/11/19
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE 7822DT
AT TIME OF DRILLING ---
LOGGED BY AMR **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				Roadbox
5				Solid Riser
10				Native
15				
20				
25				
30				Sand Pack Slotted Screen
35				
40				

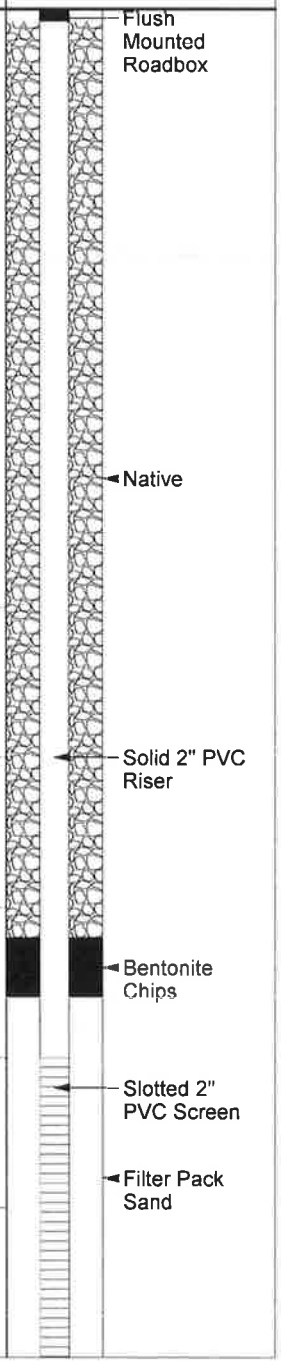
WELL NUMBER TT-08

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 9/10/19 **COMPLETED** 9/10/19
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE
AT TIME OF DRILLING ---
LOGGED BY KML **CHECKED BY** ISC
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	GRAPHIC LOG	MATERIAL DESCRIPTION
0				
15	PS SS-1	70		Gray-orange-tan medium-to-coarse SAND, little rounded Gravel, moist 19-20'. Orange bands @ 17', 18, and 19'.
20	PS SS-2	80		20.0 Gray-orange-tan medium-to-coarse SAND, little rounded Gravel, moist. Orange bands @ 22' and 24'.
25	PS SS-3	64		25.0 Gray-orange-tan medium-to-coarse SAND, little rounded Gravel, moist. Orange molting throughout.
30	PS SS-4	33		30.0 Gray-orange-tan medium-to-coarse SAND, little rounded Gravel, moist. Orange bands throughout.
35	PS SS-5	70		35.0 Gray-orange-tan medium-to-coarse SAND, little rounded Gravel, wet.
40				40.0 Bottom of hole at 40.0 feet.

WELL DIAGRAM



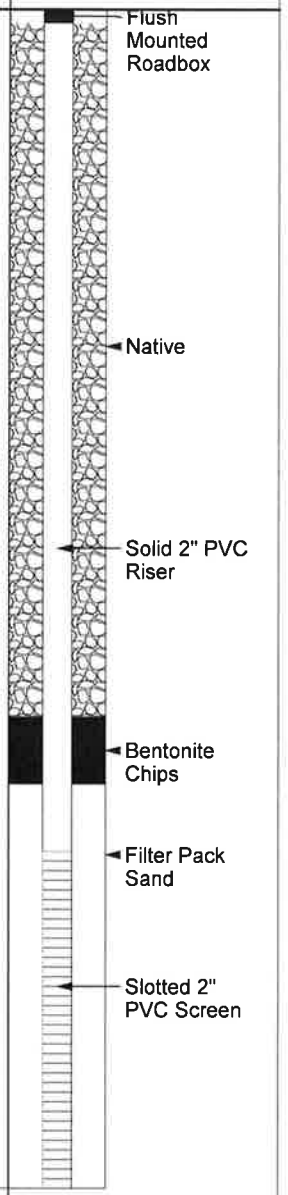
GENERAL BH / TP / WELL MARCH 2018 BORING LOGS.GPJ GINT STD US LAB.GDT 10/23/19

WELL NUMBER TT-09

TETRA TECH

CLIENT	Martha's Vineyard Airport	**PROJECT NAME**	MVA
PROJECT NUMBER	143-3953-19005	**PROJECT LOCATION**	71 Airport Road
DATE STARTED	9/10/19 **COMPLETED** 9/10/19	**GROUND ELEVATION**	_____ **HOLE SIZE** _____
DRILLING CONTRACTOR	NEGT	**GROUND WATER LEVELS:**	
DRILLING METHOD	GEO PROBE	**AT TIME OF DRILLING**	---
LOGGED BY	KML **CHECKED BY** ISC	**AT END OF DRILLING**	---
NOTES		**AFTER DRILLING**	---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION
0			
30	PS S-1		Orange coarse SAND trace fine rounded Pebbles, wet, no odor.
35			35.0 Bottom of hole at 35.0 feet.



GENERAL BH / TP / WELL MARCH 2018 BORING LOGS.GPJ GINT STD US LAB.GDT 10/23/19

WELL NUMBER TT-10

TETRA TECH

CLIENT Martha's Vineyard Airport
PROJECT NAME MVA
PROJECT NUMBER 143-3953-19005
PROJECT LOCATION 71 Airport Road
DATE STARTED 9/11/19 **COMPLETED** 9/11/19
GROUND ELEVATION _____ **HOLE SIZE** _____
DRILLING CONTRACTOR NEGT
GROUND WATER LEVELS:
DRILLING METHOD GEO PROBE
AT TIME OF DRILLING ---
LOGGED BY KML **CHECKED BY** ISC
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				Flush Mounted Roadbox
10				
20				Native
				Solid 2" PVC Riser
30	PS S-1		Orange-tan medium-to-coarse SAND, trace Gravel, wet @ 34'.	Bentonite Chips
			35.0	Filter Pack Sand
40			Bottom of hole at 45.0 feet.	Slotted 2" PVC Screen

GENERAL BH / TP / WELL MARCH 2018 BORING LOGS.GPJ GINT STD US LAB.GDT 10/23/19

F. G. SULLIVAN DRILLING CO., INC.
Lancaster, Mass. 01523

Name of Driller CARL BERTHAIM Names of Helpers SHAWN FAUREAU

Job: Name & Location MARTHA'S VINEYARD AIR PORT OFF EDGARTOWN ROAD 1350 FT WEST OF AIRPORT ACCESS ROAD

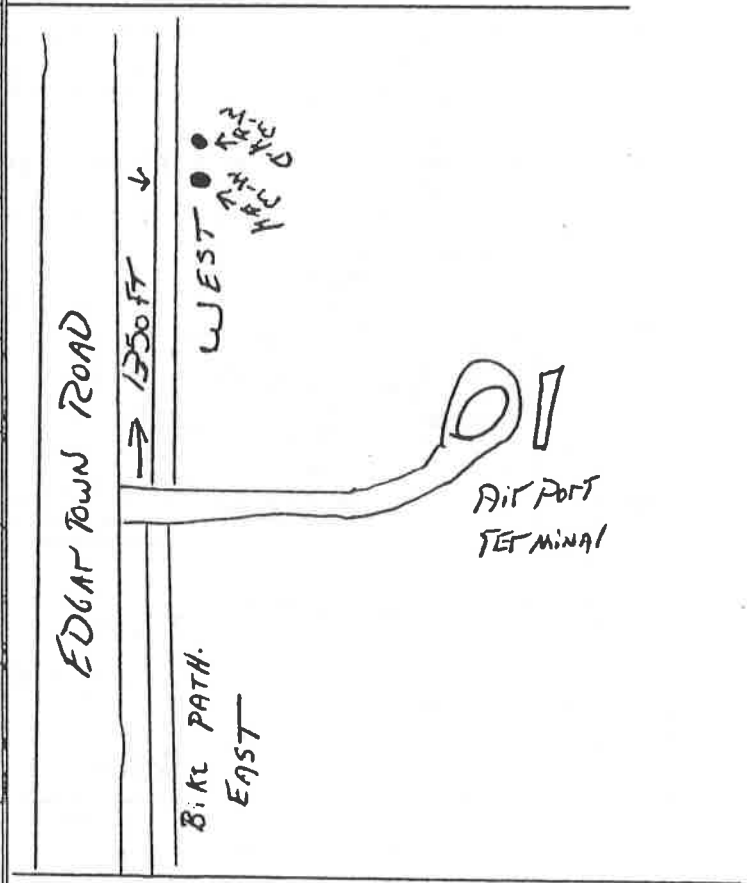
Date Started 5-11-88 Date Finished 5-13-88

Hole No. #4 2" MONITORING WELL

Depth From	Depth To	Classification of Material	Feet of Screen Exposed
0	5	COURSE SAND + GRAVEL BROKEN ROCK	15 FT OF 2" PVC
5	10	COURSE GRAVEL + SAND BROKEN ROCK	
10	15	COURSE GRAVEL + SAND	Size of Screen & Slot
15	20	FINE + MED SAND + GRAVEL	2 IN 10 SLOT
20	25	FINE + MED SAND + GRAVEL	
25	30	COURSE GRAVEL	Screen Type
30	35	COURSE GRAVEL	FLUSH TUBE PVC
35	40	MED GRAVEL	Pipe Left In
40	45	MED GRAVEL	37' OF 2" PVC
45	50	MED GRAVEL	Pipe Above Ground
~~50~~	~~55~~		
			2.0 FT
			Static From Top of Pipe
			34.92
			G.P.M.
			—
			Samples Taken
			—

1-37
1-15
5-12

SITE PLAN



Pump Test on Hole No.

Date	Time	Dr. Down	G.P.M.	Static and Other Info.

REMARKS

SET 15 FT OF 10 SLOT PVC FLUSH TUBE AND 37 FT OF 2" PIPE

PULLED OUT ALL 3" PIPE

SET BENTONITE SEAL FROM 34' TO 30 FT

SET 5 FT OF 2½" PROTECTOR PIPE WITH LOCKING CAP AND LOCK. - CEMENTED IN PLACE

F. G. SULLIVAN DRILLING CO., INC.
Lancaster, Mass. 01523

Name of Driller CARL BERGLUND Names of Helpers SHAWN FAUREAU

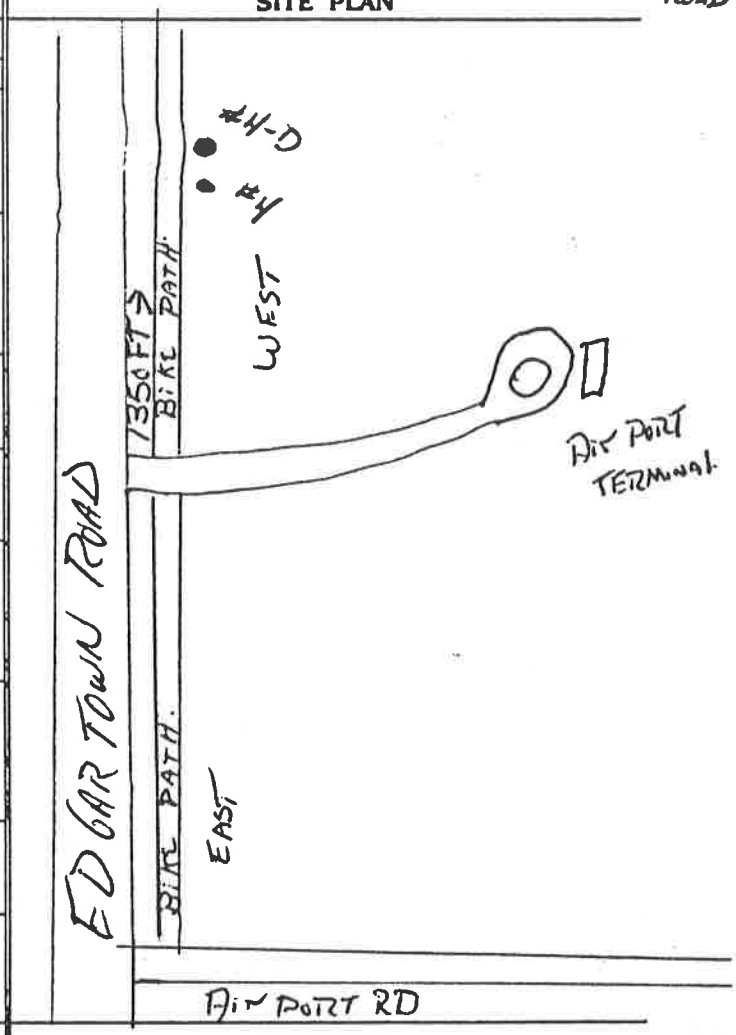
Job: Name & Location MARTHA'S VINEYARD AIRPORT OFF EDGARTOWN RD 1350 FT WEST OF AIRPORT ACCESS ROAD

Date Started 5-9-88 Date Finished 5-11-88

Hole No. # 4-D 2" MONITORING WELL

Depth From	Depth To	Classification of Material	Feet of Screen Exposed
0	5	COURSE GRAVEL + SAND BROKEN ROCK	15' OF 2" PVC
5	10	COURSE GRAVEL + SAND BROKEN ROCK	
10	15	COURSE GRAVEL SAND	Size of Screen & Slot
15	20	FINE + MED SAND + GRAVEL	2IN 10 SLOT
20	25	FINE + MED SAND + GRAVEL	
25	30	COURSE GRAVEL	Screen Type
30	35	COURSE GRAVEL	FLUSH TUBE PVC
35	40	MED GRAVEL	Pipe Left In
40	45	MED GRAVEL	60' of 2" PVC
45	50	MED GRAVEL	Pipe Above Ground
50	55	FINE + MED SAND GRAVEL	2.0 FT
55	60	FINE + MED SAND GRAVEL	
60	65	COURSE SAND	Static From Top of Pipe
65	70	COURSE SAND	34.92
70	75	COURSE SAND	
			G.P.M.
			—
			Samples Taken
			—

SITE PLAN



Pump Test on Hole No.

Date	Time	Dr. Down	G.P.M.	Static and Other Info.

REMARKS

SET 15 FT OF 10 SLOT PVC FLUSH TUBE SCREEN AND 60 FT OF 2" PIPE

— — — — — —

PULLED OUT ALL 3" PIPE

— — — — — —

SET BENTONITE SEAL FROM 34 FT TO 30 FT

— — — — — —

SET 5 FT OF 2½" PROTECTOR PIPE WITH LOCKING CAP AND LOCK — CEMENT IN PLACE.

F. G. SULLIVAN DRILLING CO.
Lancaster, Mass 01523

Name of Driller Todd Sullivan Names of Helpers Dave McLaughlin

Job: Name & Location For the Martha's Vineyard Airport Comm. of Barnes Rd.

Date Started 12-30-86 Date Finished 12-31-86

Hole No. #A

Depth 85' Classification of Observation well

From	To	Material
	20'	Br. MED & Coarse SanD
	36'	Br. Coarse SanD & Gravel
	45'	DK. Br. Coarse Sand & Coarse Gravel
45'	74'	Br. MED & Coarse Sand & Some Coarse Gravel
74'	85'	Br. MED Sand

Feet of Screen Exposed: 4'

Size of Screen & Slot: 5'x1¼" 30Slot

Screen Left in: 1@ 85'

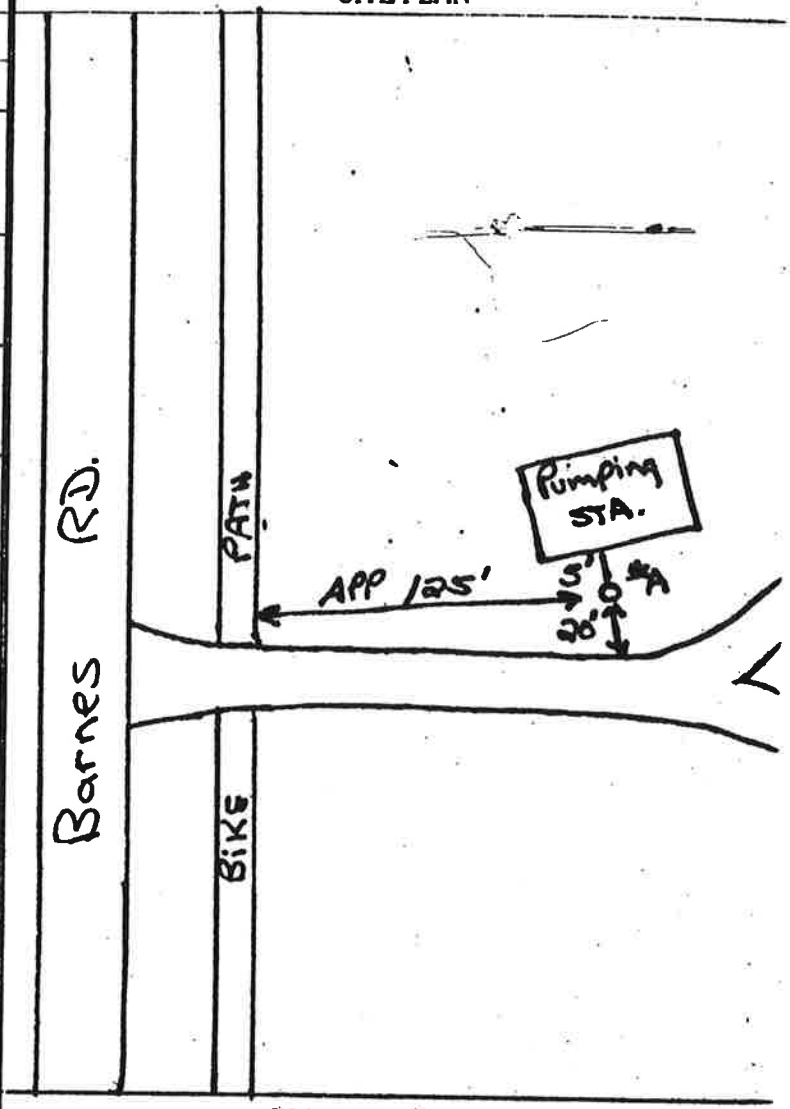
Screen Pulled Out: —

Pipe Left in: 81' of 2½" Steel Pipe

Pipe Pulled Out: 4' of 2½" Steel Pipe.

Remarks:
AG - 1.00'
Depth - 85'
GPM - 8
Static below Gr. Level - 31.40'

SITE PLAN



Pump Test on Hole No.

Date	Time	Dr. Down	G.P.M.	Static and Other Info.

REMARKS

Set 4' of 30 Slot Screen @ 85'. well pumped 8 GPM with a Jet pump. Pumped the well for 1 hour

1 Hour Total pumping Time.

F. G. SULLIVAN DRILLING CO.
Lancaster, Mass 01523

Name of Driller Todd Sullivan Names of Helpers Dave Mclaughlin

Job: Name & Location For the Martha's Vineyard Airport Comm off Barnes Rd

Date Started 12-31-86 Date Finished 1-5-87

Hole No. #B

Depth 60' Classification of Observation well

From	To	Material
	22'	Br. Coarse Sand
22'	35'	Br. Coarse Sand & Coarse Gravel
35'	48'	DK. Br. Coarse Sand
48'	60'	DK. Br. Med & Coarse Sand

Feet of Screen Exposed: 4'

Size of Screen & Slot: 5' x 1¼" 30 Slot

Screen Left in: 1 @ 60'

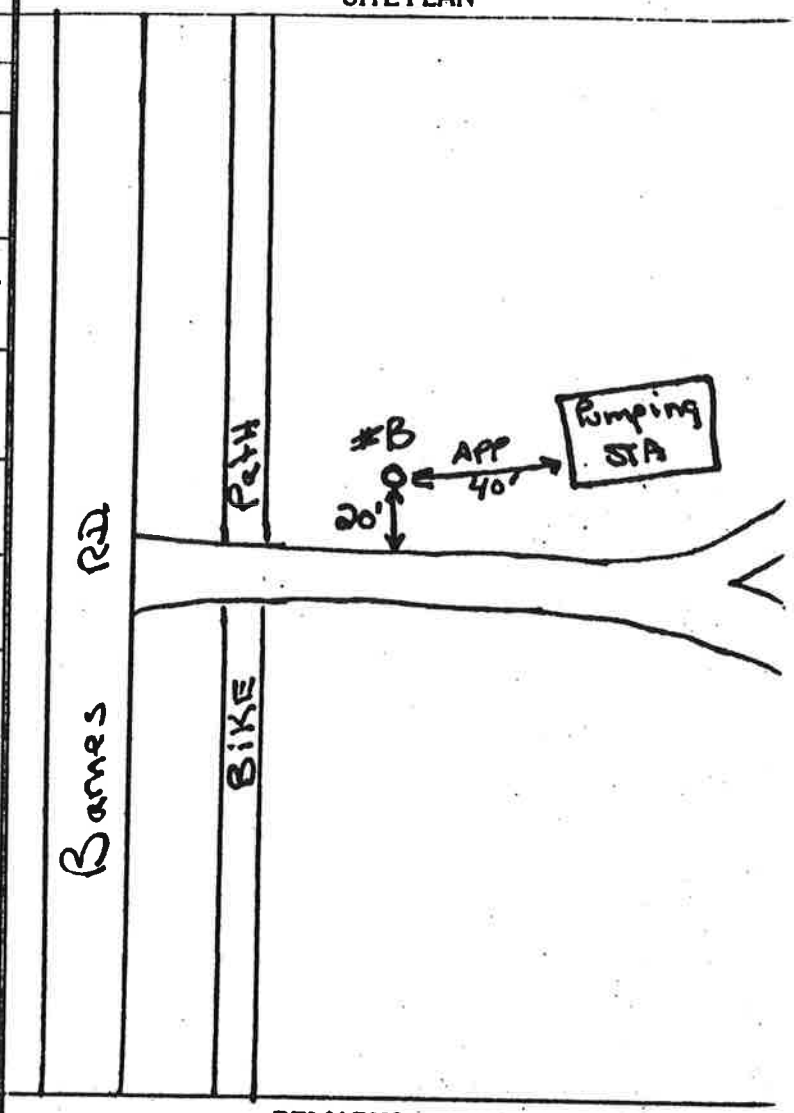
Screen Pulled Out: —

Pipe Left in: 56' of 2½" steel pipe

Pipe Pulled Out: 4' of 2½" steel pipe

Remarks:
AG - 2.00
Depth - 60'
GPM - 8
Static below Gr. Level - 29.06'

SITE PLAN



Pump Test on Hole No.

Date	Time	Dr. Down	G.P.M.	Static and Other Info.

REMARKS

Set a 5'-30 slot screen @ 60
well pumped 8 GPM. pumped
the well for 1 hour @ 8 GPM

1 Hour Total pumping Time.

PROJECT: TAKEMMY LAUNDRY

DATE: 4-3-96

BORING NO.: TMW-2

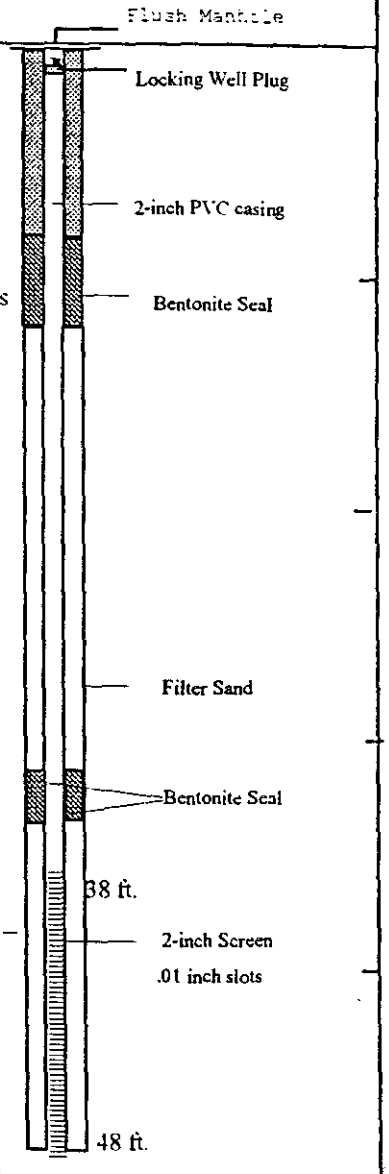
Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION
0				
				SM SILTY SAND: medium brown, dry, with .5 ft. of topsoil, sand is med. to coarse.
10				
		18 11 11/9	<0.5	SP SAND: coarse -v. coarse grain, moist, with beds of silty sand as above , some cobbles
				SP SAND: med. brown, fine-coarse grain, moist
20				
		9 10 10 19	<0.5	
30				
		10 12 16/11	<0.5	GW-SW GRAVELLY SAND: tan to light brown moist, gravel <.5 inch, well rounded, interbeds of sand, med. to coarse grain
40				W.T.
		17 8 10/9	<0.5	
50				
		10 11 11/11	<0.5	Bottomof boring

WELL COMPLETION



Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

Location behind building east

PROJECT: TAKEMMY PCE

DATE: 4-23-96

BORING NO.: TMW-4

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
0					Locking Well Cap
				LOAM: dark brown, silty	
				SM SILTY SAND; medium brown, dry,	
				SW SAND; orange-tan,medium to coarse grain, moist interbedded with SAND; fine to medium grain, tan, moist	2-inch PVC casing
10		7/4/6/8	<0.5		Bentonite Seal
		11/4/19/9	<0.5	coarse beds become gravely	
20		11/5/11/13	<0.5		
		14/22/11/17	<0.5		
30		13/11/15/20	<0.5	as above some iron staining	Bentonite Seal
		11/4/17/5	<0.5		
40		11/19/10/10	0.5	W.T.	38.0 ft.
					2-inch Screen
					.01 inch slots
				GW-SW GRAVELLY SAND; tan to light brown gravel 1/4 to 1 inch in diameter.	Filter Sand
50		12/7/8/10	0.5		
				Drill to 54.0 feet	53.0 ft.

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

PROJECT: TAKEMMY PCE

DATE: 4-23-96

BORING NO.: TMW-5

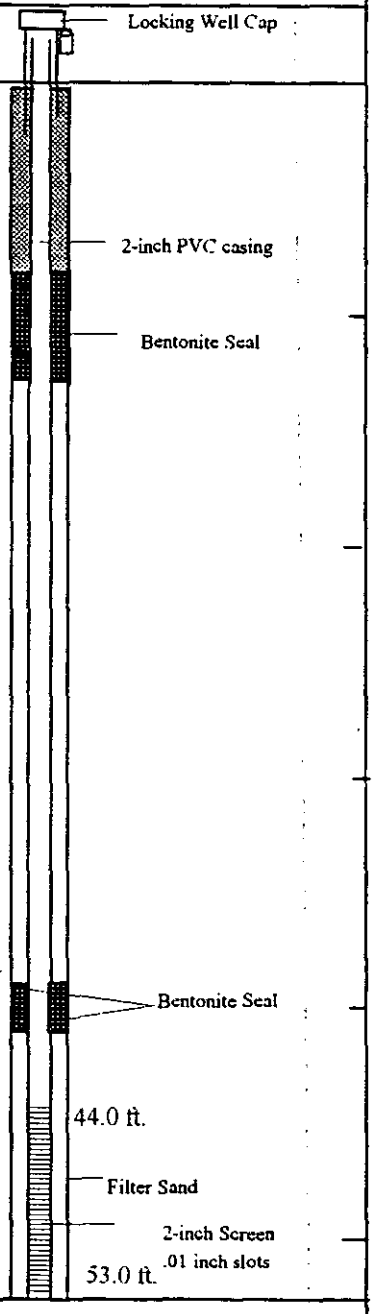
Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION
0				
				LOAM: dark brown, silty
				SM SILTY SAND; medium brown, dry,
				SM-SP Interbedded SILTY SAND: as above and SAND: lt brown, fine to medium grain
10		2/6/18/16	<0.5	
				SW SAND; medium to coarse grain, tan-orange moist becomes coarser grain at base of sample
			<0.5	
20		1/4/16/13	<0.5	
				SP/SW Interbedded SAND as above with SAND: fine-medium grain,tan, iron st., moist-wet
		4/22/11/17	<0.5	
30		4/11/8/ref	<0.5	
		11/4/17/5	<0.5	
40		17/12/10/10	<0.5	
				W.T.
50		2/2/4/20	0.5	

WELL COMPLETION



Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

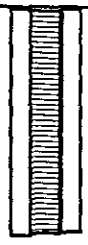
PROJECT: TAKEMMY PCE

DATE: 5-23-96

BORING NO.: TMW-5

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
50					
				cotinued gravely sand as above	 59.0 feet
60					
		12/14/15/1	<0.5	BOTTOM OF BORING	
70					
80					
90					
50					50 ft.

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

PROJECT: TAKEMMY PCE

DATE: 7-31-96

BORING NO.: TMW-5D

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
0					Locking Well Cap
				LOAM; dark brown, silty	
				SM SILTY SAND; medium brown, dry,	
				SM-SP Interbedded SILTY SAND; as above and SAND; lt brown, fine to medium grain	2-inch PVC casing
10		2/6/18/16	<0.5		
				SW SAND; medium to coarse grain, tan-orange moist becomes coarser grain at base of sample	Bentonite Seal
			<0.5		
20		1/4/16/13	<0.5		
				SP/SW Interbedded SAND as above with SAND; fine-medium grain,tan, iron st., moist-wet	
		4/22/11/17	<0.5		
30		4/11/8/ref	<0.5		
		11/4/17/5	<0.5		
					W.T.
40		17/12/10/10	<0.5		
50		2/2/4/20	<0.5		Bentonite Seal

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

Log of sheet 1 from borehole TMW-5

PROJECT: TAKEMMY PCE

DATE: 7-31-96

BORING NO.: TMW-5D

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 2

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
50					
				cotinued gravely sand as above	
60		5/10/75/R	<0.5		59.0 feet
70		6/18/24/18		SW SAND: light brown, medium to very coarse grain, minor gravel, more fines @ 80 ft.	74.0 feet
		17/16/20/16			
80		14/22/35/47			
		45/50		BOTTOM OF BORING	
90					
50					50 ft.

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

PROJECT: TAKEMMY PCE

DATE: 4-23-96

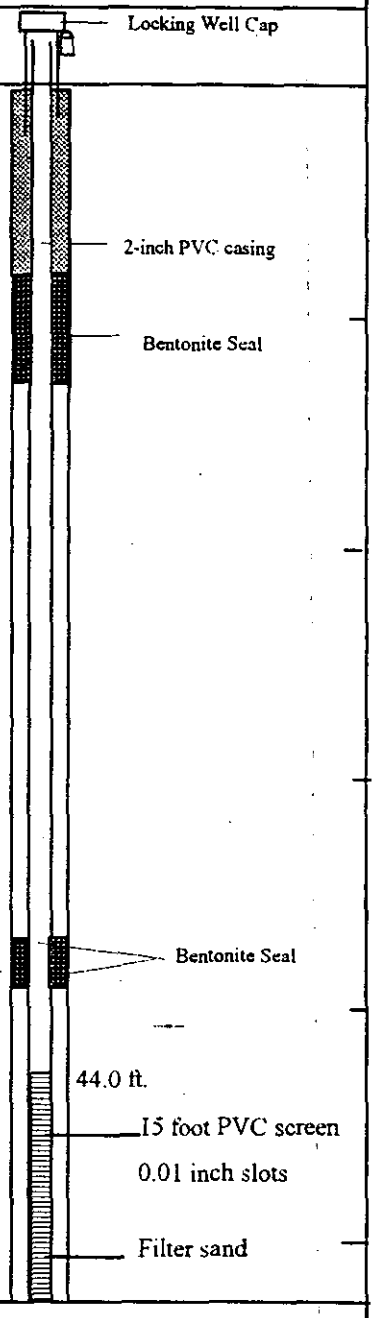
BORING NO.: TMW-6

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION
0				
				LOAM: dark brown, silty
				SM SILTY SAND: medium brown, dry,
10		5/33/21/19	<0.5	SP SAND: medium brown, fine-medium grain
			<0.5	
20		5/5/9/13	<0.5	SW SAND; tan, medium to coarse grain, moist, some cobbles.
				becomes coarser with more gravel
30		7/6/15/19	<0.5	
				GP GRAVELY SAND: medium to very coarse grain, gravel is mostly quartz, .25 to 1 inch
		5/11/14/19	<0.5	
40		4/7/9/19	<0.5	
				less sand and more gravel
50		6/7/9/8	<0.5	



Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

Log of sheet 1 from borehole TMW-6

PROJECT: TAKEMMY PCE

DATE: 5-23-96

BORING NO.: TMW-6

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 2

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
50					
				GP SANDY GRAVEL; more uniform, tan-brown	
60					59.0 feet
		12/14/15/13	<0.5	BOTTOM OF BORING	
70					
80					
90					
50					50 ft.

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

PROJECT: TAKEMMY PCE

DATE: 7-31-96

BORING NO.: TMW-6D

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
0					Locking Well Cap
				LOAM: dark brown, silty	
				SM SILTY SAND; medium brown, dry,	
					2-inch PVC casing
10		5/33/21/19	<0.5	SP SAND; medium brown, fine-medium grain	
					Bentonite Seal
			<0.5		
20		5/5/9/13	<0.5	SW SAND; tan, medium to coarse grain, moist, some cobbles.	
				becomes coarser with more gravel	
30		7/6/15/19	<0.5		
				GP GRAVELY SAND; medium to very coarse grain, gravel is mostly quartz, .25 to 1 inch	
		5/11/14/1.	<0.5		
				W.T.	
40		4/7/9/19	0.5		
				less sand and more gravel	
50		6/7/9/8	<0.5		Bentonite Seal

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

Log of sheet 1 from borehole TMW-6

PROJECT: TAKEMMY PCE

DATE: 7-31-96

BORING NO.: TMW-6D

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
50					
				cotinued gravely sand as above	
60		7/10/24	0.7		59.0 feet
		20/23/21/17			
70		8/11/23/24	0.9		
		33/46/50/R			74.0 feet
				SW SAND; light brown, medium to very coarse grain, minor gravel, more fines @ 80 ft.	
80		5/9/12/18	1.0		
		35/50		BOTTOM OF BORING	
90					
50					50 ft.

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

PROJECT: TAKEMMY PCE

DATE: 6-25-96

BORING NO.: TMW-11

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
0					Locking Well Cap
				LOAM: dark brown, silty	
				SM SILTY SAND; medium brown, dry to moist	2-inch PVC casing
10		5/24/20/19	<0.5	SW SAND; medium to coarse grain, tan-orange	Bentonite Seal
			<0.5		
20		17/12/10/R	0.6	SP/SW Interbedded SAND as above with SAND: fine-medium grain,tan, iron st., moist-wet	
		3/15/14/20	<0.5		
30		24/16/13/25	0.6		Bentonite Seal
		7/28/R	<0.5	W.T.	33.0 ft.
40		17/12/10/19	0.5	GP GRAVELY SAND: lt. orange-brown, coarse to very coarse grain, gravel less than .25 inch	Filter Sand
					2-inch Screen
				SW SAND: medium to very coarse grain, tan, 1.0 inch silt bed, medium brown	.01 inch slots
50		2/2/4/20	0.5		48.0 ft.
				bottom of bore hole @ 49.0	

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

PROJECT: TAKEMMY PCE

DATE: 6-25-96

BORING NO.: TMW-12

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
0					Locking Well Cap
				LOAM; dark brown, silty	
				SM SILTY SAND; medium brown, dry to moist	2-inch PVC casing
10		9/10/10/16	<0.5	SW SAND; medium to coarse grain,medium brown, moist	Bentonite Seal
20		14/12/10/R	<0.5	SP/SW Interbedded SAND as above with SAND; fine-medium grain,tan, iron st., moist-wet	
		6/12/14/15	<0.5		
30		6/10/10/14	0.6		Bentonite Seal
		14/5/11/10	<0.5	W.T.	33.0 ft.
40		5/16/14/19	0.5	GP GRAVELY SAND; lt. orange-brown, coarse to very coarse grain, gravel less than .25 inch	Filter Sand
50		8/15/11.8	0.5	10% fines in this sample	2-inch Screen .01 inch slots
				bottom of bore hole @ 49.0	48.0 ft.

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

Other Comments

PROJECT: TAKEMMY PCE

DATE: 6-25-96

BORING NO.: TMW-13

Field Boring & Monitoring Well Completion Form

SAUNDERS ASSOCIATES

Page 1

DEPTH Feet	SAMPLE	Blow Counts	PPM	LITHOLOGICAL DESCRIPTION	WELL COMPLETION
0					Locking Well Cap
				SM SILTY SAND; medium brown, dry to moist	2-inch PVC casing
10		5/20/15/40	<0.5	SW SAND; fine to coarse grain,med.-dk brown, moist	Bentonite Seal
				SW SAND: medium to coarse grain, lt.-med. brown, wet to saturated.	
20		17/33/13/12	<0.5		
		12/9/8/11	<0.5		
30		13/48/28/15	<0.5		Bentonite Seal
					33.0 ft.
		10/10/7/9	<0.5	W.T.	
40		12/9/12/12	0.5	GP GRAVELY SAND: lt. orange-brown, coarse to very coarse grain, gravel less than .25 inch	Filter Sand
					2-inch Screen .01 inch slots
50		9/5/6/5	0.5		48.0 ft.
				bottom of bore hole @ 49.0	

Logged By: Craig Saunders, Hydrogeologist

Drilling Company: Scannell Well Drilling

Rig/Method: Mobile B56 / Hollow-Stem Auger

Field Screening: Photovac PID - Calibrated (Isob).

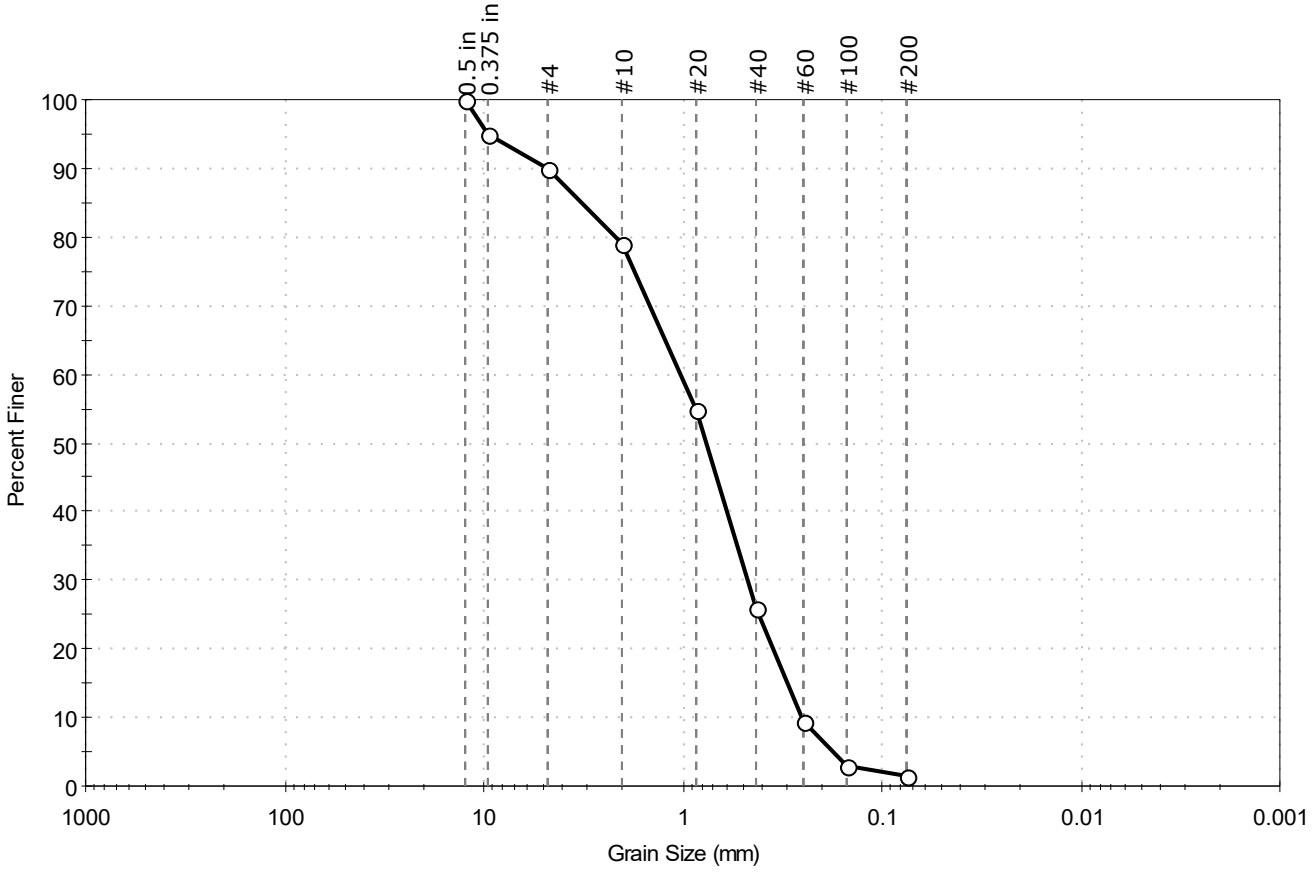
Other Comments

Appendix F

Laboratory Report – Particle Size Analysis

Client:	Tetra Tech				
Project:	Martha's Vineyard Airport				
Location:	West Tisbury, MA			Project No:	GTX-310638
Boring ID:	M-4	Sample Type:	jar	Tested By:	ckg
Sample ID:	M-4-32-32	Test Date:	09/21/19	Checked By:	bfs
Depth :	31-32	Test Id:	524598		
Test Comment:	---				
Visual Description:	Moist, yellowish brown sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	10.0	88.6	1.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	95		
#4	4.75	90		
#10	2.00	79		
#20	0.85	55		
#40	0.42	26		
#60	0.25	9		
#100	0.15	3		
#200	0.075	1.4		

Coefficients

D_{85} = 3.2214 mm
D_{30} = 0.4686 mm
D_{60} = 1.0225 mm
D_{15} = 0.2987 mm
D_{50} = 0.7578 mm
D_{10} = 0.2542 mm
C_u = 4.022
C_c = 0.845

Classification

ASTM: Poorly graded SAND (SP)

AASHTO: Stone Fragments, Gravel and Sand (A-1-b (1))

Sample/Test Description

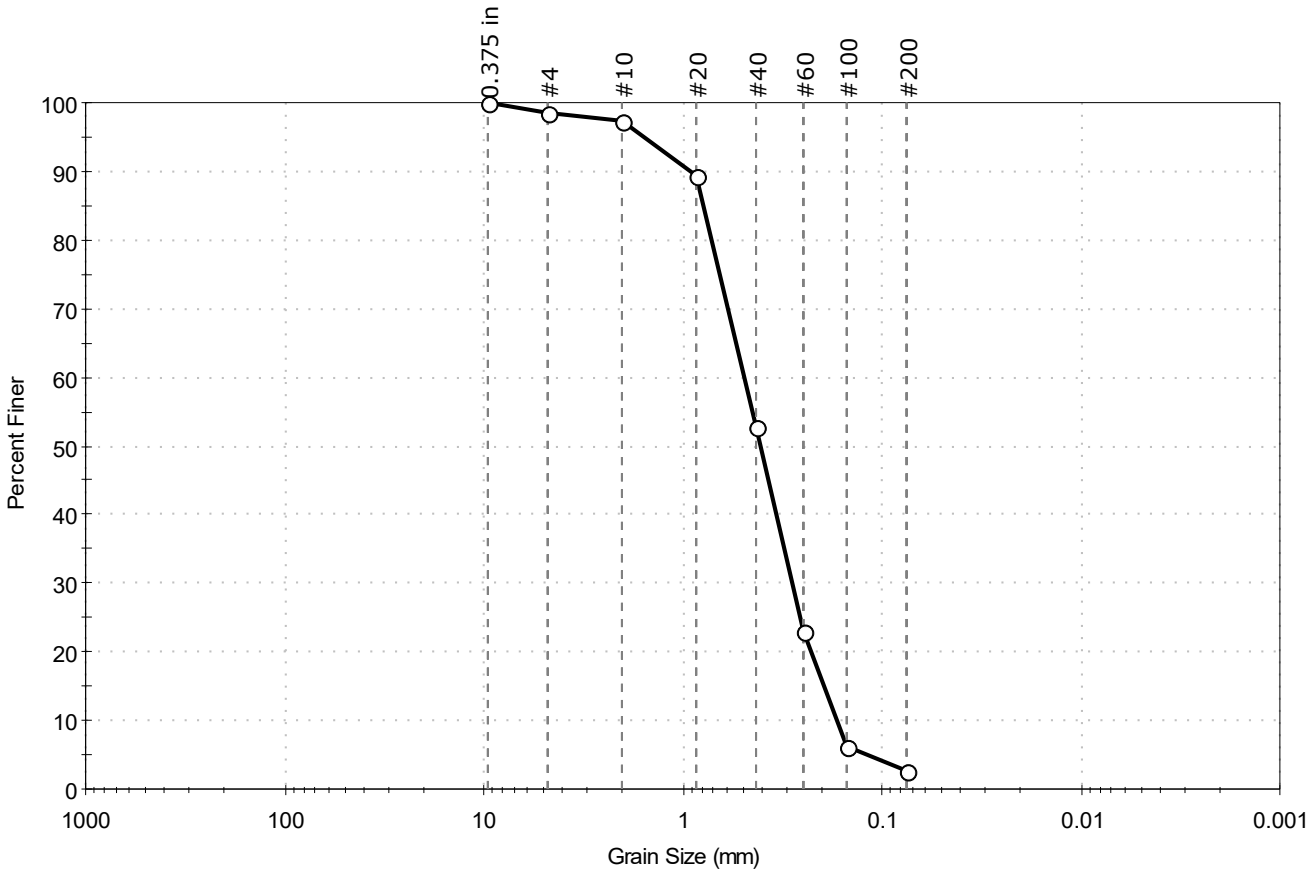
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	Tetra Tech				
Project:	Martha's Vineyard Airport				
Location:	West Tisbury, MA			Project No:	GTX-310638
Boring ID:	M-4	Sample Type:	jar	Tested By:	ckg
Sample ID:	M-4-45-46	Test Date:	09/21/19	Checked By:	bfs
Depth :	45-46	Test Id:	524599		
Test Comment:	---				
Visual Description:	Moist, olive yellow sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.5	95.7	2.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	97		
#20	0.85	89		
#40	0.42	53		
#60	0.25	23		
#100	0.15	6		
#200	0.075	2.8		

Coefficients

D_{85} = 0.7839 mm	D_{30} = 0.2831 mm
D_{60} = 0.4875 mm	D_{15} = 0.1962 mm
D_{50} = 0.4045 mm	D_{10} = 0.1688 mm
C_u = 2.888	C_c = 0.974

Classification

ASTM Poorly graded SAND (SP)

AASHTO Fine Sand (A-3 (1))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Appendix G

Statistical Analysis Summary and PFAS Fingerprint Analysis Data

Appendix G - Statistical Analysis Summary for Private Wells

Date/Time of Computation	**ProUCL 5.110/10/2019 1:56:34 PM**
User Selected Options	
From File	**WorkSheet.xls**
Full Precision	**OFF**

General Statistics

Variable	NumObs	# Missing	Minimum	Maximum	Mean	Geo-Mean	SD	SEM	MAD/0.675	Skewness	CV
Private Wells - PFAS (all detected)	84	0	1.8	1358	89.66	18.06	220.2	24.02	17.11	3.817	2.456
Private Wells - PFAS (no outliers)	69	0	1.8	66.5	16.91	9.875	16.95	2.041	13.31	1.372	1.003

Percentiles

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Private Wells - PFAS (all detected)	84	0	2.161	3.648	4.758	14.31	44.73	61.28	231.2	579.7	945.5
Private Wells - PFAS (no outliers)	69	0	2.048	2.956	3.88	11.9	23.7	28.36	43.26	56.4	63.03

General Statistics for Log-Transformed Dataset

Variable	NumObs	# Missing	Minimum	Maximum	Mean	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Private Wells - PFAS (all detected)	84	0	0.588	7.214	2.894	2.844	1.686	1.667	0.654	-0.146	0.583
Private Wells - PFAS (no outliers)	69	0	0.588	4.197	2.29	1.221	1.105	1.315	-0.0352	-1.218	0.483

Percentiles for Log-Transformed Dataset

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Private Wells - PFAS (all detected)	84	0	0.77	1.291	1.56	2.661	3.801	4.115	5.441	6.362	6.836
Private Wells - PFAS (no outliers)	69	0	0.717	1.084	1.356	2.477	3.165	3.345	3.767	4.03	4.143

Appendix G - Statistical Analysis Summary for Private Wells

Goodness of Fit Testing		
	Private Wells - PFAS (all detected)	**Private Wells - PFAS (no outliers)**
Number of Valid Observations	84	69
Number of Distinct Observations	82	67
Minimum	1.8	1.8
Maximum	1358	66.5
Mean of Raw Data	89.66	16.91
Standard Deviation of Raw Data	220.2	16.95
Khat	0.409	1.065
Theta hat	219.1	15.87
Kstar	0.403	1.029
Theta star	222.7	16.44
Mean of Log Transformed Data	2.894	2.29
Standard Deviation of Log Transformed Data	1.686	1.105
Normal GOF Test Results		
Correlation Coefficient R	0.652	0.908
Approximate Shapiro Wilk Test Statistic	0.452	0.811
Shapiro Wilk Critical (0.05) Value		
Approximate Shapiro Wilk P Value	0.00E+00	5.28E-12
Lilliefors Test Statistic	0.374	0.186
Lilliefors Critical (0.05) Value	0.0968	0.107
GOF Result		
Data not Normal at (0.05) Significance Level	**TRUE**	**TRUE**
Gamma GOF Test Results		
Correlation Coefficient R	0.948	0.984
A-D Test Statistic	6.005	1.064
A-D Critical (0.05) Value	0.84	0.779
K-S Test Statistic	0.206	0.11
K-S Critical(0.05) Value	0.104	0.11
Data not Gamma Distributed at (0.05) Significance Level	**TRUE**	FALSE
Data appear Gamma Distributed at (0.05) Significance Level	FALSE	**TRUE**
Lognormal GOF Test Results		
Correlation Coefficient R	0.975	0.977
Approximate Shapiro Wilk Test Statistic	0.929	0.925
Approximate Shapiro Wilk P Value	1.30E-04	3.87E-04
Shapiro Wilk Critical (0.05) Value		
Lilliefors Test Statistic	0.0857	0.0857
Lilliefors Critical (0.05) Value	0.0968	0.107
Data appear Lognormal at (0.05) Significance Level	**TRUE**	**TRUE**

Appendix G - Statistical Analysis Summary for Private Wells

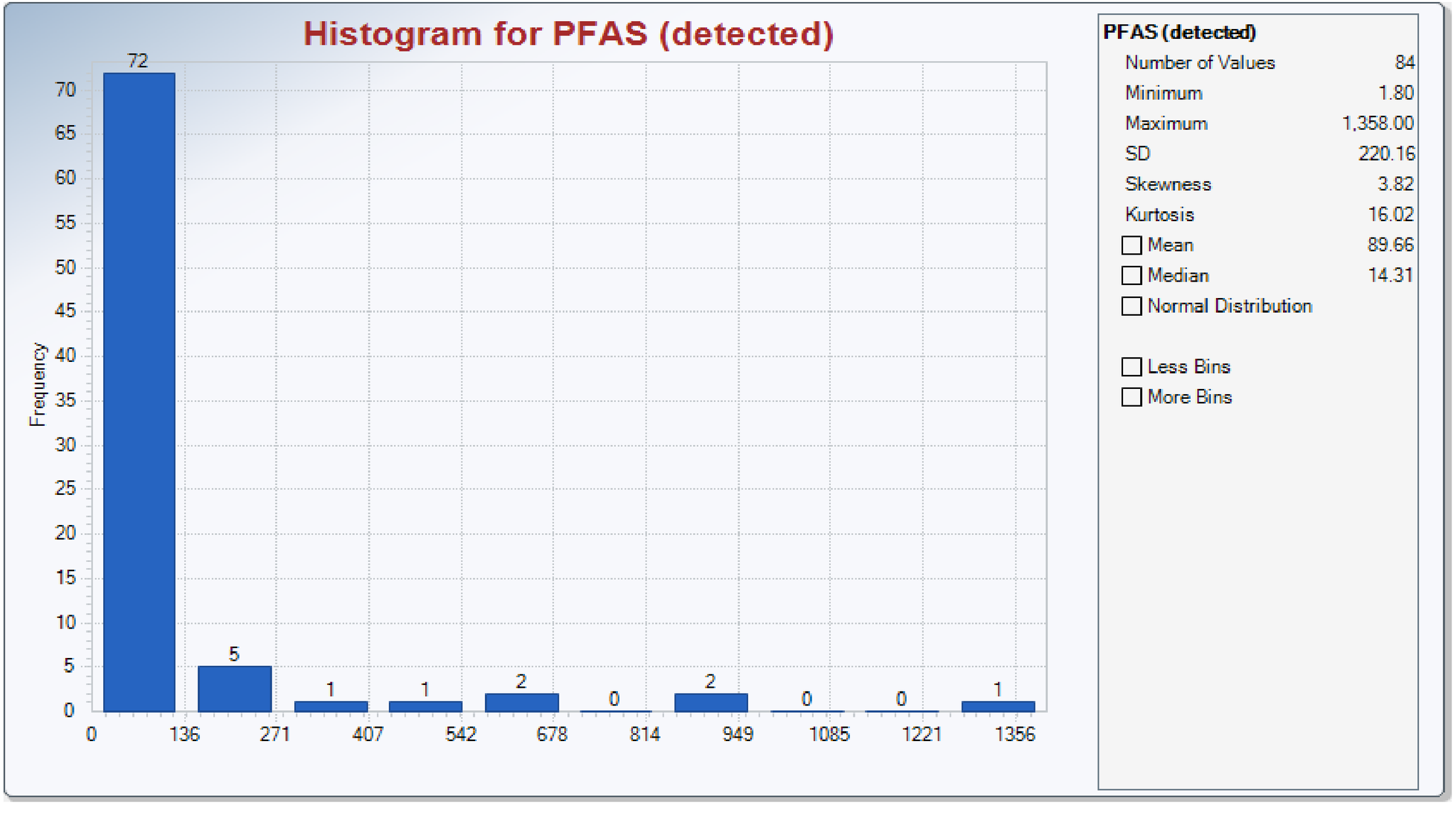
Outlier Testing:

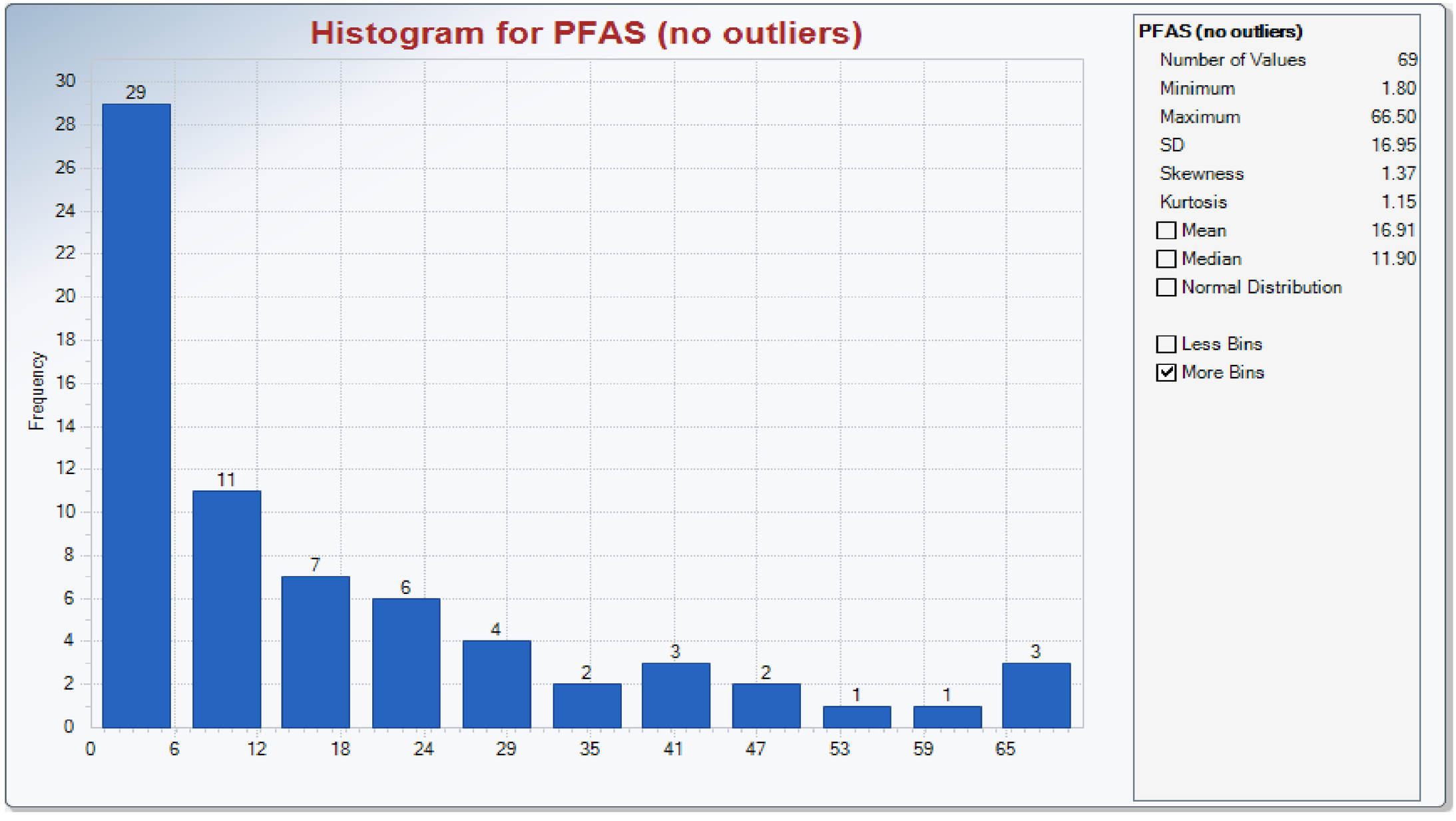
Outlier Test for Private Wells - PFAS (all detected)
A series of Outlier Tests were performed in ProUCL on the Private Well Data set
Outliers were identified at concentrations above 66.9 ppt
General Statistics and goodness of fit testing replicated with outliers removed from data set
Rosner's Outlier Test for PFAS (no outliers)

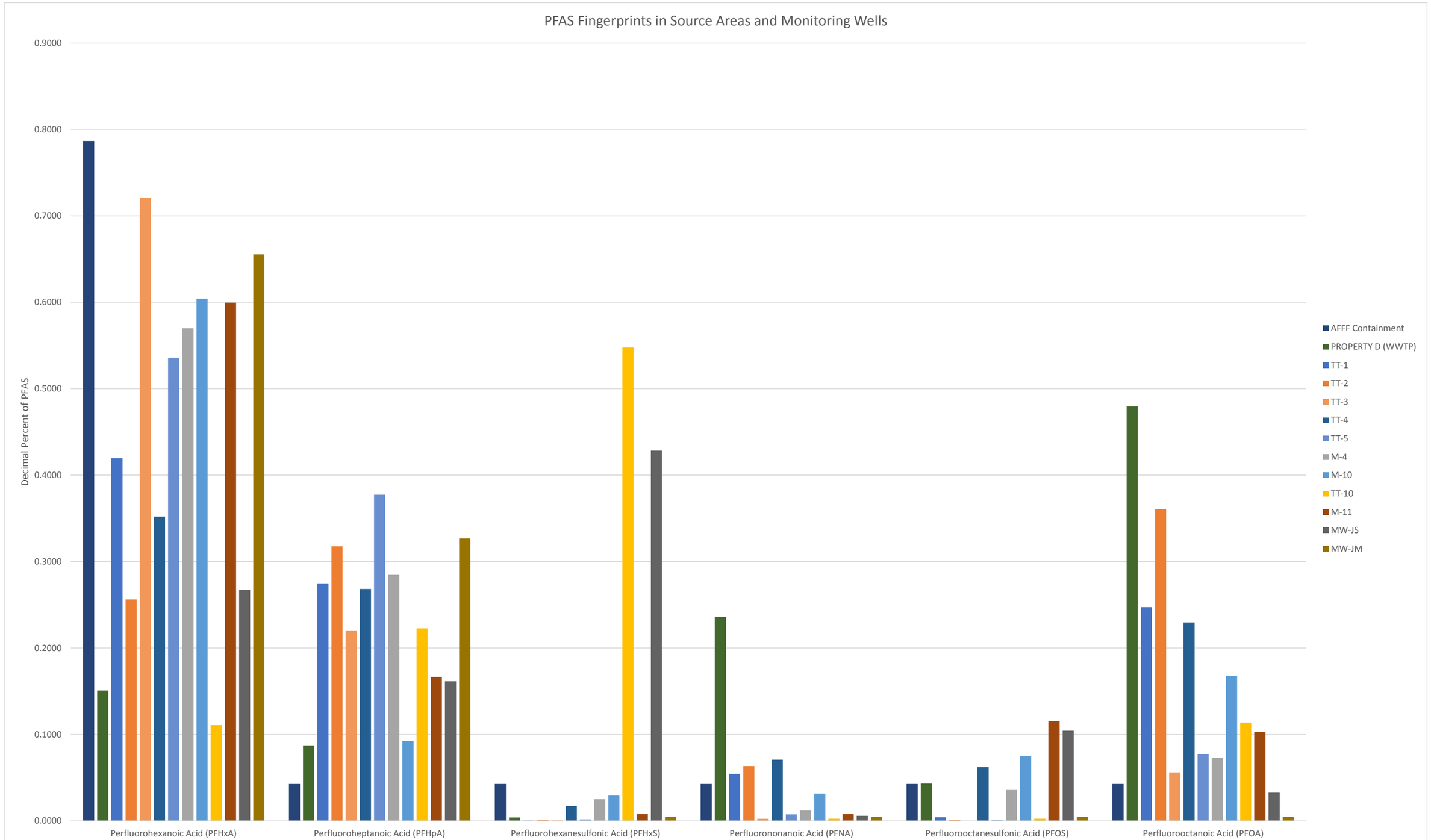
Mean	16.91
Standard Deviation	16.95
Number of data	69
Number of suspected outliers	1

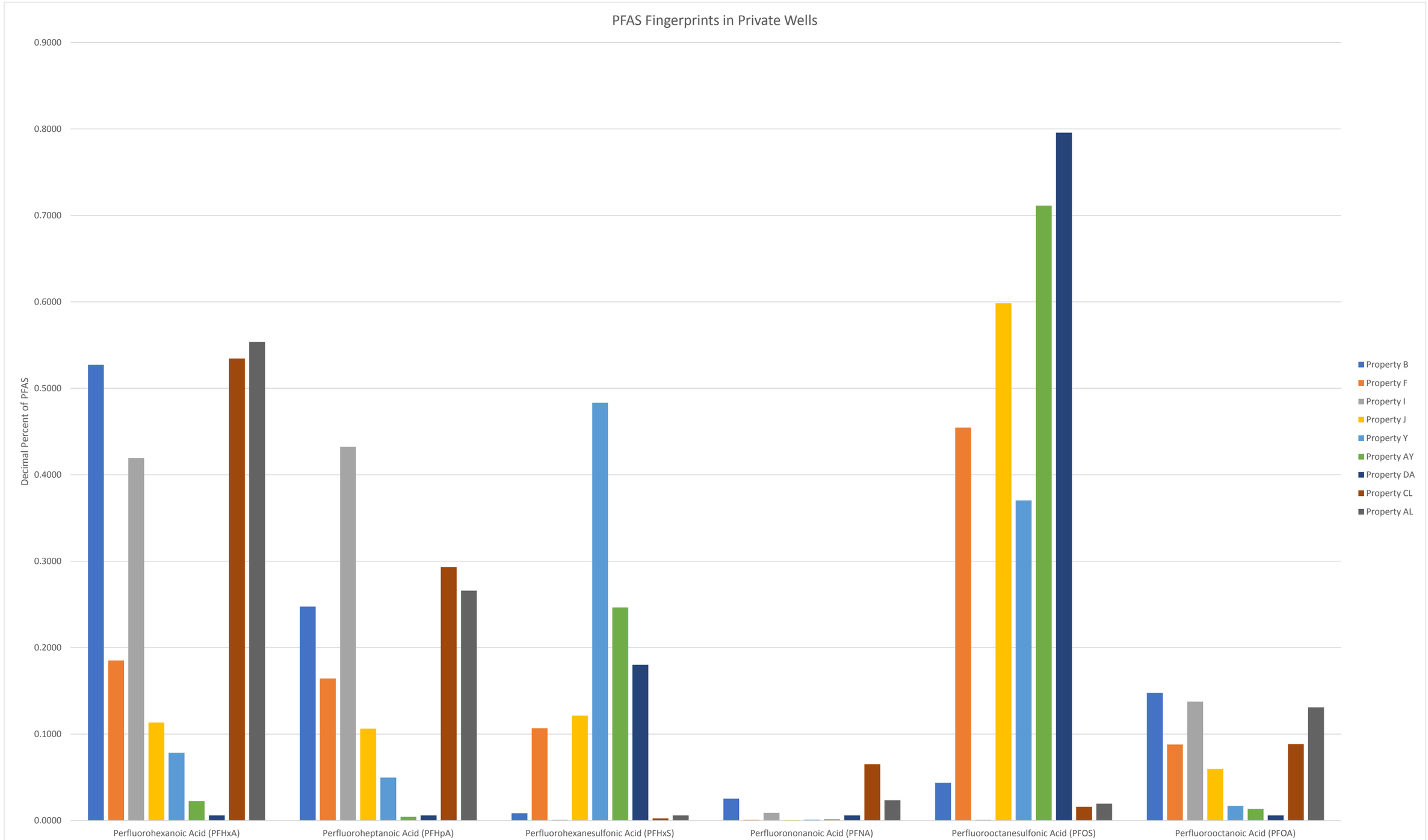
#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	16.91	16.83	66.5	1	2.947	3.254	3.614

For 5% Significance Level, there is no Potential Outlier
For 1% Significance Level, there is no Potential Outlier

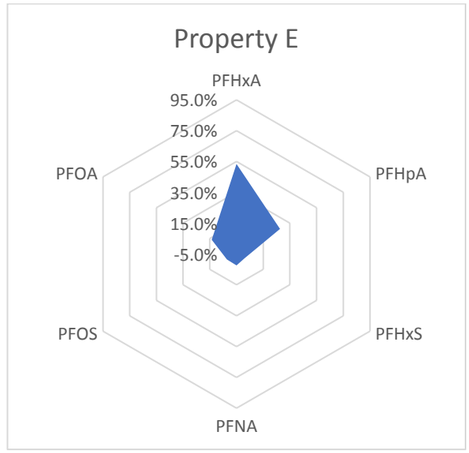

Histogram for PFAS (detected)
Frequency
72
5
1
1
2
0
2
0
0
1
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
0
136
271
407
542
678
814
949
1085
1221
1356
PFAS (detected)
Number of Values 84
Minimum 1.80
Maximum 1,358.00
SD 220.16
Skewness 3.82
Kurtosis 16.02
Mean 89.66
Median 14.31
Normal Distribution
Less Bins
More Bins

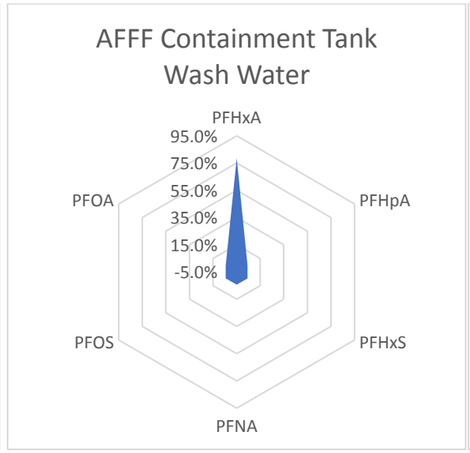

Histogram for PFAS (no outliers)
Frequency
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
29
11
7
6
4
2
3
2
1
1
3
0
6
12
18
24
29
35
41
47
53
59
65
PFAS (no outliers)
Number of Values 69
Minimum 1.80
Maximum 66.50
SD 16.95
Skewness 1.37
Kurtosis 1.15
Mean 16.91
Median 11.90
Normal Distribution
Less Bins
More Bins

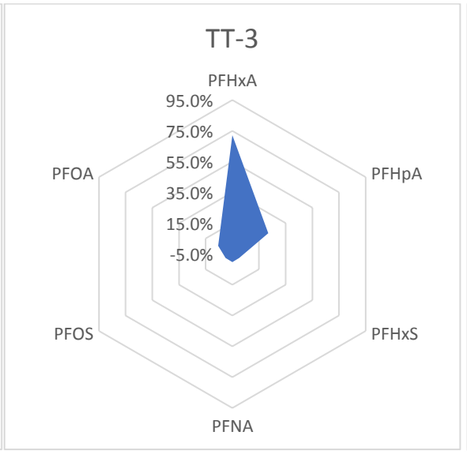

PFAS Fingerprints in Source Areas and Monitoring Wells
Decimal Percent of PFAS
0.9000
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
Perfluorohexanoic Acid (PFHxA)
Perfluoroheptanoic Acid (PFHpA)
Perfluorohexanesulfonic Acid (PFHxS)
Perfluorononanoic Acid (PFNA)
Perfluorooctanesulfonic Acid (PFOS)
Perfluorooctanoic Acid (PFOA)
AFFF Containment
PROPERTY D (WWTP)
TT-1
TT-2
TT-3
TT-4
TT-5
M-4
M-10
TT-10
M-11
MW-JS
MW-JM

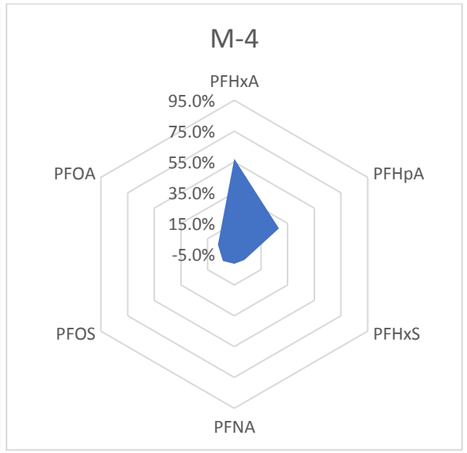

PFAS Fingerprints in Private Wells
Decimal Percent of PFAS
0.9000
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
Perfluorohexanoic Acid (PFHxA)
Perfluoroheptanoic Acid (PFHpA)
Perfluorohexanesulfonic Acid (PFHxS)
Perfluorononanoic Acid (PFNA)
Perfluorooctanesulfonic Acid (PFOS)
Perfluorooctanoic Acid (PFOA)
Property B
Property F
Property I
Property J
Property Y
Property AY
Property DA
Property CL
Property AL

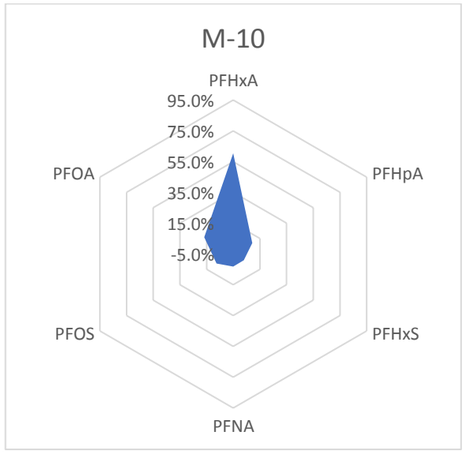
Appendix G – Radar Plots

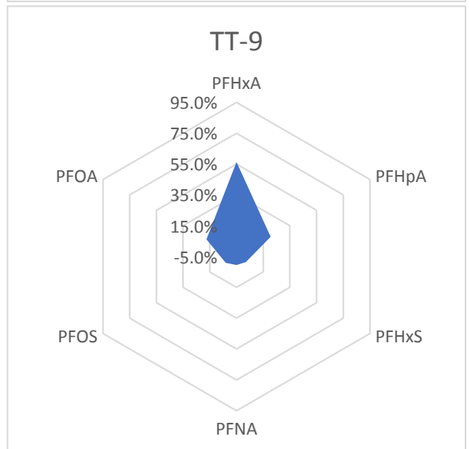


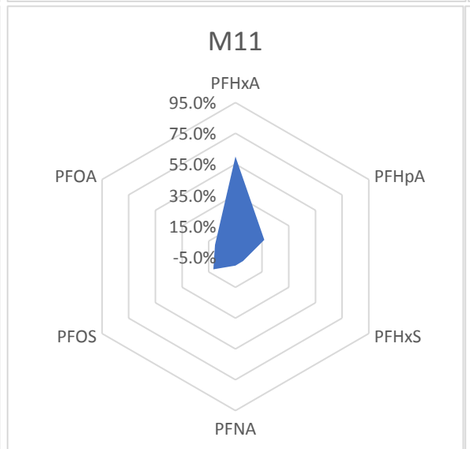


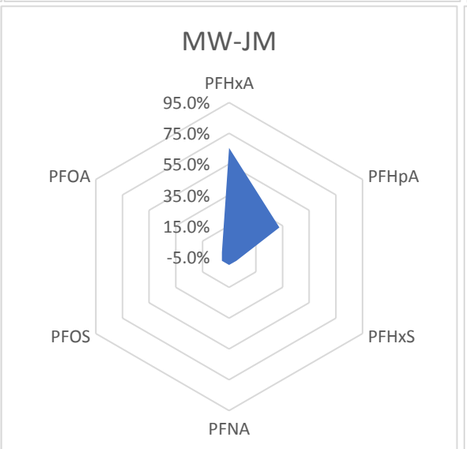


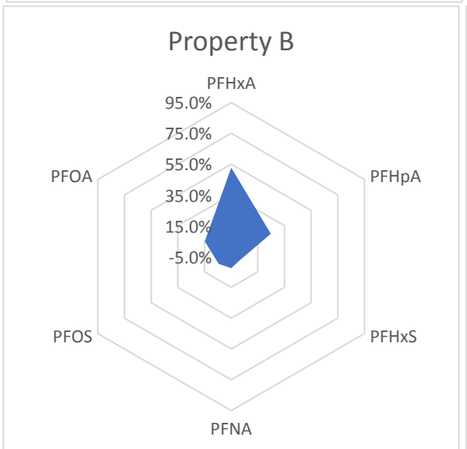


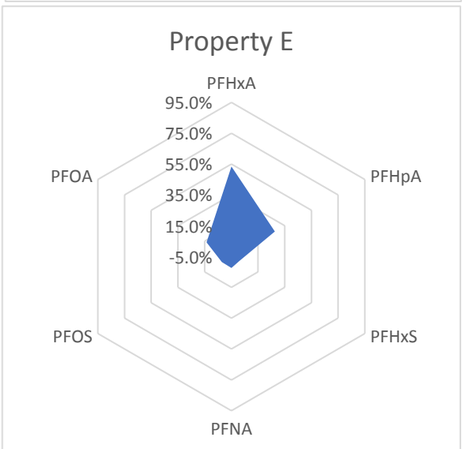


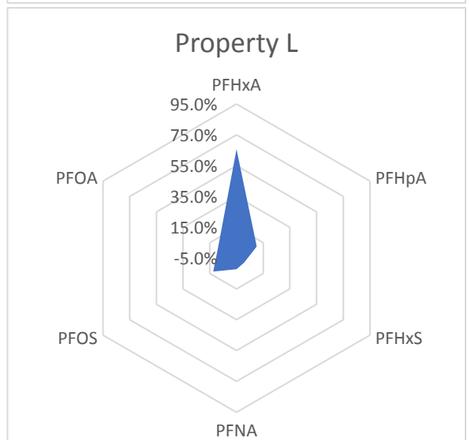


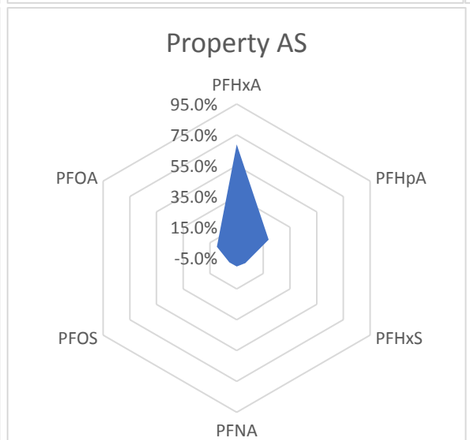


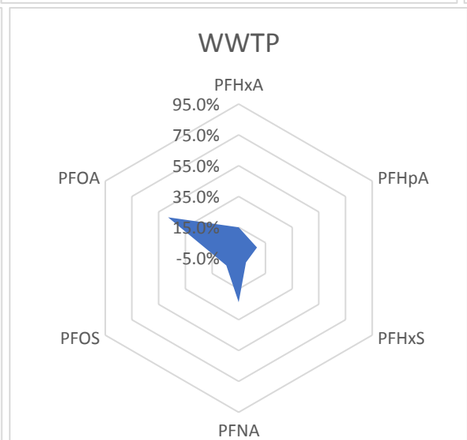




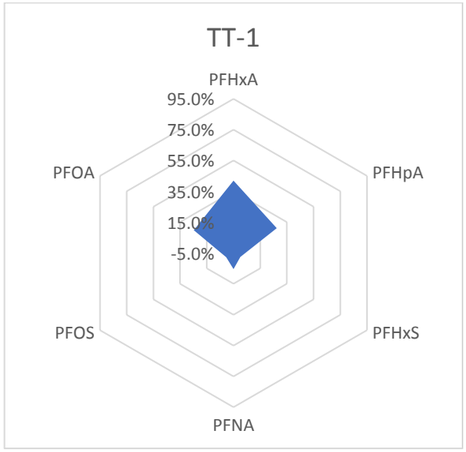


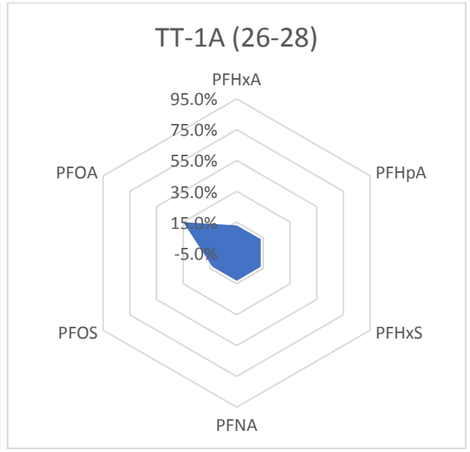


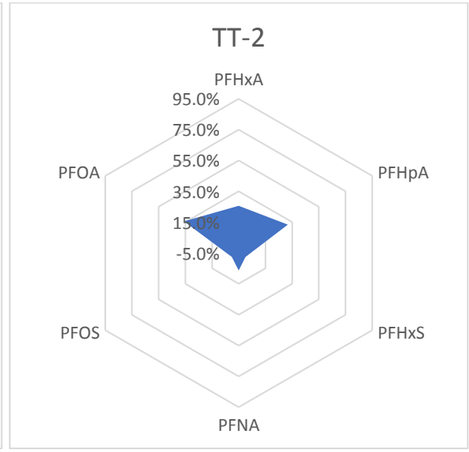


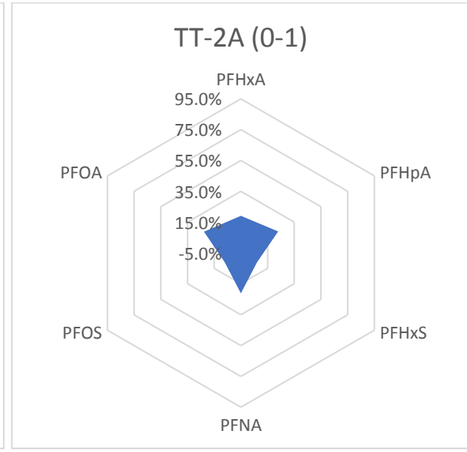


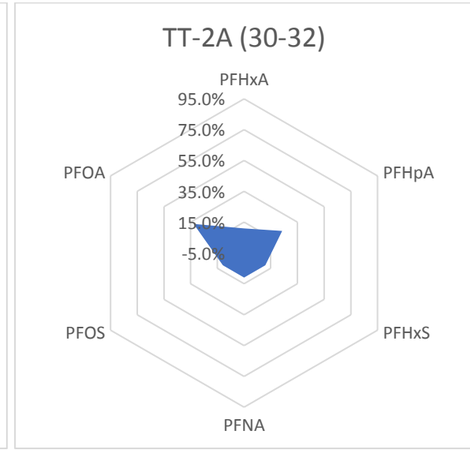
Appendix G – Radar Plots

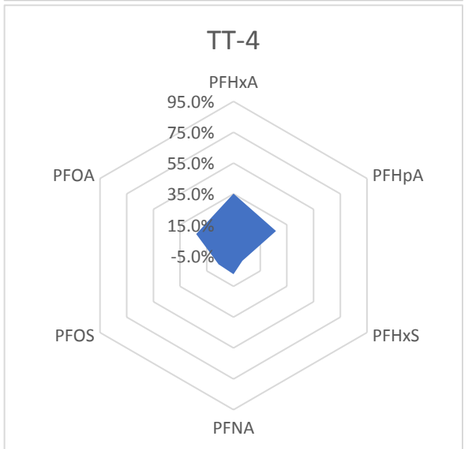


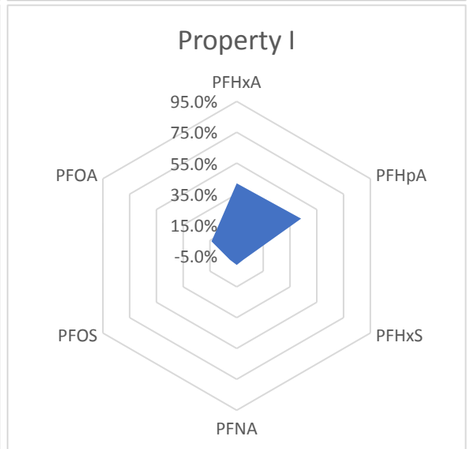


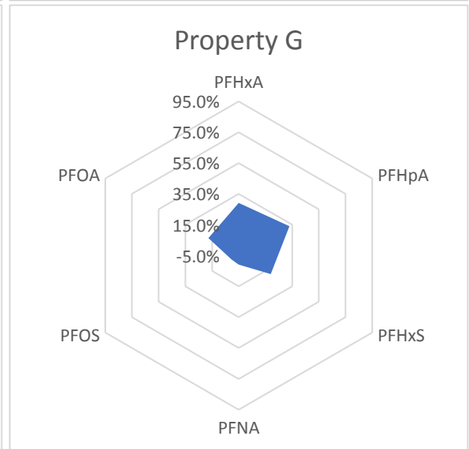


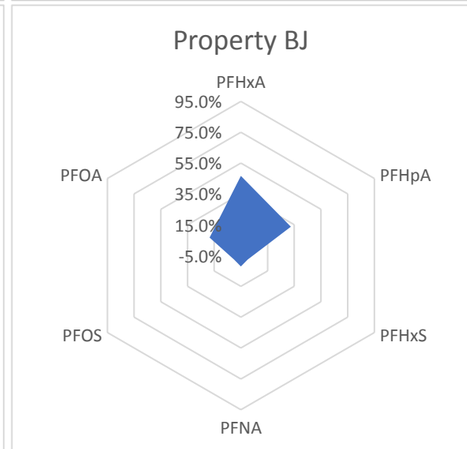


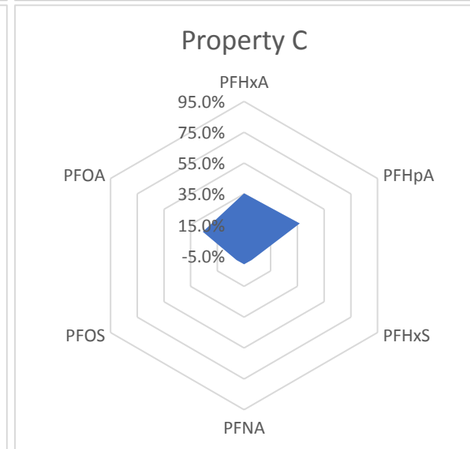


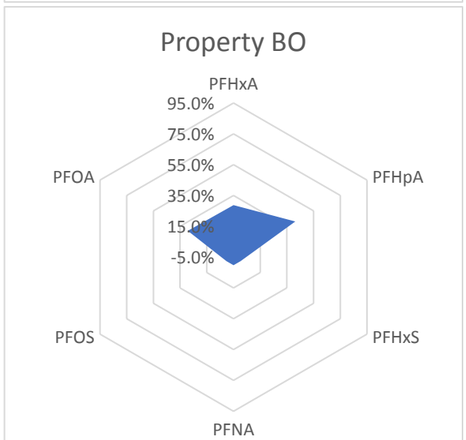


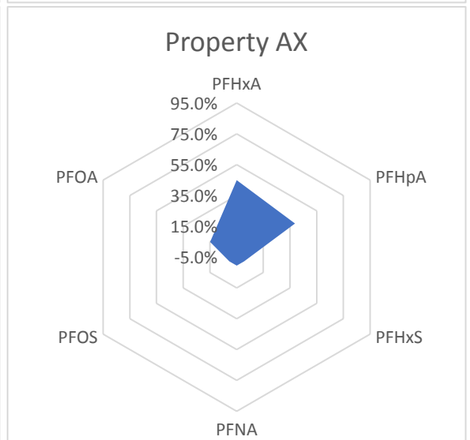




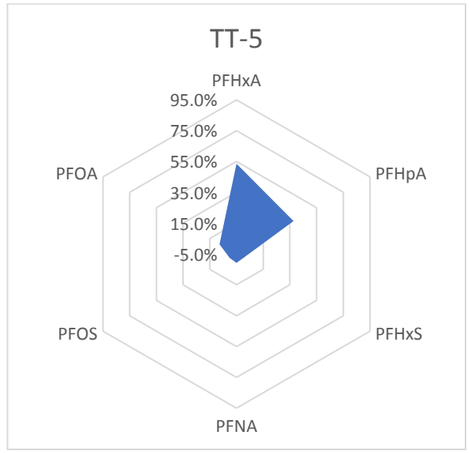


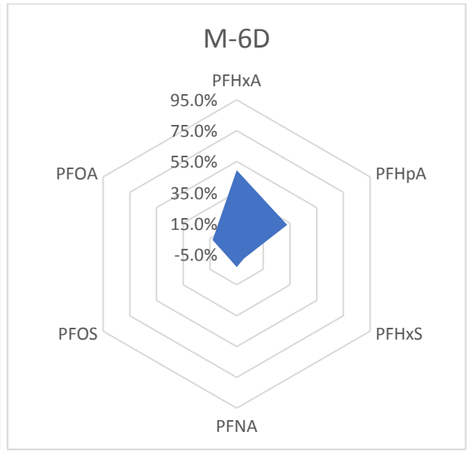


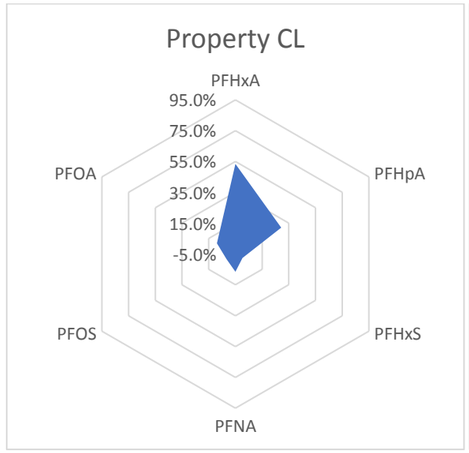


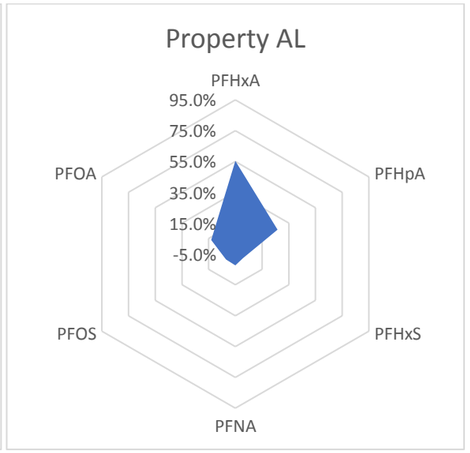


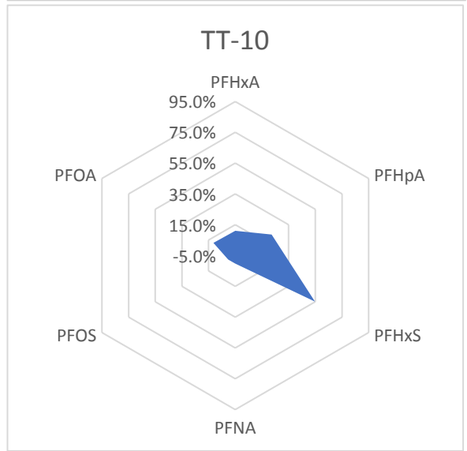
Appendix G – Radar Plots

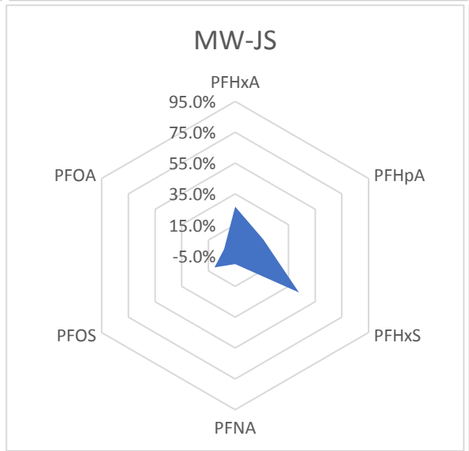


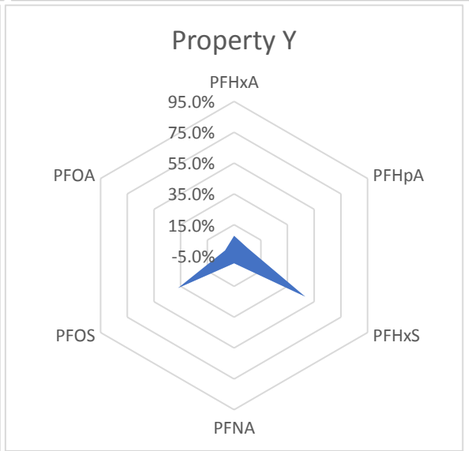


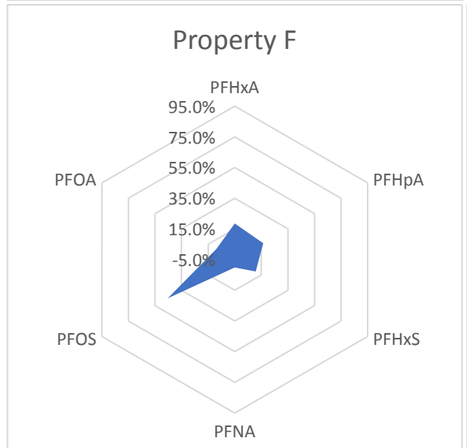


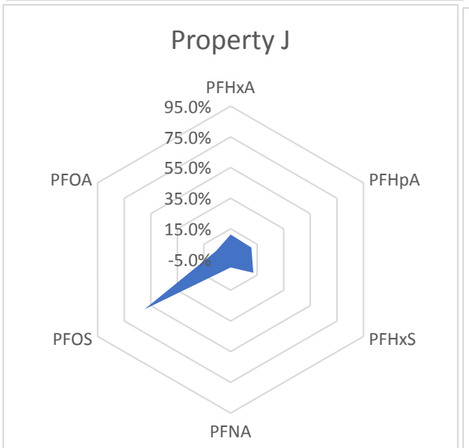


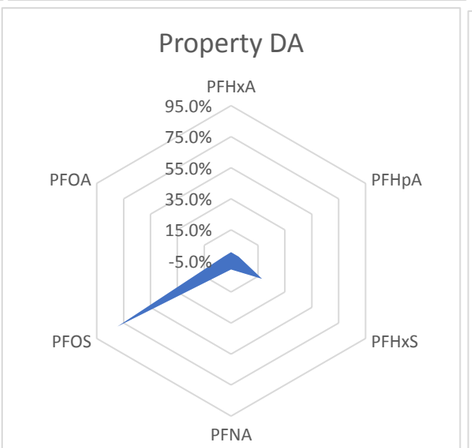


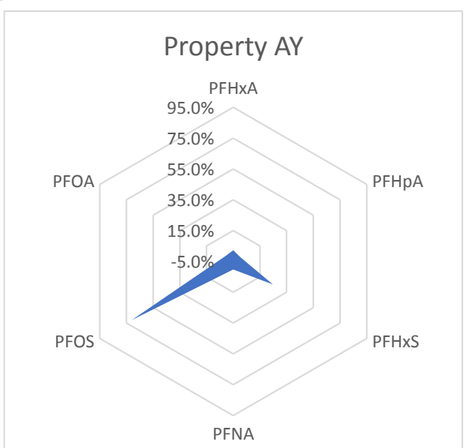












Appendix H

Copies of Public Notifications

TETRA TECH

November 20, 2019

Board of Selectmen
C/O Jennifer Rand, Town Administrator
West Tisbury Town Hall
1059 State Road, P.O. Box 278
West Tisbury, MA 02575

Re: Notice of Phase I Initial Site Investigation and Tier I Classification
Martha's Vineyard Airport
RTN 4-0027571

Dear Mrs. Rand:

On behalf of the Martha's Vineyard Airport Commission (MVAC), and in accordance with the Massachusetts Contingency Plan (MCP) under 310 CMR 40.1403(3)(e), Tetra Tech is providing notification that a Phase I Initial Site Investigation (ISI) was performed at the above-referenced Disposal Site. A copy of the summary of findings and statement of conclusions is attached to this letter.

As a result of the Phase I ISI, the Disposal Site has been classified as Tier I according to 310 CMR 40.0500. Pursuant to 310 CMR 40.0703(8)(a)(2), we are providing notification at least three days prior to the publication of the public notice of availability of a Tier I Classification. This public notice will be published in the Martha's Vineyard Times on Wednesday November 27, 2019. A copy of the public notice is attached.

The Tier Classification Submittal and the disposal site file can be viewed at MassDEP website using Release Tracking Number (RTN) 4-0027571 at https://eeaonline.eea.state.ma.us/portal#!/search/wastesite or at MassDEP Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347, 508-946-2700. Additional public involvement opportunities are available under 310 CMR 40.1403(9) and 310 CMR 40.1404.

Very truly yours,

Ronald E. Myrick, Jr., P.E., L.S.P.
Director

CC: West Tisbury, Board of Health
Edgartown, Board of Selectmen
Edgartown, Health Department

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Tetra Tech
Marlborough Technology Park, 100 Nickerson Road, Marlborough, MA 01752
Tel 508.786.2200 Fax 508.786.2201 tetratech.com

TETRA TECH

CONCLUSIONS AND PHASE I REPORT COMPLETION STATEMENT

Phase I – Initial Site Investigation activities have been completed at the Site. The results of soil and groundwater investigations have provided evidence of per- and polyfluoroalkyl substances (PFAS) impacts to primarily groundwater at the Site. The following summarizes the findings and conclusions of the Phase I Report:

- Apparent past releases of aqueous film-forming foam (AFFF) for fire-fighting purposes at MVY have resulted in the presence of PFAS substances in soil and groundwater at the Site. These releases have migrated in groundwater to the south and affected residential developments proximate to Vineyard Meadow Farms Road, Waldrons Bottom Road, and Coffins Field Road.

- The residences downgradient from MVY utilize private water supply wells as a source of potable water. Some of those private wells located in the area downgradient from MVY have been found to have detectable concentrations of PFAS compounds at concentrations above the current MassDEP ORSG and above the proposed MCP Method 1 GW-1 standard. IRA actions have been implemented to identify private wells that may be affected by PFAS compounds, mitigate exposure to PFAS via the drinking water pathway, and control/eliminate the critical exposure pathway, to the extent feasible.

This Phase I Report has been prepared to present the results of Preliminary Response Actions undertaken at the Site in accordance with 310 CMR 40.0400. This Phase I Report conforms with the applicable requirements of the MCP under 310 CMR 40.0480. The data generated during the Phase I investigations indicate that additional Comprehensive Response Actions are necessary at the Site, and a Tier Classification of the Site pursuant to the provisions of 310 CMR 40.0500 is necessary. A Phase I Report Completion Statement and MassDEP Transmittal Form BWSC-107 are submitted via eDEP with this report. The findings of this Phase I Report have been used in the Tier Classification of the Site as presented below.

TIER CLASSIFICATION OPINION

Using the data and information presented in the Phase I Report, Tetra Tech has completed a Tier Classification of the Site in accordance with 310 CMR 40.0500. It is our opinion that the data and information in the Phase I Report are adequate to evaluate the Site conditions and complete the Tier Classification. The Tier I Inclusionary Criteria listed under 310 CMR 40.0520(2) were reviewed in comparison to the conditions identified at the Site. Based on our review of these criteria, the Site is classified as a Tier I Site 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. The Tier Classification Transmittal Forms (BWSC-107, 107A and 107B) are submitted via eDEP with this report. Comprehensive Response Actions are necessary at the Site and will be conducted according to the deadlines and requirements specified for Tier I Disposal Sites under 310 CMR 40.0560.

Tetra Tech
Marlborough Technology Park, 100 Nickerson Road, Marlborough, MA 01752
Tel 508.786.2200 Fax 508.786.2201 tetratech.com

NOTICE OF TIER CLASSIFICATION

Martha's Vineyard Airport
71 Airport Road, West Tisbury, MA
RTN 4-0027571

A release of oil and/or hazardous materials has occurred at this location, which is a disposal site as defined by M.G.L. c. 21E, §2 and the Massachusetts Contingency Plan, 310 CMR 40.0000. To evaluate the release, a Phase I Initial Site Investigation was performed pursuant to 310 CMR 40.0480. The site has been classified as Tier I pursuant to 310 CMR 40.0500. On November 20, 2019, the Martha's Vineyard Airport Commission (MVAC) filed a Tier I Classification Submittal with the Department of Environmental Protection (MassDEP). To obtain more information on this disposal site, please contact Ronald E. Myrick, Jr., PE, LSP, Tetra Tech, 100 Nickerson Road, Marlborough, MA, ron.myrick@tetratech.com or 508-786-2363. The Tier Classification Submittal and the disposal site file can be viewed at MassDEP website using Release Tracking Number (RTN) 4-0027571 at https://eeaonline.eea.state.ma.us/portal#!/search/wastesite or at MassDEP Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347, 508-946-2700. Additional public involvement opportunities are available under 310 CMR 40.1403(9) and 310 CMR 40.1404.

TETRA TECH

November 20, 2019

Board of Health
C/O Omar Johnson, Agent
West Tisbury Town Hall
1059 State Road, P.O. Box 278
West Tisbury, MA 02575

Re: Notice of Phase I Initial Site Investigation and Tier I Classification
Martha's Vineyard Airport
RTN 4-0027571

Dear Mr. Johnson:

On behalf of the Martha's Vineyard Airport Commission (MVAC), and in accordance with the Massachusetts Contingency Plan (MCP) under 310 CMR 40.1403(3)(e), Tetra Tech is providing notification that a Phase I Initial Site Investigation (ISI) was performed at the above-referenced Disposal Site. A copy of the summary of findings and statement of conclusions is attached to this letter.

As a result of the Phase I ISI, the Disposal Site has been classified as Tier I according to 310 CMR 40.0500. Pursuant to 310 CMR 40.0703(8)(a)(2), we are providing notification at least three days prior to the publication of the public notice of availability of a Tier I Classification. This public notice will be published in the Martha's Vineyard Times on Wednesday November 27, 2019. A copy of the public notice is attached.

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Very truly yours,

Ronald E. Myrick, Jr., P.E., L.S.P.
Director

CC: West Tisbury, Board of Selectmen
Edgartown, Board of Selectmen
Edgartown, Health Department

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Tetra Tech
Marlborough Technology Park, 100 Nickerson Road, Marlborough, MA 01752
Tel 508.786.2200 Fax 508.786.2201 tetratech.com

TETRA TECH

CONCLUSIONS AND PHASE I REPORT COMPLETION STATEMENT

Phase I – Initial Site Investigation activities have been completed at the Site. The results of soil and groundwater investigations have provided evidence of per- and polyfluoroalkyl substances (PFAS) impacts to primarily groundwater at the Site. The following summarizes the findings and conclusions of the Phase I Report:

- Apparent past releases of aqueous film-forming foam (AFFF) for fire-fighting purposes at MVY have resulted in the presence of PFAS substances in soil and groundwater at the Site. These releases have migrated in groundwater to the south and affected residential developments proximate to Vineyard Meadow Farms Road, Waldrons Bottom Road, and Coffins Field Road.

- The residences downgradient from MVY utilize private water supply wells as a source of potable water. Some of those private wells located in the area downgradient from MVY have been found to have detectable concentrations of PFAS compounds at concentrations above the current MassDEP ORSG and above the proposed MCP Method 1 GW-1 standard. IRA actions have been implemented to identify private wells that may be affected by PFAS compounds, mitigate exposure to PFAS via the drinking water pathway, and control/eliminate the critical exposure pathway, to the extent feasible.

This Phase I Report has been prepared to present the results of Preliminary Response Actions undertaken at the Site in accordance with 310 CMR 40.0400. This Phase I Report conforms with the applicable requirements of the MCP under 310 CMR 40.0480. The data generated during the Phase I investigations indicate that additional Comprehensive Response Actions are necessary at the Site, and a Tier Classification of the Site pursuant to the provisions of 310 CMR 40.0500 is necessary. A Phase I Report Completion Statement and MassDEP Transmittal Form BWSC-107 are submitted via eDEP with this report. The findings of this Phase I Report have been used in the Tier Classification of the Site as presented below.

TIER CLASSIFICATION OPINION

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Tetra Tech
Marlborough Technology Park, 100 Nickerson Road, Marlborough, MA 01752
Tel 508.786.2200 Fax 508.786.2201 tetratech.com

NOTICE OF TIER CLASSIFICATION

Martha's Vineyard Airport
71 Airport Road, West Tisbury, MA
RTN 4-0027571

A release of oil and/or hazardous materials has occurred at this location, which is a disposal site as defined by M.G.L. c. 21E, §2 and the Massachusetts Contingency Plan, 310 CMR 40.0000. To evaluate the release, a Phase I Initial Site Investigation was performed pursuant to 310 CMR 40.0480. The site has been classified as Tier I pursuant to 310 CMR 40.0500. On November 20, 2019, the Martha's Vineyard Airport Commission (MVAC) filed a Tier I Classification Submittal with the Department of Environmental Protection (MassDEP). To obtain more information on this disposal site, please contact Ronald E. Myrick, Jr., PE, LSP, Tetra Tech, 100 Nickerson Road, Marlborough, MA, ron.myrick@tetratech.com or 508-786-2363. The Tier Classification Submittal and the disposal site file can be viewed at MassDEP website using Release Tracking Number (RTN) 4-0027571 at https://eeaonline.eea.state.ma.us/portal#!/search/wastesite or at MassDEP Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347, 508-946-2700. Additional public involvement opportunities are available under 310 CMR 40.1403(9) and 310 CMR 40.1404.

TETRA TECH

November 20, 2019

Board of Selectmen
Edgartown Town Hall, 3rd Floor, 70 Main Street
PO Box 5158
Edgartown, MA 02539

Re: Notice of Phase I Initial Site Investigation and Tier I Classification
Martha's Vineyard Airport
RTN 4-0027571

Dear Board of Selectmen:

On behalf of the Martha's Vineyard Airport Commission (MVAC), and in accordance with the Massachusetts Contingency Plan (MCP) under 310 CMR 40.1403(3)(e), Tetra Tech is providing notification that a Phase I Initial Site Investigation (ISI) was performed at the above-referenced Disposal Site. A copy of the summary of findings and statement of conclusions is attached to this letter.

As a result of the Phase I ISI, the Disposal Site has been classified as Tier I according to 310 CMR 40.0500. Pursuant to 310 CMR 40.0703(8)(a)(2), we are providing notification at least three days prior to the publication of the public notice of availability of a Tier I Classification. This public notice will be published in the Martha's Vineyard Times on Wednesday November 27, 2019. A copy of the public notice is attached.

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Very truly yours,

Ronald E. Myrick, Jr., P.E., L.S.P.
Director

CC: Edgartown, Health Department
West Tisbury, Board of Selectmen
West Tisbury, Board of Health

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Tetra Tech
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Tel 508.786.2200 Fax 508.786.2201 tetratech.com

TETRA TECH

CONCLUSIONS AND PHASE I REPORT COMPLETION STATEMENT

Phase I – Initial Site Investigation activities have been completed at the Site. The results of soil and groundwater investigations have provided evidence of per- and polyfluoroalkyl substances (PFAS) impacts to primarily groundwater at the Site. The following summarizes the findings and conclusions of the Phase I Report:

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TIER CLASSIFICATION OPINION

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Tetra Tech
Marlborough Technology Park, 100 Nickerson Road, Marlborough, MA 01752
Tel 508.786.2200 Fax 508.786.2201 tetratech.com

NOTICE OF TIER CLASSIFICATION

Martha's Vineyard Airport
71 Airport Road, West Tisbury, MA
RTN 4-0027571

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TETRA TECH

November 20, 2019

Health Department
C/O Matt Poole, Health Agent
Edgartown Town Hall, 2nd Floor
PO Box 1596
Edgartown, MA 02539

Re: Notice of Phase I Initial Site Investigation and Tier I Classification
Martha's Vineyard Airport
RTN 4-0027571

Dear Mr. Poole:

On behalf of the Martha's Vineyard Airport Commission (MVAC), and in accordance with the Massachusetts Contingency Plan (MCP) under 310 CMR 40.1403(3)(e), Tetra Tech is providing notification that a Phase I Initial Site Investigation (ISI) was performed at the above-referenced Disposal Site. A copy of the summary of findings and statement of conclusions is attached to this letter.

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Very truly yours,

Ronald E. Myrick, Jr., P.E., L.S.P.
Director

CC: Edgartown, Board of Selectmen
West Tisbury, Board of Selectmen
West Tisbury, Board of Health

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CONCLUSIONS AND PHASE I REPORT COMPLETION STATEMENT

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- Apparent past releases of aqueous film-forming foam (AFFF) for fire-fighting purposes at MVY have resulted in the presence of PFAS substances in soil and groundwater at the Site. These releases have migrated in groundwater to the south and affected residential developments proximate to Vineyard Meadow Farms Road, Waldrons Bottom Road, and Coffins Field Road.

- The residences downgradient from MVY utilize private water supply wells as a source of potable water. Some of those private wells located in the area downgradient from MVY have been found to have detectable concentrations of PFAS compounds at concentrations above the current MassDEP ORSG and above the proposed MCP Method 1 GW-1 standard. IRA actions have been implemented to identify private wells that may be affected by PFAS compounds, mitigate exposure to PFAS via the drinking water pathway, and control/eliminate the critical exposure pathway, to the extent feasible.

This Phase I Report has been prepared to present the results of Preliminary Response Actions undertaken at the Site in accordance with 310 CMR 40.0400. This Phase I Report conforms with the applicable requirements of the MCP under 310 CMR 40.0480. The data generated during the Phase I investigations indicate that additional Comprehensive Response Actions are necessary at the Site, and a Tier Classification of the Site pursuant to the provisions of 310 CMR 40.0500 is necessary. A Phase I Report Completion Statement and MassDEP Transmittal Form BWSC-107 are submitted via eDEP with this report. The findings of this Phase I Report have been used in the Tier Classification of the Site as presented below.

TIER CLASSIFICATION OPINION

Using the data and information presented in the Phase I Report, Tetra Tech has completed a Tier Classification of the Site in accordance with 310 CMR 40.0500. It is our opinion that the data and information in the Phase I Report are adequate to evaluate the Site conditions and complete the Tier Classification. The Tier I Inclusionary Criteria listed under 310 CMR 40.0520(2) were reviewed in comparison to the conditions identified at the Site. Based on our review of these criteria, the Site is classified as a Tier I Site 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. The Tier Classification Transmittal Forms (BWSC-107, 107A and 107B) are submitted via eDEP with this report. Comprehensive Response Actions are necessary at the Site and will be conducted according to the deadlines and requirements specified for Tier I Disposal Sites under 310 CMR 40.0560.

Tetra Tech
Marlborough Technology Park, 100 Nickerson Road, Marlborough, MA 01752
Tel 508.786.2200 Fax 508.786.2201 tetratech.com

NOTICE OF TIER CLASSIFICATION

Martha's Vineyard Airport
71 Airport Road, West Tisbury, MA
RTN 4-0027571

A release of oil and/or hazardous materials has occurred at this location, which is a disposal site as defined by M.G.L. c. 21E, §2 and the Massachusetts Contingency Plan, 310 CMR 40.0000. To evaluate the release, a Phase I Initial Site Investigation was performed pursuant to 310 CMR 40.0480. The site has been classified as Tier I pursuant to 310 CMR 40.0500. On November 20, 2019, the Martha's Vineyard Airport Commission (MVAC) filed a Tier I Classification Submittal with the Department of Environmental Protection (MassDEP). To obtain more information on this disposal site, please contact Ronald E. Myrick, Jr., PE, LSP, Tetra Tech, 100 Nickerson Road, Marlborough, MA, ron.myrick@tetratech.com or 508-786-2363. The Tier Classification Submittal and the disposal site file can be viewed at MassDEP website using Release Tracking Number (RTN) 4-0027571 at https://eeaonline.eea.state.ma.us/portal#!/search/wastesite or at MassDEP Southeast Regional Office, 20 Riverside Drive, Lakeville, MA 02347, 508-946-2700. Additional public involvement opportunities are available under 310 CMR 40.1403(9) and 310 CMR 40.1404.

TETRA TECH

Tetra Tech

Marlborough Technology Park
100 Nickerson Road
Marlborough, MA 01752

tetratech.com