NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

22 December 2020

MEMORANDUM FOR Heather Bishop, New York State Department of Environmental Conservation (NYSDEC)

FROM: Nicole Wireman, NGB/A4VR

SUBJECT: Submission of Draft Final Expanded Site Inspection Report for Per- and Polyfluoroalkyl Substances (PFAS) at Gabreski Air National Guard Base, New York

1. The Air National Guard (ANG) is pleased to submit the subject document for NYSDEC review. Per previous discussion, NYSDEC will be submitting the document to the New York State Department of Health. ANG is also submitting this report to Suffolk County Water Authority (SCWA) and Suffolk County Department of Health Services (SCDHS) for review. Note that this Draft Final document is considered deliberative and for internal use only. Therefore, please do not release it to any other person or organization without discussion with me first.

2. The ANG requests submission of comments on the subject document by 29 January 2021. We appreciate any efforts you can make to provide comments within this timeframe, as our goal is to prepare responses to comments and receive NYSDEC acceptance of the final report by 31 March 2021.

3. If you have any questions, please reach out to me at nicole.wireman.1@us.af.mil.

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DRAFT FINAL EXPANDED SITE INSPECTION REPORT FOR PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) AT THE GABRESKI AIR NATIONAL GUARD BASE WESTHAMPTON, LONG ISLAND, NEW YORK

Contract Number: GS00Q140A DU127
Delivery Order: W9133L-18-F-0052

Prepared for:
Restoration Branch, Environmental Division,
Logistics and Installations Directorate,
Air National Guard Readiness Center (NGB/A4VR)
Joint Base Andrews, Maryland

DECEMBER 2020

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Acronyms and Abbreviations

%	Percent
106RW	106th Rescue Wing
AFFF	Aqueous Film Forming Foam
ANG	Air National Guard
ANGB	Air National Guard Base
AOC	Area of Concern
bgs	below ground surface
BOMARC	Boeing Michigan Aeronautical Research Center
C6	Six Carbon Based…
C8	Eight Carbon Based…
CERCLA	Comprehensive Environmental Response, Compensation, and Recovery Act
cm/sec	centimeters per second
DoD	Department of Defense
EIS	extracted internal standard
ESI	Expanded Site Inspection
ft	foot/feet
ft/day	feet/day
FTA	Fire Training Area
FTS	fluorotelemer sulfonate
GAC	granular activated carbon
GIS	Geographic Information System
gpd/ft	gallons per day per foot
gpd/ft^2	gallons per day per square foot
gpm	gallons per minute
GSA	General Services Administration
HA	Health Advisory
IDW	Investigation Derived Waste
IRP	Installation Restoration Program
LIRR	Long Island Railroad
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MSL	mean sea level
MW	monitoring well
ng/g	nanograms per gram
ng/L	nanograms per liter
NGB/A4VR	Restoration Branch, Environmental Division, Logistics and Installations Directorate, Air National Guard Readiness Center
NY	New York

NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OASIS	One Acquisition Solution for Integrated Services
PA	Preliminary Assessment
PFAS	Per- and Polyfluoroalkyl Substances
PFBA	Pentafluorobenzoic Acid
PFBS	Perfluorobutanesulfonic Acid
PFHpS	Perfluorohexanesulfonic Acid
PFHxA	Perfluorohexanoic Acid
PFHxS	Perfluorohexane Sulfonic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PFPeA	Perfluoropentanoic Acid
PID	Photoionization Detector
PRL	Potential Release Location
PVC	polyvinyl chloride
PWS	public water supply
QAPP	Quality Assurance Project Plan
QC	quality control
SCDHS	Suffolk County Department of Health Services
SCWA	Suffolk County Water Authority
SGPA	Special Groundwater Protection Area
SI	Site Inspection
UCMR	Unregulated Contaminant Monitoring Rule
UFP	Unified Federal Policy
ug/L	micrograms per liter
US	United States
USAF	United States Air Force
USEPA	United States Environmental Protection Agency

SECTION 1.0 Introduction

This Expanded Site Inspection (ESI) was performed to investigate and further confirm presence or absence of per- and polyfluoroalkyl substances (PFAS) in soil, groundwater, surface water, sediment, and stormwater at the Gabreski Air National Guard Base (ANGB) located in Westhampton, Long Island, New York (NY) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. Parsons was contracted by the Restoration Branch, Environmental Division, Logistics and Installations Directorate, Air National Guard Readiness Center (NGB/A4VR) under the United States (US) General Services Administration (GSA) One Acquisition Solution for Integrated Services (OASIS) Pool 1 contract number GS00Q14OA DU127, delivery order W9133L-18-F-0052, to perform the ESI at Gabreski ANGB. The New York State Department of Environmental Conservation (NYSDEC) is the regulatory authority for the ESI activities at the Gabreski ANGB.

The ESI was conducted between January and August 2020 in accordance with the procedures specified in the ESI Work Plan (Parsons, 2019), except for the deviations noted in Section 2.7. This ESI Report describes the objectives and activities completed for the investigation and presents the results and findings collected during the course of the investigation. The location of Gabreski ANGB is shown on **Figure 1**.

1.1 BACKGROUND

Gabreski ANGB is located in Westhampton, Long Island, New York at the Francis S. Gabreski Airport in Suffolk County and is home to the 106th Rescue Wing (106RW) of the NY Air National Guard. Gabreski ANGB is located just north of the Village of Westhampton Beach and approximately 90 miles east of New York City. The Base is in the southwestern portion of the airport property and leases approximately 88.5-acres of the 1,486-acre airport property from Suffolk County. The Base supports the operation and maintenance of the 106RW and houses aircraft, support personnel, vehicles, and equipment. Gabreski Air National Guard (ANG) fire and rescue units support both military and civilian aircraft incidents.

In 1941, the site was developed by the US Army as the Westhampton Beach Army Airfield where it was used by World War II fighter pilots and instructors for gunnery training. At this time, Suffolk County owned the property but leased it to the US Government. From 1948 to 1951, use of a majority of the property was discontinued by the US Army and a private oil company leased the airfield. In 1951, the United States Air Force (USAF) reactivated the airfield as the Suffolk County Air Force Base. In 1969, the USAF deactivated and closed the base and Suffolk County began operating the airfield as Suffolk County Airport, which was renamed Francis S. Gabreski Airport in 1991. Military operations were reintroduced in June 1970 when the 102nd Air Refueling Squadron of the 106th Air Refueling Group, New York ANG, relocated to Suffolk County. In 1972, the unit's mission changed from air refueling to fighter-interceptor, with the new mission of controlling the skies along the northeast coastline. In 1975, the designation and mission changed again to "Aerospace Rescue and Recovery", later shortened to "Air Rescue" and then simply "Rescue". The names of the 102nd Rescue Squadron and 106RW were assigned in 1995; however, the location of the ANG facilities has not changed since 1971. The mission

of the 106RW is to provide peacetime and combat search and rescue services on a world-wide basis using HC-130P Hercules aircraft and HH-60G Pave Hawk helicopters.

PFAS are compounds used in the formulation of eight carbon based (C8) Aqueous Film Forming Foam (AFFF), which was used by the USAF and the ANG to extinguish petroleum fires starting in approximately 1970. Long-chain PFAS used in C8 AFFF, specifically perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), are recognized as persistent, bioaccumulative, and toxic compounds (ITRC, 2020). As of January 2019, C8 AFFF at Gabreski ANGB has been removed from service, disposed of, and replaced with short-chain six carbon based (C6) AFFF, approved under the United States Environmental Protection Agency (USEPA)'s Stewardship Program. C6 PFAS are currently considered lower in toxicity, have significantly reduced bioaccumulation potential compared to C8 PFAS, and are PFOS-free with non-detect (trace only) amounts of PFOA (ITRC, 2020 and USEPA, 2019a).

The NGB/A4VR performed a Preliminary Assessment (PA) (BB&E, 2016) and Site Inspection (SI) (AECOM, 2019) at the Gabreski ANGB in accordance with the CERCLA process for PFAS in soil, surface water, sediment, and groundwater. The USEPA identifies the SI as the on-site investigation to determine what hazardous substances are present and if they are being released to the environment. The previous SI activities were confined to 16 on-Base areas of concern (AOCs) on or near the Base (**Figure 1**). The SI recommended the focus of future investigations be placed on off-Base migration since the highest PFAS concentrations in groundwater were detected at AOC 1, located upgradient from the Suffolk County Water Authority (SCWA) Meetinghouse Road drinking water wells, where PFAS impacts have been detected. AOC 3, and AOC 19 and AOC 20 (the latter two located off-Base) were identified as requiring additional investigation during this ESI as they were not investigated during the SI. Therefore, the ESI was conducted to augment the data collected in the SI and determine if there are off-Base upgradient sources and/or downgradient impacts to off-Base receptors.

1.2 SCOPE AND OBJECTIVES

The AOCs investigated as part of the ESI include:

- AOC 1 – Former Fire Training Area (FTA)-01
- AOC 3 – Former Building 230
- AOC 19 – Mobile Fire Training Area
- AOC 20 – Current Fire Training Area

The ESI also included investigation of areas within the Base upgradient of the AOCs and outside the Base boundary both downgradient and upgradient of the AOCs. For example, the Canine Kennel is an off-Base area that was sampled during the ESI, but it is not associated with ANG mission-related activities (i.e., the Canine Kennel is a non-ANG source area).

ESI activities were conducted with the following objectives:

1. Confirm and further assess the presence of PFAS in media, including:

a. Groundwater at and downgradient of impacted AOCs, downgradient of Gabreski ANGB, and in background/control wells upgradient of Gabreski ANGB;

b. Sediment and surface water within off-Base surface water features located downgradient from the Base boundary;

c. Storm water on-Base and downstream of AOCs, downgradient off-Base from the Base boundary, and from upgradient background/control locations of the AOCs.

2. Confirm the presence or absence of PFAS in soil and groundwater at AOCs not previously investigated during the SI including:
   a. AOCs 3, 19, and 20
3. Perform a receptor survey which includes incorporating the results from Suffolk County Department of Health Services (SCDHS) receptor survey.
4. Assess potential migration pathways of PFAS-contaminated groundwater from Gabreski ANGB to off-Base receptors including the Gus Guerrera wellfield, Meetinghouse Road wellfield, and downgradient private wells.

The ESI sampling summary for each AOC is presented in **Table 1**. Sample location overview maps including sample locations for both the SI (AECOM, 2019) and ESI are presented as **Figures 2**, **3**, **4** and **5**. The scope of the ESI included the following tasks:

- Installation of 12 groundwater screening profiles for PFAS prior to installation of permanent wells at those locations (**Figure 2**);
- Advancement of 5 soil borings to 5 feet (ft) below ground surface (bgs) at AOCs 3 and 19 and collection of two soil samples from each boring (**Figures 3A** and **3B**);
- Installation of 14 permanent monitoring wells to collect groundwater samples at the 4 AOCs (1, 3, 19, and 20) and locations upgradient and downgradient of the AOCs (**Figure 4**);
- Redevelopment and groundwater sampling at 8 existing monitoring wells;
- Collection of 14 sediment and 13 surface water samples downgradient of the base (**Figure 5**);
- Collection of 8 stormwater samples on-Base and downgradient of the AOCs (**Figure 6**);
- Slug testing of select newly installed monitoring wells; and
- Performance of a receptor survey.

1.3 ENVIRONMENTAL SETTING

The following sections summarize the environmental setting of Gabreski ANGB, specifically the surface water drainage, geology, and hydrogeology.

1.3.1 SURFACE WATER DRAINAGE

Topography of the Gabreski Airport area slopes gently to the south and southeast and overall surface water drainage is generally consistent with those directions. In paved areas of Gabreski ANGB, surface water flows via overland flow to drainage basins throughout the Base. In vegetated areas, most of the precipitation percolates into the soil; however, there is the potential for some of the flow to be conveyed via overland flow as surface water runoff. The majority of surface water drainage on the Base

property discharges into the Aspatuck River system south of Gabreski ANGB (**Figure 5**). Runoff from the western portion of the Francis S. Gabreski Airport drains into Aspatuck River while runoff from the eastern portion drains into Quantuck Creek. Both creeks flow into Quantuck Bay, and ultimately into the Atlantic Ocean (AECOM, 2019).

1.3.2 GEOLOGY

Gabreski ANGB is located on a glacial outwash plain that slopes south from the Ronkonkoma Moraine to bays and barrier islands, which form the southern boundary of Long Island. Five unconsolidated formations are found below, or near, the Gabreski ANGB. These units dip generally to the south with the thicker units very widespread and underlying most of Suffolk County. A description of each unit is provided below from shallowest to deepest.

Glacial Deposits – Upper Pleistocene sediments are composed of glacial outwash deposits, lacustrine and marine deposits, and terminal/ground- and ablation-moraine till deposits. The sediments below the Gabreski ANGB and airport are mostly outwash deposits consisting of stratified fine to coarse sand and gravel of light- to dark-brown, tan, and yellowish-brown color. Till deposits known as the Ronkonkoma Terminal Moraine are hills and located approximately 2 miles north of the airport. Lacustrine and marine deposits are usually thin and discontinuous and are found locally throughout Long Island. The Pleistocene epoch is divided into four major glacial stages: the Nebraskan, Kansan, Illinoian, and Wisconsin. The youngest epoch, the Wisconsin, produced Long Island Sound and most of the topographic features of Suffolk County as it is known today. During the earlier part of the Wisconsin stage, the ice sheet moved to about the middle of the county and stopped, leaving before it the central ridge or terminal moraine. This ice sheet was called the Ronkonkoma sheet, and the moraine, which runs the entire length of the county from the Nassau County line to Montauk Point, was given the same name. The glacier retreated from this point back to the north of Long Island and then re-advanced. The last advance terminated along the north shore, and again, a hilly terminal moraine was formed. This last advance of the ice was called the Harbor Hill sheet, and the moraine was called the Harbor Hill Moraine.

After the two ice sheets reached their southern limits in the county, they began to melt. As they melted, meltwater streams flowed from the glaciers and carried a large volume of sand and gravel farther south. The sand and gravel were deposited in a more or less flat plain, developing what is known as an outwash plain. Two outwash plains are in the county, with the one between the Ronkonkoma moraine and the Atlantic Ocean being the one present below the airport (Dames & Moore, 1986).

The upper Pleistocene glacial deposits which underlie the airport are mainly outwash deposits consisting of 100 - 120 ft of stratified fine to coarse sand and gravel. Sieve analyses of two subsurface samples indicated the following average percentages: 90.5 percent (%) sand, 7.9% gravel, and 1.6% silt/clay. Surface soil was found to contain higher percentages of silt (ABB-ES, 1997).

Gardiners Clay – An approximately 40-ft-thick clay bed lies below the glacial deposits and above the Magothy formation at the airport. This clay is present at about 100 ft below mean sea level (MSL) at the airport and extends southward where it overlaps the Monmouth Greensand. The Gardiners clay pinches out just north of the airport, but equivalent clay bodies can be found locally at various locations

on Long Island. This unit is made up of green and gray clay, silt, and clayey and silty sand including some interbedded clayey and silty gravel. This layer as a whole has low hydraulic conductivity and tends to confine water in the underlying aquifer (Dames & Moore, 1986).

Monmouth Greensand – Unconformably overlying the Magothy formation is the Monmouth Greensand. This unit is not present beneath the airport or to the north, but is present 3,000 ft to the south. This unit extends southward and forms a wedge-like layer that thickens towards the south. It is approximately 50 ft thick beneath the barrier beach. The Monmouth Greensand consists of interbedded marine deposits of dark-gray, olive-green, dark-greenish-gray, and greenish-black glauconitic and lignitic clay, silt, and clayey and silty sand. This layer has a low hydraulic conductivity and tends to confine the water of the underlying aquifer (Dames & Moore, 1986)

Magothy Formation – Below the Monmouth Greensand lies the Magothy Formation, which is a thick body of continental deposits (930 ft) composed of lenses of sand, sandy clay, clay, and some gravel and is unconformably overlain by upper Pleistocene deposits. The present upper surface of the Magothy on Long Island is an erosional surface, and the original thickness is not known. The Magothy formation underlies most of Long Island except for some western areas where it was removed by erosion. It may extend beneath Long Island Sound but is probably truncated by erosion and overlain by Pleistocene deposits. To the south, the Magothy formation, like the Raritan, extends out under the sea, where it also probably changes from a terrestrial to a marine deposit. The Magothy is composed of beds of poorly sorted quartzose sand mixed with and interbedded with silt and clay, and locally it contains pebbles or small lenses of gravel. Sandy clay and clayey sand make up most of the fine beds, but there are also several thick beds of clay some as much as 50 ft thick. The basal 100 to 150 ft of the Magothy contains a greater proportion of coarse-grained material. This consists partly of coarse sand and gravel that contains pebbles as much as 2 or 3 inches in diameter. Voids are largely filled with silt and soft clay. The coarse-grained beds are separated by beds of sandy clay.

Raritan Formation – The Raritan formation rests directly on highly to slightly weathered bedrock. The formation is probably entirely continental and was laid down as a coastal-plain deposit by streams flowing off the mainland. On Long Island, the formation has two fairly distinct members: 1) the Raritan Clay Member and 2) Lloyd Sand Member.

The *Raritan Clay Member* which overlies the Lloyd sand, makes up the upper portion of the Raritan Formation. The top of the clay member is approximately 1000 ft below MSL at the Airport. Its thickness is about 200 ft and composed of a solid silty clay with that is gray, red or white in color with few lenses of sand and gravel and abundant lignite and pyrite. It is not clearly bedded, as the textures and colors grade into one another. Zones containing well-marked, narrow bands of light-colored silty clay alternate with darker colored clay. The *Lloyd Sand Member* overlies the bedrock and provides a reliable source of drinking water. The Lloyd Sand Member is approximately 400 feet thick and consists of white and gray fine-to-coarse sand containing silt and clay in the interstices. It also includes beds of clay or sandy clay and coarser textured beds that contain gravel. The unit consists chiefly of sand and coarse gravel, which contains some pebbles at least 2 inches in diameter. The voids between the pebbles are for the most part filled with sand and some clay. The sandy portion of the unit has a moderate hydraulic conductivity while the clayey beds has a low hydraulic conductivity (Garber, M.S., 1986).

Bedrock – The bedrock that underlies the unconsolidated deposits include hard, dense schist, gneiss, and granite similar in character to that which underlies much of the mainland in nearby parts of New York and Connecticut. The bedrock has no primary porosity but does exhibit some secondary porosity due to joints and fractures, and it generally has a low hydraulic conductivity (Dames & Moore, 1986). Elevation of the bedrock is approximately 1,600 ft below MSL. These rocks are either metamorphosed Precambrian or early Paleozoic Age sediments.

1.3.3 HYDROGEOLOGY

The Gabreski ANGB property lies within a Special Groundwater Protection Area (SGPA) of Suffolk County. An SGPA is watershed recharge area important for the maintenance of large volumes of high-quality groundwater, with the overarching goal of the SGPA to protect the water supply. The SGPAs are designated as Critical Environmental Areas that have unique natural settings. Groundwater beneath the Base is found within three different aquifers (Upper Glacial, Magothy, and Lloyd) which are designated as Sole Source Aquifers since 1978. A description of each aquifer and aquitard overlying Gabreski from shallowest to deepest is provided below.

Upper Glacial Aquifer – The Upper Glacial aquifer correlates to the saturated interval of the glacial outwash deposits of the Wisconsin glaciation. This water-bearing unit is an unconfined aquifer present directly below the Gabreski ANGB and airport. The clean, coarse sand and gravel is very porous and highly permeable. There is virtually no surface runoff since rainfall infiltrates where it falls due to the high porosity of the soils. Much of the drinking water in central Suffolk County is obtained from the Upper Glacial aquifer. There are no effective barriers to the movement of water anywhere in the unit, but there may be substantial variation in permeability over short distances.

Some of these minor variations in water-bearing characteristics might become significant in connection with possible movement of a contaminant. As the moraine and outwash deposits were developed by water flowing generally from north to south, individual lenses of sand and gravel may be elongated in this direction. Thus, there may be threads of material with relatively higher permeable material along which water might move a little more rapidly under proper hydraulic conditions. Hydraulic conductivity of the outwash deposits was estimated to be about 2000 gallons per day per square foot (gpd/ft^2) (9.4 x 10^{-2} centimeters per second [cm/sec]) (ABB-ES, 1997), and transmissivity is approximately 200 gallons per day per foot (gpd/ft) (2.9 x 10-1 cm^2/s) (Dames & Moore, 1986).

Groundwater flow in the aquifer is generally south southeast toward the headwaters of Quantuck Creek. Depth to groundwater averages 35 to 40 ft bgs. Historical slug tests performed on installation monitoring wells and piezometers (screened in the upper glacial aquifer) produced hydraulic conductivities ranging from 1.6 x 10^{-2} to 5.2 x 10^{-2} cm/sec (Dames & Moore, 1986).

Gardiners Clay (aquitard) – This clay is poorly permeable and constitutes a confining layer for the underlying aquifer. Occasionally, some sand layers within the Gardiner may yield small quantities of water. The effectiveness of the Gardiners clay as a barrier to groundwater movement is an important factor in determining whether contamination reaching the groundwater in the glacial sands would be carried down to the lower aquifer. The clayey and silty sand zones in the clay would offer relatively little restriction to the movement of the water, which could then pass downward wherever the hydraulic

gradient is favorable. Water can pass through the Gardiners clay, although at a slow rate, in small amounts and probably at most places only by circuitous routes. Below the airport, the beds of clay and sand within the Gardiners Clay are an effective barrier to the movement of groundwater into lower aquifers. The combination of low permeability with the generally upward movement of water within the Magothy aquifer would tend to keep near surface contamination from migrating into the lower aquifer (Dames & Moore, 1986).

Magothy Aquifer – Although part of the Magothy consists of dense clay and layers of coarse sand and gravel, by far the greater part of the Magothy formation is made up of sandy clay and clayey sand. The formation as a whole, because of its thickness, can transmit and store large amounts of groundwater. Wells that are constructed and developed carefully generally yield large quantities of water from all but the most clayey parts of the formation. Hydraulic conductivity of the Magothy below the airport was estimated to be 380 gpd/ft^2, and transmissivity was at least 300 gpd/ft with a saturated thickness of approximately 930 ft. Below the airport, the top of the Magothy aquifer is about 150 ft below MSL. This confined, artesian nature of the Magothy would cause an upward flow of water through the overlying Gardiners clay (Dames & Moore, 1986).

Raritan Clay (aquitard) – The Raritan Clay member of the Raritan formation is considered an aquitard separating the underlying Lloyd Aquifer from the overlying Magothy Aquifer. Thickness below the airport is approximately 200 ft. The hydraulic conductivity of a clay similar to the Raritan was determined to be 0.2 gpd/ft^2 (9.4 x 10^{-6} cm/sec), which is several orders or magnitude less than either the Lloyd or Magothy aquifers indicating that mixing of waters is quite small (Dames & Moore, 1986).

Lloyd Aquifer – Overlying the bedrock is the Lloyd Aquifer which correlates to the Lloyd Sand Member of the Raritan Formation. The Lloyd aquifer is considered one of the most important aquifers on Long Island largely because it yields adequate supplies of good water in areas, where supplies from overlying formations are inadequate or are contaminated by or readily subject to contamination by sea water. The Lloyd can supply water under these circumstances because it is overlain by the relatively impermeable and virtually continuous blanket of the clay member. The hydraulic conductivity of the Lloyd around the airport was estimated to be 300 gallons per day per square foot (gpd/ft^2) and transmissivity was estimated as 75 gpd/ft (Dames & Moore, 1986).

Groundwater is the only water supply source in Suffolk County and the high transmissivities of selected aquifers makes them good sources of drinking water in the area. Most of the groundwater pumped from wells in the Gabreski airport area is obtained from the Upper Glacial Aquifer, with less amounts obtained from the Magothy and Lloyd aquifers (PEER, 2004).

There are no groundwater supply wells on the Gabreski ANGB, however, there are public water supply wells and residences with private water supply wells within a 2-mile radius of the Gabreski ANGB. There are two Suffolk County Water Authority public water supply well fields, the Meetinghouse Well Field and Gus Guerrera Well field, downgradient of the Gabreski ANGB. The Meetinghouse Well Field contains five water supply wells (#12A, #14, #17, #19, #22) screened in the Upper Glacial aquifer and is located approximately 1,600 feet from the southeastern boundary of the Gabreski airport. All five of these wells have had historical detections of PFAS. The Gus Guerrera Well Field contains three supply wells and is located approximately 1,300 feet southwest of the Gabreski ANGB, north of the

Montauk Branch of the Long Island Railroad tracks. Two of the three wells have historical detections of PFAS. Public water supply wells and residences with private water supply wells are discussed further in Section 3.4.

1.4 SCREENING LEVELS

Screening criteria for assessing data were established in Section 2.3 of the PFAS SI report (AECOM, 2019) and remained unchanged for the approved ESI Work Plan. However, the Department of Defense (Department of Defense, 2019) and USEPA (USEPA, 2019b) have recommended new screening levels in addition to the USEPA lifetime Health Advisory (HA) for PFOA and/or PFOS in drinking water of 70 nanograms per liter (ng/L) [parts per trillion]. Screening levels are based on regional screening levels calculated using the USEPA's online calculator (USEPA, 2020) using a residential scenario and a hazard quotient of 0.1 because multiple PFAS are encountered at the site. In this ESI report, Department of Defense (DoD) guidance will be followed and the screening levels will be used to determine if further investigation is warranted or if the site can proceed to site closeout[1]. The applicable screening criteria are summarized below:

- Soil and Sediment:
  - Screening Levels
    - PFOA = 130 nanograms per gram (ng/g);
    - PFOS = 130 ng/g; and,
    - Perfluorobutanesulfonic Acid (PFBS) = 130,000 ng/g
- Groundwater, Surface Water, and Stormwater:
  - Screening Levels
    - PFOA = 40 ng/L
    - PFOS = 40 ng/L
    - PFBS = 40,000 ng/L

[1] At the time of writing of the ESI report, New York State promulgated a maximum contaminant level for PFOA (10 ng/L) and PFOS (10 ng/L) (NYS, 2020), however, based on the CERCLA process, which is federal cleanup law, the DoD will not evaluate state standards until the RI/FS.

SECTION 2.0 Field Investigation Activities

The following subsections summarize ESI field activities. Field activities were conducted between January and August 2020 and in accordance with the procedures specified in the ESI Work Plan (Parsons, 2019), except as noted in Section 2.7. Daily Field Summary reports are provided in **Appendix A**.

2.1 PREPARATORY ACTIVITIES

Prior to commencement of ESI activities, drilling locations were pre-marked and details of the proposed locations were provided to Dig Safely New York, the one call utility notification center. In addition, on-Base and Off-Base utilities were located by a third-party private utility locator, Blood Hound, LLC. No significant changes were made to the proposed locations as a result of utility clearance.

Parsons obtained the following permits to conduct work within the vicinity of the Francis S. Gabreski Airport, within the City of Westhampton Beach right of way, and on adjacent properties:

- Federal Aviation Administration Form 7460-1, Notice of Proposed Construction or Alteration for temporary drilling rigs was submitted on 22 May 2019. A total of 13 Aeronautical Study Numbers were assigned to the project for this submittal: 2019-AEA-946-NRA through 2019-AEA-958-NRA. A determination letter approving the proposed work at locations within the vicinity of the ANGB, the Runway and Taxiway Free Areas of the Francis S. Gabreski Airport was issued on 06 December 2019.
- Federal Aviation Administration Form 7460-1, Notice of Proposed Construction or Alteration for temporary drilling rigs was submitted on 05 December 2019. A total of four Aeronautical Study Numbers were assigned to the project for this additional submittal[2]. A determination letter approving the proposed work at locations within the vicinity of the Runway and Taxiway Free Areas of the Francis S. Gabreski Regional Airport was issued on 03 March 2020 and 13 April 2020.
- Federal Aviation Administration Form 7460-1, Notice of Proposed Construction or Alteration for temporary drilling rigs was submitted on 03 January 2020. A total of two Aeronautical Study Numbers 2020-AEA-10-NRA and 2020-AEA-11-NRA were assigned to the project for this additional submittal. A determination letter approving the proposed work at locations within the vicinity of the Runway and Taxiway Free Areas of the Francis S. Gabreski Regional Airport was issued 13 April 2020.
- Right-of-Entry agreements were obtained from the County of Suffolk, Village of Quogue, Town of Southampton, Suffolk County Water Authority, and Southampton Township Waterfowl Association to allow access to their property for the ESI activities.

[2] 2019-AEA-2741-NRA, 2019-AEA-2742-NRA, 2019-AEA-2743-NRA, 2019-AEA-2744-NRA

2.2 FIELD SAMPLING

ESI field sampling activities included soil, groundwater, surface water, sediment, and stormwater sampling and are summarized below.

2.2.1 GROUNDWATER SCREENING PROFILES

During the ESI, 12 vertical profile borings were completed for the purpose of groundwater collection down and upgradient of AOC 1 and other locations on-Base and off-Base (**Figure 2**). The vertical profile borings were advanced by Cascade Drilling using direct-push drilling methods. Vertical profile samples were collected in 10-foot intervals from the water table to 100 feet bgs using a 2-foot retractable screen. The groundwater screening profiles were used to select the screen interval for the permanent wells (see Section 2.2.3). Graphs of the screening results with the screen interval selected are provided in **Appendix B**.

2.2.2 SOIL SAMPLING

During the ESI, soil borings were completed for the purpose of soil sample collection at AOCs 3 and 19 (**Figures 3A** and **3B**). The soil borings were advanced by Cascade Drilling using direct-push drilling methods to a depth of 5 ft bgs. Soil borings were logged for soil lithology. Boring logs are provided in **Appendix C**.

- At AOC 3, two soil borings were advanced, and two grab soil samples were collected from each boring at depths of 0-1 ft bgs and 4-5 ft bgs (**Figure 3A**).
- At AOC 19, three soil borings were advanced, and two grab soil samples were collected from each boring at depths of 0-1 ft bgs and 4-5 ft bgs. One soil boring (GB-19-SB02) was converted into a shallow monitoring well (**Figure 3B**).

All soil samples were screened by a photoionization detector (PID) as a health and safety precaution. PID calibration logs are provided in **Appendix D**. Following collection of soil samples, boreholes were abandoned by backfilling the boreholes with bentonite and capping with surrounding soil.

2.2.3 MONITORING WELL INSTALLATION, WELL DEVELOPMENT, GROUNDWATER SAMPLING, AND SLUG TESTING

During the ESI, 14 monitoring wells were installed. The monitoring well at AOC 3 and the monitoring well at AOC 19 were installed so that the screened interval straddled the shallow water table. At the remaining monitoring wells, the screened interval was set at the depth of the highest PFAS concentration detected during groundwater vertical profiling (see Section 2.2.1 and **Appendix B**). The locations of the monitoring wells are shown on **Figure 4** and well construction details are presented on **Table 3**. Monitoring well borings were advanced by Cascade Drilling using direct-push (Geoprobe® 7822) drilling methods. Well depths range from 38 to 97 ft bgs. Soil cores were collected continuously to verify soil lithology, then inspected, logged, and field screened using a PID. Boring logs are provided in **Appendix C** and PID calibration logs are provided in **Appendix D**. Each monitoring well was constructed using two-inch diameter, schedule 40 polyvinyl chloride (PVC) riser with a 10-ft long, 0.010-inch slotted screen. One monitoring well, GB-OB-MW05 was constructed using one-inch

diameter, schedule 40 PVC riser with a 10-foot long, 0.010-inch slotted screen; one-inch diameter was used because there was difficulty advancing the 2-inch diameter direct push tooling at depth due to the soil density. The monitoring wells were surveyed by Young & Young Engineering, a New York-licensed land surveyor. The monitoring well survey report is included as **Appendix E**.

Each monitoring well was developed using a submersible pump to surge and purge the screened interval and remove fine particles that had accumulated. Well development logs are provided in **Appendix F**. Water quality meter calibration logs are provided in **Appendix D**.

Groundwater samples were collected from 22 wells via low-flow sampling methods using stainless-steel monsoon pumps and peristaltic pumps with disposable PFAS-free tubing. The samples were collected at 14 newly installed wells and 8 existing monitoring wells. Water levels and total well depth were measured to the nearest 0.01 inch during two synoptic measurement events. Groundwater elevations are summarized in **Table 4** and groundwater contour maps were constructed using the water level measurements made on 26 June 2020 (**Figure 7**). Two rounds of groundwater samples were collected between June and July 2020 from the monitoring wells: an initial round (1st round) and a confirmatory round (2nd round). The confirmatory groundwater sampling round was conducted following completion of the initial groundwater sampling round. The confirmatory round was conducted using sampling procedures that were identical to those used in the initial round. Groundwater sampling logs are provided in **Appendix G**.

Following groundwater sampling, in-situ hydraulic conductivity tests (i.e., slug tests) were performed at 13 of the newly installed monitoring wells; well GB-OB-MW05 was not tested as it is a 1-inch diameter well. Each slug test was conducted in accordance with the American Society for Testing and Materials D4044/D4044M-15 and results were recorded by a pressure transducer and data logger. Data interpretation was based on the methods of Bouwer and Rice (Bouwer and Rice, 1976). Slug test analysis reports are provided as **Appendix H**.

2.2.4 SURFACE WATER, SEDIMENT, AND STORMWATER SAMPLING

During the ESI, 14 sediment and 13 surface water samples were collected (**Figure 5**). One surface water location, GB-OBAR-SW01 was not collected due to dry conditions. Detailed descriptions of the sampling locations are included with the results in Section 3. Surface water and sediment samples were collected following a minimum of 48 hours of clear weather with no significant storm events to ensure that these sample results represent ambient flow conditions. All sediment samples were co-located with a surface water sample and were collected after the surface water sample. Surface water and sediment sampling logs are provided in Appendices I and J, respectively.

During the ESI, eight stormwater samples were collected (**Figure 6**). Stormwater was not collected at three proposed locations (GB-08-ST01, GB-08-ST04 and GB-14-ST01) as there was not enough water for sampling. Stormwater samples were collected during a storm event on 28 August 2020 such that these samples represent increased flow conditions. Stormwater sampling logs are provided in **Appendix K**.

2.3 DECONTAMINATION

Non-disposable sampling equipment was decontaminated between uses with Alconox® cleaning solution and rinsed with laboratory-provided PFAS-free water. All rinsate was collected in sealed containers for disposal. For groundwater sampling, the flow-through cell and any non-dedicated equipment (i.e., water-level probe, multi-parameter instrument probe) that contacted groundwater was decontaminated between uses. Larger equipment such as drill rigs were cleaned with potable water using a high-pressure washer. A source blank sample from an on-base fire hydrant was analyzed for PFAS and results were used during the data validation process. Equipment blank samples were collected and analyzed for PFAS as prescribed in the Work Plan.

2.4 INVESTIGATION-DERIVED WASTE MANAGEMENT

Liquid Investigation Derived Waste (IDW) was managed in two different ways depending on the liquid source. Decontamination fluids and development water were collected and contained in 275-gallon totes on the Site. Purge water was discharged to the ground surface adjacent to the well in locations on the Gabreski ANGB and in areas on the Francis S. Gabreski Airport property consistent with Section 4.11 of the approved ESI Work Plan (Parsons, 2019). IDW soil generated from borings and monitoring well installation was stored in properly labeled 55-gallon drums.

Following receipt of laboratory analytical results, three 55-gallon drums of soil, and four 275-gallon plastic totes of wastewater were removed from the Gabreski ANGB on 15 October 2020. The IDW was transported by Freehold Cartage Inc. to Veolia North America's Flanders New Jersey 10-day storage facility and then transported for final disposal via incineration at Veolia's Port Arthur, Texas Treatment Complex, a facility licensed to accept the waste. Copies of the waste manifest and certificate of disposal are presented in **Appendix L**.

2.5 LABORATORY ANALYSES

Samples were submitted to Eurofins Lancaster Laboratories Environmental in Lancaster, Pennsylvania. The samples were analyzed for a total of 24 PFAS target analytes via USEPA method 537 modified. The 24 target analytes were chosen based on the PFAS compounds included in the USEPA draft target analyte list (USEPA, 2018). Laboratory analytical reports are provided as **Appendix M**.

2.6 DATA VALIDATION AND USABILITY

Data validation was performed as defined in the Unified Federal Policy Quality Assurance Project Plan (UFP-QAPP) in the ESI Work Plan (Parsons, 2019). Data validation reports are included in **Appendix N**. The following samples were collected during the Gabreski ANGB ESI sampling conducted in 2020:

- Ten (10) soil samples were collected at five soil boring locations. One (1) field duplicate was collected from location GB-19-SB02 and one (1) Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Quality Control sample was collected;

- Fourteen (14) sediment samples were collected at 14 locations. One (1) field duplicate and one (1) MS/MSD quality control (QC) pair were collected;
- Forty-four (44) groundwater samples were collected in two rounds from 22 monitoring wells. Two (2) field duplicates and two (2) MS/MSD pairs were collected for QC;
- Thirteen (13) surface water samples were collected from 13 locations. One (1) field duplicate and 1 MS/MSD pair were collected for QC;
- Eight (8) stormwater water samples from eight locations were collected. One (1) field duplicate and 1 MS/MSD pair were collected for QC;
- Thirteen (13) equipment blanks;
- Fourteen (14) field blanks, and
- One (1) source blank.

The results of the data quality evaluation indicate that the overall quality of the data enables its use to confirm the presence or absence of contamination. Through data verification, validation, and review, the analytical information has been qualified as appropriate. Data are considered usable if results are unqualified or qualified as estimated. Results qualified "R" as rejected are considered unusable due to serious deficiencies in quality control. A total of 2,976 data points were collected for this data set. Of those, 51 results were qualified "R" as rejected and unusable. The majority of the data rejected was due to extremely high or extremely low External Injection Standard recoveries during laboratory analysis. The results for stormwater sample GB-08-ST02 collected 10 February 2020 were rejected as unusable as the sample was mistakenly collected (no other synoptic stormwater samples were collected due to lack of precipitation on that day). Therefore, 98.3 % of the data were considered usable for the purposes of this project, which meets the minimum criteria of 90%. The overall quality of the data meets or exceeds the established project objectives.

2.7 DEVIATIONS FROM THE WORK PLAN

Deviations from the Final Work Plan (Parsons, 2019) included the following:

- The ESI investigation was designed to be conducted using Triad tenets wherein data would be collected using rapid turn analysis and decisions would be made in the field using historical and newly collected data. However, after NYSDEC comments on the work plan, there was only one contingency groundwater location that needed to be placed and it was done using traditional data reporting, rather than the Triad approach. The revised process involved collecting most of the proposed samples, analyzing the results, then placing contingency locations for additional sampling.
- Stormwater samples could not be collected at three proposed stormwater sample locations (GB-08-ST01, GB-08-ST04 and GB-14-ST01) because stormwater was not present at those locations during the storm event.
- Surface water location GB-OBAR-SW01 was not collected due to lack of water.
- Monitoring well MW-1 was not gauged during the first synoptic groundwater gauging event due to access issues.

- At location GB-OB-MW05, a 1-inch diameter monitoring well was installed (instead of a 2-inch well) due to the difficulties penetrating the formation to the depth required.
- Slug testing was not performed at GB-OB-MW05 because of the small diameter of the well.
- GB-19-MW01 was installed at soil boring location GB-19-SB02 instead of the proposed GB-19-SB01. The intent of this well location is to sample the shallow groundwater under the assumption that AOC 19 is a source area. The shift in location places the well in a more downgradient location of the AOC and at the location where PFAS concentrations were higher in an historical shallow subsurface profile (NYSDEC vertical profile Q-43 vs Q-41). This modification was reviewed and approved by ANG on 11 February 2020.
- The location of GB-03-SB02 was shifted approximately 50 feet northeast due to utilities at the proposed location.

SECTION 3.0 Field Investigation Results

This section presents the soil, groundwater, sediment, surface water, and stormwater analytical data generated during the ESI field activities along with results from slug testing and the receptor survey.

3.1 ANALYTICAL RESULTS

The laboratory analytical results were compared to the corresponding screening criteria summarized in Section 1.4. Soil analytical results are summarized in **Table 5**. Groundwater profile screening results are presented in **Table 6**. These screening results were used for selection of the screened interval for the permanent wells and were not validated; these data should not be used for future decision making. Groundwater analytical results are summarized in **Table 7**, surface water analytical results are summarized in **Table 8**, sediment analytical results are summarized in **Table 9**, and stormwater analytical results are summarized in **Table 10**. **Figures 8a** and **8b** present the soil analytical results from both the SI (AECOM, 2019) and ESI. **Figure 9** presents groundwater profiling results from the ESI and historical studies (EAR, 2016; PWGC, 2018; SCSHD, 2016). For clarity, only the depth with the highest PFAS concentration is displayed for the historical vertical profile data on **Figure 9**. **Figures 10** and **11** present the groundwater analytical results from both the SI (AECOM, 2019) and ESI by area as follows – **Figure 10** West: Gabreski ANGB AOCs and Off-Base Wells and **Figure 11** East: AOCs 1, 19, 20, Canine Kennel (a non-ANG source area) and Off-Site Wells. **Figure 12** presents the surface water and sediment analytical results from the ESI. **Figure 13** presents the stormwater results from the ESI.

3.1.1 SOIL

Soil analytical results indicate that there are no significant PFAS impacts (no exceedances of the screening criteria) within the locations sampled. The highest detections of PFAS were at AOC 3. AOC 19 only had two estimated detections of one PFAS compound. Details on the soil results are discussed below.

At AOC 3, soil samples were collected at two intervals (0-1 ft bgs and 4-5 ft bgs) from two borings, GB-03-SB01 and GB-03-SB02 (**Figure 8A**). There were no exceedances of the screening criteria. Three PFAS compounds were detected: Perfluoropentanoic Acid (PFPeA), Perfluorohexane Sulfonic Acid (PFHxS), and PFOS (**Table 5**). Both PFPeA and PFHxS were only detected in boring GB-03-SB02 and were estimated detections less than 1 ng/g. PFOS was detected in both depth intervals from both borings; however, the maximum concentration (3.4 ng/g) was less than the screening level (130 ng/g).

At AOC 19, soil samples were collected at two intervals (0-1 ft bgs and 4-5 ft bgs) from three borings, GB-19-SB01, GB-19-SB02, and GB-19-SB03 (**Figure 8B**). Soil analytical results indicated no detections of PFAS compounds in boring GB-19-SB01. Within the other two borings, only one PFAS compound (PFOS) was detected. The two detections were estimated concentrations and were within the shallow intervals in both soil borings. The maximum concentration (0.61 J ng/g) of PFOS did not exceed the screening level (130 ng/g).

3.1.2 GROUNDWATER SCREENING PROFILES

Groundwater screening profiles were performed at 12 locations (**Figure 9**). At each profile location, analytical samples were collected at up to 10 ft depth intervals starting at the water table and continuing down to 100 ft bgs. The analytical results were reviewed and the concentrations of total PFAS and the sum of PFOA/PFOS were used to help select the depth to place a 10 ft screen for the permanent monitoring well at the location. Screening profile analytical results are presented in **Table 6** and in concentration versus depth plots in **Appendix B**. In general, the depth of the largest PFAS concentration was selected to straddle with the screen of the permanent monitoring well (**Appendix B**).

At profile GB-OB-MW06, three depths were found with elevated concentrations. At this location, although the peak at the shallower depth (30-32 ft) was the smallest, a shallow depth for the well screen was selected with the purpose of investigating the contribution of PFAS from shallow groundwater into a nearby surface water body.

The profiles were also used to evaluate the general changes in the vertical distribution of PFAS along groundwater flow paths. PFAS impacts at deeper depths were found in profiles GB-BB-MW01, GB-OB-MW08, GB-OB-MW03, GB-OB-MW04, GB-OB-MW05, GB-OB-MW06, and GB-OB-MW07. Locations GB-BB-MW01 and GB-OB-MW07 are both upgradient of the Gabreski ANGB AOCs.

3.1.3 GROUNDWATER

Groundwater samples were collected from 22 locations both on-Base and off-Base during the ESI, including 14 newly installed monitoring wells and 8 existing monitoring wells. The following paragraphs describe the analytical results at the AOCs, downgradient of the AOCs, and upgradient. Groundwater analytical results are presented in **Figures 10** and **11** and include data from both the SI (AECOM, 2019), previous PFAS investigations (EAR, 2018; NYSDEC, 2016; PWGC, 2018; SCDHS, 2016; ZEB, 2016) and groundwater sampling conducted during the ESI. The text below discusses results from the ESI.

At AOC 1, the concentrations of PFOS exceeded the screening level for all samples collected from all wells associated with the AOC (**Table 7**, **Figure 11**). Concentrations of PFOA exceeded the screening level at all wells within AOC 1 except GB-IRP7-MW03 (located upgradient of AOC 1). During the ESI, the maximum total concentration (47,450 J ng/L) of PFOA (450 ng/L) plus PFOS (47,000 J ng/L) was measured during the first round of sampling in existing well GB-IRP7-MW01 located in the south corner of AOC 1. For comparison, during the SI the PFOS+PFOA concentration at this well was 32,520 ng/L (AECOM, 2019). Upgradient of AOC 1, the highest PFOS+PFOA concentration during the ESI was 197 ng/L (2nd round). Downgradient of AOC 1, the highest PFOS+PFOA concentration was 10,020 ng/L (1st round) at well GB-IRP7-MW04. Both PFOA and PFOS exceeded the screening level.

At AOC 3, PFOS exceeded the screening level during both rounds of sampling at well GB-03-MW01 (**Table 7**, **Figure 10**). PFOA individually did not exceed the screening level. This well is located in the southeast, downgradient quadrant of the AOC. This AOC was not investigated during the SI, but at the request of the NYSDEC it was included as part of the ESI.

At AOC 19, PFOA (maximum of 110 ng/L, 1st round) exceeded the screening level during both rounds of sampling at well GB-19-MW01 (**Table 7**, **Figure 11**). PFOS individually did not exceed the screening level. These results are consistent and of similar magnitude to the maximum concentration detected within the groundwater profile (Q-43) installed by the SCDHS in this location (**Figure 9**). The maximum PFOA concentration at Q-43 was 346 ng/L (36.5 ft bgs) and PFOS concentrations throughout the profile were below the screening level. The maximum concentrations at both GB-19-MW01 and Q-43 were found at similar depths.

At AOC 20, existing well MW-2, installed during a NYSDEC investigation (EAR, 2018) was resampled during the ESI. All PFOA and PFOS concentrations detected at this location exceeded the screening level (**Table 7**, **Figure 11**). Individually, the maximum concentrations of PFOA (6,800 ng/L) and PFOS (9,900 R ng/L) were detected in the second and first rounds, respectively. The PFOS value was rejected during data validation for exceeding the range for extracted internal standard (EIS) response; however, the PFOS value is expected to be biased low, therefore, the magnitude of PFOS concentration at this location is interpreted as high although the exact value cannot be quantified (**Appendix N**). Other PFAS compounds detected at this location at elevated concentrations greater than 1,000 ng/L include: 6:2 fluorotelemer sulfonate (FTS), 8:2 FTS, perfluorohexanesulfonic acid (PFHpS), perfluorohexanoic acid (PFHxA), and PFHxS (**Table 7**). In comparison, these values compare well with the previous sample collected by NYSDEC where PFOS (58,400 ng/L) and PFOA (12,600 ng/L) concentrations were detected above the screening level and PFHxS was detected at a concentration of 221,000 ng/L.

Three existing wells (GB-ECR-MW01, GB-ECR-SW7, and GB-IRP5-MW01) located within the western Base boundary were resampled during the ESI (**Table 7**, **Figure 10**). During the SI, all three of these wells had PFOS and PFOA concentrations that exceeded the screening level. The ESI confirmed these results with PFOS concentrations in each round that exceeded the screening level and PFOA concentrations in two of the three wells which exceeded the screening level. The sum of PFOS+PFOA (5,500 ng/L [GB-ECR-MW01, 2nd round], 13,340 ng/L [GB-ECR-SW7, 2nd round], and 930 ng/L [GB-IRP5-MW01], 1st round) was dominated by the PFOS concentration, and at GB-IRP5-MW01, PFOA did not exceed the screening level during either round of sampling. Downgradient of the western Base boundary, existing wells SW-8 and SW-9 were both resampled during the ESI. Concentrations of PFOS and PFOA at both wells exceeded the screening level with maximum PFOS+PFOA concentrations of 5,000 and 2,580 ng/L (2nd round) at SW-8 and SW-9, respectively. The concentrations are of similar magnitude to those found during the EAR (2018) investigation (**Figure 10**).

On-Base[3] and off-Base[4] results indicate that PFOS was detected above the screening level at all well locations with the exception of on-Base well GB-BB-MW01 and off-Base well GB-OB-MW05. PFOA was detected above the screening level in off-Base wells GB-OB-MW01, GB-OB-MW02, GB-OB-MW04 and GB-OB-MW08. The highest concentrations of PFOS or PFOA were detected in wells such as GB-OB-MW02/GB-OB-MW08 or GB-OB-MW04 immediately downgradient of the main Base AOCs and AOCs 1

[3] Monitoring wells GB-BB-MW01 and GB-BB-MW02

[4] Monitoring wells GB-OB-MW01, GB-OB-MW02, GB-OB-MW03, GB-OB-MW04, GB-OB-MW05, GB-OB-MW06, GB-OB-MW07, and GB-OB-MW08.

and 20. Elevated PFOS and PFOA concentrations were also found downgradient of the western ANGB AOCs (e.g., AOC 8, 13,000 and 340 ng/L, respectively). The results indicate the presence of two distinct continuous PFAS plumes that extend from the western Gabreski ANGB area and the area of AOC 1/AOC 20, southeast to the Long Island Railroad. There are also elevated PFOS and PFOA concentrations at MW-1 at the Canine Kennel (a non-ANG source area) to the east of these plumes. The geographic extents of the two PFAS plumes are consistent with the expected groundwater flow directions in the Upper Glacial aquifer groundwater zones (**Figures 10** and **11**).

Vertical profile data suggest elevated PFOS and PFOA concentrations occur at various depths within the subsurface (**Figure 9**). Near AOC sources (e.g., GB-OB-MW01, GB-IRP7-MW04, GB-OB-MW04), in general, maximum or elevated PFOS and PFOA concentrations are found at the approximate depth of the water table. This observation is consistent with the expected concentration distribution near a potential PFAS source and the behavior of PFAS to accumulate at air-water interfaces. Moving downgradient from AOC sources (e.g., GB-OB-MW02, GB-OB-MW08, GB-OB-MW03 and GB-OB-MW06) maximum PFOS and PFOA concentrations tend to be 10-20 feet below the water table.

PFAS concentrations detected at upgradient wells indicate potential contribution of PFAS from off-Base sources to the north and a potential mechanism for transport to the west of the AOCs (**Figure 10**). Although the PFOS and PFOA concentrations within the ESI well (GB-BB-MW01) installed upgradient of the main Base AOCs did not exceed the screening level, 450ft east of GB-BB-MW01, two of three wells installed as part of the ZEB (2016) investigation had PFOS concentrations over the screening level (**Figure 10**). The PFOA concentrations in all three wells were below the screening level. All three of these existing wells are upgradient of the Gabreski ANGB AOCs. During the ESI, a second well, GB-BB-MW02, was installed along the western edge of the Gabreski ANGB main base area. This well has PFOS concentrations (max. 220 ng/L) above the screening level. Although this well is cross hydraulic gradient of the AOCs, the groundwater contours suggest a more southerly flow direction in this area (**Figure 7**). Additionally, numerous infiltration basins are present along the western edge of the Base boundary (**Figure 13**). These basins may accept stormwater flow from various locations throughout the base and allow infiltration of stormwater into the ground along the western Base boundary. Additionally, the subsurface in this portion of the Base may be influenced from the pumping wells at the nearby Gus Guerrera well field thus drawing groundwater flow towards the west. A third upgradient well, GB-OB-MW07 (**Figure 11**), was installed off-base and north of AOC 19. Elevated concentrations of PFOS (370 ng/L, 1st round) above the screening level were detected in this well suggesting the presence of an upgradient source. The maximum PFOS concentrations at this well were detected at a deeper depth (~80 ft bgs) in both the vertical profile borings (**Appendix B**) and the permanent monitoring well suggesting that the well is not located at the source area and the source area is located farther upgradient.

Analytical results from groundwater wells on-Base and at the airport support categorization of the AOCs as either a primary source area or a secondary source area. A primary source area is defined as an area where PFAS groundwater contamination is approximately equal to or greater than two orders of magnitude above the screening level (40 ng/L) and a secondary source area is defined as an area where PFAS groundwater contamination exceeds the screening level but concentrations are less than two orders of magnitude above the screening level. Based on the SI and ESI data, the primary source

areas are the area that includes AOC 1 (Former FTA, Installation Restoration Program [IRP] Site 7) and AOC 20 (Current FTA) and the AOCs within the main base area (e.g., AOC 2 (Building 300, Fire Station) or AOC 18 (IRP Site 8G, Old Base Septic System)) where SI results indicate elevated PFOS or PFOA concentrations and base boundary wells sampled during the ESI were elevated. Secondary source areas include AOC 3 (Former Building 230 - Vehicle Maintenance), the Canine Kennel site (a non-ANG source area), and the area around, and upgradient (GB-OB-MW07), of AOC 19 (Mobile FTA).

3.1.4 SURFACE WATER

Surface water samples were collected from 13 locations off-Base during the ESI, including from Old Ice Pond/Wildlife Refuge, Quantuck Creek, and the Aspatuck River. Due to a lack of water in the Aspatuck River at the time of sampling, one proposed sample (GB-OBAR-SW01) could not be collected and location GB-OBAR-SW02 was moved farther south to the first available water in the waterbody. The following paragraphs describe the analytical results from these water bodies, which are downgradient of the AOCs and the Gabreski ANGB. Surface water analytical results for the ESI are summarized in **Table 8** and **Figure 12**. There are no promulgated PFAS standards or screening criteria for surface water, therefore, surface water analytical results are compared to the screening levels for groundwater.

In the Old Ice Pond/Wildlife Refuge, six surface water samples were collected. These locations are east/southeast (side- and down-gradient) of AOC 19 and the Canine Kennel Site (a non-ANG source area) (**Figure 12**). Results indicate that the concentrations of PFOA and PFOS did not exceed the screening level. The highest PFOA or PFOS concentration was found at GB-OBNP-SW02 (13 ng/L) (**Table 8**). These results are consistent with previous samples collected in this area (SCDHS, 2018).

In Quantuck Creek, four surface water samples were collected southeast of Gabreski ANGB and AOCs 1 and 20 (**Figure 12**). Results indicate that PFOS exceeded the screening level at three of the sample locations (GB-OBQC-SW01, GB-OBQC-SW02, and GB-OBQC-SW03), but PFOA did not exceed the screening level at any of the Quantuck Creek locations. The highest PFOS concentration was found at the sample location (GB-OBQC-SW01) closest to the AOCs with a maximum concentration of 240 ng/L (**Table 8**). The highest concentration in Quantuck Creek is two orders of magnitude higher than the concentrations measured in the Old Ice Pond. This maximum PFOS concentration in Quantuck Creek was measured at the headwaters of the Creek approximately 400 feet south of the outflow of Old Ice Pond into Quantuck Creek (**Figure 12**).

In the Aspatuck River, three surface water samples were collected south of the main Gabreski ANGB AOCs (**Figure 12**). At all three surface water sample locations the PFOS concentrations exceeded the screening level, but the PFOA concentrations did not. The magnitude of all three concentrations were similar to each other and to two of the samples collected in Quantuck Creek, but the most downgradient sample had the highest PFOS concentration (160 J ng/L) (**Table 8**).

3.1.5 SEDIMENT

During the ESI, sediment samples were collected at the same 13 off-Base locations as the surface water samples. One additional sediment sample (GB-OBAR-SD01) was collected at a location where surface water was not collected due to a lack of water. Sediment analytical results for the ESI are

summarized in **Table 9** and **Figure 12**. Sediment sample results from the Old Ice Pond/Wildlife Refuge (north of Long Island Railroad [LIRR]/east of Canine Kennel [a non-ANG source area]) indicated that none of the three individual PFAS (PFBS, PFOA, and PFOS) with a screening level were detected in the samples and no other PFAS were detected from these locations.

Within Quantuck Creek, only the most upgradient sample (GB-OBQC-SD01) had detections of both PFOA and PFOS, but neither exceeded the screening level. Only PFOS was detected in the remaining three sediment samples from Quantuck Creek with the maximum value (390 ng/g) exceeding the PFOS screening level in sample GB-OBQC-SD03 (**Table 9**, **Figure 12**).

Within the Aspatuck River, located directly downgradient of the main Gabreski ANGB base area, PFAS was detected in all samples collected. PFOS was the predominant constituent detected in all of the sediment samples collected from this water body. The maximum PFOS value was detected at location GB-OBAR-SD03 with a concentration of 96 J ng/g within the parent sample. Within the duplicate sample collected at this location a concentration of 140 J ng/g was detected which exceeded the PFOS screening level. Neither PFOA nor PFBS exceeded their respective screening levels within the Aspatuck River (**Table 9**, **Figure 12**).

3.1.6 STORMWATER

Stormwater samples were collected at eight locations during the ESI during a storm event such that these samples represent increased flow conditions. Locations included stormwater system discharge piping and outfalls both on-Base and off-Base. Stormwater analytical results are presented on **Table 10** and **Figure 13**. There are no promulgated PFAS standards or screening criteria for stormwater, therefore, stormwater analytical results are compared to the screening levels for groundwater.

Analytical results indicate detection of various PFAS compounds in every sample and six sample locations had concentrations that exceeded the screening level for PFOA or PFOS (**Table 10**). The PFOA concentration at one location (43 ng/L at GB-B-ST01, field duplicate) exceeded its screening level. PFOS concentrations were exceeded at five other locations, including locations at AOC 8 and AOC 14, and other locations associated with infrastructure flowing to AOC 13 and at the SDO-001 outfall (AOC 12). The maximum PFOS concentration was at GB-12-ST01 (110 ng/L). GB-OB-ST01 could not be collected off-Base and was relocated to AOC 8; similar to GB-08-ST03, concentrations of PFOS were found above the screening level.

Within several samples (GB-12-ST01, GB-13-ST01, GB-14-ST02 and GB-OB-ST01), another PFAS compound, 6:2 FTS, was found to have concentrations higher than the concentrations of PFOA or PFOS. These higher concentrations of 6:2 FTS in the vicinity of AOC 8 and the stormwater system outfalls may relate to the more recent use of modern short-chain C6 AFFF formulations instead of legacy PFOS-based AFFF (Fomtec, 2020).

3.2 PFAS PROPORTIONAL ANALYSIS

Radar charts were prepared to illustrate concentrations and proportions of various PFAS compounds in groundwater and surface water at select sample locations. The proportional analysis provided by radar charts can be used to identify distinct combinations of PFAS mixtures at each sample location.

Radar charts for select groundwater samples are shown on **Figure 14** with proportional analysis plots on **Figure 15**. Radar charts for select surface water samples are provided on **Figure 16**.

The primary source areas (AOCs within western ANGB area; AOCs 1 and 20 – Fire Training Areas) at Gabreski ANGB, the AOCs with a history of routine AFFF storage, handling, or use, exhibit a "type signature" dominated by PFOS, minor other sulfonates (PFHxS, PFPeA and PFHxA), and the 6:2 FTS. This signature is illustrated in samples from groundwater monitoring wells GB-ECR-SW7 downgradient of several of the on-Base AOCs, followed by an increase in sulfonates other than PFOS in wells SW-9 and GB-OB-MW03, downgradient of GB-ECR-SW7 by 1,000 and 2,100 feet, respectively. This "type signature" is exhibited in wells located in the western ANGB area extending south and in wells extending south from AOCs 1 and 20 (**Figure 14**). This distribution suggests that PFAS found in downgradient areas is potentially related to PFAS found at the primary source areas in the western Base area and AOCs 1 and 20. Peripheral and upgradient groundwater monitoring locations (e.g., GB-OB-MW07, GB-IRP7-MW03) at Gabreski ANGB exhibit the same PFAS signature as the AFFF "type signature" associated with monitoring wells proximate to the primary source area AOCs where AFFF was routinely stored, handled, or used. This indicates that there is a potential contribution of PFAS from upgradient sources that may be related to use of AFFF (e.g., plane crash and response activities).

Concentrations and proportions of PFAS in groundwater can change as migration occurs away from a source area through a porous medium due to differential sorption. For instance, PFOS (8-carbon sulfonate) is more sorptive than PFHxS (6-carbon sulfonate), which is more sorptive than PFBS (4-carbon sulfonate), resulting in fractionation, or changing proportions of concentrations along the flow direction. This is illustrated by a sequence of radar charts and relative proportion bar chart along the flow path. Proportional bar charts were created along the three flow paths illustrated in **Figure 15**: 1) GB-IRP5-MW01 to GB-OB-MW01; 2) GB-ECR-SW7, SW-8/SW-9, GB-OB-MW03; and 3) GB-IRP7-MW01, GB-IRP7-MW04, and GB-OB-MW04.

The selected flow paths with end member wells (source to distal downgradient) indicate declining PFAS concentrations and fractionation and transformation due to differential sorption and the potential breakdown of 6:2 FTS (**Figure 15**). Mid-point wells (e.g., SW-8 and SW-9) show an intermediate pattern that fits the trend between source and downgradient wells. Radar diagrams and bar charts illustrate that carboxylates (PFPeA, PFHxA, and pentafluorobenzoic acid [PFBA]) are increasingly more prominent as groundwater moves along the flow path from upgradient to downgradient. These shorter chain carboxylates typically migrate faster and farther than longer chain PFAS compounds. The increase in proportion of carboxylates may be a function of increased degradation products related to the breakdown of 6:2 FTS. Limited PFOA (8-carbons) in the downgradient wells supports degradation of 6:2 FTS (6-carbon) to PFPeA and PFHxA (5- and 6-carbon).

Surface water radar charts in the Aspatuck River have a similar AFFF "type signature" dominated by PFOS that characterizes groundwater at the western ANGB AOCs, AOCs 1 and 20, and in downgradient areas (**Figure 16**). Additionally, surface water PFAS concentrations in the Aspatuck River are similar in concentration and PFAS proportion to PFAS in groundwater near the headwaters of the river (GB-OB-MW03). The combination of the PFAS concentrations and similar signatures plotted on the radar charts indicate that PFAS found in the Aspatuck River is potentially from local groundwater discharge into the

headwaters of the river. The PFAS found in stormwater near AOC 12 and 13 (both outfalls for the ANGB stormwater system) periodically discharges to drainage swales allowing infiltration into the ground just north of the Aspatuck River headwater. Both AOC 12 and 13 receive discharge from AOCs identified as potential PFAS release sites and may be a potential ephemeral source of PFAS that infiltrates into the Aspatuck River.

The AFFF "type signature" is also observed in the radar charts from samples collected in Quantuck Creek (**Figure 16**). The PFAS concentrations found in the Quantuck Creek samples suggest that there is some groundwater (with PFAS) contribution to the surface water in Quantuck Creek in this downgradient area. This is consistent with a hydrologic model where the large waterbody is a likely local discharge zone for groundwater flowing southeast from the eastern half of the airport (**Figure 7**).

A summary of the proportional analysis is as follows:

- Primary source AOCs with history of routine AFFF storage, handling, or use exhibit a characteristic PFAS signature dominated by PFOS and PFHxS at relatively elevated concentrations.
- PFAS found in groundwater as far as 2,000 ft downgradient of the western Gabreski ANGB is potentially related to PFAS found at the primary source areas (AOCs within western ANGB boundary) based on the hydrogeologic conditions, concentration distribution, and similarity of radar chart signatures.
- Similarly, PFAS found in groundwater 2,800 ft downgradient of AOC 1 and AOC 20 is potentially related to PFAS found at these primary source areas.
- Changing proportions of PFAS (especially PFOS, PFHxS, PFBS, and PFOA) along the downgradient groundwater flow path from three source locations to downgradient areas indicate transport of PFAS by advective flow and associated differential sorption in porous media. This can modify the PFAS signature in the downgradient direction through fractionation.
- PFAS concentrations and radar chart signatures in surface water are consistent with upgradient groundwater indicating that PFAS found in the Aspatuck River (1,800 ft downgradient) and Quantuck Creek (3,000 ft downgradient) surface water is potentially from infiltration near the headwater of the surface water body and/or advective discharge of groundwater containing PFAS to surface water, as these areas are likely local groundwater discharge zones hydraulically downgradient of groundwater known to contain PFAS.

3.3 SLUG TESTING RESULTS

Table 9 presents the results of the slug testing. The geometric mean of hydraulic conductivities calculated from slug tests was 8.7 x 10^{-2} cm/sec (246 feet per day (ft/day)) for these wells that are all installed in the Upper Glacial Aquifer. This result is similar to the range of conductivities of 1.6 x 10^{-2} to 5.2 x 10^{-2} cm/sec (45 to 147 ft/day) reported for on-Base wells by Dames & Moore (1986), and is consistent with the estimated hydraulic conductivity previously reported for the regional Upper Glacial Aquifer (9.4 x 10^{-2} cm/sec by ABB-ES 1997, or 266 ft per day) in the 2004 Final Remedial Investigation Report (Section 3.6 in PEER, 2004).

The groundwater average linear (or seepage) velocities were calculated using the hydraulic conductivity above, gradient from the groundwater contour map (**Figure 7**) and estimated effective porosity (or specific yield of 28%) for the Upper Glacial Aquifer from literature. The calculated groundwater velocity is 1.6 ft/day for the materials tested in the Upper Glacial Aquifer (**Table 9**).

3.4 RECEPTOR SURVEY

Potential receptors of concern for PFAS compounds are off-Base and include public water supply (PWS) wells, domestic drinking water wells, and hydraulic discharge areas such as brooks, rivers and wetlands (**Table 12**). One of the objectives of this ESI was to evaluate if there is a contaminant migration pathway between identified ANG PFAS source areas and receptors. Exposure pathways to receptors are described in the following paragraphs. Other nearby potential sources of PFAS are also discussed.

There are two SCWA PWS well fields downgradient of Gabreski ANGB (**Figure 17**). Historical sampling indicates that PFAS were detected in individual wells at both of these well fields. The individual wells within these well fields are screened within the transmissive sands of the Upper Glacial Aquifer. Information on the operational status of the PWS well fields was provided in the 2016 through 2020 Drinking Water Quality Reports published annually by the SCWA (the statistical results for the entire well field, not individual wells). Raw statistical water quality data from each of the two well fields are contained in 2016 through 2020 Supplemental Reports[5] also published by SCWA. The well fields are discussed in the following bullets:

- The Meeting House Road well field is located approximately 3,100 feet south and hydrologically downgradient of the nearest Gabreski ANGB AOC (AOC 20) (**Figure 17**). This well field contains five individual supply wells, including #12A (92 ft), #14 (58 ft), #17 (56 ft), #19 (54 ft) and #22 (108 ft) (**Figure 17**). The individual wells pump water between ~100 and 458 gallons per minute (gpm) from the Upper Glacial Aquifer based on 11/3/2016 and 9/12/2018 data from SCWA Production Control Department.
    - In 2016, Meeting House Road wells #14, #17, and #19 (at the northeast end of the well field) were removed from service by SCWA because they had elevated levels of PFOS, and in the same year these three wells were placed back in service with granular activated carbon (GAC) treatment to remove PFOS. Well #22 (at the southeast end of the well field) was also removed from service in 2016 and placed back in service with GAC treatment to remove PFOS. Historical SCWA sampling results between 2015 and 2019 from the Meeting House Well field indicated a maximum sum of PFOS+PFOA of 8,000 ng/L (in 2015), with an average maximum of 6,411 ng/L, setting aside the 2016 lower maximum measured when wells #14, #17, and #19 were removed from service and retrofitted with GAC units.

[5] The range of data presented in these reports shows the lowest value for a detected analyte, the highest value, the average value, and the total number of tests conducted at each well field. These values represent an average of all the individual wells at each well field.

- In 2019 the maximum PFOS+PFOA concentration was 6,435 ng/L. Averages for the entire well field over this same five-year period were lower, between 940 and 1,030 ng/L (SCWA, 2020). Approximately 700 ft upgradient of this well field, historical results (SCDHS, 2016) from groundwater profiles at MH-1, MH-2, MH-3 and MH-4 along South Country Road show maximum PFOS+PFOA concentrations of 960, 190, 14,300, and <40 ng/L, respectively, with the maximum occurring at MH-3. Results from ESI wells installed farther hydraulically upgradient of these monitoring wells at AOC 1 and AOC 20 indicate higher PFOS+PFOA concentrations of 47,450 and 10,020 ng/L, respectively (**Figure 11**).
- In summary, there is a progression of decreasing PFOS+PFOA (PFOS-dominant) concentrations from the primary PFAS source areas at AOC 1 and AOC 20 on the Gabreski airport to the hydraulically downgradient Meeting House Road well field. At the primary source areas the maximum concentration is found at the water table, and moving along a downgradient groundwater flow path to South Country Road, the maximum concentration is lower in the aquifer (10 ft below the water table at GB-OB-MW04 and 20 ft below the water table at MH-3), which are indications of a slightly diving plume as it moved away from the source. It is possible that vertical movement is influenced by pumping at the Meeting House wells farther downgradient.

- The Gus Guerrera well field is located approximately 1,300 feet southwest of the nearest Gabreski ANGB AOC (AOC 14) and hydrologically down and cross gradient of the AOCs (**Figure 17**). This well field contains three individual supply wells, including #1 (103 ft), #2 (104 ft), and #3 (105 ft) (**Figure 17**). The individual wells pump water between 718 and 1,047 gpm from the Upper Glacial Aquifer based on 9/11/2018 data from the SCWA Production Control Department.
  - In 2015, water flow from Gus Guerrera #1 was blended with well #2 and well #3 to reduce PFOS concentrations in well #1. In 2016, Gus Guerrera wells #1 and #2 (central and southern end of the well field) were removed from service by SCWA because they had elevated levels of PFOS, and in the same year these two wells were placed back in service with GAC treatment to remove PFOS. Historical SCWA sampling results between 2015 and 2019 from the Gus Guerrera well field indicated a maximum sum of PFOS+PFOA of 550 ng/L (in 2015), with an average maximum of 314 ng/L, not including the 2016 lower maximum measured when wells #1 and #2 were removed from service and retrofitted with GAC units.
  - In 2019, the maximum PFOS+PFOA concentration was non-detect using USEPA Method 537, but the total using the SCWA PFAAS Method was 79 ng/L. Overall, the maximum concentrations are steadily decreasing in this well field. Averages for the entire well field over this same five-year period are lower, between 60 and 190 ng/L (SCWA, 2020). Results from ESI wells (GB-OB-MW01 and GB-OB-MW02) installed hydraulically up and cross-gradient of the Gus Guerrera well field had PFOS+PFOA concentrations of 570 and 3,682 ng/L, respectively (**Figure 10**). In summary, results indicate that PFAS [PFOS+PFOA (PFOS-dominant)] has migrated south from the southeast corner of Gabreski ANGB roughly parallel to Old River road and east of the Gus Guerrera well field. While the Gus Guerrera wells do not appear to be directly hydraulically downgradient of this area, they are likely

close to the western perimeter of the plume and pumping wells at Gus Guerrera may have influenced the movement of the PFAS on the west side of the plume.

- The Spinney Road well field is located approximately 10,700 feet (2 miles) northeast of the nearest Gabreski ANGB AOC (AOC 19) and hydraulically cross-gradient of the AOCs (**Figure 17**). Contributions of PFAS from Gabreski ANGB are not expected in this location. PFAS concentrations reported in the SCWA 2020 water quality report indicate no detections (sampled in 2017 and 2020) of PFAS at this well field.
- The Quogue Riverhead Road well field is located approximately 7,800 feet (1.5 miles) northeast of the nearest Gabreski ANGB AOC (AOC 19) and hydraulically up- and cross-gradient of the AOCs (**Figure 17**). Contributions of PFAS from Gabreski ANGB are not expected in this location. PFAS concentrations reported in the SCWA 2020 water quality report indicate no detections (sampled in 2016 and 2020) of PFAS at this well field.
- The Old County Road well field is located approximately 10,100 feet (2 miles) southwest of the nearest Gabreski ANGB AOC (AOC 14) and hydraulically cross-gradient of the AOCs (**Figure 17**). Contributions of PFAS from Gabreski ANGB are not expected in this location. This well field was sampled for PFAS in 2016, 2017, 2018, 2019, and 2020. The well field had detections of PFAS in 2018 and 2020 according to the Supplemental Reports published by SCWA.
- The County Road 31 well #1 is located approximately 9,400 feet (1.8 miles) north of the nearest Gabreski ANGB AOC (AOC 3) and hydraulically upgradient of the AOCs (**Figure 17**). Contributions of PFAS from Gabreski ANGB are not expected in this location. This well was sampled for PFAS in 2016 and no detections were reported for 6 PFAS. The next PFAS analyses are reported for the calendar year 2019 (2020 supplemental report), where PFOS was detected at a maximum concentration of 22 ng/L. This indicates some upgradient source of PFOS in the area. Information on the status of this well field was obtained from a SCWA inter-office correspondence memo from Production Control dated 21 April 2020 that provided an emerging contaminants action plan monthly update. The update describes site preparations for new GAC installations at multiple sites and that a GAC system was on order for County Road 31 (Westhampton). A 22 September 2020 update memorandum states that "County Rd 31 #1 in Westhampton was assigned to GAC on 19 August 2020." No other information was obtained on this well field.
- The ESI results indicate an exposure pathway exists between the locations of former and current ANG fire training activities (at AOC 1 and AOC 20, respectively) and the historical detections of PFAS along South Country Road (particularly at well MH-3) and one or more downgradient Meeting House Road wells. In particular, the wells in the northeastern portion of the well field (e.g., #14 and #19) appear to be the most likely to be in the flow path of PFAS that has migrated from these primary PFAS source areas. In addition, an exposure pathway is likely between the Gabreski ANGB and Gus Guerrera well field. There is no exposure pathway to the Spinney Road, Quogue Riverhead Road, Old Country Road, or County Road 31 well fields as they are hydrologically up- or cross-gradient of the Gabreski ANGB and the airport.

Most residences in the area south and southeast of Gabreski airport are connected to public water supply provided by the SCWA; however, there are private (domestic) water wells located in the villages of Westhampton Beach and Quogue, and the hamlets of Quiogue and East Quogue (all in the Town of

Southampton) to the south and southeast of Gabreski airport (**Figure 17**). Residents that drink the water from these private wells are also potential receptors for PFAS migration in groundwater. Below are bullets that describe private well surveys and sampling conducted in the vicinity of Gabreski ANGB and Gabreski airport, as chronicled on the SCDHS web site, mostly in on-line groundwater quality update postings and in email correspondence with SCDHS. No additional information on the results of the well surveys, including locations of the private wells (e.g., geographic information system, or Geographic Information System [GIS] data) was available from the SCDHS or the SCWA. The surveys are described below.

- A 25 July 2016 SCDHS notice titled "Water Quality Advisory for Private Well Owners in Areas of Westhampton" stated that through monitoring conducted under a USEPA program known as the Unregulated Contaminant Monitoring Rule (UCMR), PFOS was detected in public water supply wells in the vicinity of the New York State Air National Guard Base at Gabreski Airport located on Old Riverhead Road in Westhampton Beach. The notice indicated that to assess the drinking water quality of properties served with private wells, the SCDHS would be conducting a private well survey in the vicinity of the airport property, and once identified, the private wells would be sampled. The survey area was south of the LIRR tracks, and east of Beaverdam Creek, Westhampton, and West of Quantuck Creek in Westhampton (**Figure 17**). Out of an abundance of caution, the notice recommended use of bottled water for residences using a private well in this area and stated that additional results are not available.
- According to 18 May 2018 SCDHS notice titled "Groundwater Quality in the Air National Guard Base, Westhampton Vicinity" and 29 October 2019 email correspondence from SCDHS, the SCDHS has conducted a private well survey in the vicinity of and downgradient of the New York State Air National Guard Base to help assess the drinking water quality of properties served with private wells. A total of 61 properties have had their private wells sampled between 23 July 2016 and 19 June 2017. PFOS+PFOA was detected above the USEPA lifetime HA in 11 private wells. The PFOS+PFOA concentration in private wells ranged from non-detect to 1,880 ng/L. The private well survey area included properties located south of the LIRR tracks, east of Beaverdam Creek, Westhampton, and West of Quantuck Creek in Westhampton (**Figure 17**). The notice further stated that in November of 2016, the NYSDEC announced that those properties that are either impacted or threatened to be impacted by PFAS contamination will be connected to public water. To date, 62 properties have been connected to public water. Additional results are not available.
- An 11 October 2018 SCDHS notice announced that it will be conducting private well surveys in an area of Quogue southeast of Gabreski Airport and in an area of East Quogue adjacent to the northeast boundary of Gabreski Airport. The notice stated that SCDHS would like to sample private wells in these areas at no charge, and residents in the survey areas currently using a private well may wish to take advantage of free bottled water as a precaution until results of their water test are available. The announcement followed the detection of PFOS and PFOA in a groundwater monitoring well on the eastern area of the Gabreski Airport property. The announcement also indicated, though it is unknown whether off-site groundwater downgradient of this eastern area of Gabreski Airport property is contaminated, these private well surveys are being conducted out of an abundance of caution. Groundwater monitoring by the SCDHS related to a county-owned Brownfields site known as the Canine Kennel (an off-

Base location not associated with ANG mission-related activities), located in the eastern area of Gabreski Airport found elevated levels of PFOS and PFOA. The notice stated, based on the location of these detections, it appears that the Canine Kennel site is not the source of the PFAS in groundwater. The County, in coordination with the NYSDEC and New York State Department of Health (NYSDOH), is planning to conduct additional groundwater monitoring in this area of the airport property.

- Quogue: The private well survey in the vicinity of Quogue is located in the area bounded on the north by Bluejay Way, on the west by Peacock Path and the Quantuck Creek, south by the Quantuck Bay, Quogue Canal and the Shinnecock Bay and to the east by Heatherwood Lane and Quogue Riverhead Road (**Figure 17**). SCDHS estimated that approximately 33 properties with private wells were located in this area. Email correspondence (29 October 2019) from SCDHS indicated that 18 private wells were sampled between 25 October 2018 and 29 July 2019. These results indicated that no private well results were above the USEPA lifetime HA; the maximum PFOS+PFOA concentration was 26 ng/L.
- East Quogue: The private well survey in the vicinity of East Quogue is located in the area bounded on the north by Lewis Road and Gabreski Airport, on the west by Quogue Riverhead Road, Whippoorwill Lane and Peacock Path, to the south by Bluejay Way, Woodleigh Place, Sachem Lane and Damascus Road, and to the east by Lewis Road (**Figure 17**). SCDHS estimates that approximately 29 properties with private wells are located in this area. Additional results are not available. Email correspondence (29 October 2019) from SCDHS indicates that 17 private wells were sampled between 16 October 2018 and 09 September 2019. These results indicated that no private well results were above the USEPA lifetime HA; the maximum PFOS+PFOA concentration was 9.8 ng/L.

Other potential sources of PFAS nearby to Gabreski ANGB and Gabreski airport are also documented by the SCDHS, including the former Damascus landfill approximately 5,600 feet to the east and the former Boeing Michigan Aeronautical Research Center (BOMARC) site approximately 8,500 feet to the west. Details on those areas are provided below.

- Former Damascus Landfill: An 11 April 2018 SCDHS notice titled "Water Quality Advisory for Private Well Owners in Area of Former Damascus Road Landfill in E. Quogue" noted that the former Damascus Road landfill, located at the end of Damascus Road in East Quogue, NY was being evaluated under an initiative to evaluate landfills for potential impacts to drinking water supplies with a focus on potential impacts from emerging contaminants, such as PFOS and PFOA. Results indicated that a combined PFOS and PFOA exceeded the USEPA lifetime HA of 70 ng/L in groundwater at one of the monitoring wells, with a combined PFOS and PFOA concentration of 11,620 ng/L observed. The notice declared at the time, based on these results, additional investigation of private drinking water supply wells in the areas was needed. The notice further explained that to assess the drinking water quality of properties served with private wells, SCDHS had begun a private well survey, including sampling of private wells, in the vicinity of the former Damascus Road landfill. The survey area was defined as the area bounded on the north by Woodleigh Place and Damascus Road, on the west by Quogue Riverhead Road and Heatherwood Lane, and on the east by Lewis Road and Walker Avenue and south continuing to the Shinnecock Bay and its tributaries. Out of an abundance of

caution, the notice recommended use of bottled water for residences using a private well in this area (**Figure 17**). This landfill is approximately 1-mile northeast of the Gabreski airport fence line.

- Former BOMARC Site: An 03 June 2020 SCDHS notice titled "Environmental Investigation at the former BOMARC Missile Base" noted that the former BOMARC Missile Base, located on Old Country Road in Westhampton, is being considered as a potential inactive hazardous waste disposal site. SCDHS installed 28 profile wells as part of a preliminary soil and groundwater sampling investigation at the BOMARC property. PFAS were detected in 26 of the 28 profile wells. Four groundwater profile wells had detections above the USEPA lifetime HA, with concentrations of PFOS and PFOA, as high as 219 ng/L. A total of 13 of the 28 profile wells had detections of PFOS and/or PFOA above the New York State drinking water standards of 10 ng/L. Also, the SCDHS initiated a private well survey in December of 2017 in an area generally south of the BOMARC property following a detection of PFOS at 48 ng/L in a SCWA Old Country Road public water supply well which is located immediately south of the former BOMARC facility. Fifty-four properties potentially utilizing private well water were identified in the survey area and 41 private well samples have been collected by SCDHS. Two of the private wells had detections of PFOS and/or PFOA at levels exceeding the USEPA lifetime HA of 70 ng/L, and 11 more wells were found to contain PFOS and/or PFOA at levels exceeding the state maximum contaminant level of 10 ng/L. The NYSDEC has installed treatment systems and continues to monitor the two homes with detections above the USEPA lifetime HA. Bottled water was made available at no cost to all properties in the survey area that had detections of PFOS or PFOA in their private well. The former BOMARC site is approximately 2,700 feet west of Gabreski ANGB.

Other potential receptors include groundwater discharge to Aspatuck River, Quantuck Creek, and Old Ice Pond and the surrounding wetlands system. Sampling for this ESI indicates that PFAS was detected in the Aspatuck River and Quantuck Creek, and in low concentrations in the Old Ice Pond. ESI results indicate an exposure pathway exists between the ANG activities and the PFAS found in the Aspatuck River, via ephemeral stormwater discharge near AOC 12 and 13 and infiltration into the groundwater near the Aspatuck River headwaters. There is a likely exposure pathway between ANG activities and PFAS found in Quantuck Creek due to downgradient migration of groundwater from AOCs 1 and 20 and eventual discharge into the creek. Although the ESI results indicate a connection between ANG activities and the detections of PFAS in the Aspatuck River and Quantuck Creek, ANG may not be the only contributor, and other potential contributors/activities in the vicinity need to be investigated.

SECTION 4.0 Conclusions and Recommendations

The conclusions presented herein are based upon data derived from samples collected during the SI and ESI at on-Base and off-Base locations and also include an evaluation of the results compared to current applicable screening levels. It should be noted that potential release location (PRL) was used in the SI, while AOC was used in the ESI. For the purposes of this report, the terms PRL and AOC are considered to be similar in meaning and interchangeable. An overview of screening level exceedances by AOC and media (including PRLs from the SI) is presented on Table 13.

- The area surrounding Gabreski ANGB and the Gabreski Airport is underlain by the Upper Glacial Aquifer. The Upper Glacial aquifer consists of glacial outwash deposits and this water-bearing unit is an unconfined aquifer present directly below the Gabreski ANGB and airport. The clean, coarse sand and gravel is very porous and highly permeable. Much of the groundwater used for drinking water is obtained from the Upper Glacial aquifer for Central Suffolk County.
- Near Gabreski ANGB, groundwater flow in the Upper Glacial Aquifer is generally to the south and southeast toward Quantuck Bay and Moneyboque Bay, beyond which is a barrier island system and the Atlantic Ocean. The groundwater velocity calculated for the Upper Glacial Aquifer is 1.6 ft/day.
- Groundwater, surface water, sediment and stormwater analytical samples indicate that PFOA and PFOS were detected at concentrations greater than the PFOS+PFOA screening limit both on-Base and off-Base.
- The SI analyzed soil from 14 PRLs (1, 2, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17 and 18) located on-Base. PRLs 1, 2, 6, 15, and 18 had concentrations of PFOS which exceeded the current screening level (as presented in the ESI). None of the SI samples had exceedances of PFOA. During the ESI, AOCs 3 and 19 were investigated for soil. Soil analytical results were generally low with the highest PFAS concentrations found at AOC 3 (up to 3.4 ng/g for PFOS), followed by AOC 19, which had limited detections of PFAS (maximum of 0.61 J ng/g for PFOS). These soil PFAS concentrations were all below their respective screening limits.
- During the SI, two surface water samples were collected at the stormwater outfalls southeast of the main Base area (PRLs 12 and 13). Results were below the current screening levels for both PFOS and PFOA. During the ESI, analytical results from surface water samples collected off-Base indicate that surface water in the Aspatuck River and Quantuck Creek is impacted with PFOS concentrations above the screening limit. Within the Aspatuck River, PFOS concentrations were consistently above the screening limit from the most upgradient location to the most downgradient location. Three of four samples within Quantuck Creek had PFOS concentrations above the screening limit. Concentrations in Quantuck Creek may be less consistently measured due to dilution and tidal influences.
- During the SI, three sediment samples were collected within PRL 14. None of the samples exceeded the current screening levels for PFOS or PFOA. During the ESI, sediment samples were collected from 14 off-Base locations. Sediment analytical results indicated that there are impacts within the Aspatuck River and Quantuck Creek. None of the six samples collected within the Old Ice Pond had detections of any of the 21 PFAS compounds analyzed. Within the

Aspatuck River and Quantuck Creek, the PFAS signature suggests an AFFF source, predominately PFOS with other related compounds (PFHxS, PFOA, PFPeA, and 8:2 FTS).

- No stormwater samples were collected during the SI. ESI analytical results from stormwater samples collected on-Base indicate that water in the stormwater infrastructure during storm events contains PFAS concentrations above the screening limit. The highest concentrations of PFAS were found downgradient of AOC 8 and in the outfalls that disperse much of the stormwater from the Base off-site. The two stormwater outfalls (AOCs 12 and 13) release into an open ditch allowing stormwater to infiltrate into the ground. This infiltration area is near the headwaters of Aspatuck Creek.
- The SI investigated groundwater at 14 PRLs (1, 2, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17 and 18) on-Base. Analytical results from the SI indicated that all PRLs (with the exception of PRL 16) have an exceedance of the PFOS screening level and all PRLs (with the exception of PRLs 5 and 16) have an exceedance of the PFOA screening level. The highest groundwater concentrations (PFOS: 32,000 ng/L; PFOA: 520 ng/L) were detected at PRL 1 (AOC 1). ESI analytical results from groundwater wells on- and off-Base and within the Airport indicate that the primary source areas include 1) the AOCs within the western Base boundary where SI results indicate elevated PFAS concentrations and base boundary wells and downgradient wells sampled during the ESI were elevated and, 2) the area of AOC 1 (Former FTA) and AOC 20 (current FTA). Secondary source areas include AOC 3 (Former Building 230 - Vehicle Maintenance), the Canine Kennel site (an off-Base source not associated with ANG mission-related activities), and the area around, and upgradient (GB-OB-MW07), of AOC 19 (Mobile FTA).
- Regionally, on-Base and downgradient PFAS results indicate that PFAS was found at all well locations (with the exception of GB-OB-MW05) at depths up to 100 ft bgs in the Upper Glacial Aquifer. The highest concentrations of PFOS+PFOA (47,450 J ng/L) were detected in the area AOC 1 and AOC 20. Elevated PFAS concentrations were also found downgradient of the western ANGB AOCs (e.g., AOC 8, PFOS+PFOA: 13,340 ug/L). The results indicate the presence of two distinct continuous PFAS plumes that extend from the western Gabreski ANGB area and the area of AOC 1/AOC 20, southeast to the Long Island Railroad. There are also elevated PFAS at the Canine Kennel area (a non-ANG source area) to the east of these plumes. The geographic extents of the two PFAS plumes are consistent with the expected groundwater flow directions in the Upper Glacial aquifer groundwater zones. Vertically, the PFAS concentrations were found throughout the aquifer (shallow, intermediate, and deep zones).
- Upgradient wells, and the ZEB (2016) investigation, on the western portion of Gabreski ANGB indicate a potential contribution of PFAS from off-site sources to the north.
- An upgradient ESI well located in the northeastern portion of the airport indicates a potential contribution of PFAS from off-site sources to the north of AOC 19 (e.g., air crashes where AFFF was used, local industry).
- Primary source AOCs with a history of routine AFFF storage, handling, or use exhibit a characteristic PFAS signature dominated by PFOS and PFHxS at relatively elevated concentrations. This “type signature” is exhibited in the majority of downgradient wells extending to the southeast and south of AOC 1 and AOC 20 and the AOCs located within the

western ANGB boundary. Surface water radar charts in the Aspatuck River and Quantuck Creek have a similar AFFF "type signature" dominated by PFOS and PFHxS.

- The ESI results indicate an exposure pathway exists between ANG activities and the historical detections of PFAS at the Meetinghouse Road and Gus Guerrera wellfields. Although the ESI results indicate a connection between the ANG activities and the historical detections of PFAS at the two wells fields, ANG may not be the only contributor, and other potential contributors/activities in the vicinity will need to be investigated. The ESI results suggest there are non-ANG sources upgradient of any of the AOCs in the northeastern portion of the airport and at the Canine Kennel site.
- Further investigation is needed in order to evaluate the existence of a pathway between ANG activities and any private residential wells down and/or cross gradient from the Gabreski ANGB, as the exact locations of these private wells are not known at this time and there was no record of recent sampling at the time of this ESI.

Based on the ESI results, the following actions are recommended:

- Further investigation should be completed following the CERCLA process.
- Investigate the horizontal and vertical extent of PFAS concentrations in groundwater downgradient of the primary source areas (AOCs within Main Base area and AOC 1 and AOC 20) to further characterize and delineate the PFAS plume. Also, further characterize the potential for PFAS in groundwater to migrate east to Old Ice Pond.
- Investigate the downgradient horizontal and vertical extent of PFAS south of the Long Island Railroad.

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TABLES

Table 1
Expanded Site Inspection Sampling Summary
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	AOC Name	Media Impacted above SL per SI	Number of SBs	Number of Monitoring Wells		Number of Samples					
				Existing	New	SO	VP	GW	SW	SD	ST
1	Former Fire Training Area	GW	0	1	2	0	0	4	0	0	0
3	Former Bldg. 230	n/a	2	0	1	2	0	2	0	0	0
19	Mobile Fire Training Area	n/a	3	0	1	3	0	2	0	0	0
20	Current Fire Training Area	n/a	0	1	1	0	0	4	0	0	0
On Base	Not applicable	GW, SO	0	3	2	0	14	10	0	0	6
Off Base (Upgradient / Downgrdient)	Not applicable	n/a	0	3	7	0	78	28	13	14	2

Notes:
GW - groundwater
SB - soil boring
SD - sediment
SO - soil
SL - screening level
ST - storm water
SW - surface water
VP - vertical profile

Table 2
Groundwater Profile Screening Samples
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

#	AOC	Well Identification Where Profile Performed	Midpoint of Groundwater Grab Sample in Vertical Profile (feet bgs)
1	1	GB-IRP7-MW03	45, 50, 60, 70, 80, 90, 100
2	1	GB-IRP7-MW04	40, 50, 60, 70, 80, 90, 100
3	20	GB-OB-MW04	30, 40, 50, 60, 70, 80, 90, 100
4	On-Base	GB-BB-MW01	46, 50, 60, 70, 80, 90, 100
5	On-Base	GB-BB-MW02	46, 50, 60, 70, 80, 90, 100
6	Off-Base (Upgradient/ Downgradient	GB-OB-MW01	40, 50, 60, 70, 80, 90, 100
7	Off-Base (Upgradient/ Downgradient)	GB-OB-MW02	40, 50, 60, 70, 80, 90, 100
8	Off-Base (Upgradient/ Downgradient)	GB-OB-MW03	25, 30, 40, 50, 60, 70, 80, 90, 100
9	Off-Base (Upgradient/ Downgradient)	GB-OB-MW05	20, 30, 40, 50, 60, 70, 80, 90, 100
10	Off-Base (Upgradient/ Downgradient)	GB-OB-MW06	5, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
11	Off-Base (Upgradient/ Downgradient)	GB-OB-MW07	45, 50, 60, 70, 80, 90, 100
12	Off-Base (Upgradient/ Downgradient)	GB-OB-MW08	40, 50, 60, 70, 80, 90, 100

Notes:

1) Screen length for groundwater grab sample was 2 ft.

Table 3
Monitoring Well Construction Details
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	Well Identification	Well Type	Ground Surface Elevation (NAVD88 feet amsl)	Top of Casing Elevation (NAVD88 feet amsl)	Screened Interval (feet bgs)	Well Diameter (inches)	Casing
1	GB-IRP7-MW03	New	50.74	50.09	62 - 72	2	PVC
1	GB-IRP7-MW04	New	46.51	45.91	40 - 50	2	PVC
1	GB-IRP7-MW01	Existing	42.96	42.31	31.54 - 41.54	2	PVC
3	GB-03-MW01	New	48.98	48.38	39.9 - 49.9	2	PVC
19	GB-19-MW01	New	47.08	46.38	37 - 47	2	PVC
20	GB-OB-MW04	New	30.50	29.60	38 - 48	2	PVC
20	MW-2	Existing	40.63	40.03	30 - 40	1	PVC
On Base	GB-BB-MW01	New	55.13	54.48	44 - 54	2	PVC
On Base	GB-BB-MW02	New	54.28	53.68	46 - 56	2	PVC
On Base	GB-IRP5-MW01	Existing	45.27	44.62	33 - 43	2	PVC
On Base	ECR-SW7	Existing	39.25	41.55	25 - 35	2	PVC
On Base	ECR-MW01	Existing	43.87	43.27	32 - 42	2	PVC
Off Base (Upgradient/ Downgradient)	GB-OB-MW01	New	44.97	44.32	38 - 48	2	PVC
Off Base (Upgradient/ Downgradient)	GB-OB-MW02	New	44.38	43.73	50 - 60	2	PVC

Table 3
Monitoring Well Construction Details
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	Well Identification	Well Type	Ground Surface Elevation (NAVD88 feet amsl)	Top of Casing Elevation (NAVD88 feet amsl)	Screened Interval (feet bgs)	Well Diameter (inches)	Casing
Off Base (Upgradient/ Downgradient)	GB-OB-MW03	New	24.90	24.40	65 - 75	2	PVC
Off Base (Upgradient/ Downgradient)	GB-OB-MW05	New	19.78	19.18	89.5 - 99.5	1	PVC
Off Base (Upgradient/ Downgradient)	GB-OB-MW06	New	5.23	8.18	25 - 35	2	PVC
Off Base (Upgradient/ Downgradient)	GB-OB-MW07	New	55.73	55.33	75 - 85	2	PVC
Off Base (Upgradient/ Downgradient)	GB-OB-MW08	New	44.91	44.26	53 - 63	2	PVC
Off Base (Upgradient/ Downgradient)	SW-8	Existing	32.29	34.89	40 - 50	2	PVC
Off Base (Upgradient/ Downgradient)	SW-9	Existing	30.46	33.16	40 - 50	2	PVC
Off Base (Upgradient/ Downgradient)	MW-1	Existing	22.44	24.84	7 - 17	1	PVC

Table 4
Groundwater Elevation Data #1
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

Well Identification	Top of Casing Elevation (NAVD88 feet amsl)	Screened Interval (ft bgs)	Date	Time	Depth to Water	Groundwater Elevation (NAVD88 feet amsl)	Total Depth (feet btoc)	Notes
GB-IRP7-MW03	50.09	62 - 72	6/17/2020	11:47	37.83	12.26	71.66	
GB-IRP7-MW04	45.91	40 - 50	6/17/2020	11:50	35.57	10.34	49.7	
GB-IRP7-MW01	42.31	31.54 - 41.54	6/17/2020	11:42	31.31	11.00	41.66	
GB-03-MW01	48.38	39.9 - 49.9	6/17/2020	10:08	34.35	14.03	49.54	
GB-19-MW01	46.38	37 - 47	6/18/2020	15:22	33.5	12.88	46.8	
MW-2	40.03	30 - 40	6/17/2020	10:40	30.11	9.92	39.85	
GB-BB-MW01	54.48	44 - 54	6/17/2020	13:30	39.65	14.83	53.79	
GB-BB-MW02	53.68	46 - 56	6/17/2020	13:35	40.22	13.46	56.9	
GB-IRP5-MW01	44.62	33 - 43	6/18/2020	11:09	33.1	11.52	43	
ECR-SW7	41.55	25 - 35	6/18/2020	8:30	28.39	13.16	34.6	
ECR-MW01	43.27	32 - 42	6/18/2020	9:30	30.46	12.81	42.09	
GB-OB-MW01	44.32	38 - 48	6/17/2020	12:25	33.65	10.67	48.21	
GB-OB-MW02	43.73	50 - 60	6/17/2020	12:37	34.09	9.64	59.6	
GB-OB-MW03	24.40	65 - 75	6/17/2020	12:42	14.25	10.15	72.7	
GB-OB-MW04	29.60	38 - 48	6/17/2020	12:51	22.82	6.78	47.81	
GB-OB-MW05	19.18	89.5 - 99.5	6/17/2020	13:00	12.37	6.81	97.32	
GB-OB-MW06	8.18	25 - 35	6/17/2020	13:15	5.05	3.13	37.89	
GB-OB-MW07	55.33	75 - 85	6/18/2020	14:00	40.18	15.15	83.73	
GB-OB-MW08	44.26	53 - 63	6/17/2020	12:30	34	10.26	61.27	
SW-8	34.89	40 - 50	6/17/2020	9:18	23.3	11.59	52.5	
SW-9	33.16	40 - 50	6/17/2020	9:15	21.4	11.76	52.2	
MW-1	NG	7 - 17	NG	NG	NG	NG	NG	No access

Notes:
NG - Not Gauged

Table 4
Groundwater Elevation Data #2
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

Well Identification	Top of Casing Elevation (NAVD88 feet amsl)	Screened Interval (ft bgs)	Date	Time	Depth to Water	Groundwater Elevation (NAVD88 feet amsl)	Total Depth (feet btoc)	Notes
GB-IRP7-MW03	50.09	62 - 72	6/26/2020	11:49	37.88	12.21	71.7	
GB-IRP7-MW04	45.91	40 - 50	6/26/2020	11:38	35.70	10.21	49.7	
GB-IRP7-MW01	42.31	31.54 - 41.54	6/26/2020	11:42	31.40	10.91	41.7	
GB-03-MW01	48.38	39.9 - 49.9	6/26/2020	10:08	34.35	14.03	49.5	
GB-19-MW01	46.38	37 - 47	6/26/2020	14:09	33.6	12.78	46.8	
MW-2	40.03	30 - 40	6/26/2020	11:31	30.18	9.85	39.9	
GB-BB-MW01	54.48	44 - 54	6/26/2020	10:22	39.66	14.82	53.8	
GB-BB-MW02	53.68	46 - 56	6/26/2020	10:29	40.29	13.39	55.9	
GB-IRP5-MW01	44.62	33 - 43	6/26/2020	9:59	33.22	11.40	43	
ECR-SW7	41.55	25 - 35	6/26/2020	9:34	28.53	13.02	34.6	
ECR-MW01	43.27	32 - 42	6/26/2020	9:43	30.65	12.62	42.1	
GB-OB-MW01	44.32	38 - 48	6/26/2020	12:30	33.70	10.62	48.2	
GB-OB-MW02	43.73	50 - 60	6/26/2020	12:35	34.22	9.51	59.6	
GB-OB-MW03	24.40	65 - 75	6/26/2020	12:46	14.42	9.98	72.8	
GB-OB-MW04	29.60	38 - 48	6/26/2020	12:51	23.00	6.60	47.8	
GB-OB-MW05	19.18	89.5 - 99.5	6/26/2020	11:14	12.40	6.78	97.3	
GB-OB-MW06	8.18	25 - 35	6/26/2020	12:08	5.00	3.18	37.9	
GB-OB-MW07	55.33	75 - 85	6/26/2020	13:57	40.25	15.08	83.7	
GB-OB-MW08	44.26	53 - 63	6/26/2020	12:40	34.12	10.14	61.3	
SW-8	34.89	40 - 50	6/26/2020	10:52	23.45	11.44	52.5	
SW-9	33.16	40 - 50	6/26/2020	10:49	21.60	11.56	52.2	
MW-1	24.84	7 - 17	6/26/2020	11:08	14.70	10.14	22.0	

Notes:

NG - Not Gauged

Table 5
Summary of Soil Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/g)	6:2FTS (ng/g)	8:2FTS (ng/g)	NEtFOSAA (ng/g)	NMeFOSAA (ng/g)	PFBA (ng/g)	PFDA (ng/g)	PFDoA (ng/g)	PFPeA (ng/g)	PFPeS (ng/g)	PFTeA (ng/g)	PFTriA (ng/g)	PFUnA (ng/g)	PFBS (ng/g)	PFOA (ng/g)	PFOS (ng/g)
				Screening Level	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130,000[2]	130[2]	130[2]
3-Former Bldg. 230	GB-03-SB01	GB-03-SB01-0-1	02/10/2020	N	<1.7 U	<1.7 U	<1.7 U	<0.42 U	<0.42 U	< 2.1 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 UJ	<0.42 U	<0.42 U	<1.7 U	<0.42 U	0.39 J
3-Former Bldg. 230	GB-03-SB01	GB-03-SB01-4-5	02/10/2020	N	<1.6 U	<1.6 U	<1.6 U	<0.40 U	<0.40 U	<1.6 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 UJ	<0.40 U	<0.40 U	<1.6 U	<0.40 U	2.5
3-Former Bldg. 230	GB-03-SB02	GB-03-SB02-0-1	02/10/2020	N	<1.7 U	<1.7 U	<1.7 U	<0.41 U	<0.41 U	<2.1 U	<0.41 U	<0.41 U	0.25 J	<0.41 U	<0.41 UJ	<0.41 U	<0.41 U	<1.7 U	<0.41 U	3.4
3-Former Bldg. 230	GB-03-SB02	GB-03-SB02-4-5	02/10/2020	N	<1.5 U	<1.5 U	<1.5 U	<0.39 U	<0.39 U	<1.5 U	<0.39 U	<0.39 U	0.19 J	<0.39 U	<0.39 UJ	<0.39 U	<0.39 U	<1.5 U	<0.39 U	1.9
19-Mobile FTA	GB-19-SB01	GB-19-SB01-0-1	02/25/2020	N	<1.5 U	<1.5 U	<1.5 U	<0.38 U	<0.38 U	<1.5 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<1.5 U	<0.38 U	<0.38 U
19-Mobile FTA	GB-19-SB01	GB-19-SB01-4-5	02/25/2020	N	<1.6 U	<1.6 U	<1.6 U	<0.40 UJ	<0.40 UJ	<1.6 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<1.6 U	<0.40 U	<0.40 U
19-Mobile FTA	GB-19-SB02	GB-19-SB02-0-1	02/25/2020	N	<1.6 U	<1.6 U	<1.6 U	<0.41 U	<0.41 UJ	<1.6 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<1.6 U	<0.41 U	0.61 J
19-Mobile FTA	GB-19-SB02	GB-19-SB02-4-5	02/25/2020	N	<1.6 U	<1.6 U	<1.6 U	<0.41 U	<0.41 UJ	<1.6 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<1.6 U	<0.41 U	<0.41 U
19-Mobile FTA	GB-19-SB02	GB-19-SB92-4-5	02/25/2020	FD	<1.6 U	<1.6 U	<1.6 U	<0.40 UJ	<0.40 UJ	<1.6 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<1.6 U	<0.40 U	<0.40 U
19-Mobile FTA	GB-19-SB03	GB-19-SB03-0-1	02/25/2020	N	<1.6 U	<1.6 U	<1.6 U	<0.41 U	<0.41 U	<1.6 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<1.6 U	<0.41 U	0.20 J
19-Mobile FTA	GB-19-SB03	GB-19-SB03-4-5	02/25/2020	N	<1.7 U	<1.7 U	<1.7 U	<0.42 U	<0.42 U	<1.7 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<1.7 U	<0.42 U	<0.42 U

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFDS (ng/g)	PFHpA (ng/g)	PFHpS (ng/g)	PFHxA (ng/g)	PFHxS (ng/g)	PFNA (ng/g)	PFNS (ng/g)	PFOSA (ng/g)
				Screening Level	NA	NA	NA	NA	NA	NA	NA	NA
3-Former Bldg. 230	GB-03-SB01	GB-03-SB01-0-1	02/10/2020	N	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U
3-Former Bldg. 230	GB-03-SB01	GB-03-SB01-4-5	02/10/2020	N	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
3-Former Bldg. 230	GB-03-SB02	GB-03-SB02-0-1	02/10/2020	N	<0.41 U	<0.41 U	<0.41 U	<0.41 U	0.37 J	<0.41 U	<0.41 U	<0.41 U
3-Former Bldg. 230	GB-03-SB02	GB-03-SB02-4-5	02/10/2020	N	<0.39 U	<0.39 U	<0.39 U	<0.39 U	0.57 J	<0.39 U	<0.39 U	<0.39 U
19-Mobile FTA	GB-19-SB01	GB-19-SB01-0-1	02/25/2020	N	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U	<0.38 U
19-Mobile FTA	GB-19-SB01	GB-19-SB01-4-5	02/25/2020	N	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
19-Mobile FTA	GB-19-SB02	GB-19-SB02-0-1	02/25/2020	N	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U
19-Mobile FTA	GB-19-SB02	GB-19-SB02-4-5	02/25/2020	N	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U
19-Mobile FTA	GB-19-SB02	GB-19-SB92-4-5	02/25/2020	FD	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U	<0.40 U
19-Mobile FTA	GB-19-SB03	GB-19-SB03-0-1	02/25/2020	N	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U	<0.41 U
19-Mobile FTA	GB-19-SB03	GB-19-SB03-4-5	02/25/2020	N	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U	<0.42 U

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA RSL Calc - USEPA Regional Screening Level Calculator, Residential Soil, HQ=0.1; available at: https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/g - nanograms per gram.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

J - Analyte detected, estimated concentration.

UJ - Analyte not detected. LOD is approximate.

Table 6
Summary of Groundwater Profile Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/L)	6:2FTS (ng/L)	8:2FTS (ng/L)	NEtFOSAA (ng/L)	NMeFOSAA (ng/L)	PFBA (ng/L)	PFDA (ng/L)	PFDoA (ng/L)	PFDS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-45-47	02/05/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-50-52	02/05/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-60-62	02/05/2020	N	<9.8 U	23 J	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-70-72	02/05/2020	N	<10 U	38 J	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-80-82	02/05/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-90-92	02/05/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-100-102	02/05/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-40-42	02/06/2020	N	96 J	33,000	3,400	<97 U	<120 U	2,500	<97 U	<97 U	<97 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-50-52	02/06/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-60-62	02/06/2020	N	<9.9 U	20 J	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-70-72	02/06/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-80-82	02/06/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-90-92	02/05/2020	N	<9.8 U	53	30	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-100-102	02/05/2020	N	<10 U	200	43	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-30-32	02/04/2020	N	<10 U	38 J	45	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-40-42	02/04/2020	N	<9.9 U	690	710	<9.9 U	<12 U	140	13 J	<9.9 U	<9.9 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-50-52	02/04/2020	N	<9.8 U	230	25 J	<9.8 U	<12 U	45 J	<9.8 U	<9.8 U	<9.8 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-60-62	02/04/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-70-72	02/04/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-80-82	02/04/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-90-92	02/04/2020	N	<9.8 U	200	150	<9.8 U	<12 U	32 J	<9.8 U	<9.8 U	<9.8 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-100-102	02/04/2020	N	<9.8 U	62	30	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-40-42	01/29/2020	N	<10 U	40 J	<20 U	<10 U	<12 U	40 J	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-50-52	01/30/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-60-62	01/30/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	24 J	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-70-72	01/30/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	21 J	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-80-82	01/30/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-90-92	01/30/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-100-102	01/29/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-40-42	01/30/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-50-52	02/03/2020	N	<10 U	780	500	<10 U	<12 U	130	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-60-62	02/03/2020	N	<10 U	130	68	<10 U	<12 U	23 J	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-70-72	02/03/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-80-82	01/31/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-90-92	01/31/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-100-102	01/30/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-25-27	02/04/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-30-32	02/04/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U

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Summary of Groundwater Profile Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFHpA (ng/L)	PFHpS (ng/L)	PFHxA (ng/L)	PFHxS (ng/L)	PFNA (ng/L)	PFNS (ng/L)	PFOSA (ng/L)	PFPeA (ng/L)	PFPeS (ng/L)	PFTeA (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-45-47	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-50-52	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-60-62	02/05/2020	N	5.6 J	<9.8 U	8.7 J	73	<9.8 U	<9.8 U	<9.8 U	7.5 J	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-70-72	02/05/2020	N	15 J	14 J	20	150	<10 U	<10 U	<10 U	15 J	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-80-82	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-90-92	02/05/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-100-102	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-40-42	02/06/2020	N	4,500	7,000	12,000	47,000	140 J	<97 U	<97 U	10,000	1,300	<97 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-50-52	02/06/2020	N	<9.8 U	<9.8 U	<9.8 U	6.4 J	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-60-62	02/06/2020	N	<9.9 U	<9.9 U	5.2 J	13 J	<9.9 U	<9.9 U	<9.9 U	5.5 J	<9.9 U	<9.9 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-70-72	02/06/2020	N	<9.9 U	<9.9 U	5.8 J	25	<9.9 U	<9.9 U	<9.9 U	5.1 J	<9.9 U	<9.9 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-80-82	02/06/2020	N	<10 U	<10 U	<10 U	5.0 J	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-90-92	02/05/2020	N	5.4 J	5.6 J	14 J	44	<9.8 U	<9.8 U	<9.8 U	13 J	<9.8 U	<9.8 U
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-100-102	02/05/2020	N	18 J	13 J	43	120	<10 U	<10 U	<10 U	39	<10 U	<10 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-30-32	02/04/2020	N	16 J	<10 U	29	66	<10 U	<10 U	<10 U	27	<10 U	<10 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-40-42	02/04/2020	N	250	45	520	1,300	15 J	6.1 J	<9.9 U	420	50	<9.9 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-50-52	02/04/2020	N	72	8.4 J	140	240	7.3 J	<9.8 U	<9.8 U	140	11 J	<9.8 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-60-62	02/04/2020	N	<9.8 U	<9.8 U	5.2 J	19 J	<9.8 U	<9.8 U	<9.8 U	5.4 J	<9.8 U	<9.8 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-70-72	02/04/2020	N	<9.9 U	<9.9 U	<9.9 U	11 J	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-80-82	02/04/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-90-92	02/04/2020	N	56	11 J	120	320	<9.8 U	<9.8 U	<9.8 U	99	12 J	<9.8 U
20-Current FTA	GB-OB-MW04	GB-OB-MW04-100-102	02/04/2020	N	20 J	<9.8 U	53	130	<9.8 U	<9.8 U	<9.8 U	46	6.8 J	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-40-42	01/29/2020	N	65	64	260	1,300	15 J	<10 U	<10 U	130	78	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-50-52	01/30/2020	N	13 J	<9.7 U	23	47	<9.7 U	<9.7 U	<9.7 U	28	10 J	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-60-62	01/30/2020	N	9.7 J	<9.9 U	22	14 J	<9.9 U	<9.9 U	<9.9 U	40	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-70-72	01/30/2020	N	15 J	<9.8 U	31	39	<9.8 U	<9.8 U	<9.8 U	40	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-80-82	01/30/2020	N	<9.8 U	<9.8 U	11 J	20	<9.8 U	<9.8 U	<9.8 U	13 J	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-90-92	01/30/2020	N	5.9 J	<9.9 U	14 J	19 J	<9.9 U	<9.9 U	<9.9 U	22	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-100-102	01/29/2020	N	<9.9 U	<9.9 U	15 J	24	<9.9 U	<9.9 U	<9.9 U	19 J	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-40-42	01/30/2020	N	18 J	<9.9 U	41	240	<9.9 U	<9.9 U	<9.9 U	31	10 J	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-50-52	02/03/2020	N	290	69	1,100	3,200	34	<10 U	<10 U	420	430	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-60-62	02/03/2020	N	40	9.9 J	110	310	6.2 J	<10 U	<10 U	70	35	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-70-72	02/03/2020	N	10 J	<9.9 U	16 J	75	<9.9 U	<9.9 U	<9.9 U	19 J	6.3 J	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-80-82	01/31/2020	N	4.9 J	<9.7 U	7.7 J	21	<9.7 U	<9.7 U	<9.7 U	7.4 J	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-90-92	01/31/2020	N	7.0 J	<9.7 U	12 J	30	<9.7 U	<9.7 U	<9.7 U	11 J	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-100-102	01/30/2020	N	5.2 J	<9.8 U	8.6 J	17 J	<9.8 U	<9.8 U	<9.8 U	9.5 J	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-25-27	02/04/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-30-32	02/04/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U

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AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFTriA (ng/L)	PFUnA (ng/L)	PFBS (ng/L)	PFOA (ng/L)	PFOS (ng/L)	SUM of PFOA + PFOS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	70[2]	70[2]	70[2]
Screening Level					NA	NA	40,000[1]	40[3]	40[3]	NA
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-45-47	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	ND
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-50-52	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	ND
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-60-62	02/05/2020	N	<9.8 U	<9.8 U	<9.8 U	11 J	**45**	56 J
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-70-72	02/05/2020	N	<10 U	<10 U	<10 U	20	**250**	270
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-80-82	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	ND
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-90-92	02/05/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	ND
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-100-102	02/05/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	ND
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-40-42	02/06/2020	N	<97 U	<97 U	440	**14,000**	**220,000 E**	234,000 E
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-50-52	02/06/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	**57**	57
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-60-62	02/06/2020	N	<9.9 U	<9.9 U	<9.9 U	6.8 J	**130**	136.8 J
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-70-72	02/06/2020	N	<9.9 U	<9.9 U	<9.9 U	6.1 J	**190**	196.1 J
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-80-82	02/06/2020	N	<10 U	<10 U	<10 U	<10 U	**57**	57
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-90-92	02/05/2020	N	<9.8 U	<9.8 U	<9.8 U	6.9 J	**980**	986.9 J
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-100-102	02/05/2020	N	<10 U	<10 U	<10 U	21	**1,700**	1,721
20-Current FTA	GB-OB-MW04	GB-OB-MW04-30-32	02/04/2020	N	<10 U	<10 U	<10 U	15 J	**130**	145 J
20-Current FTA	GB-OB-MW04	GB-OB-MW04-40-42	02/04/2020	N	<9.9 U	<9.9 U	28	**290**	**2,600**	2,890
20-Current FTA	GB-OB-MW04	GB-OB-MW04-50-52	02/04/2020	N	<9.8 U	<9.8 U	5.6 J	**91**	**610**	701
20-Current FTA	GB-OB-MW04	GB-OB-MW04-60-62	02/04/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	25	25
20-Current FTA	GB-OB-MW04	GB-OB-MW04-70-72	02/04/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	12 J	12 J
20-Current FTA	GB-OB-MW04	GB-OB-MW04-80-82	02/04/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	5.6 J	5.6 J
20-Current FTA	GB-OB-MW04	GB-OB-MW04-90-92	02/04/2020	N	<9.8 U	<9.8 U	6.9 J	**62**	**660**	722
20-Current FTA	GB-OB-MW04	GB-OB-MW04-100-102	02/04/2020	N	<9.8 U	<9.8 U	<9.8 U	21	**210**	231
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-40-42	01/29/2020	N	<10 U	<10 U	22	**210**	**13,000**	13,210
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-50-52	01/30/2020	N	<9.7 U	<9.7 U	5.8 J	17 J	**83**	100 J
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-60-62	01/30/2020	N	<9.9 U	<9.9 U	<9.9 U	16 J	38	54 J
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-70-72	01/30/2020	N	<9.8 U	<9.8 U	6.9 J	18 J	**59**	77 J
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-80-82	01/30/2020	N	<9.8 U	<9.8 U	<9.8 U	8.8 J	**75**	83.8 J
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-90-92	01/30/2020	N	<9.9 U	<9.9 U	<9.9 U	9.8 J	**45**	54.8 J
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-100-102	01/29/2020	N	<9.9 U	<9.9 U	<9.9 U	10 J	**70**	80 J
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-40-42	01/30/2020	N	<9.9 U	<9.9 U	12 J	8.1 J	16 J	24.1 J
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-50-52	02/03/2020	N	<10 U	<10 U	130	**480**	**8,700**	9,180
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-60-62	02/03/2020	N	<10 U	<10 U	15 J	**59**	**950**	1,009
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-70-72	02/03/2020	N	<9.9 U	<9.9 U	<9.9 U	19 J	**130**	149 J
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-80-82	01/31/2020	N	<9.7 U	<9.7 U	<9.7 U	9.3 J	**48**	57.3 J
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-90-92	01/31/2020	N	<9.7 U	<9.7 U	<9.7 U	13 J	**61**	74 J
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-100-102	01/30/2020	N	<9.8 U	<9.8 U	<9.8 U	12 J	35	47 J
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-25-27	02/04/2020	N	<10 U	<10 U	<10 U	6.6 J	7.9 J	14.5 J
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-30-32	02/04/2020	N	<9.9 U	<9.9 U	<9.9 U	6.5 J	<9.9 U	6.5 J

Table 6
Summary of Groundwater Profile Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/L)	6:2FTS (ng/L)	8:2FTS (ng/L)	NEtFOSAA (ng/L)	NMeFOSAA (ng/L)	PFBA (ng/L)	PFDA (ng/L)	PFDoA (ng/L)	PFDS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-40-42	02/03/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-50-52	02/03/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-60-62	02/03/2020	N	<9.9 U	26 J	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-70-72	02/03/2020	N	<9.6 U	52	<19 U	<9.6 U	<12 U	44 J	<9.6 U	<9.6 U	<9.6 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-80-82	02/03/2020	N	<9.8 U	46 J	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-90-92	02/03/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	20 J	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-100-102	02/03/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	21 J	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-20-22	02/10/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-30-32	02/10/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-40-42	02/10/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-50-52	02/10/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-60-62	02/10/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-70-72	02/10/2020	N	<9.9 U	<39 U	<20 U	<9.9 U	<12 U	<39 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-80-82	02/07/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-90-92	02/07/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-100-102	02/07/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-5-7	02/07/2020	N	<97 U	<390 U	<190 U	<97 U	<120 U	<390 U	<97 U	<97 U	<97 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-10-12	02/07/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-20-22	02/07/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-30-32	02/07/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-40-42	02/07/2020	N	<9.5 U	<38 U	<19 U	<9.5 U	<11 U	<38 U	<9.5 U	<9.5 U	<9.5 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-50-52	02/07/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-60-62	02/06/2020	N	<10 U	31 J	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-70-72	02/06/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-80-82	02/06/2020	N	<9.9 U	91	28 J	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-90-92	02/07/2020	N	<98 U	<390 U	<200 U	<98 U	<120 U	<390 U	<98 U	<98 U	<98 U
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-45-47	01/31/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-50-52	01/31/2020	N	<9.6 U	<39 U	<19 U	<9.6 U	<12 U	<39 U	<9.6 U	<9.6 U	<9.6 U
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-60-62	01/31/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-70-72	01/31/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-80-82	01/31/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-90-92	01/31/2020	N	<9.9 U	<39 U	<20 U	<9.9 U	<12 U	<39 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-100-102	01/31/2020	N	<10 U	60	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-40-42	02/26/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	66	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-50-52	02/26/2020	N	<10 U	89	180	<10 U	<12 U	37 J	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-60-62	02/26/2020	N	<9.9 U	340	78	<9.9 U	<12 U	81	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-70-72	02/26/2020	N	<9.8 U	130	16 J	<9.8 U	<12 U	91	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-80-82	02/26/2020	N	<10 U	120	<20 U	<10 U	<12 U	70	<10 U	<10 U	<10 U

Table 6
Summary of Groundwater Profile Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFHpA (ng/L)	PFHpS (ng/L)	PFHxA (ng/L)	PFHxS (ng/L)	PFNA (ng/L)	PFNS (ng/L)	PFOSA (ng/L)	PFPeA (ng/L)	PFPeS (ng/L)	PFTeA (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Downgradient/Upgradient (Off Base)	GB-0B-MW03	GB-0B-MW03-40-42	02/03/2020	N	8.1 J	<9.8 U	13 J	70	<9.8 U	<9.8 U	<9.8 U	12 J	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-0B-MW03	GB-0B-MW03-50-52	02/03/2020	N	14 J	<9.7 U	21	110	<9.7 U	<9.7 U	<9.7 U	20	7.6 J	<9.7 U
Downgradient/Upgradient (Off Base)	GB-0B-MW03	GB-0B-MW03-60-62	02/03/2020	N	13 J	<9.9 U	25	100	<9.9 U	<9.9 U	<9.9 U	22	6.9 J	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW03	GB-0B-MW03-70-72	02/03/2020	N	32	6.2 J	160	320	<9.6 U	<9.6 U	<9.6 U	150	46	<9.6 U
Downgradient/Upgradient (Off Base)	GB-0B-MW03	GB-0B-MW03-80-82	02/03/2020	N	11 J	<9.8 U	39	130	<9.8 U	<9.8 U	<9.8 U	37	14 J	<9.8 U
Downgradient/Upgradient (Off Base)	GB-0B-MW03	GB-0B-MW03-90-92	02/03/2020	N	14 J	<9.8 U	62	140	<9.8 U	<9.8 U	<9.8 U	59	22	<9.8 U
Downgradient/Upgradient (Off Base)	GB-0B-MW03	GB-0B-MW03-100-102	02/03/2020	N	15 J	<9.9 U	73	150	<9.9 U	<9.9 U	<9.9 U	66	24	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-20-22	02/10/2020	N	<9.9 U	<9.9 U	<9.9 U	5.8 J	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-30-32	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-40-42	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-50-52	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-60-62	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-70-72	02/10/2020	N	5.7 J	<9.9 U	7.2 J	27	<9.9 U	<9.9 U	<9.9 U	6.8 J	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-80-82	02/07/2020	N	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-90-92	02/07/2020	N	<9.8 U	<9.8 U	16 J	25	<9.8 U	<9.8 U	<9.8 U	10 J	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-0B-MW05	GB-0B-MW05-100-102	02/07/2020	N	<9.8 U	<9.8 U	11 J	16 J	<9.8 U	<9.8 U	<9.8 U	6.6 J	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-5-7	02/07/2020	N	<97 U	<97 U	<97 U	<97 U	<97 U	<97 U	<97 U	<97 U	<97 U	<97 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-10-12	02/07/2020	N	<9.9 U	<9.9 U	<9.9 U	17 J	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-20-22	02/07/2020	N	<9.9 U	<9.9 U	<9.9 U	7.0 J	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-30-32	02/07/2020	N	<9.7 U	<9.7 U	6.6 J	31	<9.7 U	<9.7 U	<9.7 U	5.0 J	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-40-42	02/07/2020	N	<9.5 U	<9.5 U	5.8 J	8.2 J	<9.5 U	<9.5 U	<9.5 U	8.3 J	<9.5 U	<9.5 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-50-52	02/07/2020	N	<9.7 U	<9.7 U	9.6 J	38	<9.7 U	<9.7 U	<9.7 U	8.7 J	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-60-62	02/06/2020	N	6.8 J	<10 U	17 J	49	7.3 J	<10 U	<10 U	12 J	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-70-72	02/06/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-80-82	02/06/2020	N	8.4 J	15 J	32	100	<9.9 U	<9.9 U	<9.9 U	21	5.0 J	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW06	GB-0B-MW06-90-92	02/07/2020	N	<98 U	<98 U	<98 U	<98 U	<98 U	<98 U	<98 U	<98 U	<98 U	<98 U
Downgradient/Upgradient (Off Base)	GB-0B-MW07	GB-0B-MW07-45-47	01/31/2020	N	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	5.7 J	<9.7 U	<9.7 U
Downgradient/Upgradient (Off Base)	GB-0B-MW07	GB-0B-MW07-50-52	01/31/2020	N	<9.6 U	<9.6 U	<9.6 U	<9.6 U	<9.6 U	<9.6 U	<9.6 U	<9.6 U	<9.6 U	<9.6 U
Downgradient/Upgradient (Off Base)	GB-0B-MW07	GB-0B-MW07-60-62	01/31/2020	N	<9.9 U	<9.9 U	<9.9 U	5.9 J	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW07	GB-0B-MW07-70-72	01/31/2020	N	<9.8 U	<9.8 U	<9.8 U	7.6 J	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U
Downgradient/Upgradient (Off Base)	GB-0B-MW07	GB-0B-MW07-80-82	01/31/2020	N	<9.9 U	<9.9 U	<9.9 U	21	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW07	GB-0B-MW07-90-92	01/31/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW07	GB-0B-MW07-100-102	01/31/2020	N	6.5 J	<10 U	13 J	70	<10 U	<10 U	<10 U	18 J	<10 U	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW08	GB-0B-MW08-40-42	02/26/2020	N	66	<10 U	380	180	<10 U	<10 U	<10 U	140	530	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW08	GB-0B-MW08-50-52	02/26/2020	N	50	12 J	130	900	18 J	<10 U	8.9 J	65	160	<10 U
Downgradient/Upgradient (Off Base)	GB-0B-MW08	GB-0B-MW08-60-62	02/26/2020	N	89	28	200	510	28	<9.9 U	<9.9 U	220	40	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW08	GB-0B-MW08-70-72	02/26/2020	N	62	13 J	220	300	7.7 J	<9.8 U	<9.8 U	280	37	<9.8 U
Downgradient/Upgradient (Off Base)	GB-0B-MW08	GB-0B-MW08-80-82	02/26/2020	N	55	13 J	170	290	8.9 J	<10 U	5.2 J	190	33	<10 U

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Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFTriA (ng/L)	PFUnA (ng/L)	PFBS (ng/L)	PFOA (ng/L)	PFOS (ng/L)	SUM of PFOA + PFOS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	70[2]	70[2]	70[2]
Screening Level					NA	NA	40,000[l]	40[3]	40[3]	NA
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-40-42	02/03/2020	N	<9.8 U	<9.8 U	<9.8 U	12 J	36	48 J
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-50-52	02/03/2020	N	<9.7 U	<9.7 U	<9.7 U	18 J	**66**	84 J
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-60-62	02/03/2020	N	<9.9 U	<9.9 U	<9.9 U	14 J	**82**	96 J
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-70-72	02/03/2020	N	<9.6 U	<9.6 U	44	26	**88**	114
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-80-82	02/03/2020	N	<9.8 U	<9.8 U	19 J	12 J	**68**	80 J
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-90-92	02/03/2020	N	<9.8 U	<9.8 U	30	9.3 J	27	36.3 J
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-100-102	02/03/2020	N	<9.9 U	<9.9 U	31	9.9 J	**40**	49.9 J
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-20-22	02/10/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-30-32	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	8.1 J	8.1 J
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-40-42	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	6.1 J	6.1 J
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-50-52	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	10 J	10 J
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-60-62	02/10/2020	N	<10 U	<10 U	<10 U	<10 U	6.0 J	6 J
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-70-72	02/10/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	14 J	14 J
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-80-82	02/07/2020	N	<9.7 U	<9.7 U	<9.7 U	<9.7 U	<9.7 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-90-92	02/07/2020	N	<9.8 U	<9.8 U	<9.8 U	6.7 J	**87**	93.7 J
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-100-102	02/07/2020	N	<9.8 U	<9.8 U	<9.8 U	6.5 J	**90**	96.5 J
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-5-7	02/07/2020	N	<97 U	<97 U	<97 U	<97 U	<97 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-10-12	02/07/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-20-22	02/07/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	26	26
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-30-32	02/07/2020	N	<9.7 U	<9.7 U	<9.7 U	6.9 J	**250**	256.9 J
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-40-42	02/07/2020	N	<9.5 U	<9.5 U	<9.5 U	<9.5 U	**46**	46
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-50-52	02/07/2020	N	<9.7 U	<9.7 U	<9.7 U	7.7 J	**320**	327.7 J
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-60-62	02/06/2020	N	<10 U	<10 U	<10 U	24	**320**	344
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-70-72	02/06/2020	N	<10 U	<10 U	<10 U	<10 U	6.1 J	6.1 J
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-80-82	02/06/2020	N	<9.9 U	<9.9 U	<9.9 U	27	**1,300**	1,327
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-90-92	02/07/2020	N	<98 U	<98 U	<98 U	<98 U	**140 J**	140 J
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-45-47	01/31/2020	N	<9.7 U	<9.7 U	<9.7 U	<9.7 U	9.4 J	9.4 J
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-50-52	01/31/2020	N	<9.6 U	<9.6 U	<9.6 U	<9.6 U	<9.6 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-60-62	01/31/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-70-72	01/31/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	18 J	18 J
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-80-82	01/31/2020	N	<9.9 U	<9.9 U	<9.9 U	8.4 J	**230**	238.4 J
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-90-92	01/31/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-100-102	01/31/2020	N	<10 U	<10 U	<10 U	6.4 J	**120**	126.4 J
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-40-42	02/26/2020	N	<10 U	<10 U	400	<10 U	19 J	19 J
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-50-52	02/26/2020	N	<10 U	<10 U	83	**61**	**1,700**	1,761
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-60-62	02/26/2020	N	<9.9 U	<9.9 U	35	**85**	**2,700**	2,785
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-70-72	02/26/2020	N	<9.8 U	<9.8 U	47	**55**	**550**	605
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-80-82	02/26/2020	N	<10 U	<10 U	38	**54**	**440**	494

Table 6
Summary of Groundwater Profile Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/L)	6:2FTS (ng/L)	8:2FTS (ng/L)	NEtFOSAA (ng/L)	NMeFOSAA (ng/L)	PFBA (ng/L)	PFDA (ng/L)	PFDoA (ng/L)	PFDS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-90-92	02/26/2020	N	<9.9 U	62	19 J	<9.9 U	<12 U	83	8.8 J	<9.9 U	<9.9 U
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-100-102	02/26/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-46-48	01/28/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-50-52	01/28/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-60-62	01/28/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-70-72	01/28/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-80-82	01/28/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-90-92	01/28/2020	N	<10 U	<40 U	<20 U	<10 U	<12 U	<40 U	<10 U	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-100-102	01/28/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-46-48	01/29/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-50-52	01/29/2020	N	<9.7 U	<39 U	<19 U	<9.7 U	<12 U	<39 U	<9.7 U	<9.7 U	<9.7 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-60-62	01/29/2020	N	<9.9 U	<39 U	<20 U	<9.9 U	<12 U	<39 U	<9.9 U	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-70-72	01/29/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-80-82	01/29/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-90-92	01/29/2020	N	<9.8 U	<39 U	<20 U	<9.8 U	<12 U	<39 U	<9.8 U	<9.8 U	<9.8 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-100-102	01/29/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos .

Value is for individual and combined concentrations of PFOS and PFOA.

[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/L - nanograms per liter.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

ND - There were no detections in the PFAS Summation.

J - Analyte detected, estimated concentration.

E - Exceeds instrument calibration range. Estimated concentration.

Results equal to or exceeding the Screening Level are bolded.

Results equal to or exceeding the USEPA lifetime Health Advisory are highlighted yellow.

Results are unvalidated data because data was used only for selection of the screened interval for the permanent wells; data should not be used for future decision making.

Table 6
Summary of Groundwater Profile Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFHpA (ng/L)	PFHpS (ng/L)	PFHxA (ng/L)	PFHxS (ng/L)	PFNA (ng/L)	PFNS (ng/L)	PFOSA (ng/L)	PFPeA (ng/L)	PFPeS (ng/L)	PFTeA (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Downgradient/Upgradient (Off Base)	GB-0B-MW08	GB-0B-MW08-90-92	02/26/2020	N	38	12 J	140	280	15 J	<9.9 U	<9.9 U	100	36	<9.9 U
Downgradient/Upgradient (Off Base)	GB-0B-MW08	GB-0B-MW08-100-102	02/26/2020	N	<10 U	<10 U	5.2 J	8.7 J	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-46-48	01/28/2020	N	5.2 J	<9.9 U	5.6 J	21	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-50-52	01/28/2020	N	<10 U	<10 U	<10 U	14 J	<10 U	<10 U	<10 U	5.2 J	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-60-62	01/28/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-70-72	01/28/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-80-82	01/28/2020	N	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	5.6 J	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-90-92	01/28/2020	N	<10 U	<10 U	<10 U	5.1 J	<10 U	<10 U	<10 U	5.6 J	<10 U	<10 U
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-100-102	01/28/2020	N	<9.7 U	<9.7 U	<9.7 U	6.3 J	<9.7 U	<9.7 U	<9.7 U	8.1 J	<9.7 U	<9.7 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-46-48	01/29/2020	N	11 J	<9.7 U	11 J	24	<9.7 U	<9.7 U	<9.7 U	17 J	<9.7 U	<9.7 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-50-52	01/29/2020	N	19 J	<9.7 U	18 J	49	<9.7 U	<9.7 U	<9.7 U	15 J	<9.7 U	<9.7 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-60-62	01/29/2020	N	<9.9 U	<9.9 U	10 J	8.6 J	<9.9 U	<9.9 U	<9.9 U	16 J	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-70-72	01/29/2020	N	5.0 J	<9.9 U	12 J	13 J	<9.9 U	<9.9 U	<9.9 U	19 J	<9.9 U	<9.9 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-80-82	01/29/2020	N	<9.8 U	<9.8 U	5.9 J	<9.8 U	<9.8 U	<9.8 U	<9.8 U	7.4 J	<9.8 U	<9.8 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-90-92	01/29/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-100-102	01/29/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos .
Value is for individual and combined concentrations of PFOS and PFOA.

[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/L - nanograms per liter.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

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J - Analyte detected, estimated concentration.

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Results equal to or exceeding the Screening Level are bolded.

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Table 6
Summary of Groundwater Profile Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFTriA (ng/L)	PFUnA (ng/L)	PFBS (ng/L)	PFOA (ng/L)	PFOS (ng/L)	SUM of PFOA + PFOS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	70[2]	70[2]	70[2]
Screening Level					NA	NA	40,000[3]	40[3]	40[3]	NA
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-90-92	02/26/2020	N	<9.9 U	<9.9 U	45	**75**	**720**	795
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-100-102	02/26/2020	N	<10 U	<10 U	<10 U	<10 U	15 J	15 J
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-46-48	01/28/2020	N	<9.9 U	<9.9 U	<9.9 U	13 J	7.7 J	20.7 J
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-50-52	01/28/2020	N	<10 U	<10 U	<10 U	9.3 J	6.4 J	15.7 J
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-60-62	01/28/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	ND
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-70-72	01/28/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	ND
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-80-82	01/28/2020	N	<10 U	<10 U	<10 U	<10 U	5.8 J	5.8 J
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-90-92	01/28/2020	N	<10 U	<10 U	<10 U	<10 U	**43**	43
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-100-102	01/28/2020	N	<9.7 U	<9.7 U	<9.7 U	<9.7 U	13 J	13 J
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-46-48	01/29/2020	N	<9.7 U	<9.7 U	<9.7 U	12 J	34	46 J
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-50-52	01/29/2020	N	<9.7 U	<9.7 U	<9.7 U	**41**	**140**	181
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-60-62	01/29/2020	N	<9.9 U	<9.9 U	<9.9 U	5.3 J	21	26.3 J
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-70-72	01/29/2020	N	<9.9 U	<9.9 U	<9.9 U	8.4 J	14 J	22.4 J
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-80-82	01/29/2020	N	<9.8 U	<9.8 U	<9.8 U	7.4 J	12 J	19.4 J
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-90-92	01/29/2020	N	<9.8 U	<9.8 U	<9.8 U	<9.8 U	<9.8 U	ND
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-100-102	01/29/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	ND

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos .
Value is for individual and combined concentrations of PFOS and PFOA.

[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/L - nanograms per liter.

NA - No screening level available.

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Table 7
Summary of Groundwater Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/L)	6:2FTS (ng/L)	8:2FTS (ng/L)	NEtFOSAA (ng/L)	NMeFOSAA (ng/L)	PFBA (ng/L)	PFDA (ng/L)	PFDoA (ng/L)	PFDS (ng/L)	PFHpA (ng/L)	PFHpS (ng/L)	PFHxA (ng/L)	PFHxS (ng/L)
EPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Former FTA	GB-IRP7-MW01	GB-IRP7-MW01-01	06/16/2020	N	48	2,700	1,200	<9.7 U	<12 U	1,100	6.6 J	<9.7 U	<9.7 U	890	240	3,500	2,300
1-Former FTA	GB-IRP7-MW01	GB-IRP7-MW01-02	06/25/2020	N	38	1,700	930	<8.0 U	<9.6 U	600	<8.0 U	<8.0 U	<8.0 U	930	250	2,600	1,800
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-01	06/17/2020	N	<0.79 U	9.5	<1.6 U	<0.79 U	<0.95 U	5.7	<0.79 U	<0.79 U	<0.79 U	10	4.8	12	130
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-02	06/30/2020	N	<0.86 U	13	<1.7 U	<0.86 U	<1.0 U	6.7	<0.86 U	<0.86 U	<0.86 U	15	6.0	16	170
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW93-02	06/30/2020	FD	<0.79 U	14	<1.6 U	<0.79 U	<0.95 U	5.8	<0.79 U	<0.79 U	<0.79 U	13	6.4	16	160
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-01	06/25/2020	N	8.2 J	1,400	100	<7.9 U	<9.5 U	190	<7.9 U	<7.9 U	<7.9 U	330	410	690	1,400
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-02	06/30/2020	N	7.7 J	1,500	89	<8.3 U	<9.9 U	180	<8.3 U	<8.3 U	<8.3 U	320	430	750	1,400
3-Former Bldg. 230	GB-03-MW01	GB-03-MW01-01	06/19/2020	N	<0.86 U	39	<1.7 U	<0.86 U	<1.0 U	50	<0.86 U	<0.86 U	<0.86 U	44	3.2	120	150
3-Former Bldg. 230	GB-03-MW01	GB-03-MW01-02	06/29/2020	N	<0.83 U	31	<1.7 U	<0.83 U	<1.0 U	39	<0.83 U	<0.83 U	<0.83 U	36	2.5	100	110
19-Mobile FTA	GB-19-MW01	GB-19-MW01-01	06/18/2020	N	<0.77 U	<42 U	<1.5 U	<0.77 U	<0.92 U	72	<0.77 U	<0.77 U	<0.77 U	110	8.4	330 J	630
19-Mobile FTA	GB-19-MW01	GB-19-MW01-02	06/30/2020	N	<0.87 U	25	<1.7 U	<0.87 U	<1.0 U	46	<0.87 U	<0.87 U	<0.87 U	75	9.5	220	420
20-Current FTA	GB-OB-MW04	GB-OB-MW04-01	06/15/2020	N	<0.82 U	2,000	190	<0.82 U	<0.99 U	150	2.7	<0.82 U	0.97 J	300	83	540	960
20-Current FTA	GB-OB-MW04	GB-OB-MW04-02	06/25/2020	N	<8.6 U	1,700	200	<8.6 U	<10 U	150	<8.6 U	<8.6 U	<8.6 U	270	87	530	830
20-Current FTA	MW-2	MW-2-01	06/17/2020	N	76 J	5,100 R	1,100	<8.3 U	<9.9 U	200	<8.3 U	<8.3 U	<8.3 R	210	3,100	1,600	10,000
20-Current FTA	MW-2	MW-2-02	06/30/2020	N	91	6,500 R	1,300	<8.9 U	<11 U	200	6.6 J	<8.9 U	<8.9 R	330	3,600	1,800	8,100
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-01	06/16/2020	N	<0.84 U	<4.2 U	<1.7 U	<0.84 U	<1.0 U	13	<0.84 U	<0.84 U	<0.84 U	26	8.6	51	180
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-02	06/28/2020	N	<0.83 U	3.3 J	0.84 J	<0.83 U	<1.0 U	14	<0.83 U	<0.83 U	<0.83 U	26	11	63	220
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-01	06/17/2020	N	<0.81 U	350	140	<0.81 U	<0.97 U	27	1.4 J	<0.81 U	<0.81 U	50	20	110	250
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-02	06/30/2020	N	<0.88 U	490	260	<0.88 U	<1.1 U	33	2.0	<0.88 U	<0.88 U	77	32	140	380
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-01	06/16/2020	N	<0.84 U	<3.4 U	<1.7 U	<0.84 U	<1.0 U	34	<0.84 U	<0.84 U	<0.84 U	22	3.4	120	220
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-02	06/28/2020	N	<0.84 U	<3.3 U	<1.7 U	<0.84 U	<1.0 U	31	<0.84 U	<0.84 U	<0.84 U	17	3.1	97	170
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-01	06/15/2020	N	<0.78 U	<3.1 U	<1.6 U	<0.78 U	<0.94 U	<3.1 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-02	06/25/2020	N	<0.83 U	<3.3 U	<1.7 U	<0.83 U	<1.0 U	<3.3 U	<0.83 U	<0.83 U	<0.83 U	<0.83 U	<0.83 U	0.44 J	0.42 J
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-01	06/17/2020	N	<0.84 U	<3.4 U	<1.7 U	<0.84 U	<1.0 U	3.7 J	<0.84 U	<0.84 U	<0.84 U	2.1	0.61 J	9.3	15
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW96-01	06/17/2020	FD	<0.82 U	<3.3 U	<1.6 U	<0.82 U	<0.98 U	3.8 J	<0.82 U	<0.82 U	<0.82 U	2.1	0.66 J	9.4	16
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-02	06/29/2020	N	<0.86 U	<3.4 U	<1.7 U	<0.86 U	<1.0 U	4.5	<0.86 U	<0.86 U	<0.86 U	3.4	<1.7 U	16	25
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-01	06/18/2020	N	<0.81 U	<3.2 U	<1.6 U	<0.81 U	<0.97 U	3.7 J	<0.81 U	<0.81 U	<0.81 U	5.0	2.6	6.0	45
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-02	06/30/2020	N	<0.85 U	<3.4 U	<1.7 U	<0.85 U	<1.0 U	2.8 J	<0.85 U	<0.85 U	<0.85 U	4.4	2.2	5.4	37
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-01	06/17/2020	N	<8.5 U	240	160	<8.5 U	<10 U	47	<8.5 U	<8.5 U	<8.5 U	85	17	160	360
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-02	06/29/2020	N	<0.83 U	300	200	<0.83 U	<0.99 U	52	1.7	<0.83 U	<0.83 U	98	23	200	480
Downgradient/Upgradient (Off Base)	MW-1	MW-1-01	06/25/2020	N	<8.4 U	<33 U	<17 U	<8.4 U	<10 U	24 J	<8.4 U	<8.4 U	<8.4 U	30	35	340	2,800
Downgradient/Upgradient (Off Base)	MW-1	MW-1-02	06/30/2020	N	<0.88 U	<3.5 U	<1.8 U	<0.88 U	<1.1 U	22	<0.88 U	<0.88 U	<0.88 U	36	61	360	2,900
Downgradient/Upgradient (Off Base)	SW-8	SW-8-01	06/17/2020	N	9.8 J	580	17 J	<8.8 U	<11 U	160	<8.8 U	<8.8 U	<8.8 U	130	93	480	1,500
Downgradient/Upgradient (Off Base)	SW-8	SW-8-02	06/30/2020	N	16 J	950	29	<8.3 U	<10 U	140	<8.3 U	<8.3 U	<8.3 U	190	150	710	2,300
Downgradient/Upgradient (Off Base)	SW-9	SW-9-01	06/17/2020	N	<8.2 U	240	25	<8.2 U	<9.8 U	<33 U	<8.2 U	<8.2 U	<8.2 U	110	16	270	390

Table 7
Summary of Groundwater Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFNA (ng/L)	PFNS (ng/L)	PFOSA (ng/L)	PFPeA (ng/L)	PFPeS (ng/L)	PFTeA (ng/L)	PFTriA (ng/L)	PFUnA (ng/L)	PFBS (ng/L)	PFOA (ng/L)	PFOS (ng/L)	SUM of PFOA + PFOS (ng/L)
EPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	70[2]	70[2]	70[2]
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	40,000[2	40[3]	40[3]	NA
1-Former FTA	GB-IRP7-MW01	GB-IRP7-MW01-01	06/16/2020	N	98	<9.7 U	<9.7 U	4,200	290	<9.7 U	<9.7 U	<9.7 U	150	**450**	**47,000 J**	47,450 J
1-Former FTA	GB-IRP7-MW01	GB-IRP7-MW01-02	06/25/2020	N	82	<8.0 U	<8.0 U	3,200	240	<8.0 U	<8.0 U	<8.0 U	130	**430**	**40,000 J**	40,430 J
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-01	06/17/2020	N	1.8	<0.79 U	<0.79 U	8.4	5.4	<0.79 U	<0.79 U	<0.79 U	2.8	12	**130**	142
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW03-02	06/30/2020	N	2.7	<0.86 U	<0.86 U	11	6.5	<0.86 U	<0.86 U	<0.86 U	3.5	17	**180**	197
1-Former FTA	GB-IRP7-MW03	GB-IRP7-MW93-02	06/30/2020	FD	2.5	<0.79 U	<0.79 U	10	6.2	<0.79 U	<0.79 U	<0.79 U	3.3	15	**160**	175
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-01	06/25/2020	N	27	<7.9 U	<7.9 U	800	80	<7.9 U	<7.9 U	<7.9 U	31	**420**	**9,600**	10,020
1-Former FTA	GB-IRP7-MW04	GB-IRP7-MW04-02	06/30/2020	N	25	<8.3 U	<8.3 U	740	87	<8.3 U	<8.3 U	<8.3 U	31	**410**	**9,300**	9,710
3-Former Bldg. 230	GB-03-MW01	GB-03-MW01-01	06/19/2020	N	3.4	<0.86 U	<0.86 U	170	12	<0.86 U	<0.86 U	<0.86 U	9.0	25	**93**	118
3-Former Bldg. 230	GB-03-MW01	GB-03-MW01-02	06/29/2020	N	2.6	<0.83 U	<0.83 U	120	11	<0.83 U	<0.83 U	<0.83 U	7.2	21	**69**	90
19-Mobile FTA	GB-19-MW01	GB-19-MW01-01	06/18/2020	N	0.52 J	<0.77 U	<0.77 U	320 J	97	<0.77 UJ	<0.77 UJ	<0.77 U	24	**110**	<12 U	110
19-Mobile FTA	GB-19-MW01	GB-19-MW01-02	06/30/2020	N	0.46 J	<0.87 U	0.99 J	230	71	<0.87 U	<0.87 U	<0.87 U	16	**80**	10	90
20-Current FTA	GB-OB-MW04	GB-OB-MW04-01	06/15/2020	N	17	3.4	1.8	490	32	<0.82 U	<0.82 U	2.1	16	**540**	**3,800**	4,340
20-Current FTA	GB-OB-MW04	GB-OB-MW04-02	06/25/2020	N	17	5.3 J	<8.6 U	470	34	<8.6 U	<8.6 U	<8.6 U	17	**540**	**4,700**	5,240
20-Current FTA	MW-2	MW-2-01	06/17/2020	N	41	<8.3 R	4.8 J	590	460	<8.3 U	<8.3 U	<8.3 U	240	**6,600**	**9,900 R**	16,500 R
20-Current FTA	MW-2	MW-2-02	06/30/2020	N	44	<8.9 R	5.5 J	660	490	<8.9 U	<8.9 U	<8.9 U	230	**6,800**	**9,800 R**	16,600 R
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-01	06/16/2020	N	3.5	<0.84 U	<0.84 U	31	30	<0.84 U	<0.84 UJ	<0.84 U	9.7	38	**290**	328
Downgradient/Upgradient (Off Base)	GB-OB-MW01	GB-OB-MW01-02	06/28/2020	N	3.8	<0.83 U	<0.83 U	33	31	<0.83 U	<0.83 U	<0.83 U	10	**40**	**530**	570
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-01	06/17/2020	N	8.5	1.6	0.76 J	86	19	<0.81 U	<0.81 U	<0.81 U	9.9	**66**	**2,500**	2,566
Downgradient/Upgradient (Off Base)	GB-OB-MW02	GB-OB-MW02-02	06/30/2020	N	11	2.6	1.0 J	110	30	<0.88 U	<0.88 U	<0.88 U	14	**82**	**3,600**	3,682
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-01	06/16/2020	N	0.60 J	<0.84 U	<0.84 U	100	33	<0.84 U	<0.84 U	<0.84 U	39	17	**70**	87
Downgradient/Upgradient (Off Base)	GB-OB-MW03	GB-OB-MW03-02	06/28/2020	N	<0.84 U	<0.84 U	<0.84 U	86	29	<0.84 U	<0.84 U	<0.84 U	38	15	**56**	71
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-01	06/15/2020	N	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	<0.78 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW05	GB-OB-MW05-02	06/25/2020	N	<0.83 U	<0.83 U	<0.83 U	0.45 J	<0.83 U	<0.83 U	<0.83 U	<0.83 U	<0.83 U	<0.83 U	<0.83 U	ND
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-01	06/17/2020	N	<0.84 U	<0.84 U	<0.84 U	5.4	2.6	<0.84 U	<0.84 U	<0.84 U	1.6 J	6.8	**150**	156.8
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW96-01	06/17/2020	FD	<0.82 U	<0.82 U	<0.82 U	5.2	2.9	<0.82 U	<0.82 U	<0.82 U	1.7	6.9	**150**	156.9
Downgradient/Upgradient (Off Base)	GB-OB-MW06	GB-OB-MW06-02	06/29/2020	N	<0.86 U	<0.86 U	<0.86 U	7.5	4.0	<0.86 U	<0.86 U	<0.86 U	2.2	<8.4 U	**110**	110
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-01	06/18/2020	N	1.6	<0.81 U	<0.81 U	4.1	2.0	<0.81 U	<0.81 U	<0.81 U	2.5	11	**370**	381
Downgradient/Upgradient (Off Base)	GB-OB-MW07	GB-OB-MW07-02	06/30/2020	N	1.3 J	2.0	<0.85 U	3.3	2.0	<0.85 U	<0.85 U	<0.85 U	2.2	8.8	**330**	338.8
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-01	06/17/2020	N	13 J	<8.5 U	<8.5 U	160	37	<8.5 U	<8.5 U	<8.5 U	23	**62**	**2,200**	2,262
Downgradient/Upgradient (Off Base)	GB-OB-MW08	GB-OB-MW08-02	06/29/2020	N	15	3.7	3.8	190	39	<0.83 U	<0.83 U	<0.83 U	26	**78**	**2,300**	2,378
Downgradient/Upgradient (Off Base)	MW-1	MW-1-01	06/25/2020	N	<8.4 U	<8.4 U	<8.4 U	97	23	<8.4 U	<8.4 U	<8.4 U	11 J	**82**	**2,300**	2,382
Downgradient/Upgradient (Off Base)	MW-1	MW-1-02	06/30/2020	N	0.80 J	1.3 J	<0.88 UJ	96	20	<0.88 U	<0.88 U	<0.88 U	9.4	**65**	**2,200**	2,265
Downgradient/Upgradient (Off Base)	SW-8	SW-8-01	06/17/2020	N	7.0 J	<8.8 U	<8.8 U	390	200	<8.8 U	<8.8 U	<8.8 U	180	**270**	**2,600**	2,870
Downgradient/Upgradient (Off Base)	SW-8	SW-8-02	06/30/2020	N	9.5 J	<8.3 U	<8.3 U	520	300	<8.3 U	<8.3 U	<8.3 U	270	**400**	**4,600**	5,000
Downgradient/Upgradient (Off Base)	SW-9	SW-9-01	06/17/2020	N	<8.2 U	<8.2 U	<8.2 U	370	47	<8.2 U	<8.2 U	<8.2 U	42	**110**	**2,400**	2,510

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Summary of Groundwater Analytical Results
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Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/L)	6:2FTS (ng/L)	8:2FTS (ng/L)	NEtFOSAA (ng/L)	NMeFOSAA (ng/L)	PFBA (ng/L)	PFDA (ng/L)	PFDoA (ng/L)	PFDS (ng/L)	PFHpA (ng/L)	PFHpS (ng/L)	PFHxA (ng/L)	PFHxS (ng/L)
EPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Downgradient/Upgradient (Off Base)	SW-9	SW-9-02	06/30/2020	N	<8.6 U	580	35	<8.6 U	<10 U	100	<8.6 U	<8.6 U	<8.6 U	180	34	420	620
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-01	06/19/2020	N	<0.82 U	<3.3 U	<1.6 U	<0.82 U	<0.99 U	9.1	<0.82 U	<0.82 U	<0.82 U	4.2	0.42 J	5.7	11
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-02	06/29/2020	N	<0.85 U	<3.4 U	<1.7 U	<0.85 U	<1.0 U	8.5	<0.85 U	<0.85 U	<0.85 U	3.5	<0.85 U	5.9	9.0
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-01	06/19/2020	N	<0.83 U	3.2 J	23	<0.83 U	<1.0 U	11	2.8	<0.83 U	<0.83 U	23	3.4	29	52
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-02	06/29/2020	N	<0.88 R	<4.4 U	24	<0.88 U	<1.1 U	11	2.1	<0.88 U	0.68 J	23	4.6	34	47
Within Base Boundary	GB-ECR-MW01	GB-ECR-MW01-01	06/18/2020	N	16 J	1,800	120	<9.6 U	<12 U	74	<9.6 U	<9.6 U	<9.6 U	110	44	340	650
Within Base Boundary	GB-ECR-MW01	GB-ECR-MW01-02	06/29/2020	N	53	4,200	220	<8.5 U	<10 U	150	<8.5 U	<8.5 U	<8.5 U	170	59	790	780
Within Base Boundary	GB-ECR-SW7	GB-ECR-SW7-01	06/18/2020	N	<8.4 U	1,300	280	<8.4 U	<10 U	180	<8.4 U	<8.4 U	<8.4 U	250	310	730	1,800
Within Base Boundary	GB-ECR-SW7	GB-ECR-SW7-02	06/29/2020	N	<8.3 U	1,500	390	<8.3 U	<10 U	170	<8.3 U	<8.3 U	<8.3 U	310	340	800	1,800
Within Base Boundary	GB-IRP5-MW01	GB-IRP5-MW01-01	06/18/2020	N	<0.81 U	76	33	<0.81 U	<0.97 U	24	0.45 J	<0.81 U	<0.81 U	44	5.5	70	130
Within Base Boundary	GB-IRP5-MW01	GB-IRP5-MW01-02	06/29/2020	N	<0.81 U	96	31	<0.81 U	<0.98 U	28	0.51 J	<0.81 U	<0.81 U	41	5.5	85	120

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.

Value is for individual and combined concentrations of PFOS and PFOA.

[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/L - nanograms per liter.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

ND - There were no detections in the PFAS Summation.

J - Analyte detected, estimated concentration.

R - Rejected due to serious quality control deficiencies. Result is unusable.

E - Exceeds instrument calibration range. Estimated concentration.

Results equal to or exceeding the Screening Level are bolded.

Results equal to or exceeding the USEPA lifetime Health Advisory are highlighted yellow.

Table 7
Summary of Groundwater Analytical Results
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Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFNA (ng/L)	PFNS (ng/L)	PFOSA (ng/L)	PFPeA (ng/L)	PFPeS (ng/L)	PFTeA (ng/L)	PFTriA (ng/L)	PFUnA (ng/L)	PFBS (ng/L)	PFOA (ng/L)	PFOS (ng/L)	SUM of PFOA + PFOS (ng/L)
EPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	70[2]	70[2]	70[2]
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	40,000[2	40[3]	40[3]	NA
Downgradient/Upgradient (Off Base)	SW-9	SW-9-02	06/30/2020	N	9.6 J	<8.6 U	<8.6 U	560	85	<8.6 U	<8.6 U	<8.6 U	74	**180**	**2,400**	2,580
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-01	06/19/2020	N	0.68 J	<0.82 U	<0.82 U	3.9	0.44 J	<0.82 U	<0.82 U	<0.82 U	0.96 J	6.7	4.7	11.4
Upgradient On Base Boundary	GB-BB-MW01	GB-BB-MW01-02	06/29/2020	N	0.54 J	<0.85 U	<0.85 U	4.5	0.53 J	<0.85 U	<0.85 U	<0.85 U	0.98 J	7.3	<4.1 U	7.3
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-01	06/19/2020	N	4.5	<0.83 U	<0.83 U	23	4.7	<0.83 U	<0.83 U	<0.83 U	2.4	29	**200**	229
Upgradient On Base Boundary	GB-BB-MW02	GB-BB-MW02-02	06/29/2020	N	3.7	<0.88 U	<0.88 U	23	5.3	<0.88 U	<0.88 U	<0.88 U	2.7	30	**220**	250
Within Base Boundary	GB-ECR-MW01	GB-ECR-MW01-01	06/18/2020	N	14 J	<9.6 U	<9.6 U	310	66	<9.6 U	<9.6 U	<9.6 U	37	**130**	**5,100**	5,230
Within Base Boundary	GB-ECR-MW01	GB-ECR-MW01-02	06/29/2020	N	15 J	5.8 J	<8.5 U	710	95	<8.5 U	<8.5 U	<8.5 U	58	**180**	**5,500**	5,680
Within Base Boundary	GB-ECR-SW7	GB-ECR-SW7-01	06/18/2020	N	38	<8.4 U	<8.4 U	750	160	<8.4 U	<8.4 U	<8.4 U	120	**340**	**12,000**	12,340
Within Base Boundary	GB-ECR-SW7	GB-ECR-SW7-02	06/29/2020	N	43	<8.3 U	<8.3 U	770	190	<8.3 U	<8.3 U	<8.3 U	130	**340**	**13,000**	13,340
Within Base Boundary	GB-IRP5-MW01	GB-IRP5-MW01-01	06/18/2020	N	3.0	<0.81 U	<0.81 U	74	8.9	<0.81 U	<0.81 U	<0.81 U	8.6	30	**900**	930
Within Base Boundary	GB-IRP5-MW01	GB-IRP5-MW01-02	06/29/2020	N	3.1	0.85 J	<0.81 U	80	10	<0.81 U	<0.81 U	<0.81 U	10	39	**860**	899

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.
Value is for individual and combined concentrations of PFOS and PFOA.

[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/L - nanograms per liter.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

ND - There were no detections in the PFAS Summation.

J - Analyte detected, estimated concentration.

R - Rejected due to serious quality control deficiencies. Result is unusable.

E - Exceeds instrument calibration range. Estimated concentration.

Results equal to or exceeding the Screening Level are bolded.

Results equal to or exceeding the USEPA lifetime Health Advisory are highlighted yellow.

Table 8
Summary of Surface Water Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/L)	6:2FTS (ng/L)	8:2FTS (ng/L)	NEtFOSAA (ng/L)	NMeFOSAA (ng/L)	PFBA (ng/L)	PFDA (ng/L)	PFDoA (ng/L)	PFDS (ng/L)	PFHpA (ng/L)	PFHpS (ng/L)	PFHxA (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Off-Base, Aspatuck River	GB-OBAR-SW02	GB-OBAR-SW02	02/10/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	28 J	<9.9 U	<9.9 U	<9.9 U	17 J	<9.9 U	27
Off-Base, Aspatuck River	GB-OBAR-SW03	GB-OBAR-SW03	02/09/2020	N	<0.84 U	5.2	3.6	<0.84 U	<1.0 U	11	1.1 J	<0.84 U	<0.84 U	14	2.8	27
Off-Base, Aspatuck River	GB-OBAR-SW03	GB-OBAR-SW93	02/09/2020	FD	<0.83 U	5.0	3.2	<0.83 U	<0.99 U	12	1.2 J	<0.83 U	<0.83 U	16	3.2	27
Off-Base, Aspatuck River	GB-OBAR-SW04	GB-OBAR-SW04	02/09/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	23 J	<9.9 U	<9.9 U	<9.9 U	8.8 J	<9.9 U	29
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SW01	GB-OBNP-SW01	02/08/2020	N	<0.89 R	<3.5 U	<1.8 U	<0.89 U	<1.1 U	4.3 J	<0.89 U	<0.89 U	<0.89 U	1.6 J	<0.89 U	2.6
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SW02	GB-OBNP-SW02	02/08/2020	N	<0.87 U	<3.5 U	<1.7 U	<0.87 U	<1.0 U	3.5 J	<0.87 U	<0.87 U	<0.87 UJ	2.2	<0.87 U	3.1
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW01	GB-OBOIP-SW01	02/08/2020	N	<0.84 U	<3.4 U	<1.7 U	<0.84 U	<1.0 U	1.8 J	<0.84 U	<0.84 U	<0.84 U	1.2 J	<0.84 U	4.3
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW02	GB-OBOIP-SW02	02/08/2020	N	<9.9 U	<40 U	<20 U	<9.9 U	<12 U	<40 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW03	GB-OBOIP-SW03	02/08/2020	N	<0.85 U	<3.4 U	<1.7 U	<0.85 U	<1.0 U	2.2 J	<0.85 U	<0.85 U	<0.85 U	1.0 J	<0.85 U	4.5
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW04	GB-OBOIP-SW04	02/08/2020	N	<0.79 U	<3.2 U	<1.6 U	<0.79 U	<0.95 U	<3.2 U	<0.79 U	<0.79 U	<0.79 U	<0.79 U	<0.79 U	0.66 J
Off-Base, Quantuck Creek	GB-OBQC-SW01	GB-OBQC-SW01	02/08/2020	N	<0.93 U	<3.7 U	<1.9 U	<0.93 U	<1.1 U	4.6 J	<0.93 U	<0.93 U	<0.93 U	3.3	1.0 J	13
Off-Base, Quantuck Creek	GB-OBQC-SW02	GB-OBQC-SW02	02/08/2020	N	<0.77 U	4.4	<1.5 U	<0.77 U	<0.93 U	4.6	<0.77 U	<0.77 U	<0.77 U	4.3	1.3 J	15
Off-Base, Quantuck Creek	GB-OBQC-SW03	GB-OBQC-SW03	02/08/2020	N	<0.82 U	33	3.1	<0.82 U	<0.99 U	5.8	<0.82 U	<0.82 U	<0.82 U	7.3	2.3	16
Off-Base, Quantuck Creek	GB-OBQC-SW04	GB-OBQC-SW04	02/08/2020	N	<0.77 U	3.4 J	<1.5 U	<0.77 U	<0.93 U	2.6 J	<0.77 U	<0.77 U	<0.77 U	2.3	0.77 J	6.7

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.
[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos .
Value is for individual and combined concentrations of PFOS and PFOA.
[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.
ng/L - nanograms per liter.
NA - No screening level available.
U - Analyte not detected. Result reported as < LOD (Limit of Detection).
ND - There were no detections in the PFAS Summation.
J - Analyte detected, estimated concentration.
E - Exceeds instrument calibration range. Estimated concentration.
Results equal to or exceeding the Screening Level are bolded.
Results equal to or exceeding the USEPA lifetime Health Advisory are highlighted yellow.

Table 8
Summary of Surface Water Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFHxS (ng/L)	PFNA (ng/L)	PFNS (ng/L)	PFOSA (ng/L)	PFPeA (ng/L)	PFPeS (ng/L)	PFTeA (ng/L)	PFTriA (ng/L)	PFUnA (ng/L)	PFBS (ng/L)	PFOA (ng/L)	PFOS (ng/L)	SUM of PFOA + PFOS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	70[2]	70[2]	70[2]
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	40,000[2]	40[3]	40[3]	NA
Off-Base, Aspatuck River	GB-OBAR-SW02	GB-OBAR-SW02	02/10/2020	N	62	<9.9 U	<9.9 U	<9.9 U	35	<9.9 U	<9.9 UJ	<9.9 U	<9.9 U	<9.9 U	19 J	**140**	159 J
Off-Base, Aspatuck River	GB-OBAR-SW03	GB-OBAR-SW03	02/09/2020	N	130	2.6	<0.84 U	<0.84 U	21	13	<0.84 UJ	<0.84 U	<0.84 U	11	14	**100**	114
Off-Base, Aspatuck River	GB-OBAR-SW03	GB-OBAR-SW93	02/09/2020	FD	130	2.8	<0.83 U	0.44 J	22	14	<0.83 UJ	<0.83 U	<0.83 U	12	14	**110**	124
Off-Base, Aspatuck River	GB-OBAR-SW04	GB-OBAR-SW04	02/09/2020	N	68	<9.9 U	<9.9 U	<9.9 U	21	13 J	<9.9 UJ	<9.9 U	<9.9 U	13 J	11 J	**160**	171 J
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SW01	GB-OBNP-SW01	02/08/2020	N	3.5	0.58 J	<0.89 U	<0.89 U	2.0	<0.89 U	<0.89 UJ	<0.89 U	<0.89 U	<0.89 U	1.7 J	6.4	8.1 J
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SW02	GB-OBNP-SW02	02/08/2020	N	5.1	0.50 J	<0.87 U	<0.87 U	2.7	<0.87 U	<0.87 R	<0.87 UJ	<0.87 U	<0.87 U	2.9	13	15.9
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW01	GB-OBOIP-SW01	02/08/2020	N	12	<0.84 U	<0.84 U	1.6 J	2.9	1.3 J	<0.84 UJ	<0.84 U	<0.84 U	0.88 J	1.1 J	3.5	4.6 J
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW02	GB-OBOIP-SW02	02/08/2020	N	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 U	<9.9 UJ	<9.9 U	<9.9 U	<9.9 U	<9.9 U	7.1 J	7.1 J
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW03	GB-OBOIP-SW03	02/08/2020	N	14	0.49 J	<0.85 U	0.74 J	3.0	1.3 J	<0.85 UJ	<0.85 U	<0.85 U	0.93 J	1.3 J	4.8	6.1 J
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SW04	GB-OBOIP-SW04	02/08/2020	N	4.1	<0.79 U	<0.79 U	<0.79 U	0.56 J	<0.79 U	<0.79 UJ	<0.79 U	<0.79 U	<0.79 U	<0.79 U	0.97 J	0.97 J
Off-Base, Quantuck Creek	GB-OBQC-SW01	GB-OBQC-SW01	02/08/2020	N	30	<0.93 U	<0.93 U	<0.93 U	9.6	3.6	<0.93 UJ	<0.93 U	<0.93 U	3.5	4.2	**240**	244.2
Off-Base, Quantuck Creek	GB-OBQC-SW02	GB-OBQC-SW02	02/08/2020	N	50	0.44 J	<0.77 U	0.57 J	7.4	8.0	<0.77 UJ	<0.77 U	<0.77 U	7.1	5.8	**50**	55.8
Off-Base, Quantuck Creek	GB-OBQC-SW03	GB-OBQC-SW03	02/08/2020	N	35	0.72 J	<0.82 U	1.6 J	15	3.9	<0.82 UJ	<0.82 U	<0.82 U	3.9	8.7	**110**	118.7
Off-Base, Quantuck Creek	GB-OBQC-SW04	GB-OBQC-SW04	02/08/2020	N	17	0.44 J	<0.77 U	1.5 J	4.8	2.4	<0.77 UJ	<0.77 U	<0.77 U	2.9	4.1	28	32.1

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.
[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.
Value is for individual and combined concentrations of PFOS and PFOA.
[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.
ng/L - nanograms per liter.
NA - No screening level available.
U - Analyte not detected. Result reported as < LOD (Limit of Detection).
ND - There were no detections in the PFAS Summation.
J - Analyte detected, estimated concentration.
E - Exceeds instrument calibration range. Estimated concentration.
Results equal to or exceeding the Screening Level are bolded.
Results equal to or exceeding the USEPA lifetime Health Advisory are highlighted yellow.

Table 9
Summary of Sediment Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/g)	6:2FTS (ng/g)	8:2FTS (ng/g)	NEtFOSAA (ng/g)	NMeFOSAA (ng/g)	PFBA (ng/g)	PFDA (ng/g)	PFDoA (ng/g)	PFDS (ng/g)	PFHpA (ng/g)	PFHpS (ng/g)	PFHxA (ng/g)	PFHxS (ng/g)
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Off-Base, Aspatuck River	GB-OBAR-SD01	GB-OBAR-SD01	02/10/2020	N	<2.2 U	<2.2 U	<2.2 U	<0.55 U	<0.55 U	<2.2 U	0.29 J	0.40 J	0.51 J	<0.55 U	<0.55 U	0.52 J	3.0
Off-Base, Aspatuck River	GB-OBAR-SD02	GB-OBAR-SD02	02/10/2020	N	<3.0 U	<3.0 U	<3.0 U	<0.76 U	<0.76 U	<3.0 U	<0.76 U	<0.76 U	<0.76 U	<0.76 U	<0.76 U	<0.76 U	<0.76 U
Off-Base, Aspatuck River	GB-OBAR-SD03	GB-OBAR-SD03	02/09/2020	N	<25 U	<25 U	<25 U	<6.3 U	<6.3 U	<25 U	<6.3 U	<6.3 U	4.1 J	<6.3 U	<6.3 U	3.9 J	11
Off-Base, Aspatuck River	GB-OBAR-SD03	GB-OBAR-SD93	02/09/2020	FD	<18 U	<18 U	12 J	<4.6 U	<4.6 U	<18 U	<4.6 U	<4.6 U	6.1 J	<4.6 U	<4.6 U	<4.6 U	11
Off-Base, Aspatuck River	GB-OBAR-SD04	GB-OBAR-SD04	02/09/2020	N	<18 U	<18 U	<18 U	<4.5 U	<4.5 U	<18 U	<4.5 U	<4.5 U	<4.5 U	<4.5 U	<4.5 U	<4.5 U	<4.5 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SD01	GB-OBNP-SD01	02/08/2020	N	<14 U	<14 U	<14 U	<3.5 U	<3.5 U	<14 U	<3.5 U	<3.5 U	<3.5 U	<3.5 U	<3.5 U	<3.5 U	<3.5 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SD02	GB-OBNP-SD02	02/08/2020	N	<2.1 U	<2.1 U	<2.1 U	<0.53 U	<0.53 U	<2.1 U	<0.53 U	<0.53 U	<0.53 U	<0.53 U	<0.53 U	<0.53 U	<0.53 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD01	GB-OBOIP-SD01	02/08/2020	N	<11 U	<11 U	<11 U	<2.7 U	<2.7 U	<11 U	<2.7 U	<2.7 U	<2.7 U	<2.7 U	<2.7 U	<2.7 U	<2.7 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD02	GB-OBOIP-SD02	02/08/2020	N	<17 U	<17 U	<17 U	<4.3 U	<4.3 U	<17 U	<4.3 U	<4.3 U	<4.3 U	<4.3 U	<4.3 U	<4.3 U	<4.3 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD03	GB-OBOIP-SD03	02/08/2020	N	<6.2 U	<6.2 U	<6.2 U	<1.5 U	<1.5 U	<6.2 U	<1.5 U	<1.5 U	<1.5 U	<1.5 U	<1.5 U	<1.5 U	<1.5 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD04	GB-OBOIP-SD04	02/08/2020	N	<23 U	<23 U	<23 U	<5.8 U	<5.8 U	<23 U	<5.8 U	<5.8 U	<5.8 U	<5.8 U	<5.8 U	<5.8 U	<5.8 U
Off-Base, Quantuck Creek	GB-OBQC-SD01	GB-OBQC-SD01	02/08/2020	N	<3.7 U	<3.7 U	<3.7 U	<0.93 U	<0.93 U	<3.7 U	<0.93 U	<0.93 U	<0.93 U	<0.93 U	<0.93 U	<0.93 U	<0.93 U
Off-Base, Quantuck Creek	GB-OBQC-SD02	GB-OBQC-SD02	02/08/2020	N	<7.6 U	<7.6 U	<7.6 U	<1.9 U	<1.9 U	<7.6 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	1.4 J
Off-Base, Quantuck Creek	GB-OBQC-SD03	GB-OBQC-SD03	02/08/2020	N	<11 U	<11 U	24	<2.8 U	<2.8 U	<11 U	<2.8 U	<2.8 U	<2.8 U	<2.8 U	<2.8 U	<2.8 U	3.5 J
Off-Base, Quantuck Creek	GB-OBQC-SD04	GB-OBQC-SD04	02/08/2020	N	<1.9 U	<1.9 U	<1.9 U	<0.46 U	<0.46 U	<1.9 U	<0.46 U	<0.46 U	<0.46 U	<0.46 U	<0.46 U	<0.46 U	<0.46 U

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA RSL Calc - USEPA Regional Screening Level Calculator, Residential Soil, HQ=0.1; available at: https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/g - nanograms per gram.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

J - Analyte detected, estimated concentration.

UJ - Analyte not detected. LOD is approximate.

Results equal to or exceeding the Screening Level are bolded.

Table 9
Summary of Sediment Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFNA (ng/g)	PFNS (ng/g)	PFOSA (ng/g)	PFPeA (ng/g)	PFPeS (ng/g)	PFTeA (ng/g)	PFTriA (ng/g)	PFUnA (ng/g)	PFBS (ng/g)	PFOA (ng/g)	PFOS (ng/g)
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA	[2]	130[2]	130[2]
Off-Base, Aspatuck River	GB-OBAR-SD01	GB-OBAR-SD01	02/10/2020	N	<0.55 U	<0.55 U	<0.55 U	0.66 J	<0.55 U	<0.55 UJ	<0.55 U	0.76 J	<2.2 U	<0.55 U	13
Off-Base, Aspatuck River	GB-OBAR-SD02	GB-OBAR-SD02	02/10/2020	N	<0.76 U	<0.76 U	<0.76 U	<0.76 U	<0.76 U	<0.76 UJ	<0.76 U	<0.76 U	<3.0 U	<0.76 U	6.0
Off-Base, Aspatuck River	GB-OBAR-SD03	GB-OBAR-SD03	02/09/2020	N	<6.3 U	<6.3 U	<6.3 U	6.4 J	<6.3 U	<6.3 UJ	<6.3 U	<6.3 U	<25 U	4.0 J	96 J
Off-Base, Aspatuck River	GB-OBAR-SD03	GB-OBAR-SD93	02/09/2020	FD	<4.6 U	<4.6 U	6.3 J	3.2 J	<4.6 U	<4.6 UJ	<4.6 U	2.5 J	<18 U	2.8 J	**140 J**
Off-Base, Aspatuck River	GB-OBAR-SD04	GB-OBAR-SD04	02/09/2020	N	<4.5 U	<4.5 U	<4.5 U	<4.5 U	<4.5 U	<4.5 UJ	<4.5 U	<4.5 U	<18 U	<4.5 U	19
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SD01	GB-OBNP-SD01	02/08/2020	N	<3.5 U	<3.5 U	<3.5 U	<3.5 U	<3.5 U	<3.5 UJ	<3.5 U	<3.5 U	<14 U	<3.5 U	<3.5 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBNP-SD02	GB-OBNP-SD02	02/08/2020	N	<0.53 U	<0.53 U	<0.53 U	<0.53 U	<0.53 U	<0.53 UJ	<0.53 U	<0.53 U	<2.1 U	<0.53 U	<0.53 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD01	GB-OBOIP-SD01	02/08/2020	N	<2.7 U	<2.7 U	<2.7 U	<2.7 U	<2.7 U	<2.7 UJ	<2.7 U	<2.7 U	<11 U	<2.7 U	<2.7 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD02	GB-OBOIP-SD02	02/08/2020	N	<4.3 U	<4.3 U	<4.3 U	<4.3 U	<4.3 U	<4.3 UJ	<4.3 U	<4.3 U	<17 U	<4.3 U	<4.3 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD03	GB-OBOIP-SD03	02/08/2020	N	<1.5 U	<1.5 U	<1.5 U	<1.5 U	<1.5 U	<1.5 UJ	<1.5 U	<1.5 U	<6.2 U	<1.5 U	<1.5 U
Off-Base, Old Ice Pond and Wildlife Refuge	GB-OBOIP-SD04	GB-OBOIP-SD04	02/08/2020	N	<5.8 U	<5.8 U	<5.8 U	<5.8 U	<5.8 U	<5.8 UJ	<5.8 U	<5.8 U	<23 U	<5.8 U	<5.8 U
Off-Base, Quantuck Creek	GB-OBQC-SD01	GB-OBQC-SD01	02/08/2020	N	<0.93 U	<0.93 U	<0.93 U	<0.93 U	<0.93 U	<0.93 UJ	<0.93 U	<0.93 U	<3.7 U	0.62 J	30
Off-Base, Quantuck Creek	GB-OBQC-SD02	GB-OBQC-SD02	02/08/2020	N	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<1.9 UJ	<1.9 U	<1.9 U	<7.6 U	<1.9 U	9.4
Off-Base, Quantuck Creek	GB-OBQC-SD03	GB-OBQC-SD03	02/08/2020	N	<2.8 U	<2.8 U	<2.8 U	<2.8 U	<2.8 U	<2.8 UJ	<2.8 U	<2.8 U	<11 U	<2.8 U	**390**
Off-Base, Quantuck Creek	GB-OBQC-SD04	GB-OBQC-SD04	02/08/2020	N	<0.46 U	<0.46 U	<0.46 U	<0.46 U	<0.46 U	<0.46 UJ	<0.46 U	<0.46 U	<1.9 U	<0.46 U	0.79

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA RSL Calc - USEPA Regional Screening Level Calculator, Residential Soil, HQ=0.1; available at: https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/g - nanograms per gram.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

J - Analyte detected, estimated concentration.

UJ - Analyte not detected. LOD is approximate.

Results equal to or exceeding the Screening Level are bolded.

Table 10
Summary of Stormwater Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	4:2FTS (ng/L)	6:2FTS (ng/L)	8:2FTS (ng/L)	NEtFOSAA (ng/L)	NMeFOSAA (ng/L)	PFBA (ng/L)	PFDA (ng/L)	PFDoA (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA
8-Eastern Concrete Ramp/Apron	GB-08-ST02	GB-08-ST02	08/29/2020	N	<0.81 U	19	3.7	<0.81 U	<0.97 U	8.0	4.2	<0.81 U
8-Eastern Concrete Ramp/Apron	GB-08-ST03	GB-08-ST03	08/29/2020	N	1.7 R	34 J	13	<0.86 U	<1.0 U	18	5.0	1.3 J
12-Outfall SD0-001	GB-12-ST01	GB-12-ST01	08/29/2020	N	0.97 R	78 R	10	<0.82 U	<0.98 U	14	4.0	<0.82 U
13-Outfall SD0-002	GB-13-ST01	GB-13-ST01	08/29/2020	N	<0.88 U	81	4.4	<0.88 U	<1.1 U	11	2.5	<0.88 U
14-SW Storm Drainage Ditch	GB-14-ST02	GB-14-ST02	08/29/2020	N	<0.82 U	100	5.9	<0.82 U	<0.98 U	11	2.5	2.1
Upgradient Off-Base	GB-0B-ST01	GB-0B-ST01	08/29/2020	N	1.3 J	55	13	<0.79 U	<0.95 U	20	3.9	0.85 J
Upgradient On-Base	GB-B-ST01	GB-B-ST01	08/29/2020	N	<1.1 U	<4.5 U	<2.2 U	<1.1 U	<1.3 U	14 J	<1.1 UJ	<1.1 U
Upgradient On-Base	GB-B-ST01	GB-B-ST91	08/29/2020	FD	<1.0 U	<4.2 UJ	<2.1 U	0.71 J	<1.3 U	<4.2 UJ	4.8 J	<1.0 U
Upgradient On-Base	GB-B-ST02	GB-B-ST02	08/29/2020	N	<1.2 R	<4.6 R	<2.3 U	<1.2 U	<1.4 U	<4.6 U	<1.2 U	<1.2 U

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFDS (ng/L)	PFHpA (ng/L)	PFHpS (ng/L)	PFHxA (ng/L)	PFHxS (ng/L)	PFNA (ng/L)	PFNS (ng/L)	PFOSA (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	NA	NA
Screening Level					NA	NA	NA	NA	NA	NA	NA	NA
8-Eastern Concrete Ramp/Apron	GB-08-ST02	GB-08-ST02	08/29/2020	N	<0.81 U	2.3	<0.81 U	12	3.6	1.4 J	<0.81 U	0.52 J
8-Eastern Concrete Ramp/Apron	GB-08-ST03	GB-08-ST03	08/29/2020	N	<0.86 U	2.5	1.1 J	21	12	1.8	<0.86 U	0.96 J
12-Outfall SD0-001	GB-12-ST01	GB-12-ST01	08/29/2020	N	<0.82 U	4.3	2.3	40	30	1.8	<0.82 U	0.94 J
13-Outfall SD0-002	GB-13-ST01	GB-13-ST01	08/29/2020	N	<0.88 U	5.8	0.85 J	24	11	1.1 J	<0.88 U	0.94 J
14-SW Storm Drainage Ditch	GB-14-ST02	GB-14-ST02	08/29/2020	N	<0.82 U	6.2	0.97 J	28	12	1.2 J	<0.82 U	1.2 J
Upgradient Off-Base	GB-0B-ST01	GB-0B-ST01	08/29/2020	N	<0.79 U	4.3	0.73 J	33	15	1.7	<0.79 U	0.74 J
Upgradient On-Base	GB-B-ST01	GB-B-ST01	08/29/2020	N	<1.1 U	7.2	<1.1 U	9.1 J	5.0	5.8	<1.1 U	1.6 J
Upgradient On-Base	GB-B-ST01	GB-B-ST91	08/29/2020	FD	<1.0 U	9.4	<1.0 U	11	6.5	7.2	<1.0 U	2.4 J
Upgradient On-Base	GB-B-ST02	GB-B-ST02	08/29/2020	N	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U	<1.2 U

Table 10
Summary of Stormwater Analytical Results
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

AOC	LOCID	Sample ID	Sample Date	Sample Type[1]	PFPeA (ng/L)	PFPeS (ng/L)	PFTeA (ng/L)	PFTriA (ng/L)	PFUnA (ng/L)	PFBS (ng/L)	PFOA (ng/L)	PFOS (ng/L)	SUM of PFOA + PFOS (ng/L)
USEPA lifetime Health Advisory for Drinking Water					NA	NA	NA	NA	NA	NA	70[2]	70[2]	70[2]
Screening Level					NA	NA	NA	NA	NA	40,000[2]	40[3]	40[3]	NA
8-Eastern Concrete Ramp/Apron	GB-08-ST02	GB-08-ST02	08/29/2020	N	1.0 J	0.44 J	<0.81 U	<0.81 U	<0.81 U	0.66 J	8.3	23	31.3
8-Eastern Concrete Ramp/Apron	GB-08-ST03	GB-08-ST03	08/29/2020	N	2.9 J	2.4 R	<0.86 U	<0.86 U	<0.86 U	2.6 R	9.9	**72**	81.9
12-Outfall SD0-001	GB-12-ST01	GB-12-ST01	08/29/2020	N	7.8	6.9 R	<0.82 U	<0.82 U	<0.82 U	4.1 R	15	**110**	125
13-Outfall SD0-002	GB-13-ST01	GB-13-ST01	08/29/2020	N	8.0	1.8	<0.88 U	<0.88 U	<0.88 U	2.5	6.3	**50**	56.3
14-SW Storm Drainage Ditch	GB-14-ST02	GB-14-ST02	08/29/2020	N	7.4	2.2	<0.82 U	<0.82 U	<0.82 U	3.0	7.8	**63**	70.8
Upgradient Off-Base	GB-OB-ST01	GB-OB-ST01	08/29/2020	N	3.5	2.4	<0.79 U	<0.79 U	<0.79 U	3.5	12	**45**	57
Upgradient On-Base	GB-B-ST01	GB-B-ST01	08/29/2020	N	3.7 R	1.4 R	<1.1 U	<1.1 U	6.2	0.94 R	33 J	21 J	54 J
Upgradient On-Base	GB-B-ST01	GB-B-ST91	08/29/2020	FD	4.9 R	1.5 R	<1.0 R	<1.0 U	7.4	1.5 R	**43**	25	68
Upgradient On-Base	GB-B-ST02	GB-B-ST02	08/29/2020	N	<1.2 U	<1.2 UJ	<1.2 U	<1.2 U	<1.2 U	<1.2 UJ	<1.2 U	2.2 J	2.2 J

Notes:

[1] N - Normal field sample. FD - Field duplicate of sample above.

[2] USEPA lifetime Health Advisory (HA) (May 2016); available at https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos.
Value is for individual and combined concentrations of PFOS and PFOA.

[3] USEPA RSL Calc - USEPA Regional Screening Calculator, Tap Water, HQ=0.1, available at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

ng/L - nanograms per liter.

NA - No screening level available.

U - Analyte not detected. Result reported as < LOD (Limit of Detection).

J - Analyte detected, estimated concentration.

UJ - Analyte not detected. LOD is approximate.

R - Rejected due to serious quality control deficiencies. Result is unusable.

Results equal to or exceeding the Screening Level are bolded.

Results equal to or exceeding the USEPA lifetime Health Advisory are highlighted yellow.

Table 11
Summary of Slug Test Analyses
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

							Test 1		Test 2		Test 3			
Well	Groundwater Zone	Screened Lithology	Slug Length (ft)	Slug Diameter (in)	Partially or Fully Penetrating Screen Interval	Analysis Method	Test Type	Hydraulic Conductivity (ft/d)	Test Type	Hydraulic Conductivity (ft/d)	Test Type	Hydraulic Conductivity (ft/d)	Average Hydraulic Conductivity (ft/day)	Average Hydraulic Conductivity (cm/s)
GB-IRP7-MW03	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	R	1.62E+02	R	2.65E+02	R	1.90E+02	**2.06E+02**	**7.26E-02**
GB-IRP7-MW04	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	F	1.55E+02	R	4.79E+02	R	3.12E+02	**3.15E+02**	**1.11E-01**
GB-03-MW01	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	F	3.56E+02	R	4.73E+02	R	3.46E+02	**3.92E+02**	**1.38E-01**
GB-19-MW01	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	F	3.47E+02	R	4.40E+02	R	2.97E+02	**3.61E+02**	**1.27E-01**
GB-BB-MW01	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	R	4.64E+02	R	6.44E+02	R	6.33E+02	**5.80E+02**	**2.05E-01**
GB-BB-MW02	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	R	2.68E+02	R	2.42E+02	R	3.13E+02	**2.74E+02**	**9.68E-02**
GB-OB-MW01	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	F	1.56E+02	R	3.13E+02	R	1.89E+02	**2.19E+02**	**7.74E-02**
GB-OB-MW02	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	R	2.03E+02	R	2.08E+02	R	1.76E+02	**1.96E+02**	**6.90E-02**
GB-OB-MW03	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	R	2.11E+02	R	1.12E+02	R	1.17E+02	**1.47E+02**	**5.17E-02**
GB-OB-MW04	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	R	1.63E+02	R	2.16E+02	R	2.54E+02	**2.11E+02**	**7.44E-02**
GB-OB-MW06	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	F	1.65E+02	R	1.62E+02	R	1.57E+02	**1.61E+02**	**5.69E-02**
GB-OB-MW07	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	F	2.08E+02	R	1.61E+02	R	1.86E+02	**1.85E+02**	**6.53E-02**
GB-OB-MW08	Upper Glacial Aquifer	Fine-Medium SAND	5.3	1.7	Partially	Bouwer and Rice	R	2.15E+02	R	2.16E+02	R	2.03E+02	**2.11E+02**	**7.46E-02**
												Geometric Mean:	**246.2**	**8.69E-02**

Groundwater Seepage Velocity: $V_s = Ki/n_e$

Where:

V_s = Groundwater average linear (or seepage) velocity (ft/day)
K = Hydraulic conductivity (ft/day)
i = Hydraulic gradient (ft/ft), derived from the groundwater contour maps (see Figure 7)
n_e = Effective porosity (dimensionless), based on Figure 3 in Johnson (1967)

Groundwater Zone	K	i	n_e	V_s
Upper Glacial Aquifer	246.2	0.002	28%	**1.6**

Notes:

cm/s: centimeters per second
ft/day: feet per day
Aquifer Test Pro (ATP) version 2015.1, Waterloo Hydrogeologic
Bouwer-Rice. A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells (1976)
Johnson. Specific Yield – Compilation of Specific Yields for Various Materials (1967)

Table 12
Summary of Public Water Supply Wells Within 2 Miles of Gabreski ANGB
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

SCWA Well Field ID	Distance and Direction from nearest Gabreski ANGB AOC (feet)	Well Number	Well Depth (ft bgs)	Screen Interval (ft msl)	Historical Well Yield (gpm)	Aquifer
Meeting House Road	3,100 South-Southeast	#12A	92	NA	230 - 232	Upper Glacial
		#14	58	35 to 55	98 - 100	
		#16	58	30 to 50	NA	
		#17	56	30 to 50	95 - 100	
		#19	54	30 to 50	145	
		#22	108	56.8 to 86.8	312 - 800	
Gus Guerrera	1,300 Southwest	#1	103	80 to 100	550 - 1,100	Upper Glacial
		#2	104	80.75 to 100.75	650 - 1,024	
		#3	105	NA	935 - 1,133	
Quogue-Riverhead Road	7,800 North-Northeast	#1	449	387 to 447	1,185 - 1,305	Magothy
		#2	424	117 to 157	918 - 1,335	
Spinney Road	10,700 Northeast	#1	116	80 to 118	NA	Upper Glacial
		#2	163	119 to 159	461 - 1040	Upper Glacial
		#3	533	469 to 530	1,147 - 1,344	Magothy
		#4	NA	NA	1,448 - 1,460	NA
Old Country Road	10,100 West	4	161	117 to 157	141	Upper Glacial
		1A	163	120 to 160	77	
County Road 31	9,400 North	#1	NA	NA	NA	NA

Notes:

gpm - gallons per minute

NA = Information not known at the time of writing.

Table 13
Summary of Screening Level Exceedances
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

PRL	AOC	AOC Name	Screening Level Exceedances				
			Soil (ng/g) (max. PFOS and PFOA at single location)	Groundwater (ng/L) (max. PFOS, PFOA, PFOS+PFOA)	Surface Water (ng/L) (max. PFOS, PFOA, PFOS+PFOA)	Sediment (ng/g) (max. PFOS and PFOA at single location)	Stormwater (ng/L) (max. PFOS, PFOA, PFOS+PFOA)
1	1	Former Fire Training Area	**Yes** (PFOS - 570) (PFOA - 3.2 J)	**Yes** (47,000; 450; 47,450 J)	–	–	–
2	-	Building 300 - Fire Station	**Yes** (PFOS - 2,600) (PFOA - 3.4 J)	**Yes** (1,500; 130; 1,630)	–	–	–
3	3	Former Building 230	No (PFOS - 3.4) (PFOA - ND)	**Yes** (93; 25; 118)	–	–	–
4	-	Building 395 (Helicopter Pods)	No (PFOS - 4.2) (PFOA - ND)	**Yes** (1,400; 62; 1,462)	–	–	–
5	-	Hangar 370	No (PFOS - 4.5) (PFOA - ND)	**Yes** (330; 29; 359)	–	–	–
6	-	Hangar 358	**Yes** (PFOS - 1,700 J-) (PFOA - 4.2)	**Yes** (4,700; 270; 4,970)	–	–	–
7	-	Building 250 - Warehouse	Recommended for NFA in PA Report				
8	-	Eastern Concrete Ramp/Apron	No (PFOS - 1.8) (PFOA - ND)	**Yes** (2,200; 290; 2,490)	--	--	--
9	-	Southern Concrete Ramp/Apron	No (PFOS - 110) (PFOA - 1.1)	**Yes** (1,400; 62; 1,462)	--	--	--
10	-	IRP Site 4 - Fuel Spill Area	No (PFOS - 25 J-) (PFOA - 0.52 J-)	Yes (2,200; 290; 2,490)	--	--	--
11	-	Nozzle Testing Area	No (PFOS - 120) (PFOA - 1.3 J-)	**Yes** (140; 110; 250)	--	--	--
12	-	Outfall SDO-001	--	--	No (20; 2.5; 22.5)	--	--
13	-	Outfall SDO-002	--	--	No (10; 1.5; 11.5)	--	--
14	-	IRP Site 5 - Southwest Storm Drainage Ditch	No (PFOS - 18) (PFOA - 0.27 J+)	**Yes** (5,900; 270; 6,170)	--	No (PFOS - 4.4) (PFOA - 0.41 J)	--

Table 13
Summary of Screening Level Exceedances
Expanded Site Inspection Report for PFAS
Gabreski ANGB, Westhampton, Long Island, New York

PRL	AOC	AOC Name	Screening Level Exceedances				
			Soil (ng/g) (max. PFOS and PFOA at single location)	Groundwater (ng/L) (max. PFOS, PFOA, PFOS+PFOA)	Surface Water (ng/L) (max. PFOS, PFOA, PFOS+PFOA)	Sediment (ng/g) (max. PFOS and PFOA at single location)	Stormwater (ng/L) (max. PFOS, PFOA, PFOS+PFOA)
15	-	IRP Site 8S - Old Base Septic System	No (PFOS - 140) (PFOA - 0.28 J)	**Yes** (1,500; 130; 1,630)	--	--	--
16	-	IRP Site 8K - Old Base Septic System	No (PFOS - 1.4) (PFOA - ND)	No (34; 6.4; 40.4)	--	--	--
17	-	IRP Site 8J - Old Base Septic System	No (PFOS - 6.9) (PFOA - 0.25 J)	**Yes** (1,400; 62; 1,462)	--	--	--
18	-	IRP Site 8G - Old Base Septic System	**Yes** (PFOS - 1,700 J-) (PFOA - 4.2)	**Yes** (4,700; 270; 4,970)	--	--	--
19	19	Mobile Fire Training Area	No (PFOS - 0.61 J) (PFOA - ND)	**Yes** [1] (ND; 110; 110)	--	--	--
20	20	Current Fire Training Area	**Yes** [2] (PFOS - 1,610) (PFOA - ND)	**Yes** [3] (9,900 R; 6,600; 16,500 R)	--	--	--
-	On Base	Not applicable	**Yes** (see above)	**Yes** (see above)	--	--	**Yes** (110; 15; 125)
-	Off Base (Upgradient / Downgradient)	Not applicable	--	**Yes**[4] (4,600; 400; 5,000)	**Yes** [5] (240; 4.2; 244.2)	**Yes** [6] (PFOS - 390) (PFOA - ND)	--

Notes:

Conclusions based on results from Site Inspection - PRLs (AECOM, 2019) and 2019-2020 Expanded Site Inspection - AOCs.

"-" indicates that samples were not collected in that area.

Red values indicate an exceedance of the current screening level for the applicable compound.

Soil and sediment screening levels: PFOS - 130 ng/L; PFOA - 130 ng/L; PFBS - 130,000 ng/L (there were no exceedances of PFBS in the SI or ESI).

Groundwater and surface water screening levels: PFOS - 40 ng/L; PFOA - 40 ng/L; PFBS - 40,000 ng/L (there were no exceedances of PFBS in the SI or ESI).

PFOS+PFOA results greater than or equal to the USEPA lifetime HA (70 ug/L) are red.

ND = not detected

1) Note that PFOS did not exceed the screening level in either Round 1 (ND) or 2 (10 ng/L) of the ESI.

2) Soil results from NYSDEC (2016). Perfluorinated Compound Investigation Report, 13 October 2016.

3) The reported value for PFOS was rejected (R) during data validation for exceeding the range for extracted internal standard (EIS) response; however, the reported PFOS value is expected to be biased low.

4) Sample collected during the ESI from off-Base location SW-8.

5) Note that PFOA did not exceed the screening level at any of the ESI offsite surface water locations.

6) The exceedance occurred only for PFOS in two ESI samples out of 15. All PFOA results were less than the screening level.

FIGURES

Figure 1
Site Location
Gabreski Air National Guard Base

699000

700000

4524000

4523000

GABRESKI
AIR NATIONAL GUARD BASE

AOC 18 - IRP Site 8G (Old Base Septic System)

AOC 2 - Building 300 (Fire Station)

AOC 15 - IRP Site 8S (Old Base Septic System)

AOC 3 - Former Building 230

AOC 8 - Eastern Concrete Ramp/Apron

AOC 11 - Nozzle Testing Area

AOC 6 - Hangar 358

AOC 10 - IRP Site 4 (Fuel Spill Area)

AOC 5 - Hangar 370

AOC 16 - IRP Site 8K (Old Base Septic System)

AOC 4 - Building 395 (Helicopter Pods)

AOC 9 - Southern Concrete Ramp/Apron

AOC 17 - IRP Site 8J (OldBase Septic System)

AOC 14 - IRP Site 5 (Approximate Southwest Storm Drainage Ditch)

AOC 12 - Outfall SDO-001

AOC 13 - Outfall SDO-002

AOC 19 - Mobile Fire Training Area

GABRESKI
AIR NATIONAL GUARD BASE

AOC 1 - IRP Site 7 (Fire Training Area)

AOC 20 - Current FTA

Long Island Railroad

0 250 500 Feet

Legend

- Area of Concern (AOC)
- Installation Boundary

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)	
DESIGNED BY: RGS	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations	
DRAWN BY: RGS	SCALE: AS SHOWN	CONTRACT NUMBER: GS00QI40A DU127
CHECKED BY: TM	DATE: 11/18/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
SUBMITTED BY: TM	Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_sitemap.mxd

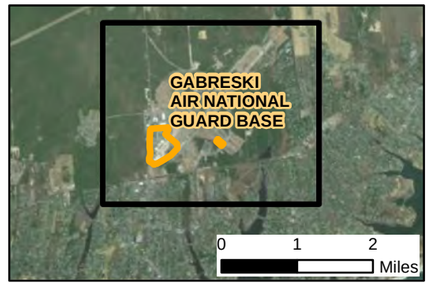
Figure 2
Groundwater
Profile Locations
Gabreski Air National Guard Base

Legend

- Groundwater Profile Location
- Supply Well
- Area of Concern (AOC)
- Installation Boundary

-Italicized labels are from previous investigations.
-Bold and green labels are from current ESI fieldwork.

ESI = Expanded Site Inspection
Canine Kennel Site is a non-ANG source area.



DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Sample Locations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)	
DESIGNED BY: RGS	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations	
DRAWN BY: RGS	SCALE: AS SHOWN	CONTRACT NUMBER: GS00QI40A DU127
CHECKED BY: TM	DATE: 12/14/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
SUBMITTED BY: TM	Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_GWProfile_Locs.mxd

Figure 3a
Soil Sample Locations
Mainbase
Gabreski Air National Guard Base

698500 699000 4523500 4523000

GABRESKI AIR NATIONAL GUARD BASE

GB-03-SB02
AOC 3
GB-03-SB01
AOC 2
300-SB02
300-SB03
300-SB01
AOC 15
IRP8S-SB01
IRP8S-SB03
IRP8S-SB02
358-SB03
AOC 11
NTA-SB03
NTA-SB02
NTA-SB01
AOC 6
IRP8G-SB01
AOC 18
IRP8G-SB02
358-SB01
358-SB02
IRP4-SB03
AOC 10
IRP4-SB02
AOC 8
IRP4-SB01
AOC 5
370-SB03
370-SB02
ECR-SB02
370-SB01
ECR-SB03
IRP8K-SB01
IRP8K-SB02
IRP8K-SB03
ECR-SB01
IRP8J-SB03
AOC 16
395-SB03
SCR-SB01
AOC 4
IRP8J-SB02
395-SB02
AOC 9
SCR-SB04
AOC 17
395-SB01
IRP8J-SB01
SCR-SB02
IRP5-SB01
SCR-SB03
AOC 14
AOC 12
SDO-001
AOC 13
SDO-002

0 150 300 Feet

Please see previous investigative reports at this site for additional information on sampling and results.

Legend

- Soil Boring
- Area of Concern (AOC)
- Installation Boundary

-Italicized labels are from previous investigations.
-Bold and green labels are from current ESI fieldwork.

ESI = Expanded Site Inspection

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons), Stormwater System and Ponds
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Proposed Samples

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
SCALE: AS SHOWN	CONTRACT NUMBER: GS00QI40A DU127
DATE: 11/18/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_SoilSamp_Mainbase.mxd

Figure 3b
Soil Sample Locations
Eastern AOCs
Gabreski Air National Guard Base

699500 700000 4524000 4523500

GB-19-SB03
GB-19-SB01
AOC 19
GB-19-SB02

GABRESKI AIR NATIONAL GUARD BASE
AOC 1
IRP7-SB03
IRP7-SB02
IRP7-SB05
IRP7-SB01
IRP7-SB04

SB-2
SB-2
SB-1
SB-1
AOC 20
SB-3

Please see previous investigative reports at this site for additional information on sampling and results.

0 150 300 Feet

Legend

- Soil Boring
- Area of Concern (AOC)
- Installation Boundary

-Italicized labels are from previous investigations.
-Bold and green labels are from current ESI fieldwork.

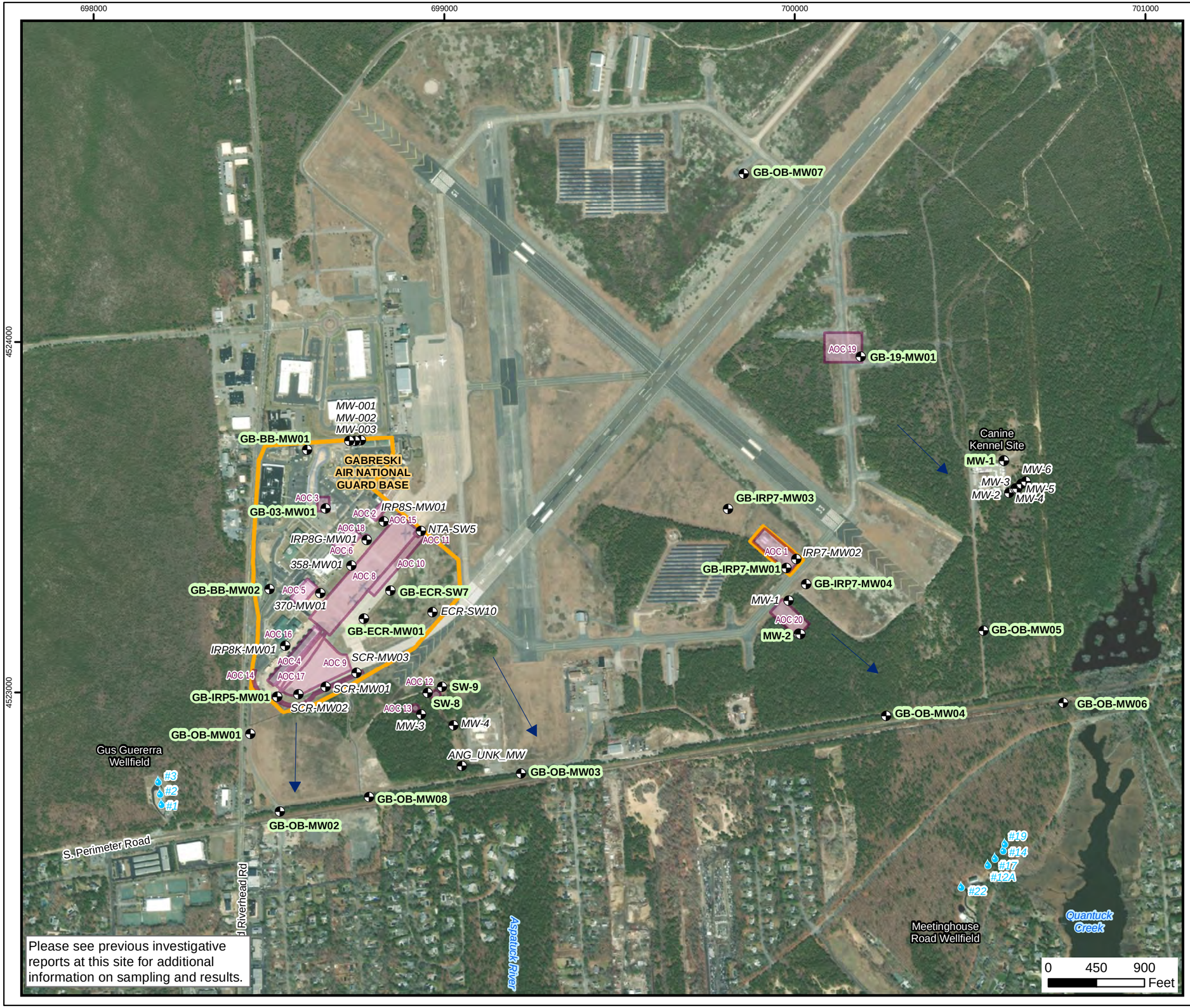
ESI = Expanded Site Inspection

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons), Stormwater System and Ponds
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Proposed Samples

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
SCALE: AS SHOWN	CONTRACT NUMBER: GS00Q140A DU127
DATE: 11/18/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_SoilSamp_EastAOCs.mxd

Figure 4
Groundwater
Sample Locations
Gabreski Air National Guard Base



Legend

- Groundwater Well
- Supply Well
- Approximate Groundwater Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-Italicized labels are from previous investigations.
-Bold and green labels are from current ESI fieldwork.

ESI = Expanded Site Inspection
Canine Kennel Site is a non-ANG source area.

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; AEB 2016; NYSDEC 2016
-Parsons: Sample Locations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)	
DESIGNED BY: RGS	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations	
DRAWN BY: RGS		
CHECKED BY: TM	SCALE: AS SHOWN	CONTRACT NUMBER: GS00QI40A DU127
SUBMITTED BY: TM	DATE: 12/14/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
	Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_GW_Locs.mxd

Figure 5
Surface Water and Sediment Sample Locations
Gabreski Air National Guard Base

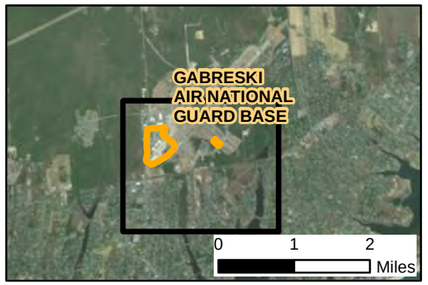
Please see previous investigative reports at this site for additional information on sampling and results.

Legend

- Surface Water Sample
- Sediment Sample
- Supply Well
- Surface Water Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-Italicized labels are from previous investigations.
-Bold and green labels are from current ESI fieldwork.

ESI = Expanded Site Inspection
Canine Kennel Site is a non-ANG source area.

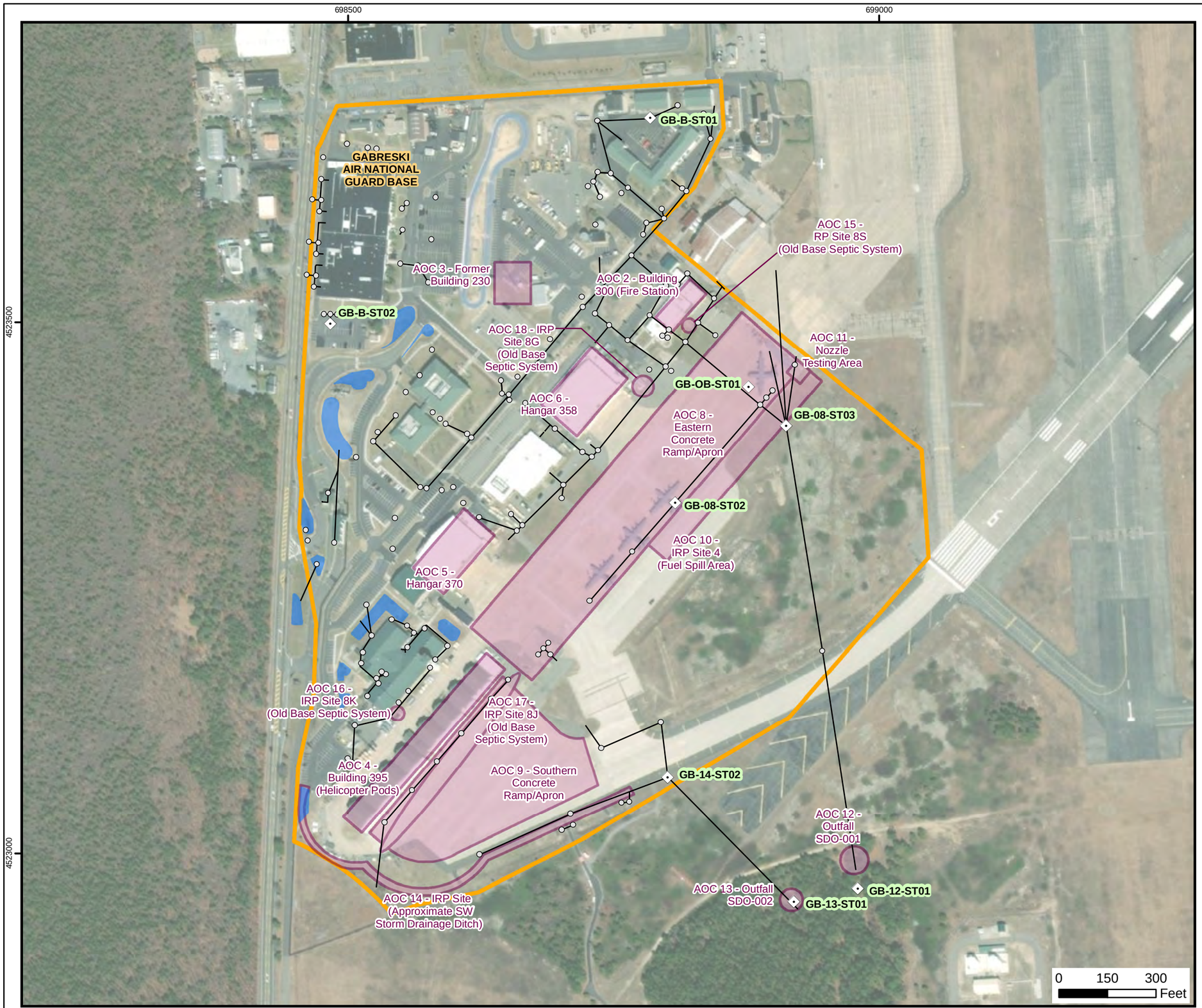


DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Sample Locations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
DRAWN BY: RGS	
CHECKED BY: TM	SCALE: AS SHOWN; CONTRACT NUMBER: GS00Q140A DU127
SUBMITTED BY: TM	DATE: 12/14/2020; DELIVERY ORDER NUMBER: W9133L-18-F-0052
	Coordinate System: WGS 1984 UTM Zone 18N

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_SW_SD_Locs.mxd

Figure 6
Stormwater Sample Locations
Gabreski Air National Guard Base



Legend

- Stormwater Sample
- Stormwater System
- Stormwater System Pond
- Area of Concern (AOC)
- Installation Boundary

-**Bold and green labels are from current ESI fieldwork.**

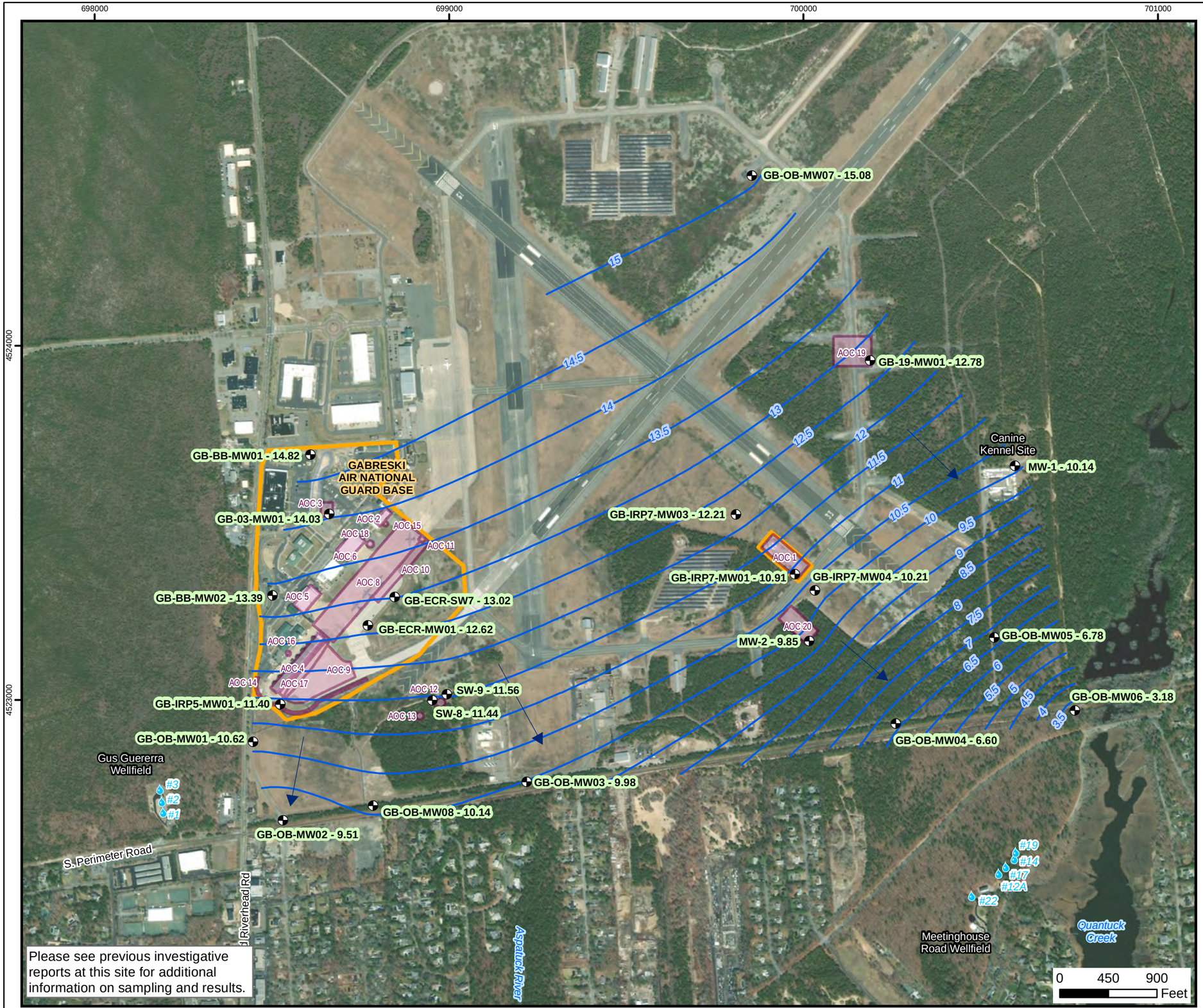
ESI = Expanded Site Inspection

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons), Stormwater System and Ponds
-Parsons: Samples

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
SCALE: AS SHOWN	CONTRACT NUMBER: GS00Q140A DU127
DATE: 11/18/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_Stormwater_Locs.mxd

Figure 7
Groundwater Contours
26 June 2020
Gabreski Air National Guard Base



Legend

- Groundwater Well with Groundwater Elevation in Feet AMSL
- Supply Well
- Groundwater Elevation Contour - 0.5 foot interval
- Approximate Groundwater Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-**Bold and green labels are from current ESI fieldwork.**

-ESI = Expanded Site Inspection

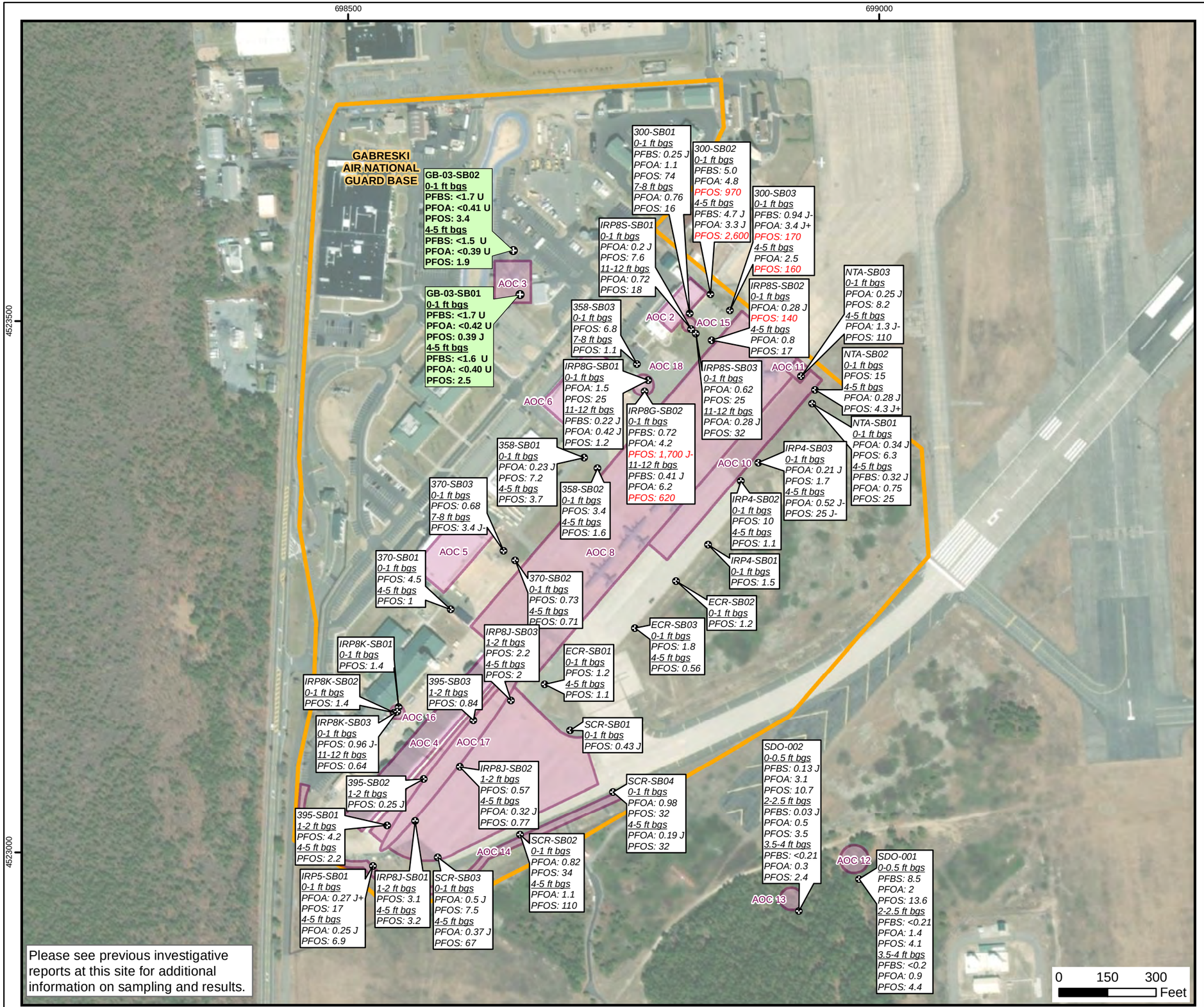
-Synoptic round of water level measurements made on 26 June 2020.
-Canine Kennel Site is a non-ANG source area.

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Parsons: Sample Locations and Elevations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
SCALE: AS SHOWN	CONTRACT NUMBER: GS00QI40A DU127
DATE: 12/14/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_GW_Contours.mxd

Figure 8a
Soil Sample
Analytical Results - Mainbase
Gabreski Air National Guard Base



Legend

Samples (Red value if exceedance):

- Soil Boring
- Area of Concern (AOC)
- Installation Boundary

-Italicized labels are from previous investigations.
-Bold and green highlighted labels are from current ESI fieldwork.

-Values shown as ng/g.
-PFBS SL = 130,000 ng/g
-PFOA SL = 130 ng/g
-PFOS SL = 130 ng/g

ESI = Expanded Site Inspection
J = Analyte detected, estimated concentration
J+ = Estimated concentration. The reported value may not be accurate or precise, and the result may be biased high.
J- = Estimated concentration. The reported value may not be accurate or precise, and the result may be biased low.
-Non-detects from historical data not shown for clarity.
ng/g = nanograms per gram
PFBS = perfluorobutanesulfonic acid
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonate
ft bgs = feet below ground surface

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons), Stormwater System and Ponds
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Proposed Samples

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
DRAWN BY: RGS	
CHECKED BY: TM	SCALE: AS SHOWN; CONTRACT NUMBER: GS00QI40A DU127
SUBMITTED BY: TM	DATE: 11/18/2020; DELIVERY ORDER NUMBER: W9133L-18-F-0052
	Coordinate System: WGS 1984 UTM Zone 18N

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_SoilSamp_Mainbase_Results.mxd

Figure 8b
Soil Sample
Analytical Results - Eastern AOCs
Gabreski Air National Guard Base

699500 700000 4524000 4523500

GB-19-SB03
0-1 ft bgs
PFBS: <1.6 U
PFOA: <0.41 U
PFOS: 0.20 J
4-5 ft bgs
PFBS: <1.7 U
PFOA: <0.42 U
PFOS: <0.42 U

GB-19-SB01
0-1 ft bgs
PFBS: <1.5 U
PFOA: <0.38 U
PFOS: <0.38 U
4-5 ft bgs
PFBS: <1.6 U
PFOA: <0.40 U
PFOS: <0.40 U

GB-19-SB02
0-1 ft bgs
PFBS: <1.6 U
PFOA: <0.41 U
PFOS: 0.61 J
4-5 ft bgs
PFBS: <1.6 U
PFOA: <0.41 U
PFOS: <0.41 U

AOC 19

GABRESKI AIR NATIONAL GUARD BASE

AOC 1

IRP7-SB02
0-1 ft bgs
PFBS: 0.36 J
PFOA: 3.8
PFOS: 230
4-5 ft bgs
PFOA: 3.2 J
PFOS: 570

IRP7-SB03
0-1 ft bgs
PFOA: 0.45 J
PFOS: 76
4-5 ft bgs
PFOA: 0.51 J
PFOS: 130

IRP7-SB01
0-1 ft bgs
PFOA: 0.61
PFOS: 91
4-5 ft bgs
PFOA: 0.69
PFOS: 65

IRP7-SB04
0-1 ft bgs
PFOS: 2.7
4-5 ft bgs
PFOS: 2.7

IRP7-SB05
0-1 ft bgs
PFOS: 31
4-5 ft bgs
PFOS: 0.85

SB-1
3.5-4 ft bgs
PFBS: <0.21
PFOA: 1
PFOS: 524

SB-1
0-0.5 ft bgs
PFBS: <0.23
PFOA: <0.23
PFOS: 355
2-2.5 ft bgs
PFBS: <20.7
PFOA: <20.7
PFOS: 1,610

SB-2
3.5-4 ft bgs
PFBS: <0.21
PFOA: 0.6
PFOS: 321

SB-2
0-0.5 ft bgs
PFBS: <21.3
PFOA: <21.3
PFOS: 50.1
2-2.5 ft bgs
PFBS: <20.9
PFOA: <20.9
PFOS: 108

SB-3
0-0.5 ft bgs
PFBS: 0.3
PFOA: 3.9
PFOS: 1,040
2-2.5 ft bgs
PFBS: 0.05 J
PFOA: 1.1
PFOS: 1,210
3.5-4 ft bgs
PFBS: 0.03 J
PFOA: 1
PFOS: 1,660

AOC 20

33

0 150 300 Feet

Please see previous investigative reports at this site for additional information on sampling and results.

Legend

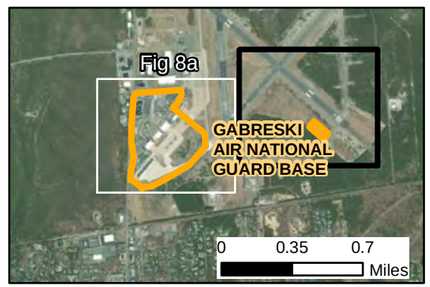
Samples (Red value if exceedance):

- Soil Boring
- Area of Concern (AOC)
- Installation Boundary

-*Italicized labels are from previous investigations.*
-**Bold and green highlighted labels are from current ESI fieldwork.**

-Values shown as ng/g.
-PFBS SL = 130,000 ng/g
-PFOA SL = 130 ng/g
-PFOS SL = 130 ng/g

ESI = Expanded Site Inspection
J = Analyte detected, estimated concentration
J+ = Estimated concentration. The reported value may not be accurate or precise, and the result may be biased high.
J- = Estimated concentration. The reported value may not be accurate or precise, and the result may be biased low.
-Non-detects from historical data not shown for clarity.
ng/g = nanograms per gram
PFBS = perfluorobutanesulfonic acid
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonate
ft bgs = feet below ground surface

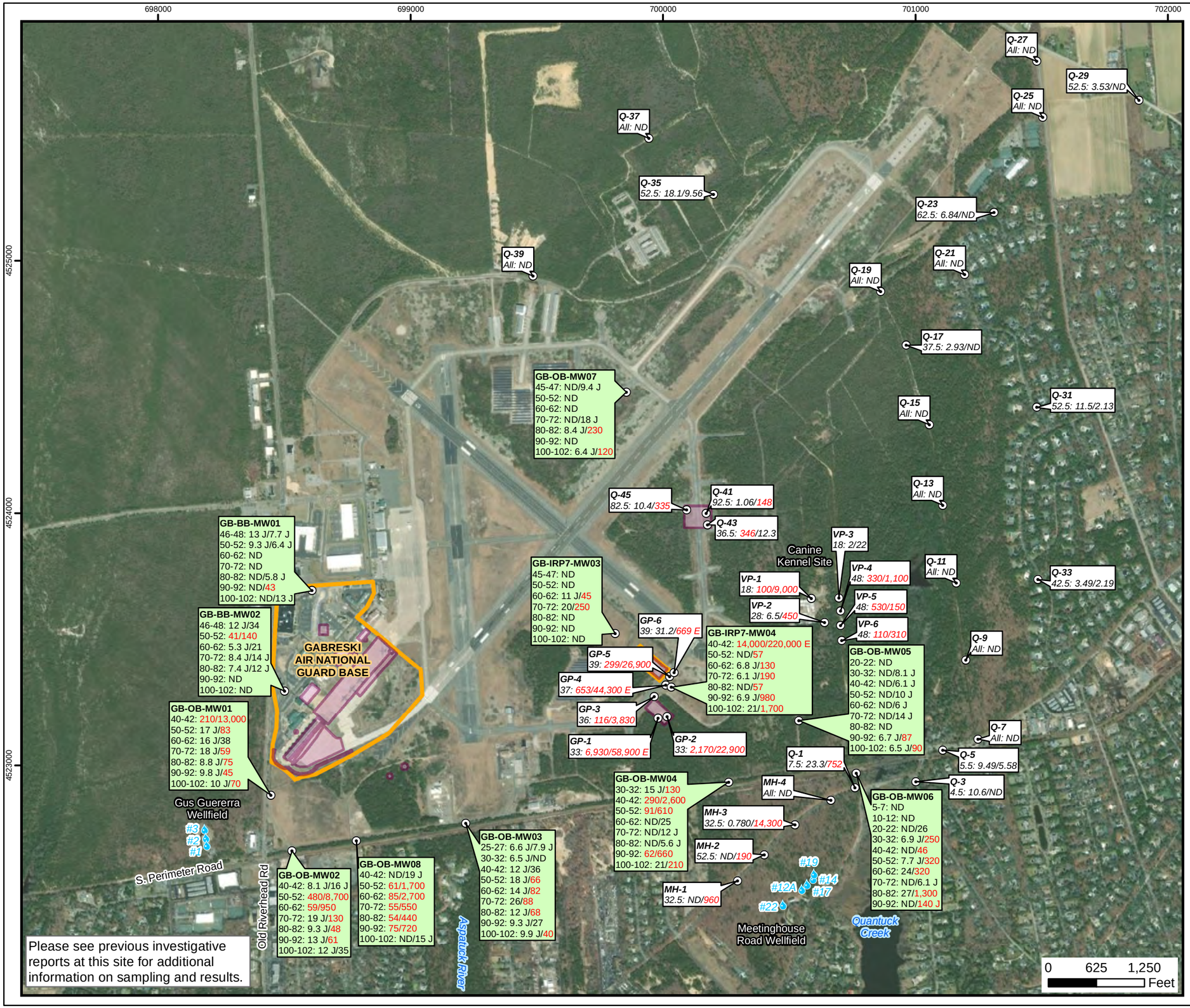


DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons), Stormwater System and Ponds
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Proposed Samples

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations SCALE: AS SHOWN CONTRACT NUMBER: GS00Q140A DU127 DATE: 11/18/2020 DELIVERY ORDER NUMBER: W9133L-18-F-0052 Coordinate System: WGS 1984 UTM Zone 18N

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_SoilSamp_EastAOCs_Results.mxd

Figure 9
Groundwater Profile Screening Results
Gabreski Air National Guard Base



Legend

Samples (Red value if exceedance):

- Groundwater Profile Location
  - Well ID
  - Sample Depth (ft bgs)
  - **Q-31** 52.5: 11.5/13.3 — PFOA/PFOS Concentration
- Supply Well
- Area of Concern (AOC)
- Installation Boundary

-*Italicized labels are from previous investigations.*
-**Bold and green labels are from current ESI fieldwork.**

ESI = Expanded Site Inspection
SI = Site Investigation
E = Exceeds instrument calibration range. Estimated concentration.
J = Analyte detected, estimated concentration
ND = not detected
ng/L = nanograms per liter
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonate
ft bgs = feet below ground surface

-Results shown are concentrationsof PFOA/PFOS (ng/L). If both PFOA and PFOS were not detected, value shown as ND.
-Screening Level for PFOA and PFOS = 40 ng/L.
-The concentrations shown from previous studies (in italics) are PFOA/PFOS and in ng/L. Only the depth interval with the maximum PFOA+PFOS concentration is shown.
-Canine Kennel Site is a non-ANG source area.

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: ESI Sample Locations and Results

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations SCALE: AS SHOWN CONTRACT NUMBER: GS00Q14OA DU127 DATE: 12/14/2020 DELIVERY ORDER NUMBER: W9133L-18-F-0052 Coordinate System: WGS 1984 UTM Zone 18N

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_GWProfile_Results.mxd

Figure 10
Groundwater Analytical Results
West: Gabreski ANGB and Off-Base Wells
Gabreski Air National Guard Base

Legend

Samples (Red value if exceedance):

- Groundwater Well
- Supply Well
- Approximate Groundwater Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-Italicized labels are from previous investigations.
-Bold and green labels are from current ESI fieldwork.

-Values shown as ng/L.
-Screening Level for PFOA and PFOS = 40 ng/L.
-Results shown are the maximum PFOA/PFOS concentration for either Round 1 or Round 2.
-Red if >= 40 ug/L.
-The concentrations shown from previous studies (in italics) are PFOA/PFOS and in ng/L.

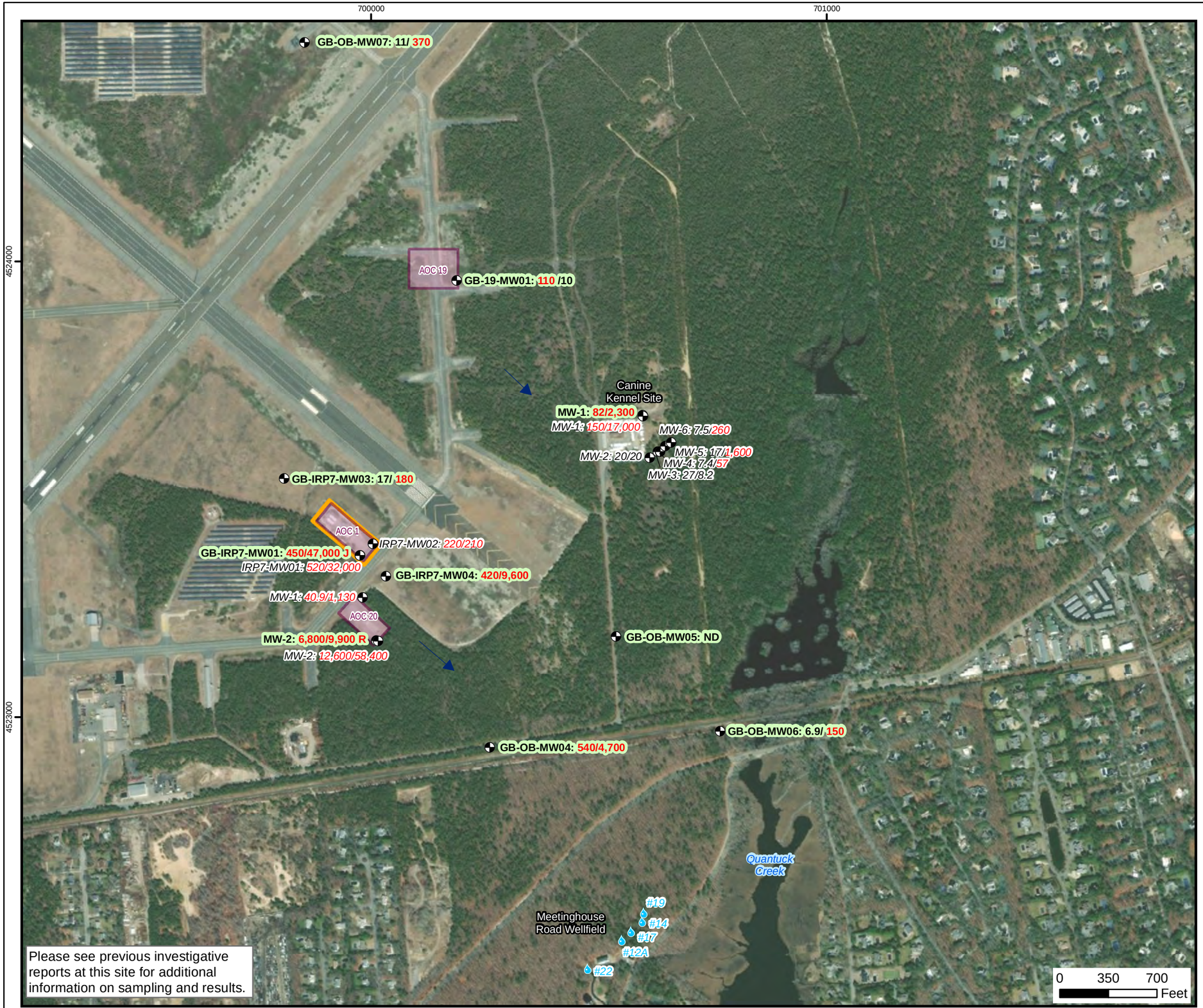
ESI = Expanded Site Inspection
J = Analyte detected, estimated concentration
ng/L = nanograms per liter
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonate

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; ZEB 2016; NYSDEC 2016
-Parsons: Sample Locations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)	
DESIGNED BY: RGS	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations	
DRAWN BY: RGS	SCALE: AS SHOWN	CONTRACT NUMBER: GS00QI40A DU127
CHECKED BY: TM	DATE: 12/14/2020	DELIVERY ORDER NUMBER: W9133L-18-F-0052
SUBMITTED BY: TM	Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_GW_WEST_Results.mxd

Figure 11
Groundwater Analytical Results
East: AOCs 1, 19, 20, Canine Kennel and Off-Site Wells
Gabreski Air National Guard Base



Legend

Samples (Red value if exceedance):

- Groundwater Well
- Supply Well
- Approximate Groundwater Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-*Italicized labels are from previous investigations.*
-**Bold and green labels are from current ESI fieldwork.**

-Values shown as ng/L.
-Screening Level for PFOA and PFOS = 40 ng/L.
-Results shown are the maximum PFOA/PFOS concentration for either Round 1 or Round 2.
-Red if >= 40 ug/L.
-The concentrations shown from previous studies (in italics) are PFOA/PFOS and in ng/L.
-Canine Kennel Site is a non-ANG source area.

ESI = Expanded Site Inspection
J = Analyte detected, estimated concentration
ng/L = nanograms per liter
R = Rejected; at MW-2, however, the PFOS value is expected to be biased low, therefore, the magnitude of PFOS concentration at this location is interpreted as high although the exact value cannot be quantified.
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonate

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Sample Locations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations SCALE: AS SHOWN CONTRACT NUMBER: GS00Q140A DU127 DATE: 12/14/2020 DELIVERY ORDER NUMBER: W9133L-18-F-0052 Coordinate System: WGS 1984 UTM Zone 18N

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_GW_EAST_Results.mxd

Figure 12
Surface Water and Sediment Sample Analytical Results
Gabreski Air National Guard Base

Please see previous investigative reports at this site for additional information on sampling and results.

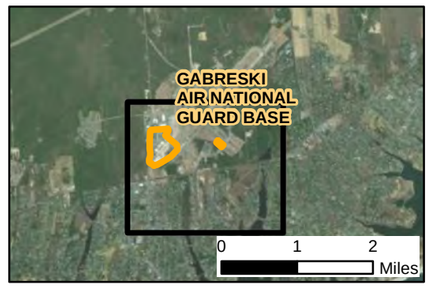
Legend

Samples (Red value if exceedance):

- Surface Water Sample
- Sediment Sample
- Supply Well
- Surface Water Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-*Italicized labels are from previous investigations.*
-**Bold and green labels are from current ESI fieldwork.**

-Results shown for surface water samples are concentrations of PFOA/PFOS.
-Sediment values shown as ng/g.
-PFBS SL = 130,000 ng/g
-PFOA SL = 130 ng/g
-PFOS SL = 130 ng/g
-Canine Kennel Site is a non-ANG source area.
Surface water values shown as ng/L.
PFOA SL = 40 ng/L
PFOS SL = 40 ng/L
ESI = Expanded Site Inspection
FD = Field duplicate
J = Analyte detected, estimated concentration
J+ = Estimated concentration. The reported value may not be accurate or precise, and the result may be biased high.
J- = Estimated concentration. The reported value may not be accurate or precise, and the result may be biased low.
Non-detects from historical data not shown for clarity.
ng/g = nanograms per gram
ng/L = nanograms per liter
PFBS = perfluorobutanesulfonic acid
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonate
ft bgs = feet below ground surface



DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Sample Locations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
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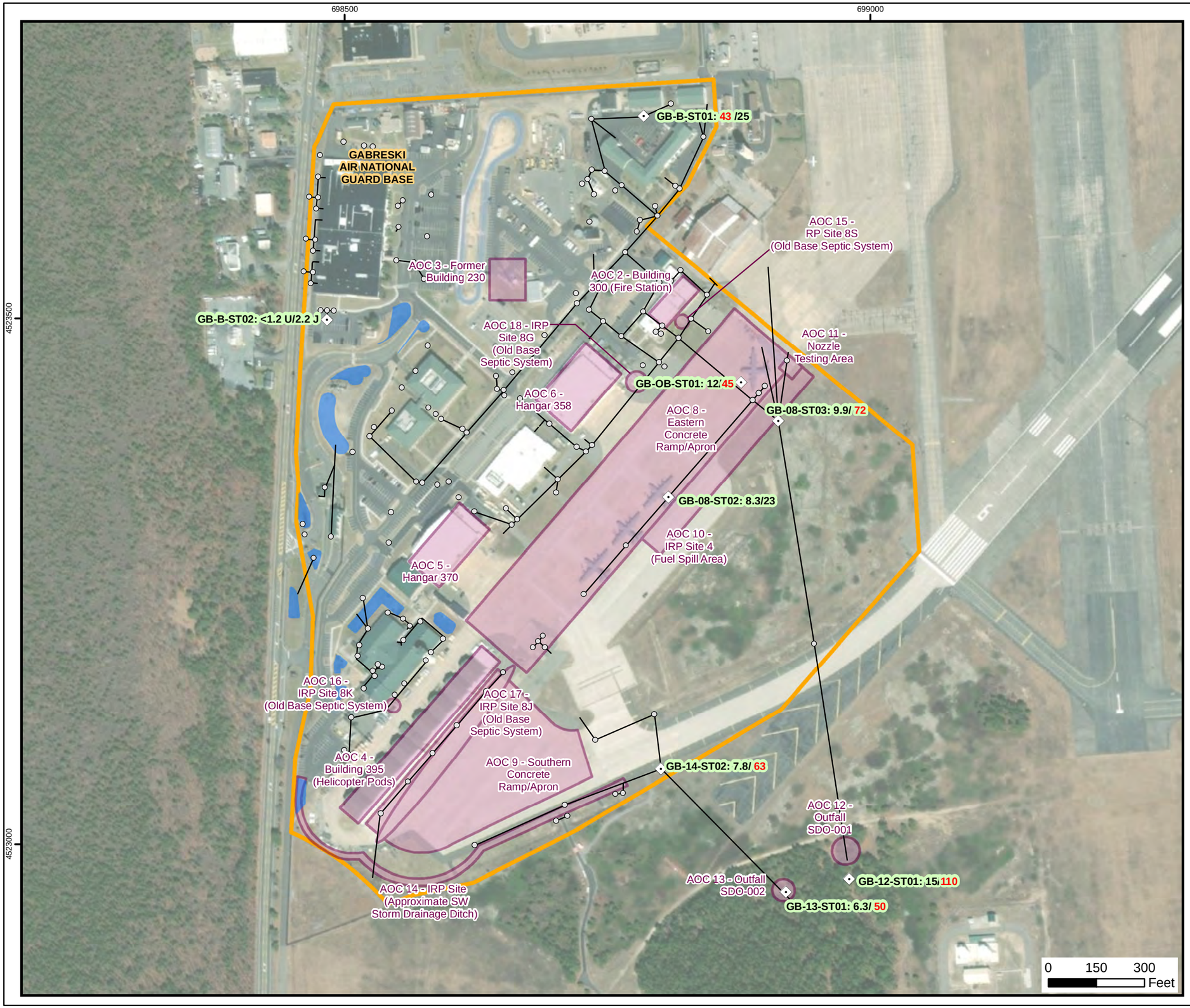
PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_SW_SD_Results.mxd

Figure 13
Stormwater
Analytical Results
Gabreski Air National Guard Base



Legend

- Stormwater Sample
- Stormwater System
- Stormwater System Pond
- Area of Concern (AOC)
- Installation Boundary

-**Bold and green labels are from current ESI fieldwork.**

-Values shown as ng/L.
-Screening Level for PFOA and PFOS = 40 ng/L.
-Results shown are concentrations of PFOA/PFOS.
-Red if PFOA or PFOS >= 40 ug/L.

ESI = Expanded Site Inspection
J = Analyte detected, estimated concentration
ng/L = nanograms per liter
PFOA = perfluorooctanoic acid
PFOS = perfluorooctane sulfonate

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons), Stormwater System and Ponds
-Parsons: Samples

PARSONS

NATIONAL GUARD BUREAU
OPERATIONS DIVISION
RESTORATION BRANCH
(NGB/A4VR)

DESIGNED BY: RGS	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
DRAWN BY: RGS	
CHECKED BY: TM	SCALE: AS SHOWN; CONTRACT NUMBER: GS00QI40A DU127
SUBMITTED BY: TM	DATE: 11/23/2020; DELIVERY ORDER NUMBER: W9133L-18-F-0052
	Coordinate System: WGS 1984 UTM Zone 18N

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_Stormwater_Results.mxd

Figure 14
PFAS Proportional Analysis for Groundwater Analytical Results, Round 2
Gabreski Air National Guard Base

698000 699000 700000 701000

4524000 4523000

GB-OB-MW07 (ng/L) PFOS

GB-19-MW01 (ng/L) PFOS

MW-1 (ng/L) PFOS

GB-BB-MW02 (ng/L) PFOS

ECR-SW7 (ng/L) PFOS

GB-IRP7-MW04 (ng/L) PFOS

GB-OB-MW06 (ng/L) PFOS

IRP5-MW01 (ng/L) PFOS

GB-IRP7-MW01 (ng/L) PFOS

GB-OB-MW04 (ng/L) PFOS

MH-3 (ng/L) PFOS

GB-OB-MW01 (ng/L) PFOS

SW-8 (ng/L) PFOS

GB-OB-MW03 (ng/L) PFOS

4:2FTS 6:2FTS 8:2FTS PFBA PFPeA PFHxA PFHpA PFOA PFNA PFBS PFPeS PFHxS PFHpS

GABRESKI AIR NATIONAL GUARD BASE

AOC 1 AOC 2 AOC 3 AOC 4 AOC 5 AOC 6 AOC 8 AOC 9 AOC 10 AOC 11 AOC 12 AOC 13 AOC 14 AOC 15 AOC 16 AOC 17 AOC 18 AOC 19 AOC 20

15 14.5 14 13.5 13 12.5 12 11.5 11 10.5 10 9.5 9 8.5 8 7.5 7 6.5 6 5.5 5 4.5 4 3.5

Canine Kennel Site

Gus Guererra Wellfield

#1 #2 #3

S. Perimeter Road

Meetinghouse Road Wellfield

#12A #14 #17 #19 #22

Quantuck Creek

Asparagus Run

0 450 900 Feet

Legend

- Groundwater Well
- Groundwater Profile Location
- Supply Well
- Groundwater Elevation Contour - 0.5 foot interval
- Approximate Groundwater Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-Radar charts depict select PFAS compounds organized by group and decreasing carbon chain (clockwise).
-Perfluorosulfonates in the northeast quadrant (clockwise C8 to C4), Perfluorocarboxylates in the southern half (C9 to C4), and Fluorotelomer Sulfonates (C10 to C6) in the northwest quadrant.
-Canine Kennel Site is a non-ANG source area.

Perfluorobutanoic acid (PFBA)
Perfluoropentanoic acid (PFPeA)
Perfluorohexanoic acid (PFHxA)
Perfluoroheptanoic acid (PFHpA)
Perfluorooctanoic acid (PFOA)
Perfluorononanoic acid (PFNA)
Perfluorobutanesulfonic acid (PFBS)
Perfluorohexanesulfonic acid (PFHxS)
Perfluoroheptanesulfonic Acid (PFHpS)
Perfluorooctanesulfonic acid (PFOS)
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)
Perfluoro-1-pentanesulfonate (PFPeS)

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Parsons: Sample Locations and Elevations

PARSONS

NATIONAL GUARD BUREAU
OPERATIONS DIVISION
RESTORATION BRANCH
(NGB/A4VR)

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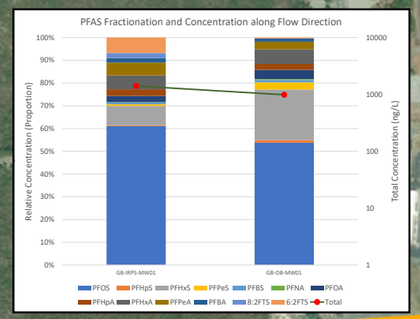
SUBMITTED BY: TM	Coordinate System: WGS 1984 UTM Zone 18N

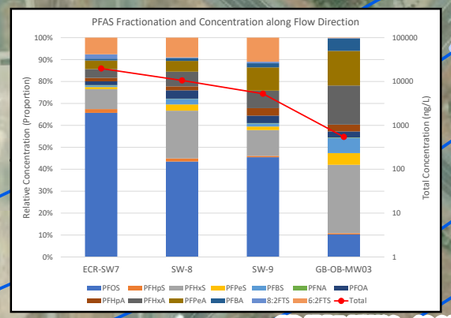
PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_GW_RadarCharts.mxd

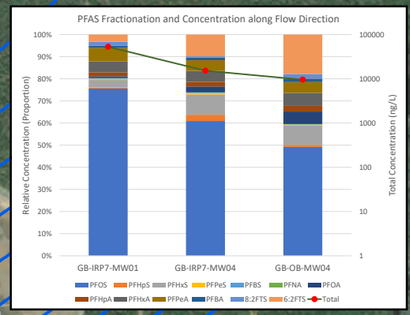
Figure 15
PFAS Partitioning Along Flow Lines, Groundwater Analytical Results, Round 2
Gabreski Air National Guard Base

698000 699000 700000 701000

4524000 4523000







GB-OB-MW07 - 15.08
GB-19-MW01 - 12.78
GB-BB-MW01 - 14.82
GB-03-MW01 - 14.03
GB-IRP7-MW03 - 12.21
GB-IRP7-MW01 - 10.91
GB-IRP7-MW04 - 10.21
GB-BB-MW02 - 13.39
GB-ECR-SW7 - 13.02
GB-ECR-MW01 - 12.62
MW-2 - 9.85
GB-OB-MW05 - 6.78
SW-9 - 11.56
GB-IRP5-MW01 - 11.40
SW-8 - 11.44
GB-OB-MW06 - 3.18
GB-OB-MW04 - 6.60
GB-OB-MW01 - 10.62
GB-OB-MW03 - 9.98
GB-OB-MW08 - 10.14
GB-OB-MW02 - 9.51

GABRESKI AIR NATIONAL GUARD BASE

AOC 1 AOC 2 AOC 3 AOC 4 AOC 5 AOC 6 AOC 8 AOC 9 AOC 10 AOC 11 AOC 12 AOC 13 AOC 14 AOC 15 AOC 16 AOC 17 AOC 18 AOC 19 AOC 20

15 14.5 14 13.5 13 12.5 12 11.5 11 10.5 10 9.5 9 8.5 8 7.5 7 6.5 6 5.5 5 4.5 4 3.5

Gus Guererra Wellfield
#3 #2 #1

S. Perimeter Road
Old Riverhead Rd
Aspatuck River
Meetinghouse Road Wellfield
#19 #14 #17 #12A #22
Quantuck Creek

0 450 900 Feet

Legend

- Groundwater Well with Groundwater Elevation in Feet AMSL
- Supply Well
- Groundwater Elevation Contour - 0.5 foot interval
- Approximate Groundwater Flow Direction
- Area of Concern (AOC)
- Installation Boundary

-Synoptic round of water level measurements made on 26 June 2020.
Perfluorobutanoic acid (PFBA)
Perfluoropentanoic acid (PFPeA)
Perfluorohexanoic acid (PFHxA)
Perfluoroheptanoic acid (PFHpA)
Perfluorooctanoic acid (PFOA)
Perfluorononanoic acid (PFNA)
Perfluorobutanesulfonic acid (PFBS)
Perfluorohexanesulfonic acid (PFHxS)
Perfluoroheptanesulfonic Acid (PFHpS)
Perfluorooctanesulfonic acid (PFOS)
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)
Perfluoro-1-pentanesulfonate (PFPeS)

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Parsons: Sample Locations and Elevations

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
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Figure 16
PFAS Proportional Analysis for Surface Water
Gabreski Air National Guard Base

698000 699000 700000 701000

4524000 4523000 4522000

GABRESKI AIR NATIONAL GUARD BASE

AOC 1 AOC 2 AOC 3 AOC 4 AOC 5 AOC 6 AOC 8 AOC 9 AOC 10 AOC 11 AOC 12 AOC 13 AOC 14 AOC 15 AOC 16 AOC 17 AOC 18 AOC 19 AOC 20

Gus Guererra Wellfield

#1 #2 #3

#12A #14 #17 #19 #22

S. Perimeter Road

Old Riverhead Rd

Aspatuck River

Montauk Hwy

Quantuck Creek

GB-OBNP-SW01 (ng/L)

GB-OBNP-SW02 (ng/L)

GB-OBOIP-SW04 (ng/L)

GB-OBOIP-SW02 (ng/L)

GB-OBOIP-SW03 (ng/L)

GB-OBOIP-SW01 (ng/L)

GB-OBAR-SW02 (ng/L)

GB-OBAR-SW03 (ng/L)

GB-OBAR-SW04 (ng/L)

GB-OBQC-SW01 (ng/L)

GB-OBQC-SW02 (ng/L)

GB-OBQC-SW03 (ng/L)

GB-OBQC-SW04 (ng/L)

PFOS PFHpS PFHxS PFPeS PFBS PFNA PFOA PFHpA PFHxA PFPeA PFBA 8:2FTS 6:2FTS 4:2FTS

0 450 900 Feet

Legend

- Surface Water Sample
- Supply Well
- Surface Water Flow Direction
- Area of Concern (AOC)
- Installation Boundary

Radar charts depict select PFAS compounds organized by group and decreasing carbon chain (clockwise). Perfluorosulfonates in the northeast quadrant (clockwise C8 to C4), Perfluorocarboxylates in the southern half (C9 to C4), and Fluorotelomer Sulfonates (C10 to C6) in the northwest quadrant.

Perfluorobutanoic acid (PFBA)
Perfluoropentanoic acid (PFPeA)
Perfluorohexanoic acid (PFHxA)
Perfluoroheptanoic acid (PFHpA)
Perfluorooctanoic acid (PFOA)
Perfluorononanoic acid (PFNA)
Perfluorobutanesulfonic acid (PFBS)
Perfluorohexanesulfonic acid (PFHxS)
Perfluoroheptanesulfonic Acid (PFHpS)
Perfluorooctanesulfonic acid (PFOS)
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)
Perfluoro-1-pentanesulfonate (PFPeS)

DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Previous Investigations: AECOM, 2019; SCDHS 2016; PWGC 2018; EAR 2018; NYSDEC 2016
-Parsons: Sample Locations

PARSONS

NATIONAL GUARD BUREAU
OPERATIONS DIVISION
RESTORATION BRANCH
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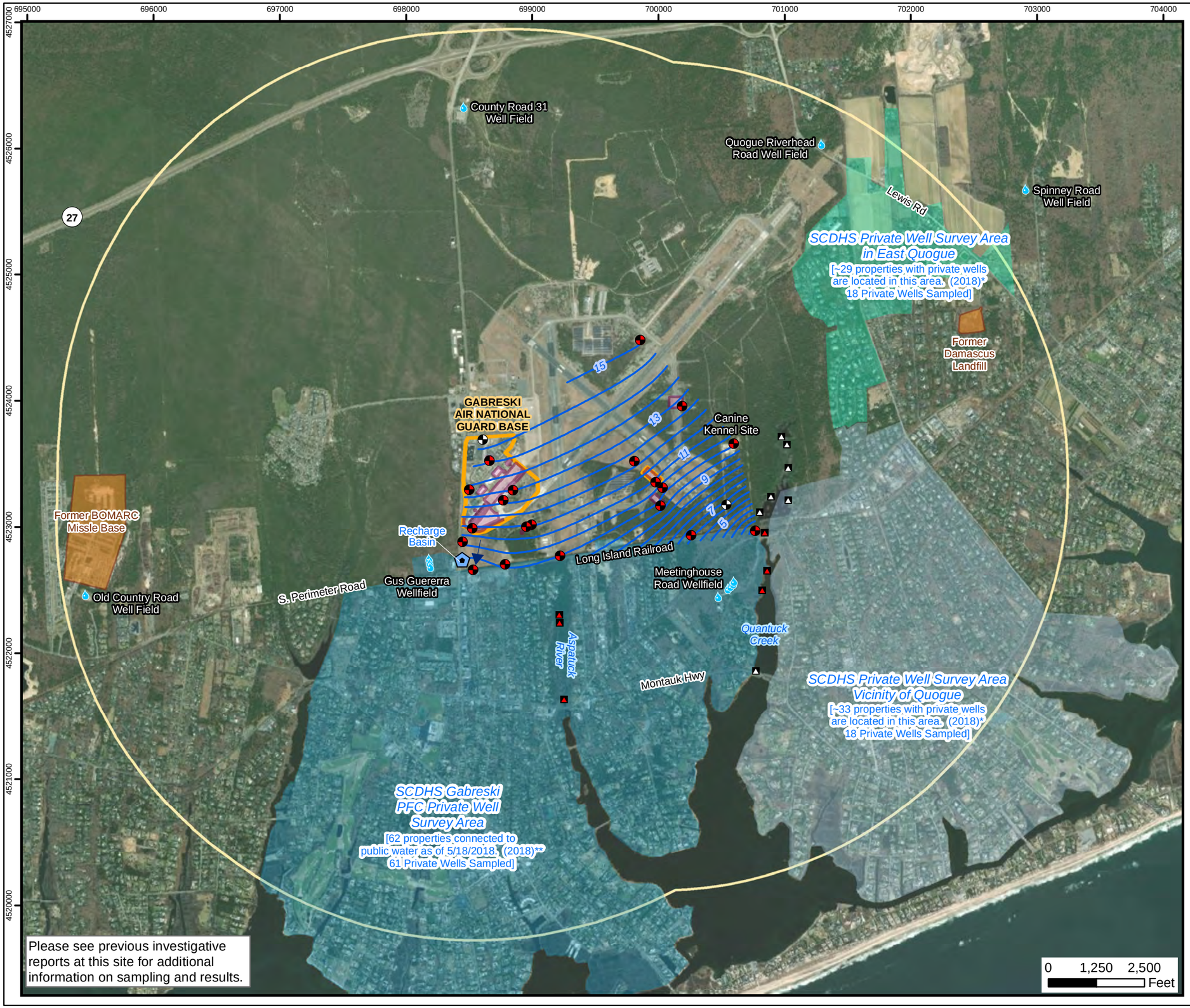
	Coordinate System: WGS 1984 UTM Zone 18N

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_SW_SD_RadarCharts.mxd

Figure 17
Groundwater Receptor Survey
Gabreski Air National Guard Base



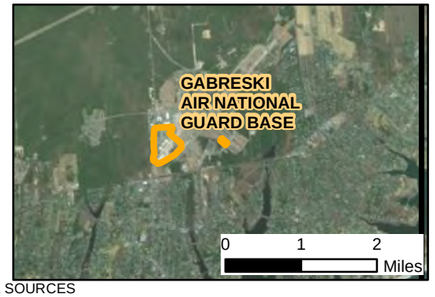
Legend

Samples (Red if exceedance):

- Groundwater Well
- Surface Water Sample
- Supply Well
- Groundwater Elevation Contour - 0.5 foot interval
- Approximate Groundwater Flow Direction
- Area of Concern (AOC)
- Installation Boundary
- 2-Mile Radius from ANG Property

-Red if PFOA or PFOS >= 40 ng/L.
-Screening Level for PFOA and PFOS = 40 ng/L.
-PFOA = perfluorooctanoic acid
-PFOS = perfluorooctane sulfonate

* = SCDHS survey area and details reported in SCDHS on-line updated dated October 11, 2018, and in October 29, 2019 email correspondence from SCDHS.
** = SCDHS survey area and details reported in SCDHS on-line updated dated May 18, 2018, and in October 29, 2019 email correspondence from SCDHS.
-ANG = Air National Guard
-ng/L = nanograms per liter
-SCDHS = Suffolk County Department of Health Services
-Canine Kennel Site is a non-ANG source area.



DATA SOURCES
-Image: ESRI, 2016
-ANG Base: Installation Boundary, AOC Boundary (modified by Parsons)
-Parsons: Sample Locations, Contours, Landfills
-Suffolk County Water Authority: Recharge Basin
-Suffolk County Health Services: Private Well Areas

PARSONS	NATIONAL GUARD BUREAU OPERATIONS DIVISION RESTORATION BRANCH (NGB/A4VR)
DESIGNED BY: RGS DRAWN BY: RGS CHECKED BY: TM SUBMITTED BY: TM	Expanded Site Inspections for Perfluorinated Compounds at Multiple Air National Guard Installations
SCALE: AS SHOWN	CONTRACT NUMBER: GS00QI40A DU127
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Coordinate System: WGS 1984 UTM Zone 18N	

PATH: F:\GISCADD\projects\OASIS\GIS\Gabreski\Maps\ESI\GABRESKI_ESI_Receptor.mxd

APPENDIX A Daily Field Summary Reports

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Sitewide
Date:	01/16/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
40	10	S	Sunny	None

Parsons Personnel:	Dan Chamberland, Paul Feshback-Meriney
Contractors:	None
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Stake locations, meet with base personnel.
General Comments:	Conducted meeting with base personnel. All locations on base have been staked. All locations on the airfield have been staked except for one. All locations off base have been staked except for one.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	
AOC:	
Date:	01/17/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
35	10	E	Sunny	None

Parsons Personnel:	Dan Chamberland, Paul Feshbach-Meriny
Contractors:	No contractors on base today.
Site Visitors:	No visitors on base today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Complete staking off-base locations. Finalize our lay down yard area and collect water samples from our water supply location.
General Comments:	Water sample collected.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	01/20/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
30	15	NE	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	Bloodhound underground: Steven Strahmann.
Site Visitors:	No visitors today
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Begin utility located at off-base locations.
General Comments:	All off-base locations completed. Several had to be moved to avoid utilities.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
All off-base locations.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	
AOC:	
Date:	01/21/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
25	15	E	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	Bloodhound: Steven Strahmann
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting completed. No health and safety issues today.
Plans for the Day:	Continue utility markouts on base.
General Comments:	All locations on base, but not on the airfield, cleared today. GB-03-SB02 moved to the north to avoid water and communication lines.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
All locations on base cleared.
Utility Clearance:
All locations on base cleared.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	
AOC:	
Date:	01/23/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
35	5	SE	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	Bloodhound: Steve Strahmann
Site Visitors:	No visitors today.
Safety:	Daily health and safety tailgate completed. No health and safety incidents today.
Plans for the Day:	Complete the utility mark outs.
General Comments:	Utility mark outs on the airfield completed. All drilling locations cleared.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
All locations on the airfield cleared, there are no issues.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	
AOC:	
Date:	01/27/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
40	5	E	Mostly Cloudy	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Ryan Jackson, Rob Allegrezza
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted, no health and safety issues today.
Plans for the Day:	Set up lay down yard, go over plan with drillers, get DBIDS badge for Parsons and Cascade personnel.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Upgradient
Date:	01/28/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
40	15	SE	Mostly Cloudy	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Ryan Jackson, Rob Allegrezza
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting completed, no health and safety issues today.
Plans for the Day:	Begin groundwater profiling.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-BB-MW01: all GW profile intervals for this location completed.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Upgradient
Date:	01/29/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
35	15	SE	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Rob Allegrezza, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Continue groundwater profiling.
General Comments:	Work progressed smoothly today.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	01/30/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
32	8	SE	Sunny	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Rob Allegrezza, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Continue groundwater profiling.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-BB-MW01 completed. Two intervals sampled at GB-OB-MW02.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	01/31/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
41	12	SE	Sunny	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Rob Allegrezza, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Continue groundwater profiling.
General Comments:	All work proceeded smoothly today.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GW profiling at GB-OB-MW07 completed. GW profiling at GB-OB-MW02 partially completed.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/03/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
50	12	N	Sunny	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Rob Allegrezza, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	GW profiling.
General Comments:	GB-OB-MW02 completed. GB-OB-MW03 completed except for 1 interval.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

See general comments.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/04/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
50	6	N	Mostly Cloudy	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	AT/Cascade: Rob Allegrezza, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Continue groundwater profiling.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-OB-MW03 profiling completed. GB-OB-MW04 profiling completed.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	1
Date:	02/05/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
41	12	NE	Overcast	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Rob Allegrezza, Ryan Jackson
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Continue GW profiling.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

All intervals at GB-IRP7-MW03 collected. Two intervals collected at GB-IRP7-MW04.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/06/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
42	5	NE	Overcast	Rain

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Rob Allegrezza, Ryan Jackson
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Continue GW profiling.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-IRP7-MW04 GW profiling completed. GB-OB-MW07 had 3 samples collected.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/07/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
40	10	N	Overcast	Rain

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Rob Allegrezza, Nick Benidetti.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Continue gw profiling.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-OB-MW06 completed except for the 100-102 interval. Began GB-OB-MW05.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Quantuck Creek
Date:	02/08/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
40	8	E	Sunny	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	No contractors today
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Surface water and sediment sampling.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
Quantuck Creek, old ice pond and north pond samples collected.
Sediment Samples:
Quantuck Creek, old ice pond and north pond samples collected.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Aspatuck River
Date:	02/09/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
38	6	E	Sunny	None

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	No contractors on site today.
Site Visitors:	No visitors today
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Surface water and sediment samples.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
Aspatuck river samples collectex
Sediment Samples:
Aspatuck river samples collected.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/10/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
45	15	NE	Overcast	Rain

Parsons Personnel:	Dan Chamberland, Matt Muto
Contractors:	ADT/Cascade: Ryan Jackson, Chris Iodici
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Complete gw profiling. Collect soil samples.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

All soil samples from AOC 03 collected.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-OB-MW06 gw profiling completed.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	
AOC:	
Date:	02/12/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
45	10	SE	Overcast	Rain

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Soil borings and monitoring well installation.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
GB-03-MW01 completed to 50 feet. GB-BB-MW02 completed to 60 feet.
Shallow or Collocated Wells:
GB-03-MW01 installed at 50 feet.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/12/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
42	8	NE	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/ Cascade: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Install GB-BB-MW02, begin drilling at GB-BB-MW01.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
GB-BB-MW01sampled to 70 feet.
Shallow or Collocated Wells:
GB-BB-MW02 installed from 46-56 feet bgs.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Upgradient
Date:	02/13/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
42	5	S	Overcast	Rain

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Drill and install GB-BB-MW01
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-BB-MW01 installed at 54 feet bgs.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/14/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
36	18	SE	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Drill and install GB-OB-MW01. Complete well pads.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:

No activity.

Utility Clearance:

No activity.

Water Level Measurements:

No activity.

Soil Borings:

GB-OB-MW01 completed to 50 feet. GB-OB-MW02 completed to 40 feet.

Shallow or Collocated Wells:

GB-OB-MW01 installed at 48 feet.

Deep Wells:

No activity.

Wells Developed:

No activity.

Slug Tests:

No activity.

Surface Water Samples:

No activity.

Sediment Samples:

No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/18/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
44	10	SE	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/CASCADE: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety incidents today.
Plans for the Day:	Drill and install GB-OB-MW02.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW02 soil boring completed to 100 feet. Well installed from 50 to 60 feet bgs.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/19/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
45	15	SE	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW03 installed to 75 feet. GB-OB-MW04 drilled to 60 feet.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/20/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
34	14	SE	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Drill and install GB-OB-MW04.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW04 drilled to 100 feet. We'll set at 48 feet.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	
AOC:	
Date:	02/21/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
35	16	E	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW05 drilled to 100 feet. Will set the well on Monday.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/24/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
54	6	SW	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/CASCADE: Chris Iodice Ryan Jackson. Bloodhound underground: Steve Strahmann
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	Twice hit refusal at 75 feet bgs and were unable to set the well. Will come back tomorrow to set a 1 inch well with the smaller rods.
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
GB-OB-MW08 cleared.
Utility Clearance:
GB-OB-MW08 CLEARED.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW05 unable to be set.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/26/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
50	10	NE	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

All profile samples from GB-OB-MW08 collected. The 35-37 interval was dry.

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	02/28/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
40	24	SE	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/ Cascade: Chris Iodice, Ryan Jackson
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW07 installed to 85 feet.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	03/02/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
33	4	SW	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	ADT
Site Visitors:	
Safety:	Slips trips falls. Be aware of moving equipment
Plans for the Day:	
General Comments:	0645: Parsons onsite 0715: ADT onsite 0745: Parsons and ADT mobilize to GB-OB-MW06 0820: Begin soil boring for stratigraphy at GB-OB-MW06 ADT completes GB-OB-MW06 boring to 95'
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
Advance stratigraphy soil boring at GB-OB-MW06
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name: Gabreski

AOC: Downgradient

Date: 03/03/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
45	3	SW	Sunny	None

Parsons Personnel: Matt Muto

Contractors: ADT: Chris Iodice, Ryan Jackson

Site Visitors:

Safety:

Plans for the Day:

0700: Parsons and ADT onsite
0730-0800: Parsons waits for airport escort
0815-0915: ADT constructs pads at GB-19-MW01 and GB-OB-MW07
0945-1030: ADT constructs well at GB-OB-MW06. Screen interval 25'-35'
ADT decons equipment
Parsons asks Nick Kilb to be escorted to munitions area. Neither Nick or Lorena is available to escort today. Parsons will touch base with the environmental team in the morning

General Comments:

Note:

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW06: Screen: 25'-35'
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	1
Date:	03/04/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
50	18	S	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson
Site Visitors:	No visitors today
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-IRP7-MW0 drilled to 50 feet. Well screened from 40 to 50 feet. GB-IRP7-MW0 3 drilled to 35 feet.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	03/06/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
48	15	E	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson.
Site Visitors:	No visitors today.
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:

No activity.

Utility Clearance:

No activity.

Water Level Measurements:

No activity.

Soil Borings:

GB-OB-MW08 drilled to 45 feet.

Shallow or Collocated Wells:

GB-IRP7-MW03 set at 72 feet, screen interval is 62-72 feet.

Deep Wells:

No activity.

Wells Developed:

No activity.

Slug Tests:

No activity.

Surface Water Samples:

No activity.

Sediment Samples:

No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Upgradient
Date:	03/10/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
52	10	N	Sunny	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson
Site Visitors:	No visitors today
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Well installation and well development.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
GB-OB-MW08 installed at 63 feet.
Deep Wells:
No activity.
Wells Developed:
GB-03-MW01, GB-BB-MW02 development completed.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	03/10/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
48	15	N	Partly Cloudy	Rain

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson
Site Visitors:	No visitors today
Safety:	Daily tailgate health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
GB-BB-MW01, GB-OB-MW07, GB-19-MW01
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	03/11/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
51	9	SE	Partly Cloudy	None

Parsons Personnel:	Dan Chamberland
Contractors:	ADT/Cascade: Chris Iodice, Ryan Jackson
Site Visitors:	No visitors today.
Safety:	Daily health and safety meeting conducted. No health and safety issues today.
Plans for the Day:	Well development.
General Comments:	
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:

No activity.

Utility Clearance:

No activity.

Water Level Measurements:

No activity.

Soil Borings:

No activity.

Shallow or Collocated Wells:

No activity.

Deep Wells:

No activity.

Wells Developed:

GB-OB-MW06, GB-OB-MW03, GB-OB-MW08, GB-OB-MW02 well development completed.

Slug Tests:

No activity.

Surface Water Samples:

No activity.

Sediment Samples:

No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	06/15/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
70	5	N	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	
Site Visitors:	
Safety:	Slips trips falls and ticks
Plans for the Day:	
General Comments:	1600: Parsons onsite, Matt calibrates YSI 1630-1745 Begin purging and sampling GB-OB-MW05 1800-1945: Purge and sample GB-OB-MW04
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-OB-MW04 & GB-OB-MW05

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name: Gabreski

AOC: Downgradient

Date: 06/16/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
72	5	N	Sunny	None

Parsons Personnel: Matt Muto

Contractors:

Site Visitors:

Safety: Slips trips falls ticks

Plans for the Day:

General Comments:

0700: Matt muto onsite
0745: Matt meets with Lorena Peters to escort and find Wells that need to be sampled with escort
1000-1100: begin purging and sample IRP7-MW01
1115-1200: purge and sample GB-IRP7-MW04
1230-1340: Purge and sample GB-OB-MW03
1400-1550: Matt retrieves flyers that have to be distributed on Wednesday to 3 post offices
1600-1730: Matt works on fixing monsoon pump
1800-1900: purge and sample GB-OB-MW01

Note:

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IRP-MW01-01, GB-IRP7-MW04, GB-OB-MW03, GB-OB-MW01

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name: Gabreski

AOC: Downgradient

Date: 06/17/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
75	10	NE	Sunny	None

Parsons Personnel: Matt Muto

Contractors:

Site Visitors:

Safety: Slips trips falls ticks

Plans for the Day:

General Comments:

0700: Matt onsite
0745: Lorena escorts Matt to SW-08
0800-0915: Purge and sample SW-08
0930-1015: Purge and sample SW-09
1030-1120: purge and sample MW-2
1130-1230: purge and sample GB-IRP7-MW03
1230-1400: Finish synoptic GW levels
1400-1515: Drop off flyers at 3 post offices
1520-1610: purge and sample GB-OB-MW06
1630-1730: Purge and sample GB-OB-MW08
1745-1845: purge and sample GB-OB-MW02

Note:

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

SW-8, SW-9, MW-2, GB-IRP7-MW03, GB-OB-MW06, GB-OB-MW08, GB-OB-MW02

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name: Gabreski

AOC: Downgradient

Date: 06/18/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
72	7	NE	Sunny	None

Parsons Personnel: Matt Muto

Contractors:

Site Visitors:

Safety: Slips trips falls ticks

Plans for the Day:

General Comments:

0700: Matt onsite
0745: Lorena escorts Matt to ECR-SW7
0800-0915: Purge and sample ECR-SW7
0930-1030: Purge and sample ECR-MW01
1100-1230: Purge and sample IRP5-MW01, submitted 1.5 bottles to lab, had to sample fast due to flight conflict
1300-1420: Matt is escorted by airport personnel to GB-OB-MW07 to purge and sample well
1430-1535: purge and sample GB-19-MW01
1600-1700: Pack 2 coolers and ship samples

Note:

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

ECR-SW7, ECR-MW01, GB-OB-MW07, GB-19-MW01

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Upgradient
Date:	06/19/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
80	5	N	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	
Site Visitors:	
Safety:	Slips trips falls ticks
Plans for the Day:	
General Comments:	0700: Matt onsite 0730-0840: purge and sample GB-03-MW01 0850-0945: Purge and sample GB-BB-MW02 1000-1045: Purge and sample GB-BB-MW01 1600: Matt packs cooler and ships samples
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

GB-03-MW01, GB-BB-MW01, GB-BB-MW02

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	06/25/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
75	2	NE	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	
Site Visitors:	
Safety:	Slips trips falls ticks
Plans for the Day:	
General Comments:	Parsons is escorted by ANGB to sample IRP7-MW01 Parsons samples GB-OB-MW04 & GB-OB-MW05 Parsons samples IDW onsite. There are 4 full totes of water and 3 full soil drums onsite
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
IRP7-MW01, GB-OB-MW04, GB-OB-MW05
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Upgradient
Date:	06/26/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
72	3	N	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	Young & Young
Site Visitors:	
Safety:	Slips trips falls pinch points
Plans for the Day:	
General Comments:	Parsons escorts Young & Young Surveyors all day Parsons ships IDW samples to Eurofins lab
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

Survey all 22 Well and 5 soil boring locations

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	06/28/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
75	5	N	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	
Site Visitors:	
Safety:	Slips trips falls ticks
Plans for the Day:	
General Comments:	Parsons onsite at 1530 Parsons samples GB-OB-MW01 & GB-OB-MW03
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
GB-OB-MW01 & GB-OB-MW03
Wells Developed:
No activity.
Slug Tests:
No activity.
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Upgradient
Date:	06/29/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
78	2	N	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	
Site Visitors:	
Safety:	Slips trips falls ticks
Plans for the Day:	
General Comments:	Parsons is escorted by ANGB to sample ECR-SW7, ECR-MW01 & IRP5-MW01 Parsons samples GB-03-MW01, GB-OB-MW06, GB-OB-MW08, GB-BB-MW01, & GB-BB-MW02
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:

No activity.

Utility Clearance:

No activity.

Water Level Measurements:

No activity.

Soil Borings:

No activity.

Shallow or Collocated Wells:

No activity.

Deep Wells:

ECR-SW7, ECR-MW01, IRP5-MW01, GB-03-MW01, GB-OB-MW06, GB-OB-MW08, GB-BB-MW01, & GB-BB-MW02

Wells Developed:

No activity.

Slug Tests:

No activity.

Surface Water Samples:

No activity.

Sediment Samples:

No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name: Gabreski

AOC: Downgradient

Date: 06/30/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
80	3	SW	Sunny	None

Parsons Personnel: Matt Muto

Contractors:

Site Visitors:

Safety: Slips trips falls ticks

Plans for the Day:

General Comments: Parsons is escorted by ANGB to sample SW-8, SW-9, MW-2, GB-IRP7-MW03, & GB-IRP7-MW04
Parsons is escorted by airport personnel to GB-OB-MW07 & GB-19-MW01
Parsons samples off base Wells GB-OB-MW02 & MW-1

Note:

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:

No activity.

Utility Clearance:

No activity.

Water Level Measurements:

No activity.

Soil Borings:

No activity.

Shallow or Collocated Wells:

No activity.

Deep Wells:

SW-8, SW-9, MW-2, GB-IRP7-MW03, GB-IRP7-MW04, GB-OB-MW07, GB-19-MW01, GB-OB-MW02 & MW-1

Wells Developed:

No activity.

Slug Tests:

No activity.

Surface Water Samples:

No activity.

Sediment Samples:

No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name:	Gabreski
AOC:	Downgradient
Date:	07/06/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
82	5	SW	Sunny	None

Parsons Personnel:	Matt Muto
Contractors:	
Site Visitors:	
Safety:	Slips trips falls ticks
Plans for the Day:	
General Comments:	Parsons performs slug test at GB-OB-MW02, GB-OB-MW03, GB-OB-MW04, and GB-OB-MW08
Note:	

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
GB-OB-MW02, GB-OB-MW03, GB-OB-MW04, and GB-OB-MW08
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

Miscellaneous Notes:

DAILY FIELD SUMMARY REPORT

Site Name: Gabreski

AOC: Downgradient

Date: 07/07/2020

Weather:

Temperature (°F)	Wind Speed (mph)	Wind Direction	Sky	Precipitation
85	2	S	Sunny	None

Parsons Personnel: Matt Muto

Contractors:

Site Visitors:

Safety: Slips trips falls ticks

Plans for the Day:

General Comments: Parsons performs slug test at GB-03-MW01, GB-19-MW01, GB-BB-MW01, GB-BB-MW02, GB-IRP7-MW03, GB-IRP7-MW04, GB-OB-MW01, GB-OB-MW06, GB-OB-MW07

Note:

DAILY FIELD SUMMARY REPORT

Surface Geophysics for Utility Clearance:
No activity.
Utility Clearance:
No activity.
Water Level Measurements:
No activity.
Soil Borings:
No activity.
Shallow or Collocated Wells:
No activity.
Deep Wells:
No activity.
Wells Developed:
No activity.
Slug Tests:
GB-03-MW01, GB-19-MW01, GB-BB-MW01, GB-BB-MW02, GB-IRP7-MW03, GB-IRP7-MW04, GB-OB-MW01, GB-OB-MW06, GB-OB-MW07
Surface Water Samples:
No activity.
Sediment Samples:
No activity.

DAILY FIELD SUMMARY REPORT

Stormwater Samples:

No activity.

Surface Soil Samples:

No activity.

Instrument Survey:

No activity.

Groundwater Sampling:

IDW Management:

No activity.

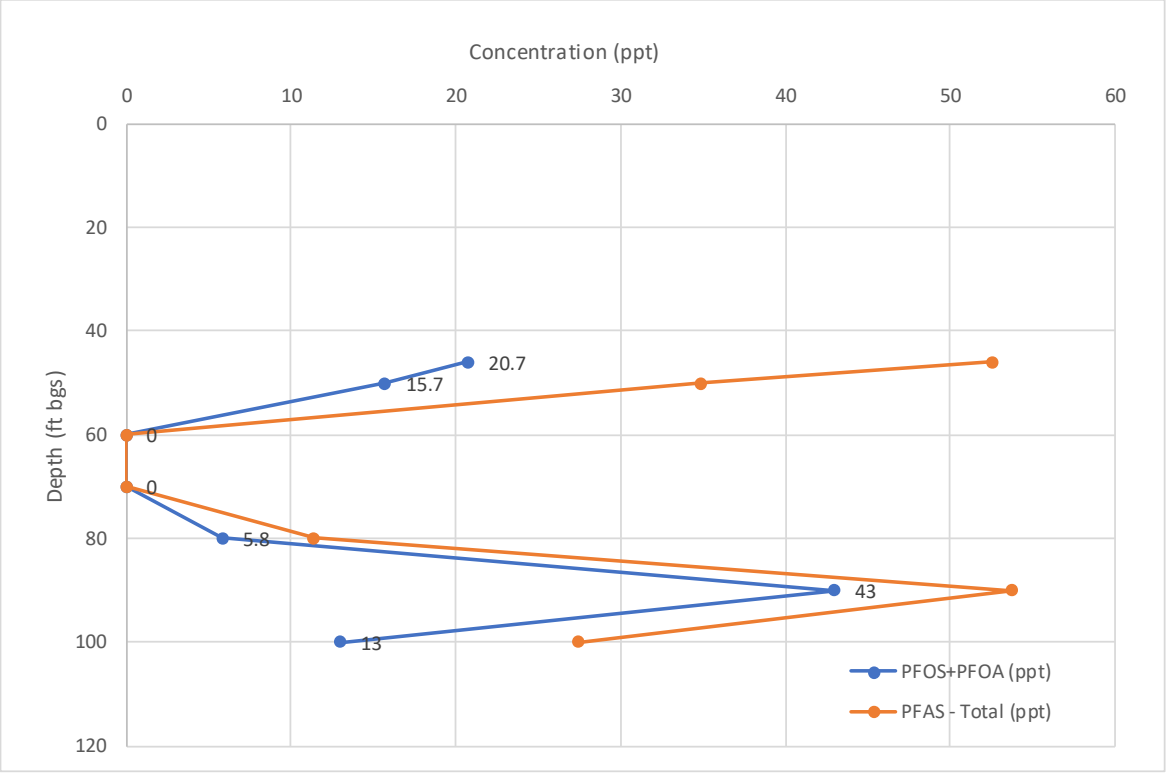
Water/Liquid Drums	Soil Drums	PPE/Debris Drums

Drums were moved to the following area:

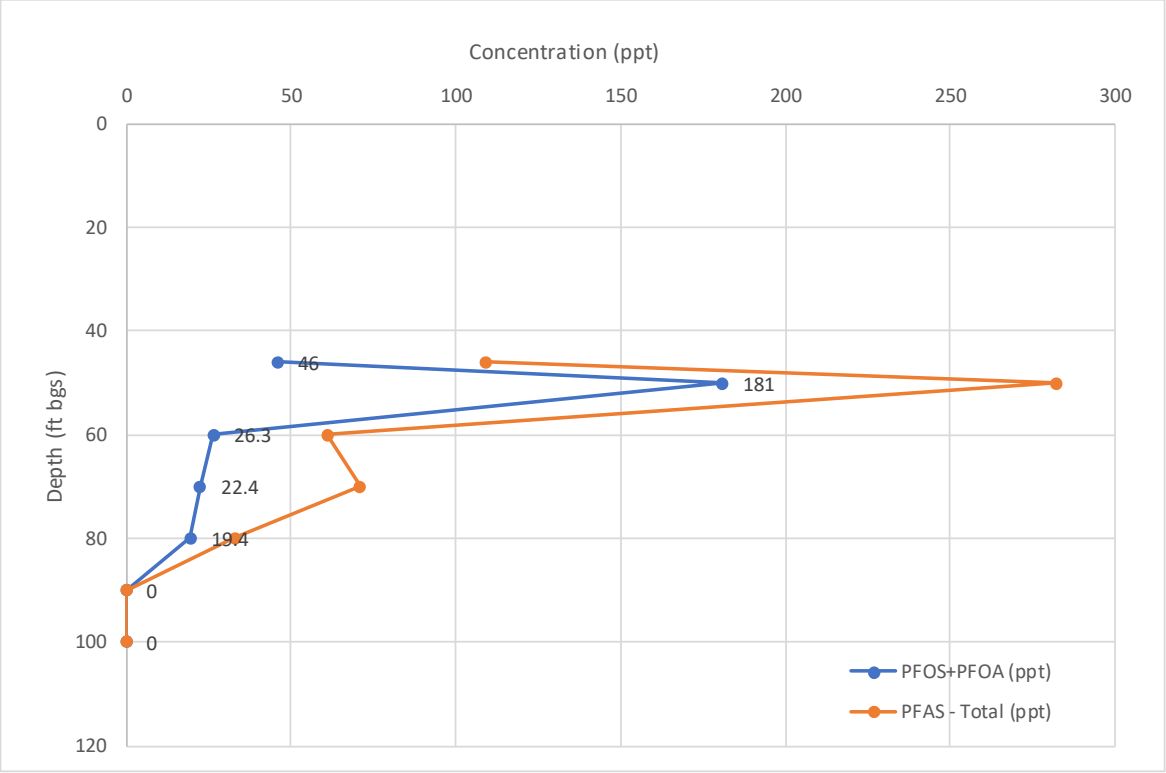
Miscellaneous Notes:

APPENDIX B Groundwater PFAS Screening Profile Graphs

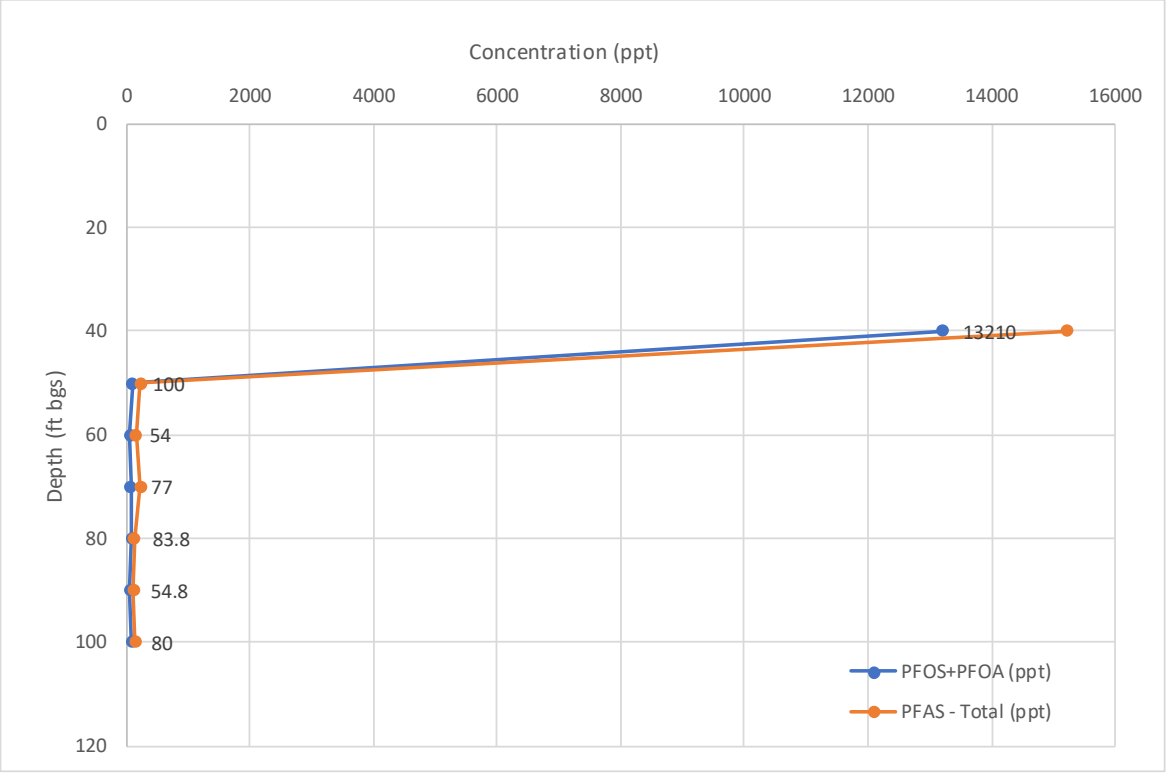
Profile Loc:	GB-BB-MW01		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	44	(ft bgs)		
				Bottom:	54	(ft bgs)		
46	20.7	52.5						
50	15.7	34.9						
60	0	0						
70	0	0						
80	5.8	11.4						
90	43	53.7						
100	13	27.4						



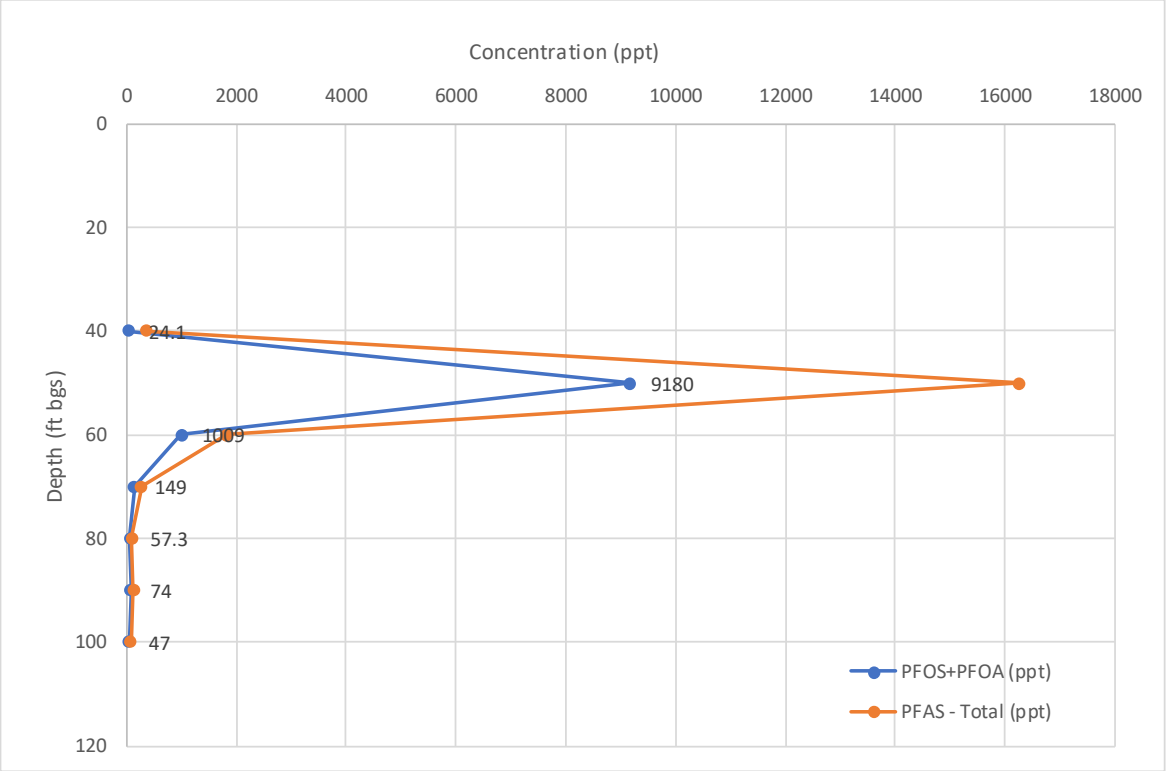
Profile Loc:	GB-BB-MW02		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	46	(ft bgs)		
				Bottom:	56	(ft bgs)		
46	46	109						
50	181	282						
60	26.3	61						
70	22.4	71						
80	19.4	33						
90	0	0						
100	0	0						



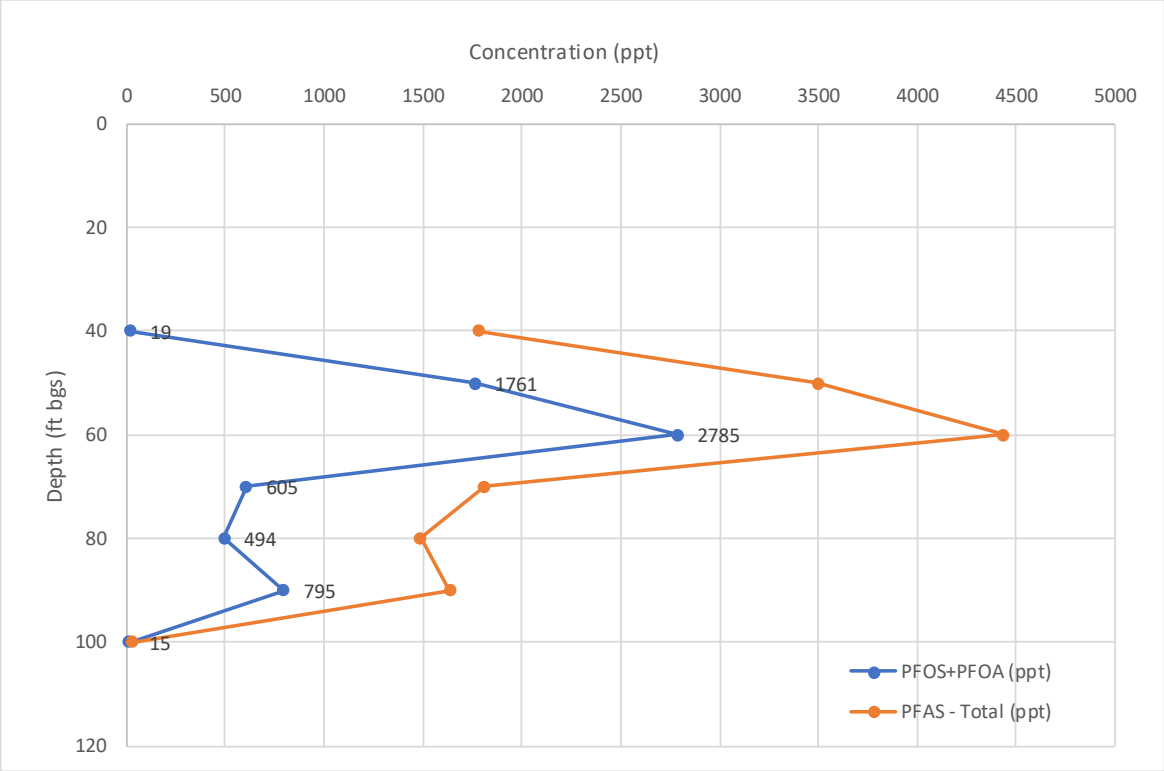
Profile Loc:	GB-OB-MW01		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	38	(ft bgs)		
				Bottom:	48	(ft bgs)		
40	13210	15224						
50	100	226.8						
60	54	163.7						
70	77	229.9						
80	83.8	127.8						
90	54.8	115.7						
100	80	138						



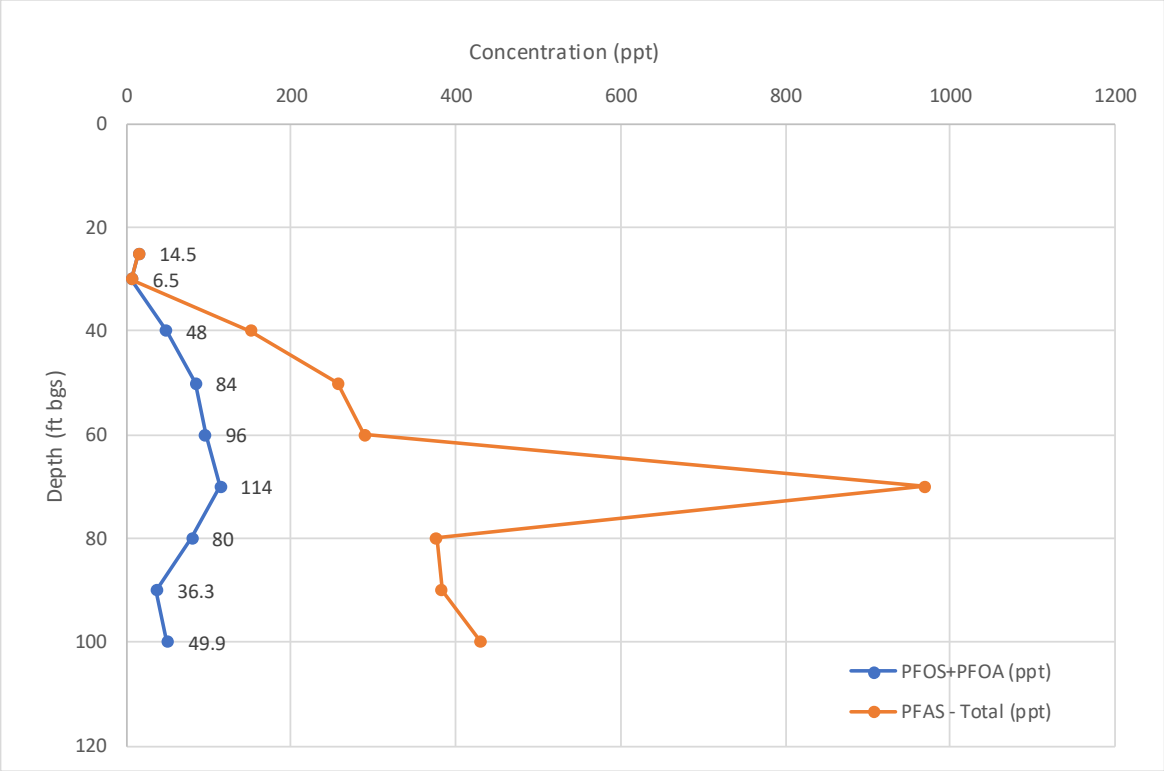
Profile Loc:	GB-OB-MW02		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	50	(ft bgs)		
				Bottom:	60	(ft bgs)		
40	24.1	376.1						
50	9180	16263						
60	1009	1826.1						
70	149	275.3						
80	57.3	98.3						
90	74	134						
100	47	87.3						



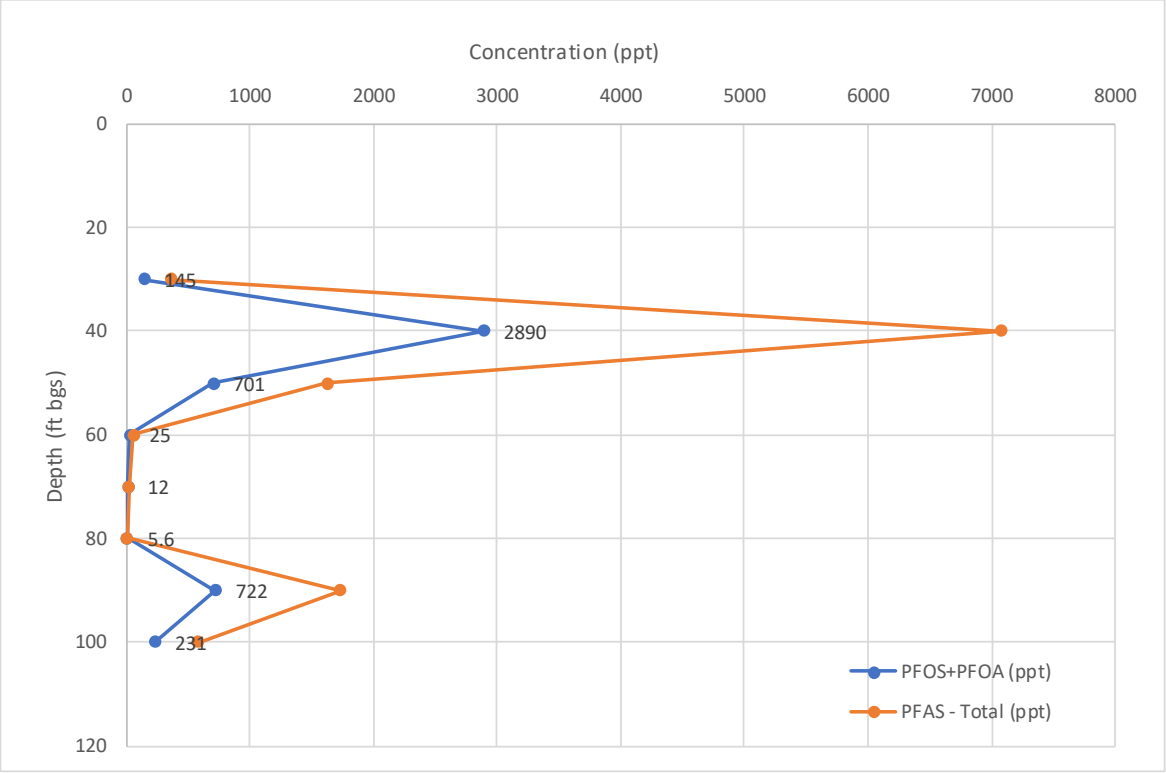
Profile Loc:	GB-OB-MW08		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	53	(ft bgs)		
				Bottom:	63	(ft bgs)		
40	19	1781						
50	1761	3493.9						
60	2785	4434						
70	605	1808.7						
80	494	1487.1						
90	795	1633.8						
100	15	28.9						



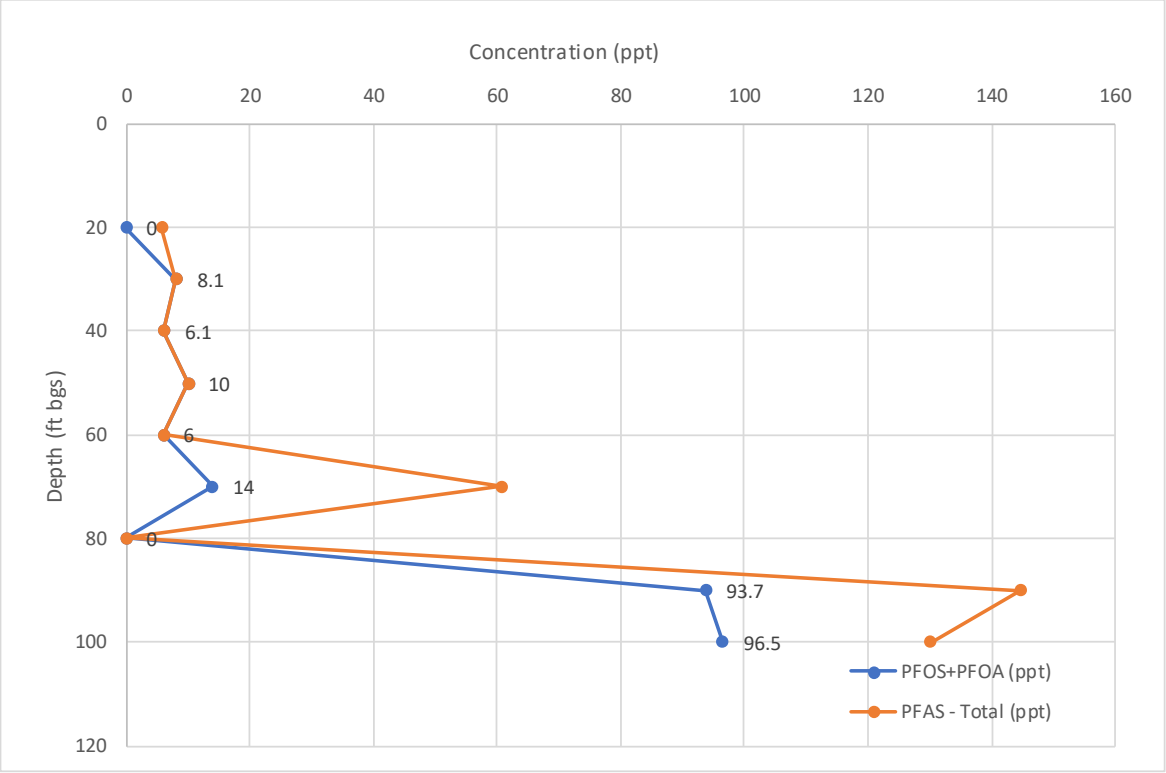
Profile Loc:	GB-OB-MW03		FILL IN BLUE ONLY				
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well			
25	14.5	14.5		Top:	65	(ft bgs)	
30	6.5	6.5		Bottom:	75	(ft bgs)	
40	48	151.1					
50	84	256.6					
60	96	288.9					
70	114	968.2					
80	80	376					
90	36.3	383.3					
100	49.9	429.9					



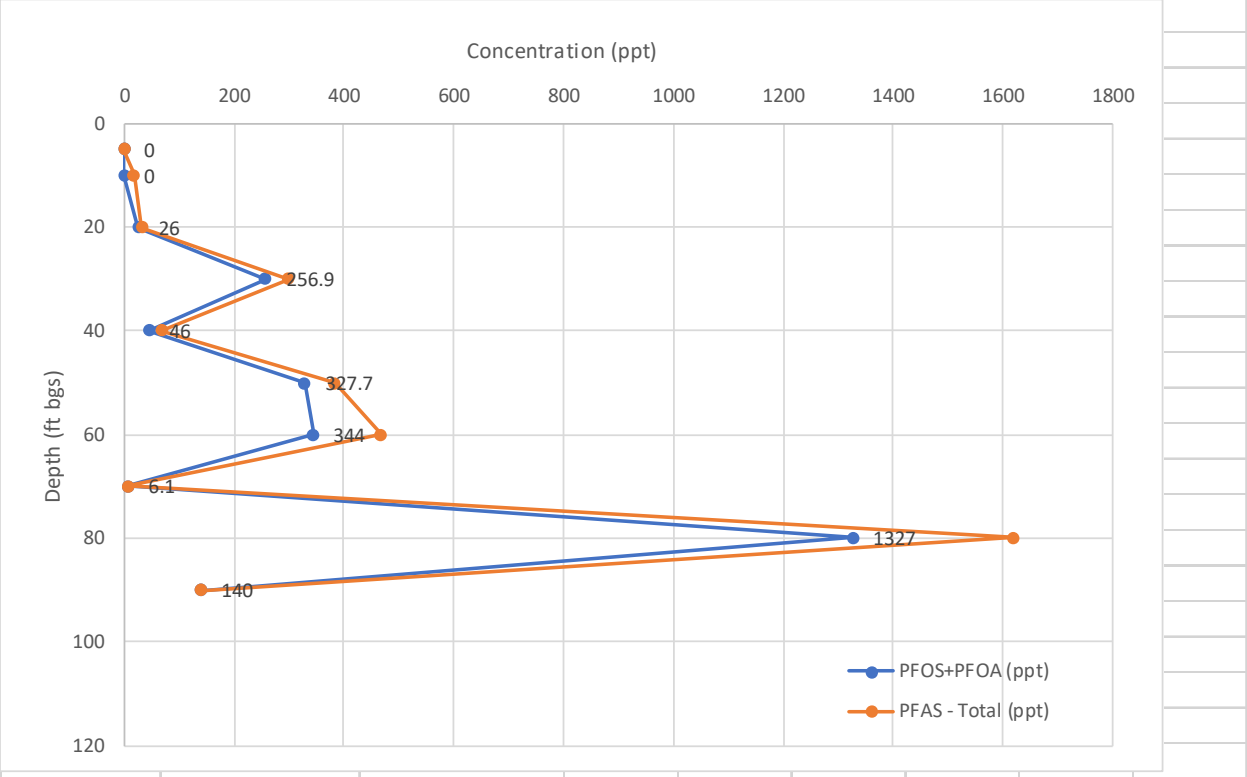
Profile Loc:	GB-OB-MW04		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	38	(ft bgs)		
30	145	366		Bottom:	48	(ft bgs)		
40	2890	7077.1						
50	701	1625.3						
60	25	54.6						
70	12	23						
80	5.6	5.6						
90	722	1728.9						
100	231	578.8						



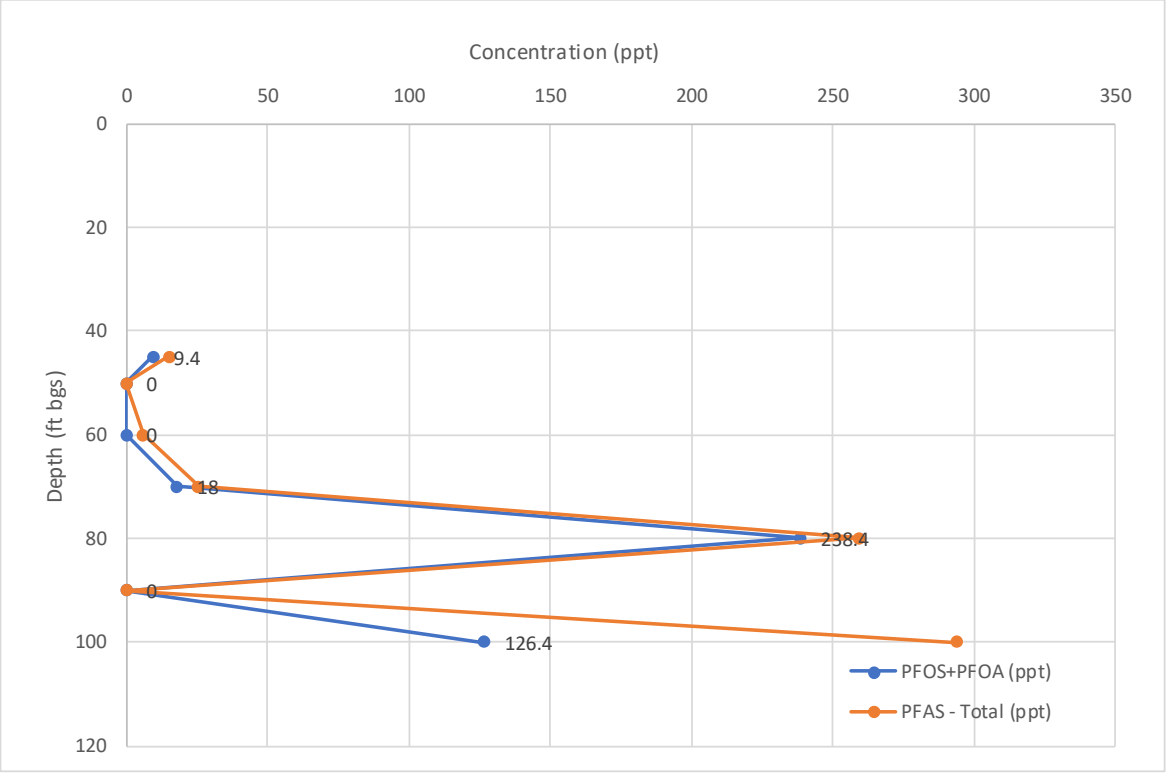
Profile Loc:	GB-OB-MW05		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
20	0	5.8		Top:	90	(ft bgs)		
30	8.1	8.1		Bottom:	100	(ft bgs)		
40	6.1	6.1						
50	10	10						
60	6	6						
70	14	60.7						
80	0	0						
90	93.7	144.7						
100	96.5	130.1						



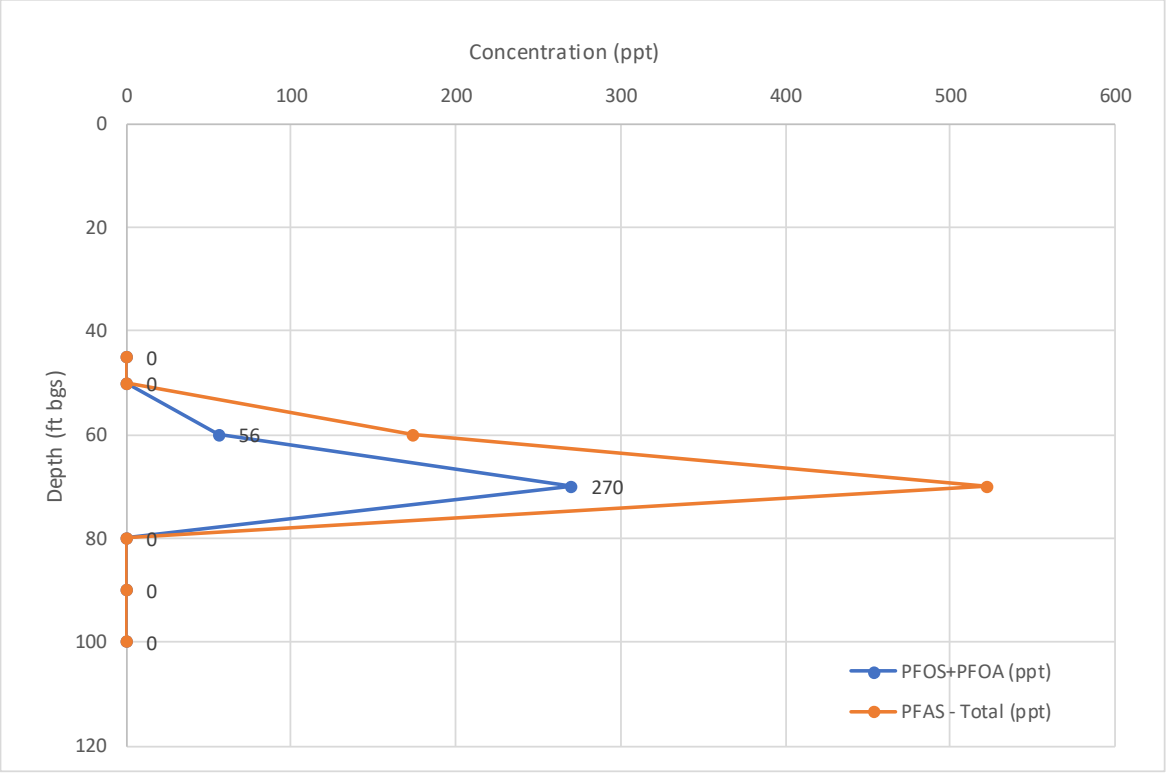
Profile Loc:	GB-OB-MW06		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
5	0	0		Top:	25	(ft bgs)		
10	0	17		Bottom:	35	(ft bgs)		
20	26	33						
30	256.9	299.5						
40	46	68.3						
50	327.7	384						
60	344	467.1						
70	6.1	6.1						
80	1327	1619						
90	140	140						



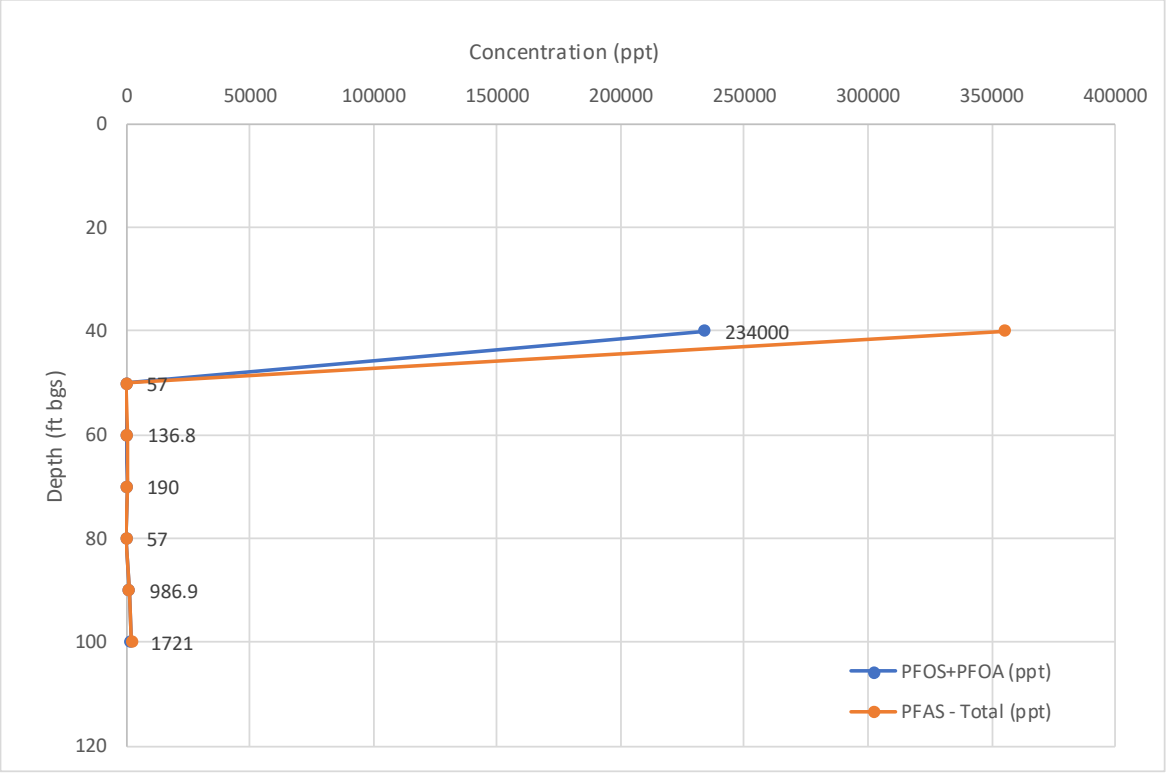
Profile Loc:	GB-OB-MW07		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	75	(ft bgs)		
				Bottom:	85	(ft bgs)		
45	9.4	15.1						
50	0	0						
60	0	5.9						
70	18	25.6						
80	238.4	259.4						
90	0	0						
100	126.4	293.9						



Profile Loc:	GB-IRP7-MW03		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	62	(ft bgs)		
				Bottom:	72	(ft bgs)		
45	0	0						
50	0	0						
60	56	173.8						
70	270	522						
80	0	0						
90	0	0						
100	0	0						



Profile Loc:	GB-IRP7-MW04		FILL IN BLUE ONLY					
Depth (ft bgs)	PFOS+PFOA (ppt)	PFAS - Total (ppt)		Selected Screen Interval for Permanent Well				
				Top:	40	(ft bgs)		
				Bottom:	50	(ft bgs)		
40	234000	355376						
50	57	63.4						
60	136.8	180.5						
70	190	232						
80	57	62						
90	986.9	1151.9						
100	1721	2197						



APPENDIX C Soil Boring Logs

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/10/2020 14:30

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
35	10	N	Overcast	Rain

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-03-SB01-0.0-1.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	1 ft.
START DEPTH:	0.0
END DEPTH:	1.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	
LAT/LONG:	40.8387028, -72.6436631

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	moist

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-03-SB01-0.0-1.0
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/02/2020 14:30
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.20001
SAMPLING DATE/TIME:	02/10/2020 14:45

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
35	10	N	Overcast	Rain

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-03-SB01-4.0-5.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	5 ft.
START DEPTH:	4.0
END DEPTH:	5.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	
LAT/LONG:	40.8387028, -72.6436631

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	moist

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-03-SB01-4.0-5.0
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/02/2020 14:45
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/10/2020 13:00

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
40			Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-03-SB02-0.0-1.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	0.5 ft.
START DEPTH:	0.0
END DEPTH:	1.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	
LAT/LONG:	40.8390794, -72.6437263

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-03-SB02-0.0-1.0
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/10/2020 13:17
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/10/2020 13:10

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
40			Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-03-SB02-4.0-5.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	4.5 ft.
START DEPTH:	4.0
END DEPTH:	5.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	
LAT/LONG:	40.8390794, -72.6437263

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-03-SB02-4.0-5.0
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/10/2020 13:17
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/25/2020 14:00

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
48	4	N	Mostly Cloudy	None

SAMPLERS:	Dan Chamberland
SAMPLE ID:	GB-19-SB01-0.0-1.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	1 ft.
START DEPTH:	0.0
END DEPTH:	1.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	
LAT/LONG:	40.8426002 / -72.6258556

SAMPLE DESCRIPTION

COLOR:	black-brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-19-SB01-0.0-1.0
DUPLICATE:	
EB SAMPLE ID:	GB-0225201400-EB-SB
FB SAMPLE ID:	GB-0225201400-FB-SB
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/25/2020 14:30
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/25/2020 14:25

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
48	5	N	Mostly Cloudy	None

SAMPLERS:	Dan Chamberland
SAMPLE ID:	GB-19-SB01-4.0-5.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	4 ft.
START DEPTH:	4.0
END DEPTH:	5.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	
LAT/LONG:	40.8426002 / -72.6258556

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-19-SB01-4.0-5.0
DUPLICATE:	
EB SAMPLE ID:	GB-0225201425-EB-SB
FB SAMPLE ID:	GB-0225201425-FB-SB
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/25/2020 14:30
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/25/2020 14:30

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
50	4	N	Mostly Cloudy	Rain

SAMPLERS:	Dan Chamberland
SAMPLE ID:	GB-19-SB02-0.0-1.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	1 ft.
START DEPTH:	0.0
END DEPTH:	1.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	Grass, Roots
LAT/LONG:	40.8422088 / -72.625838

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-19-SB02-0.0-1.0
DUPLICATE:	
EB SAMPLE ID:	GB-0225201430-EB-SB
FB SAMPLE ID:	GB-0225201430-FB-SB
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/25/2020 14:40
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/25/2020 14:40

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
49	5	N	Overcast	Rain

SAMPLERS:	Dan Chamberland
SAMPLE ID:	GB-19-SB02-4.0-5.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	4 ft.
START DEPTH:	4.0
END DEPTH:	5.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	
LAT/LONG:	40.8421997 / -72.6258338

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-19-SB02-4.0-5.0
DUPLICATE:	GB-19-SB92-4.0-5.0
EB SAMPLE ID:	GB-0225201440-EB-SB
FB SAMPLE ID:	GB-0225201440-FB-SB
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/25/2020 14:42
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/25/2020 13:30

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
48	6	NE	Overcast	Rain

SAMPLERS:	Dan Chamberland
SAMPLE ID:	GB-19-SB03-0.0-1.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	1 ft.
START DEPTH:	0.0
END DEPTH:	1.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	Grass, Roots
LAT/LONG:	40.8427606 / -72.6265992

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-19-SB03-0.0-1.0
DUPLICATE:	
EB SAMPLE ID:	GB-0225201330-EB-SB
FB SAMPLE ID:	GB-0225201330-FB-SB
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/25/2020 13:35
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SOIL SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/25/2020 13:45

WEATHER:

Temperature ° F	Wind Speed mph	Wind Direction	Sky	Preciptation
48	6	NE	Overcast	Rain

SAMPLERS:	Dan Chamberland
SAMPLE ID:	GB-19-SB03-4.0-5.0
SAMPLING METHOD:	hand auger
DEPTH OF SAMPLE:	4 ft.
START DEPTH:	4.0
END DEPTH:	5.0

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
VEGETATION:	Grass, Roots
LAT/LONG:	40.842768 / -72.6265905

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	dry

FIELD TESTS

PID:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-19-SB03-4.0-5.0
DUPLICATE:	
EB SAMPLE ID:	GB-0225201345-EB-SB
FB SAMPLE ID:	GB-0225201345-FB-SB
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/25/2020 13:48
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

Sampling Log - GeoProbe

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL NO.:**	GB-03-MW01
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	3	**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:	Due South of the cell tower behind the BX.	**DRILLING METHOD:**	GeoProbe	**NORTHING/LAT.:**	40.83872
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6436674
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BORE HOLE SIZE:**		**ELEVATION:**	-54.790028
SERIAL#:	592-922375	**SERIAL#:**	23214	**HOLE SIZE:**	4 Inch	**Z COOR UNIT:**	Feet
MODEL:	Minirae 3000	**MODEL:**	Heron dipper-T	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**BORING LOG DATE/TIME:**		**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	02/11/2020 07:35	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	02/11/2020 07:34		
Calibrated daily				**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
						BORING LOG END DEPTH:	60 Feet
FIELD SCREENING METHOD							
METER #1:	Breathing Zone	**METER #2:**	Depth Reading		**BACKFILL NOTES:**		

DEPTH Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Damp, Brown - Very Pale, Medium SAND, Little Medium Gravel			
5	10	Damp, mottled Brown - dark/Brown - light, Fine to Medium SAND, Trace Fine to Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Damp, Brown, Medium SAND, Trace Fine Gravel. Medium dense.			
15	20	Damp, Brown - Pale, Medium SAND, Little Fine to Medium Gravel. Medium dense.			
20	25	Dry, Brown - dark, Medium SAND, Little Medium to Coarse Sand and Gravel. Medium dense.			
25	30	Dry, Brown - Pale, Fine to Medium SAND, Trace Fine to Medium Gravel. Medium dense.			
30	35	Dry, Brown - Very Pale, Fine to Medium SAND, Trace Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Damp, Brown - Very Pale, Medium SAND, Some Fine to Medium Sand, Trace Fine to Medium Gravel. Medium dense.			
40	45	Moist, Brown - Very Pale, Fine to Medium SAND, Trace Coarse Sand. Medium dense.			
45	50	Wet, Brown - Pale, Fine to Medium SAND, Trace Medium Gravel. Medium dense.			
50	55	Wet, Brown - Pale, Medium SAND, And Fine Sand, Trace Medium Gravel. Medium dense.			
55	60	Wet, Brown - Pale, Medium SAND, Trace Medium to Coarse Gravel. Medium dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL NO.:**	GB-19-MW01
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	19	**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:	At SB-02 location.	**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8422305
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.625479
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	3 Inch	**ELEVATION:**	-66.929136
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	3.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	592-922375	**SERIAL#:**	29214	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	02/25/2020 10:44	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	02/25/2020 14:47		
COMMENTS:		**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
Calibrated daily				**SAMPLING DEVICE TYPE:**		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	50 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading				

BACKFILL NOTES:

DEPTH Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Dry, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, skip Coarse Sand and Gravel			
5	10	Dry, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, skip Medium to Coarse Sand and Gravel. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	13.1	Dry, Brown - dark, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine to Medium Gravel. Medium loose.			
13.1	15	Dry, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine to Medium Gravel. Medium loose.			
15	20	Dry, mottled Brown - dark/Brown - light, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand and Gravel. Medium loose.			
20	25	Dry, mottled Brown - dark/Brown - light, Fine to Medium SAND, Some Fine Sand and Sand, Trace Coarse Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
25	30	Dry, mottled Brown - dark/Brown - light, Fine to Medium SAND, Some Fine Sand and Sand, Trace Medium to Coarse Gravel. Dense.			
30	35	Damp, Brown - light, Fine to Medium SAND, Some Fine Sand, Little Medium to Coarse Sand, Trace Fine to Medium Gravel. Dense.			
35	40	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand and Gravel. ODOR. Medium dense.			
40	43.5	Wet, Gray, Fine to Medium SAND, And Fine Sand. ODOR. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
43.5	45	Wet, Brown, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine Gravel. ODOR. Medium dense.			
45	50	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand, Trace Medium Gravel. ODOR. Dense.			

Sampling Log - GeoProbe

CLIENT:	Air National Guard	PARSONS ON-SITE:	Dan Chamberland	BORING/WELL NO.:	GB-BB-MW01
PROJECT NAME:	ANG ESI	DRILLING CONTRACTOR:		LOCATION DESCRIPTION	
SITE NAME:	Gabreski	RIG TYPE:	Geoprobe 7822	COOR SYSTEM:	Field GPS
AREA OF CONCERN:	Upgradient	MACHINE MODEL #:	06-782211. 392	COOR TYPE:	3
ADDRESS:		DRILLING METHOD:	GeoProbe	NORTHING/LAT.:	40.8402392
		LICENSED DRILLER:		EASTING/LONG.:	-72.6442516
		DRILLING HELPERS:		XY COOR UNIT:	Degrees

FIELD METER #1:		FIELD METER #2:		BORE HOLE SIZE:		ELEVATION:	-38.7139094969176
TYPE:	PID	TYPE:	Water Level	HOLE SIZE:	3.25 Inch	Z COOR UNIT:	Feet
SERIAL#:	592-922375	SERIAL#:	23214	MULTIPLE CASING SIZES:		DRILLING ORIENTATION:	
MODEL:	Minirae 3000	MODEL:	Heron Dipper-T	BORING LOG DATE/TIME:		BEARING:	
LIMIT:	0 ppm	LIMIT:	Ft	DATE/TIME START:	02/12/2020 11:25	INCLINATION:	
H&S:	5 ppm	H&S:	Ft	DATE/TIME FINISH:	02/13/2020 11:11		
COMMENTS:		COMMENTS:		SAMPLING EQUIPMENT:		BORING DETAILS:	
				SAMPLING DEVICE TYPE:		INTERVAL TYPE:	Discreet
				DEVICE LENGTH:		SOIL CLASS SYSTEM:	Burmeister
				DEVICE COMMENTS:		BORING LOG START DEPTH:	5 Feet
						BORING LOG END DEPTH:	100 Feet
FIELD SCREENING METHOD							
METER #1:	Breathing Zone	METER #2:	Depth Reading		BACKFILL NOTES:		

DEPTH: Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Dry, Brown, Fine to Medium SAND, Trace Fine Gravel. Medium dense.			
5	10	Dry, mottled Brown/Brown - Pale, Fine to Medium SAND, Little Fine to Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Dry, Brown - light, Fine to Medium SAND, Little Coarse Sand, Trace Fine Gravel. Dense.			
15	20	Dry, Brown, Fine to Medium SAND, Little Coarse Sand, Trace Medium Gravel. Dense.			
20	25	Dry, Brown - light, Fine to Medium SAND, Little Coarse Sand, Trace Fine Gravel. Dense.			
25	30	Dry, Brown - light, Fine to Medium SAND, Little Coarse Sand, Trace Fine to Medium Gravel. Dense.			
30	35	Damp, mottled Brown/Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Moist, Brown - light, Fine to Medium SAND, Little Medium to Coarse Sand, Trace Fine to Medium Gravel. Medium dense.			
40	45	Wet, Brown - light, Fine to Medium SAND, And Medium to Coarse Sand, Little Medium Gravel. Dense.			
45	50	Wet, Brown - light, Fine to Medium SAND, Little Medium to Coarse Sand, Trace Medium Gravel. Dense.			
50	55	Wet, Brown - light, Fine to Medium SAND, Trace Coarse Sand and Gravel. Dense.			
55	60	Wet, Brown - light, Fine to Medium SAND. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
60	65	Wet, Brown - light, Fine to Medium SAND, Trace Coarse Sand and Gravel. Dense.			
65	70	Wet, Brown - light, Medium SAND, And Medium to Coarse Sand, Trace Fine Gravel. Medium dense.			
70	75	Wet, Brown - light, Fine to Medium SAND, Trace Fine Gravel and Sand. Dense.			
75	80	Wet, Brown - light, Fine to Medium SAND, Little Coarse Sand, Trace Fine Gravel. Dense.			
80	85	Wet, Brown - light, Fine to Medium SAND, Trace Fine to Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
85	90	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Fine to Medium Gravel. Very dense.			
90	95	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Fine to Medium Gravel. Very dense.			

Sampling Log - GeoProbe

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL #:**	GB-BB-MW02
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe: 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	Upgradient	**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:	Right next to fence near entrance gate.	**DRILLING METHOD:**	GeoProbe	**NORTHING/LAT.:**	40.8366572
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6456267
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BOREHOLE SIZE:**		**ELEVATION:**	-40.682416
SERIAL#:	59-922375	**SERIAL#:**	Heron dipper-T	**CORE SAMPLER SIZE:**	3 Inch	**Z COOR UNIT:**	Feet
MODEL:	Minirae 3000	**MODEL:**	23214	**BORING LOG DATE/TIME:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft			**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	02/11/2020 13:51	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	02/13/2020 07:28	**BORING DETAILS:**	
				SAMPLING EQUIPMENT:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	5 Feet
BACKFILL NOTES:						**BORING LOG END DEPTH:**	55 Feet

DEPTH: Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Damp, mottled Brown - dark/Brown - light, Medium SAND, Trace Coarse Gravel. Medium loose.			
5	10	Damp, Brown - light, Fine to Medium SAND, Trace Fine Gravel. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Damp, mottled Brown - Pale/Brown - dark, Fine to Medium SAND, Little Medium Gravel. Medium dense.			
15	20	Damp, mottled Brown - dark/Brown - Pale, Fine to Medium SAND, Little Fine to Medium Gravel. Medium dense.			
20	25	Damp, mottled Brown - dark/Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel. Medium dense.			
25	30	Damp, mottled Brown - dark/Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel. Medium dense.			
30	35	Damp, mottled Brown - dark/Brown - light, Fine to Medium SAND, Little Coarse Sand, Trace Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Moist, Brown - Pale, Fine to Medium SAND, Trace Fine Gravel. Medium dense.			
40	45	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Sand. Medium loose.			
45	50	Wet, Brown - Pale, Fine to Medium SAND, Little Coarse Sand, Trace Fine Gravel. Medium dense.			
50	55	Wet, Brown - Pale, Fine to Medium SAND, Little Coarse Sand, Trace Fine Gravel. Medium dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL #:**	GB-IRP7-MW03
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	1	**MACHINE MODEL #:**	06-782211 392	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8384114
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6300615
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees
		BOREHOLE SIZE:	3.25 Inch	**ELEVATION:**	-49.21
		CORE SAMPLER SIZE:	3 Inch	**Z COOR UNIT:**	Feet
		BORING LOG DATE/TIME:		**DRILLING ORIENTATION:**	
				BEARING:	
		DATE/TIME START:	03/04/2020 15:29	**INCLINATION:**	
		DATE/TIME FINISH:	03/06/2020 10:30	**BORING DETAILS:**	
		SAMPLING EQUIPMENT:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
				BORING LOG END DEPTH:	100 Feet

FIELD METER #1:		**FIELD METER #2:**	
TYPE:	PID	**TYPE:**	Water Level
SERIAL#:	592-922375	**SERIAL#:**	23214
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper- T
LIMIT:	0 ppm	**LIMIT:**	Ft
H&S:	5 ppm	**H&S:**	Ft
COMMENTS:		**COMMENTS:**	
Calibrated daily.			

BACKFILL NOTES:

DEPTH: Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Dry, Brown, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand and Gravel			
5	10	Dry, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium Gravel. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Damp, mottled Brown - light/Brown, Fine to Medium SAND, Trace Fine Sand, Sand, and Gravel, skip Medium to Coarse Sand and Gravel. Medium dense.			
15	20	Damp, mottled Brown - light/Brown - dark, Fine to Medium SAND, Little Fine Sand, Trace Medium to Coarse Sand and Gravel. Medium loose to medium dense.			
20	25	Damp, mottled Brown - light/Brown - dark, Fine to Medium SAND, Little Medium to Coarse Sand and Sand, Trace Medium Gravel. Medium loose.			
25	30	Damp, Brown - light, Fine to Medium SAND, Little Coarse Sand and Sand, Trace Coarse Gravel. Medium dense to medium loose.			
30	35	Damp, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium to Coarse Sand and Gravel. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Damp, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Gravel and Gravel. Medium dense.			
40	45	Wet, Brown - light, Medium SAND, Some Fine Sand, Little Medium to Coarse Sand, Trace Fine Gravel. Medium dense.			
45	50	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand. Medium dense.			
50	55	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Fine to Medium Gravel. Dense.			
55	60	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
60	65	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand. Dense			
65	70	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Silt and Gravel. Dense.			
70	75	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine Gravel. Dense.			
75	80	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium Gravel. Medium dense.			
80	85	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Fine Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
85	88	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, skip Medium to Coarse Sand and Gravel. Dense.			
88	90	Wet, Brown - light, Fine to Medium SAND, And Fine Sand. Dense.			
90	95	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand. Medium dense.			
95	100	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Coarse Sand and Gravel. Medium dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL #:**	GB-IRP7-MW04
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	1	**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8364488
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.627464
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees
		BOREHOLE SIZE:	3 Inch	**ELEVATION:**	-62.99
		CORE SAMPLER SIZE:	3.25 Inch	**Z COOR UNIT:**	Feet
		BORING LOG DATE/TIME:		**DRILLING ORIENTATION:**	
				BEARING:	
		DATE/TIME START:	03/04/2020 09:03	**INCLINATION:**	
		DATE/TIME FINISH:	03/04/2020 09:16	**BORING DETAILS:**	
		SAMPLING EQUIPMENT:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
				BORING LOG END DEPTH:	50 Feet

FIELD METER #1:		**FIELD METER #2:**	
TYPE:	PID	**TYPE:**	Water Level
SERIAL#:	592-922375	**SERIAL#:**	23214
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T
LIMIT:	0 ppm	**LIMIT:**	Ft
H&S:	5 ppm	**H&S:**	Ft
COMMENTS:		**COMMENTS:**	
Calibrated daily.			

BACKFILL NOTES:

DEPTH: Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Damp, Brown, Fine to Medium SAND, Little Fine Sand and Sand, skip Coarse Sand and Gravel			
5	10	Dry, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium to Coarse Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Dry, Brown - light, Fine to Medium SAND, Little Medium to Coarse Sand and Sand, Trace Medium Gravel. Medium dense.			
15	20	Dry, mottled Brown - light grayish/Brown, Fine to Medium SAND, Some Fine to Medium Gravel, Little Coarse Sand and Sand. Medium dense.			
20	25	Damp, Brown - light, Fine to Medium SAND, Little Medium to Coarse Gravel and Sand, skip Medium to Coarse Sand and Sand. Medium dense.			
25	30	Dry, Brown - light, Fine to Medium SAND, Some Medium to Coarse Sand, Little Fine Sand and Gravel. Medium loose.			
30	35	Dry, mottled Brown - light/Brown, Fine to Medium SAND, Little Fine Sand and Sand, Trace Silt and Gravel, Trace Coarse Gravel. Medium loose to dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	38.5	Damp, Brown - dark, Fine to Medium SAND, Some Fine Sand, Trace Coarse Sand, Gravel, and Silt. Medium dense.			
38.5	40	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine Gravel. Medium loose.			
40	45	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Trace Coarse Sand and Gravel. Medium dense.			
45	50	Wet, mottled Brown/Brown - light, Fine to Medium SAND, Some Fine Sand and Sand. Medium dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL NO.:**	GB-OB-MW01
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	Downgradient	**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8329733
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6464103
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	3 Inch	**ELEVATION:**	-43.963256
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	3.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	92-922375	**SERIAL#:**	23214	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	02/14/2020 07:46	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	02/14/2020 08:03		
COMMENTS:	Calibrated daily	**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	50 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading			**BACKFILL NOTES:**	

DEPTH Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Damp, Brown - reddish, Medium SAND, Little Medium Gravel			
5	10	Damp, Brown - light, Medium SAND, Trace Fine to Medium Gravel and Sand. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Dry, mottled Brown - dark/Brown - Pale, Fine to Medium SAND, Some Coarse Sand, Trace Fine to Medium Gravel. Medium dense.			
15	20	Dry, Brown - Pale, Fine to Medium SAND, Little Medium to Coarse Sand, Trace Fine Gravel. Medium dense.			
20	25	Dry, Brown - light, Fine to Medium SAND, Some Medium to Coarse Sand, Trace Medium Gravel. Medium dense.			
25	30	Dry, Brown - light, Fine to Medium SAND, Some Medium to Coarse Sand, Trace Medium Gravel. Medium dense.			
30	35	Moist, Brown - light, Fine to Medium SAND, Little Medium to Coarse Sand, Trace Fine Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Moist, Brown - light, Fine to Medium SAND, Little Medium to Coarse Sand and Sand, Trace Medium Gravel. Medium loose to dense.			
40	45	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand. Dense.			
45	49.5	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Fine to Medium Gravel. Dense.			
49.5	50	Wet, Brown - light, Medium SAND, Some Coarse Sand, Little Fine Sand, Trace Fine to Medium Gravel. Dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL NO.:**	GB-OB-MW02
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	Downgradient	**MACHINE MODEL #:**	06-782211 392	**COOR TYPE:**	Pre-Field Pick
ADDRESS:	On the south side of south perimeter road.	**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8325623542
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6430853455
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees
		BORE HOLE SIZE:	3 Inch	**ELEVATION:**	46.46
		HOLE SIZE:	3.25 Inch	**Z COOR UNIT:**	Feet
		MULTIPLE CASING SIZES:		**DRILLING ORIENTATION:**	
		BORING LOG DATE/TIME:		**BEARING:**	
		DATE/TIME START:	02/14/2020 14:58	**INCLINATION:**	
		DATE/TIME FINISH:	02/17/2020 07:24		
		SAMPLING EQUIPMENT:		**BORING DETAILS:**	
		SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
		DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
		DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
				BORING LOG END DEPTH:	100 Feet
				BACKFILL NOTES:	

FIELD METER #1:		**FIELD METER #2:**	
TYPE:	PID	**TYPE:**	Water Level
SERIAL#:	592-922375	**SERIAL#:**	23214
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T
LIMIT:	0 ppm	**LIMIT:**	Ft
H&S:	5 ppm	**H&S:**	Ft
COMMENTS:	Calibrated daily.	**COMMENTS:**	

FIELD SCREENING METHOD

METER #1:	Breathing Zone	**METER #2:**	Depth Reading

DEPTH	Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Damp, Brown - reddish, Fine to Medium SAND, Little Medium Gravel, Trace Fine Sand			
5	10	Damp, Brown, Fine to Medium SAND, Little Coarse Sand, Trace Silt and Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	12.5	Damp, Brown - dark, Fine to Medium SAND, Little Coarse Sand. Medium loose.			
12.5	15	Damp, Brown - Pale, Fine to Medium SAND, Little Coarse Sand, Trace Medium Gravel. Dense.			
15	20	Damp, mottled Brown - dark/Brown - light, Fine to Medium SAND, Trace Coarse Sand and Gravel. Dense.			
20	23	Dry, Brown - dark, Fine to Medium SAND, Trace Coarse Sand. Medium loose.			
23	25	Dry, Brown - Pale, Fine to Medium SAND, Little Coarse Sand, Trace Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
25	30	Dry, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel. Medium loose.			
30	35	Moist, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel. Medium dense.			
35	40	Wet, Brown - light, Fine to Medium SAND, Trace Medium Gravel. Very dense.			
40	45	Wet, Brown - light, Medium SAND, Little Coarse Sand, Trace Fine to Medium Gravel. Dense.			
45	50	Wet, Brown - light, Fine to Medium SAND, Little Coarse Sand, Trace Fine to Medium Gravel. Very dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
50	55	Wet, Brown - light, Fine to Medium SAND, Trace Medium to Coarse Sand and Gravel. Very dense.			
55	60	Wet, Brown - light, Fine to Medium SAND, Trace Coarse Sand. Dense.			
60	65	Wet, Brown - light, Fine to Medium SAND, Trace Coarse Sand and Gravel. Very dense.			
65	70	Wet, Brown - light, Fine to Medium SAND, Trace Coarse Sand. Medium dense.			
70	75	Wet, Brown - light, Fine to Medium SAND, Little Medium Sand and Sand, Trace Medium to Coarse Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
75	80	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand. Very dense.			
80	85	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium to Coarse Sand and Gravel. Very dense.			
85	90	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Coarse Sand and Gravel. Very dense.			
90	95	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand and Gravel. Dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL NO.:**	GB-OB-MW03
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	Downgradient	**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:	Alternate location further to the east on south perimeter road.	**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8317297
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6373072
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BORE HOLE SIZE:**	3 Inch	**ELEVATION:**	-69.553808
SERIAL#:	592-922375	**SERIAL#:**	23214	**HOLE SIZE:**	3.25 Inch	**Z COOR UNIT:**	Feet
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**BORING LOG DATE/TIME:**		**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	02/18/2020 09:44	**INCLINATION:**	
COMMENTS:	Calibrated daily	**COMMENTS:**		**DATE/TIME FINISH:**	02/19/2020 12:14		
				SAMPLING EQUIPMENT:		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	75 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading				

BACKFILL NOTES:							

DEPTH	Feet						
TOP	**BTM**		**SOIL MATRIX DESCRIPTION**	**SAMPLE ID**	**PHOTO DESCRIPTION**	**PHOTO**	
0	5		Dry, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand and Gravel				
5	10		Damp, Brown - Pale, Fine to Medium SAND, Some Medium to Coarse Sand, Trace Medium to Coarse Gravel. Loose.				

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Damp, Brown - light, Fine to Medium SAND, Some Medium to Coarse Sand, Trace Medium Gravel. Medium dense.			
15	20	Moist, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine Gravel. Very dense.			
20	25	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine to Medium Gravel. Very dense.			
25	30	Wet, Brown - light, Fine to Medium SAND, Little Coarse Sand, Trace Fine to Medium Gravel. Very dense.			
30	35	Wet, Brown - light, Medium SAND, Some Coarse Sand, Trace Medium to Coarse Gravel and Sand. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Wet, Brown, Fine to Medium SAND, Some Medium to Coarse Sand, Trace Medium to Coarse Gravel and Sand. Dense.			
40	45	Wet, Brown - light, Fine to Medium SAND, And Medium Sand, Trace Medium Gravel. Medium dense to medium loose.			
45	50	Wet, Brown, Fine to Medium SAND, Trace Coarse Sand and Gravel. Very dense.			
50	55	Wet, Brown, Fine to Medium SAND, Trace Coarse Sand and Gravel. Dense.			
55	60	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
60	65	Wet, Brown, Fine to Medium SAND, And Fine Sand. Dense.			
65	70	Wet, Brown, Fine SAND, Little Fine to Medium Sand. Dense.			
70	75	Wet, Brown, Fine to Medium SAND, Trace Medium Gravel. Dense			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL NO.:**	MW-GB-OB-MW04
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:		**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:	Just west of the mapped location.	**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8329907
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6248698
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	3 Inch	**ELEVATION:**	-59.711288
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	3.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	592-922375	**SERIAL#:**	23214	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	02/19/2020 11:23	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	02/20/2020 07:52		
COMMENTS:	Calibrated daily.	**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	100 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading				

BACKFILL NOTES:

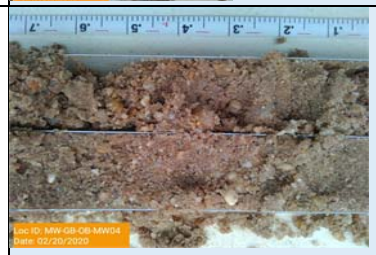
DEPTH Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Damp, Brown - light, Fine to Medium SAND, Little Fine Sand and Gravel			
5	10	Dry, mottled Brown - Pale/Brown - dark, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand, Trace Medium Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Dry, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand and Gravel. Medium dense.			
15	20	Dry, mottled Brown - Pale/Brown, Fine to Medium SAND, Little Fine Sand, Trace Medium to Coarse Sand and Gravel. Medium dense to dense.			
20	25	Damp, mottled Brown - dark/Brown - Pale, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium to Coarse Gravel. Medium dense.			
25	30	Wet, Brown - Pale, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand. Dense.			
30	35	Wet, Brown - light, Medium SAND, Little Fine Sand, Trace Coarse Sand and Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand, Trace Medium Gravel. Dense.			
40	45	Wet, Brown - light, Fine to Medium Sand, Some Fine Sand and Sand, Trace Medium Gravel. Medium dense.			
45	50	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand and Gravel. Medium dense.			
50	55	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium Gravel. Medium dense.			
55	60	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Fine Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
60	65	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium to Coarse Gravel. Dense.			
65	70	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Coarse Sand and Gravel. Dense.			
70	75	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium Gravel. Dense.			
75	80	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium Gravel. Medium dense.			
80	85	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Fine to Medium Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
85	90	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand. Medium dense.			
90	93.5	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand. Medium dense.			
93.5	94	Wet, Brown - light, Fine to Medium SAND, And Coarse Sand, Trace Fine Gravel. Medium dense			
94	95	Wet, Brown - dark, Fine SAND. Dense.			
95	100	Wet, Brown - dark, Fine SAND. Dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL NO.:**	GB-OB-MW05
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:	Downgradient	**MACHINE MODEL #:**	62-782211. 392	**COOR TYPE:**	3
ADDRESS:		**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8351791
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6215783
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**		**BORE HOLE SIZE:**	3 Inch	**ELEVATION:**	-63.648296
TYPE:	PID	**TYPE:**	Water Level	**HOLE SIZE:**	3.25 Inch	**Z COOR UNIT:**	Feet
SERIAL#:	592-922375	**SERIAL#:**	23214	**MULTIPLE CASING SIZES:**		**DRILLING ORIENTATION:**	
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T	**BORING LOG DATE/TIME:**		**BEARING:**	
LIMIT:	0 ppm	**LIMIT:**	Ft	**DATE/TIME START:**	02/21/2020 07:27	**INCLINATION:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME FINISH:**	02/21/2020 10:49		
COMMENTS:	Calibrated daily	**COMMENTS:**		**SAMPLING EQUIPMENT:**		**BORING DETAILS:**	
				SAMPLING DEVICE TYPE:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
FIELD SCREENING METHOD						**BORING LOG END DEPTH:**	100 Feet
METER #1:	Breathing Zone	**METER #2:**	Depth Reading				

						BACKFILL NOTES:	

DEPTH Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Dry, Brown - Pale, Fine to Medium SAND, Some Fine Sand and Sand, Little Medium Gravel			
5	10	Dry, Brown - Pale, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine to Medium Gravel. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Dry, mottled Brown - light/Brown - dark, Fine to Medium SAND, Little Fine Sand and Sand, Trace Coarse Gravel. Medium dense.			
15	20	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand and Gravel. Very dense.			
20	25	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, skip Medium Sand and Sand, Trace Medium Gravel. Very dense.			
25	30	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, skip Medium Sand and Sand, Trace Medium Gravel. Dense.			
30	35	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, skip Medium Sand and Sand, Trace Fine to Medium Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Coarse Sand. Dense.			
40	45	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium Gravel. Dense.			
45	50	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium Sand and Gravel. Dense.			
50	55	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand and Gravel. Dense.			
55	60	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand. Very dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
60	65	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand. Very dense.			
65	70	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium Sand, Sand, and Gravel, skip Coarse Sand and Gravel, skip Fine to Medium Gravel. Very dense.			
70	75	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand			
75	80	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium to Coarse Sand and Gravel. Very dense.			
80	85	Wet, Brown - light, Fine SAND, Trace Medium Gravel. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
85	90	Wet, Brown, Fine to Medium SAND, Trace Medium Gravel			
90	95	Wet, Brown - light, Medium SAND, Little Fine Sand. Dense.			
95	98.6	Wet, mottled Brown - Pale/Brown, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand, Trace Medium Gravel. Medium dense.			
98.6	100	Damp, mottled Brown - dark/Gray SILT. Very stiff.			

Sampling Log - GeoProbe

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Matt Muto	**BORING/WELL #:**	MW-GB-OB-MW06
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:		**MACHINE MODEL #:**	7822DT	**COOR TYPE:**	3
ADDRESS:	South of railroad tracks near wildlife refuge	**DRILLING METHOD:**	GeoProbe	**NORTHING/LAT.:**	40.8331963
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6189212
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**			
TYPE:	PID	**TYPE:**	Water Level	**BOREHOLE SIZE:**		**ELEVATION:**	-89.57
SERIAL#:	41369	**SERIAL#:**	NA	**CORE SAMPLER SIZE:**	2.25 Inch	**Z COOR UNIT:**	Feet
MODEL:	Minirae 3000	**MODEL:**	NA	**BORING LOG DATE/TIME:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft			**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	03/02/2020 08:31	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	03/03/2020 09:25	**BORING DETAILS:**	
				SAMPLING EQUIPMENT:		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
BACKFILL NOTES:						**BORING LOG END DEPTH:**	95 Feet

DEPTH: Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			
5	10	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Wet, Brown - Pale, Fine to Medium SAND, Trace Fine to Medium Gravel			
15	20	Wet, Brown - Pale, Fine to Medium SAND, Little Fine to Medium Gravel, Trace Coarse Sand			
20	25	Wet, Brown - Pale, Fine to Medium SAND, Little Fine to Medium Gravel, Trace Coarse Sand			
25	30	Wet, Brown - Pale, Fine to Medium SAND, Little Coarse Sand			
30	35	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
35	40	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel			
40	45	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			
45	50	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			
50	55	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			
55	60	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
60	65	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			
65	70	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel			
70	75	Wet, Brown - Pale, Fine to Medium SAND, Some Coarse Sand			
75	80	Wet, Brown - yellowish, Medium to Coarse SAND, Trace Fine Sand and Gravel			
80	85	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand and Gravel			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
85	90	Wet, Brown - Pale, Fine to Medium SAND, Trace Coarse Sand			
90	95	Wet, Brown - dark yellowish, Medium to Coarse SAND, Little Fine to Medium Gravel, Trace Fine Sand			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL #:**	MW-GB-OB-MW07
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:		**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:	North taxiway just off of the helicopter landing pad.	**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8470086
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6292236
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BORE HOLE SIZE:**	3 Inch	**ELEVATION:**	-54.790028
SERIAL#:	592-922375	**SERIAL#:**	23214	**HOLE SIZE:**	3.25 Inch	**Z COOR UNIT:**	Feet
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T	**BORING LOG DATE/TIME:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft			**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	02/27/2020 08:15	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	02/27/2020 08:15	**BORING DETAILS:**	
Calibrated daily				**SAMPLING EQUIPMENT:**		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
BACKFILL NOTES:						**BORING LOG END DEPTH:**	100 Feet

DEPTH: Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Moist, Brown, Fine to Medium SAND, Little Fine Sand and Sand, skip Coarse Sand and Gravel			
5	10	Dry, Brown - light, Fine to Medium SAND, Some Fine Sand. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	15	Dry, Brown, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand, Trace Fine to Medium Gravel. Medium dense.			
15	20	Dry, mottled Brown - light/Brown, Fine to Medium SAND, Some Fine Sand and Sand, Trace Medium Gravel. Dense.			
20	25	Dry, mottled Brown - light/Brown, Fine to Medium SAND, Some Fine Sand and Sand, Trace Medium Sand. Dense			
25	30	Dry, mottled Brown - light/Brown, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium Gravel and Silt, Trace Silt. Very dense.			
30	31.8	Moist, Brown - dark, Fine to Medium SAND, Some Silt, Trace Fine Gravel. Very dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
31.8	35	Dry, Brown - light, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand, Trace Coarse Gravel. Dense.			
35	40	Dry, mottled Brown - light/Brown, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium to Coarse Gravel and Silt, Trace Silt. Dense.			
40	45	Moist, mottled Brown - light/Brown, Fine to Medium SAND, Little Fine Sand and Sand, Trace Silt and Gravel, Trace Fine to Medium Gravel. Medium dense.			
45	50	Wet, Brown, Fine to Medium SAND, Little Fine Sand and Sand, Trace Coarse Gravel. Very dense to dense.			
50	55	Wet, Brown, Fine to Medium SAND, Little Fine Sand and Sand, Trace Medium Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
55	60	Wet, Brown, Fine to Medium SAND, Little Fine Sand, Trace Medium to Coarse Sand and Gravel. Very dense.			
60	65	Wet, Brown, Fine to Medium SAND, Little Medium to Coarse Sand and Sand, Trace Medium Gravel. Very dense.			
65	70	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Little Medium to Coarse Sand, Trace Coarse Gravel. Dense.			
70	75	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand, Trace Medium Gravel. Very dense.			
75	80	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand. Dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
80	85	Wet, Brown, Fine to Medium SAND, Little Fine Sand, Trace Coarse Sand and Gravel. Medium dense.			
85	90	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Little Fine to Medium Gravel, Trace Medium to Coarse Sand. Dense.			
90	95	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Trace Medium Gravel. Dense.			
95	100	Wet, Brown, Fine to Medium SAND, Some Fine Sand, Trace Coarse Sand and Gravel. Dense.			

Sampling Log - Direct Push

CLIENT:	Air National Guard	**PARSONS ON-SITE:**	Dan Chamberland	**BORING/WELL #:**	MW-GB-OB-MW08
PROJECT NAME:	ANG ESI	**DRILLING CONTRACTOR:**		**LOCATION DESCRIPTION**	
SITE NAME:	Gabreski	**RIG TYPE:**	Geoprobe 7822	**COOR SYSTEM:**	Field GPS
AREA OF CONCERN:		**MACHINE MODEL #:**	06-782211. 392	**COOR TYPE:**	3
ADDRESS:	South side of south perimeter road. Slightly east of the gate.	**DRILLING METHOD:**	Direct Push	**NORTHING/LAT.:**	40.8312785
		LICENSED DRILLER:		**EASTING/LONG.:**	-72.6424486
		DRILLING HELPERS:		**XY COOR UNIT:**	Degrees

FIELD METER #1:		**FIELD METER #2:**					
TYPE:	PID	**TYPE:**	Water Level	**BOREHOLE SIZE:**	3.25 Inch	**ELEVATION:**	-77.43
SERIAL#:	592-922375	**SERIAL#:**	23214	**CORE SAMPLER SIZE:**	3 Inch	**Z COOR UNIT:**	Feet
MODEL:	Minirae 3000	**MODEL:**	Heron Dipper-T	**BORING LOG DATE/TIME:**		**DRILLING ORIENTATION:**	
LIMIT:	0 ppm	**LIMIT:**	Ft			**BEARING:**	
H&S:	5 ppm	**H&S:**	Ft	**DATE/TIME START:**	03/06/2020 12:52	**INCLINATION:**	
COMMENTS:		**COMMENTS:**		**DATE/TIME FINISH:**	03/09/2020 08:49	**BORING DETAILS:**	
Calibrated daily.				**SAMPLING EQUIPMENT:**		**INTERVAL TYPE:**	Discreet
				DEVICE LENGTH:		**SOIL CLASS SYSTEM:**	Burmeister
				DEVICE COMMENTS:		**BORING LOG START DEPTH:**	0 Feet
BACKFILL NOTES:						**BORING LOG END DEPTH:**	65 Feet

DEPTH: Feet

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
0	5	Dry, Brown - light reddish, Fine to Medium SAND, Some Fine Sand, Little Medium to Coarse Gravel			
5	10	Damp, Brown, Fine to Medium SAND, Little Fine Sand and Gravel. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
10	13.2	Damp, Brown, Fine to Medium SAND, Little Fine Sand, Trace Fine to Medium Gravel. Dense.			
13.2	15	Damp, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium Gravel. Medium dense.			
15	20	Damp, mottled Brown - dark/Brown - light reddish, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand and Gravel. Medium dense to medium loose.			
20	25	Damp, mottled Brown - light/Brown, Fine to Medium SAND, Some Fine Sand, Little Coarse Sand and Gravel. Dense to medium loose.			
25	30	Damp, mottled Brown - light/Brown, Fine to Medium SAND, Little Fine Sand and Sand, skip Medium to Coarse Sand and Gravel. Medium loose.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
30	35	Moist, mottled Brown - light/Brown, Fine to Medium SAND, Little Fine Sand, little Medium to Coarse Sand, little fine to Medium gravel. Medium dense.			
35	40	Wet, Brown - light, Fine to Medium SAND, Some Fine Sand, Trace Medium to Coarse Sand and Gravel. Medium loose.			
40	45	Wet, Brown, Fine to Medium SAND, Little Fine Sand and medium to coarse Sand, Trace Medium Gravel. Dense.			
45	50	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, skip Medium to Coarse Sand and Gravel. Dense.			
50	55	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand and Sand, Trace Fine Gravel. Medium dense.			

TOP	BTM	SOIL MATRIX DESCRIPTION	SAMPLE ID	PHOTO DESCRIPTION	PHOTO
55	57.3	Wet, Brown - light, Fine SAND, Little Silt. Dense.			
57.3	60	Wet, Brown - light, Medium SAND, Little Coarse Sand and Sand, Trace Medium Gravel. Medium dense.			
60	65	Wet, Brown - light, Fine to Medium SAND, Little Fine Sand, Trace Medium Sand and Silt			

APPENDIX D Photoionization Detector (PID) and Water Quality Instrument Calibration Logs

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	
MODEL:	
UNIT IDENTIFICATION:	92-92237
DATE:	02/12/2020
TIME:	07:26
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	99.9 ppm

COMMENTS:

Cal gas lot number: IBI-248-100-14
Cal gas part number: 34LS-248-100

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	3
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	01/28/2020
TIME:	07:34
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas part number: 34LS-248-248-100
Cal gas lot number: IBI-248-100-14

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/03/2020
TIME:	07:34
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas part number: 34LS-248-100
Cal gas lot number: IBI-248-100-14

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/04/2020
TIME:	07:39
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: IBI-248-100-14
Cal gas part number: 34LS-248-100

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	3
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/05/2020
TIME:	08:29
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: IBI-248-100-14
Cal gas part number: 34LS-248-100

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/11/2020
TIME:	07:30
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0.1 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: IBI-248-100-14
Cal gas part number: 34ls-248-100

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Upgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/13/2020
TIME:	07:24
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: IBI-248-100-14
Cal gas part number: 34LS-248-100

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/14/2020
TIME:	07:42
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	99.8 ppm

COMMENTS:

Cal gas part number: 34LS-248-100
Cal gas lot number: IBI-248-100-14

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/17/2020
TIME:	07:20
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas part number: 34LS-248-100
Cal gas lot number: IBI-248-100-14

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/18/2020
TIME:	09:37
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: IBI-248-100-14
Cal gas part number: 34LS-248-100

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/19/2020
TIME:	11:11
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0.3 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: IBI-248-100-14
Cal gas part number: 34LS-248-100

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	19
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/25/2020
TIME:	10:32
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	97.4 ppm

COMMENTS:

Cal gas lot number: 1249838
Cal gas part number: 31721

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/26/2020
TIME:	08:16
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: 1249838
Cal gas part number: 31721

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	02/27/2020
TIME:	08:09
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: 1249838
Cal gas part number: 31721

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	03/02/2020
TIME:	07:00
SAMPLER:	Matt Muto
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	99.7 ppm

COMMENTS:

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	1
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	03/04/2020
TIME:	09:09
SAMPLER:	
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: 1249838
Cal gas part number: 31721

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	1
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	03/05/2020
TIME:	08:46
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas part number: 31721
Cal gas lot number: 1249838

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	03/06/2020
TIME:	13:02
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas lot number: 1249838
Cal gas part number: 31721

PID CALIBRATION SHEET

SITE:	Gabreski
AOC:	Downgradient
MODEL:	MiniRae 3000
UNIT IDENTIFICATION:	592-922375
DATE:	03/09/2020
TIME:	08:05
SAMPLER:	Dan Chamberland
ZERO AIR READING:	0 ppm
CALIBRATION GAS:	100.0 ppm Isobutylene
CALIBRATION GAS READING:	100 ppm

COMMENTS:

Cal gas part number: 31721
Cal gas lot number: 1249838

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Dan Chamberland				
Date:	09-Mar-2020	**Usage Start Time:**	08:28	**Usage End Time:**	17:00
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	YSI
Model:	Quatro	Model:	ProPlus
Serial Number:	18K10028	Serial Number:	18G102415
ID Number:	Pro 10102030	ID Number:	43133

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:	Hach	Make:	
Model:	2100Q	Model:	
Serial Number:	14080C034448	Serial Number:	
ID Number:	029537	ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	11.60	**Standard: 240 mV**	
Bar Pres (mmHg):	779.7	Temperature (°C):	11.10
Initial O2 Saturation (%):	115.5	Initial (mV):	259.7
Initial Reading (mg/L):	12.72	Reset to (mV):	237.7
Final O2 Saturation (%):	118.9	Lot No. (240mV):	9GL768
Meter Reset to (mg/L):	11.24	Exp. Date:	01-Sep-2020

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	21.4	20	A9235	01-Dec-2020
100/	108	100	A9004	01-Apr-2020
800/	798	800	A9241	01-Dec-2020
10/Blank	10.2	10	A9240	01-Dec-2020

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	1.36 mS/cmc	1.36 mS/cmc	1.41 mS/cmc	deg C	9GF944/06-01-2020
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

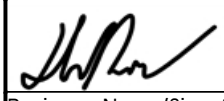
pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	11:04	5.80	4.14	110.7	4.00	8GI846/09-01-2020
10.00	11:05	5.50	9.82	-202.1	10.00	8GI657/03-09-2020
7.00 Check	11:08	5.90	6.97	-47.0	N/A	9GC686/03-01-2021

Analyst Name/Signature & Date Completed: Dan Chamberland Date: 09-Mar-2020



Reviewer Name/Signature & Date Completed: Daniel P. Chamberland Date: 09-Mar-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Dan Chamberland				
Date:	10-Mar-2020	**Usage Start Time:**	07:06	**Usage End Time:**	07:06
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	YSI
Model:	Quatro	Model:	ProPlus
Serial Number:	18K100281	Serial Number:	18G102415
ID Number:	18k100281	ID Number:	443133

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:	Hach	Make:	
Model:	2100q	Model:	
Serial Number:	14080C034448	Serial Number:	
ID Number:	029537	ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	9.70	**Standard: 240 mV**	
Bar Pres (mmHg):	764.1	Temperature (°C):	
Initial O2 Saturation (%):	92.7	Initial (mV):	297.5
Initial Reading (mg/L):	10.54	Reset to (mV):	238.1
Final O2 Saturation (%):	100.4	Lot No. (240mV):	9GL768
Meter Reset to (mg/L):	11.42	Exp. Date:	10-Mar-2020

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	20.4	20	A9235	01-Dec-2020
100/	93.7	100	A9004	01-Apr-2020
800/	806	800	A9241	01-Dec-2020
10/Blank	9.2	10	A9240	01-Dec-2020

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	0.98 mS/cmc	0.98 mS/cmc	1.41 mS/cmc	8.5 deg C	9GF944/06-01-2020
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

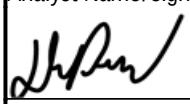
pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:29	8.90	3.73	128.0	4.00	8GI846/09-01-2020
10.00	07:32	8.60	9.77	-189.8	10.00	8GI657/09-01-2020
7.00 Check	07:35	8.60	6.99	-36.4	N/A	9GC686/03-01-2021

Analyst Name/Signature & Date Completed: Can Chamberland Date: 10-Mar-2020



Reviewer Name/Signature & Date Completed: Daniel P. Chamberland Date: 10-Mar-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Dan Chamberland				
Date:	11-Mar-2020	**Usage Start Time:**	07:11	**Usage End Time:**	07:11
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	YSI
Model:	Quatro	Model:	ProPlus
Serial Number:	18K100281	Serial Number:	18G102415
ID Number:	18K100281	ID Number:	43133

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:	Hach	Make:	
Model:	2100Q	Model:	
Serial Number:	14080C034448	Serial Number:	
ID Number:	029537	ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	9.50	**Standard: 240 mV**	
Bar Pres (mmHg):	762.2	Temperature (°C):	8.20
Initial O2 Saturation (%):	104.2	Initial (mV):	169.4
Initial Reading (mg/L):	11.92	Reset to (mV):	242.0
Final O2 Saturation (%):	100.9	Lot No. (240mV):	9GL768
Meter Reset to (mg/L):	11.52	Exp. Date:	01-Sep-2020

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	20.8	20	A9235	01-Dec-2020
100/	105	100	A9004	01-Apr-2020
800/	818	800	A9241	01-Dec-2020
10/Blank	9.3	10	A9240	01-Dec-2020

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	2.266 mS/cmc	2.266 mS/cmc	1.413 mS/cmc	10.7 deg C	9GF944/06-01-2020
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

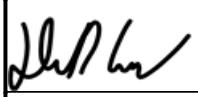
pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:32	10.70	4.13	126.1	4.00	8GI846/09-01-2020
10.00	07:33	10.80	9.79	-191.7	10.00	8GI657/09-01-2020
7.00 Check	07:36	10.80	6.98	-38.1	N/A	9GC686/03-01-2021

Analyst Name/Signature & Date Completed: Dan Chamberland Date: 11-Mar-2020



Reviewer Name/Signature & Date Completed: Daniel P. Chamberland Date: 11-Mar-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Dan Chamberland				
Date:	12-Mar-2020	**Usage Start Time:**	07:27	**Usage End Time:**	07:27
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	YSI
Model:	Quatro	Model:	ProPlus
Serial Number:	18K100281	Serial Number:	18G102415
ID Number:	18K100281	ID Number:	43133

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:	Hach	Make:	
Model:	2100Q	Model:	
Serial Number:	14080C034448	Serial Number:	
ID Number:	029537	ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	7.10	**Standard: 240 mV**	
Bar Pres (mmHg):	763.9	Temperature (°C):	10.20
Initial O2 Saturation (%):	93.7	Initial (mV):	291.0
Initial Reading (mg/L):	11.33	Reset to (mV):	235.2
Final O2 Saturation (%):	100.6	Lot No. (240mV):	9GL768
Meter Reset to (mg/L):	12.21	Exp. Date:	01-Sep-2020

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	18.8	20	A9235	01-Dec-2020
100/	100	100	A9004	01-Apr-2020
800/	811	800	A9241	01-Dec-2020
10/Blank	10.1		A9240	01-Dec-2020

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	1.43 mS/cmc	1.43 mS/cmc	1.419 mS/cmc	11 deg C	9GF944/06-01-2020
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

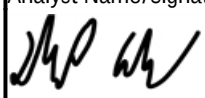
pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	08:40	10.40	4.20	122.9	4.00	8GI846/09-01-2020
10.00	08:43	10.80	9.84	-198.9	10.00	8GI657/09-01-2020
7.00 Check	08:45	11.20	7.08	-38.3	N/A	9GC686/03-01-2021

Analyst Name/Signature & Date Completed: Dan Chamberland Date: 12-Mar-2020



Reviewer Name/Signature & Date Completed: Daniel P. Chamberland Date: 12-Mar-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Matt Muto				
Date:	17-Jun-2020	**Usage Start Time:**	15:00	**Usage End Time:**	19:00
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	Geotech
Model:	ProPlus	Model:	portable turbidity meter
Serial Number:	18D102399	Serial Number:	17111524
ID Number:		ID Number:	

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:		Make:	
Model:		Model:	
Serial Number:		Serial Number:	
ID Number:		ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	22.75	**Standard: 240 mV**	
Bar Pres (mmHg):	762.3	Temperature (°C):	21.00
Initial O2 Saturation (%):	104.7	Initial (mV):	252.0
Initial Reading (mg/L):	8.60	Reset to (mV):	238.4
Final O2 Saturation (%):	100.2	Lot No. (240mV):	
Meter Reset to (mg/L):	8.62	Exp. Date:	22-Jun-2021

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	25.1	20	239D	22-Jul-2021
100/	112	100	239D	22-Jun-2021
800/	852	800	239D	22-Jun-2021

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	985 mS/cmc	985 mS/cmc	1001 mS/cmc	22.4 deg C	OGD136/04-22-2021
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	15:30	20.20	4.25	141.2	4.00	OGB875/02-22-2022
10.00	15:32	21.50	10.40	-171.5	10.00	OGB273/02-22-2022
7.00 Check	15:40	22.00	7.09	-20.8	N/A	OGB273/02-22-2022

Analyst Name/Signature & Date Completed: Matt muto Date: 22-Jun-2020

Reviewer Name/Signature & Date Completed: Date: 22-Jun-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Matt Muto				
Date:	18-Jun-2020	**Usage Start Time:**	07:30	**Usage End Time:**	19:00
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	Geotech
Model:	ProPlus	Model:	portable turbidity meter
Serial Number:	18D102399	Serial Number:	17111524
ID Number:		ID Number:	

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:		Make:	
Model:		Model:	
Serial Number:		Serial Number:	
ID Number:		ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	22.50	**Standard: 240 mV**	
Bar Pres (mmHg):	763.5	Temperature (°C):	20.80
Initial O2 Saturation (%):	103.5	Initial (mV):	296.0
Initial Reading (mg/L):	9.02	Reset to (mV):	243.0
Final O2 Saturation (%):	100.4	Lot No. (240mV):	
Meter Reset to (mg/L):	8.50	Exp. Date:	22-Jun-2020

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	29	20	239D	22-Jun-2021
100/	122	100	239D	22-Jun-2021
800/	852	800	239D	22-Jun-2021

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	957 mS/cmc	957 mS/cmc	1000 mS/cmc	22.4 deg C	OGD136/04-22-2021
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

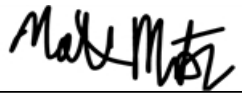
pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:31	21.90	3.52	180.4	4.00	OGB875/02-22-2022
10.00	07:35	22.10	10.58	-130.5	10.00	OGB273/02-22-2022
7.00 Check	07:40	22.50	6.95	36.9	N/A	OGB276/02-22-2022

Analyst Name/Signature & Date Completed: Matt muto Date: 23-Jun-2020



Reviewer Name/Signature & Date Completed: Date: 23-Jun-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Matt Muto				
Date:	19-Jun-2020	**Usage Start Time:**	07:06	**Usage End Time:**	19:07
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	Geotech
Model:	ProPlus	Model:	portable turbidity meter
Serial Number:	18D102399	Serial Number:	17111524
ID Number:		ID Number:	

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:		Make:	
Model:		Model:	
Serial Number:		Serial Number:	
ID Number:		ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	22.59	**Standard: 240 mV**	
Bar Pres (mmHg):	762.4	Temperature (°C):	22.50
Initial O2 Saturation (%):	103.7	Initial (mV):	274.0
Initial Reading (mg/L):	8.62	Reset to (mV):	238.0
Final O2 Saturation (%):	100.0	Lot No. (240mV):	
Meter Reset to (mg/L):	8.55	Exp. Date:	23-Jun-2021

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	32	20	239D	23-Jun-2021
100/	121	100	239D	23-Jun-2021
800/	841	800	239D	23-Jun-2021

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	1068 mS/cmc	1068 mS/cmc	1000 mS/cmc	20.4 deg C	OGD136/04-23-2021
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:10	21.90	3.91	150.1	4.00	OGB875/02-23-2022
10.00	07:15	21.80	10.42	-175.5	10.00	OGB273/02-23-2022
7.00 Check	13:15	21.10	7.08	-29.7	N/A	OGD276/02-23-2022

Analyst Name/Signature & Date Completed: Matt muto Date: 23-Jun-2020

Reviewer Name/Signature & Date Completed: Date: 23-Jun-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Matt Muto				
Date:	25-Jun-2020	**Usage Start Time:**	07:34	**Usage End Time:**	19:34
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	Geotech
Model:	ProPlus	Model:	portable turbidity meter
Serial Number:	18D102399	Serial Number:	17111524
ID Number:		ID Number:	

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:		Make:	
Model:		Model:	
Serial Number:		Serial Number:	
ID Number:		ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	21.73	**Standard: 240 mV**	
Bar Pres (mmHg):	762.0	Temperature (°C):	21.22
Initial O2 Saturation (%):	102.4	Initial (mV):	259.0
Initial Reading (mg/L):	9.22	Reset to (mV):	240.0
Final O2 Saturation (%):	100.1	Lot No. (240mV):	
Meter Reset to (mg/L):	9.05	Exp. Date:	22-Jun-2021

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	28.8	20	239D	22-Jun-2021
100/	124	100	239D	22-Jun-2021
800/	821	800	239D	22-Jun-2021

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	975 mS/cmc	975 mS/cmc	1000 mS/cmc	22.5 deg C	OGD136/04-22-2021
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:37	20.30	3.88	140.8	4.00	OGB875/02-22-2022
10.00	07:39	22.85	10.51	-170.9	10.00	OGB273/02-22-2022
7.00 Check	07:41	22.15	7.02	-19.5	N/A	OGB273/02-22-2022

Analyst Name/Signature & Date Completed: Matt muto Date: 25-Jun-2020

Matt Muto

Reviewer Name/Signature & Date Completed: Date: 14-Jul-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Matt Muto				
Date:	28-Jun-2020	**Usage Start Time:**	06:56	**Usage End Time:**	18:56
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	Geotech
Model:	ProPlus	Model:	portable turbidity meter
Serial Number:	18D102399	Serial Number:	17111524
ID Number:		ID Number:	

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:		Make:	
Model:		Model:	
Serial Number:		Serial Number:	
ID Number:		ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	21.95	**Standard: 240 mV**	
Bar Pres (mmHg):	762.5	Temperature (°C):	21.57
Initial O2 Saturation (%):	105.2	Initial (mV):	268.0
Initial Reading (mg/L):	8.50	Reset to (mV):	240.0
Final O2 Saturation (%):	100.3	Lot No. (240mV):	
Meter Reset to (mg/L):	8.55	Exp. Date:	22-Jun-2021

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	32	20	239D	22-Jun-2021
100/	117	100	239D	22-Jun-2021
800/	824	800	239D	22-Jun-2021

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	971 mS/cmc	971 mS/cmc	1000 mS/cmc	22.9 deg C	OGD136/04-22-2021
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:10	20.58	4.32	134.7	4.00	OGB875/02-22-2022
10.00	07:21	21.90	10.45	-172.2	10.00	OGB273/02-22-2022
7.00 Check	07:25	-22.20	6.95	-20.8	N/A	OGB273/02-22-2022

Analyst Name/Signature & Date Completed: Matt muto Date: 14-Jul-2020

Reviewer Name/Signature & Date Completed: Date: 14-Jul-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Matt Muto				
Date:	29-Jun-2020	**Usage Start Time:**	07:15	**Usage End Time:**	18:47
				Usage = Time instrument used in field	

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	Geotech
Model:	ProPlus	Model:	portable turbidity meter
Serial Number:	18D102399	Serial Number:	17111524
ID Number:		ID Number:	

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:		Make:	
Model:		Model:	
Serial Number:		Serial Number:	
ID Number:		ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	23.10	**Standard: 240 mV**	
Bar Pres (mmHg):	762.8	Temperature (°C):	21.10
Initial O2 Saturation (%):	105.2	Initial (mV):	254.0
Initial Reading (mg/L):	8.92	Reset to (mV):	240.2
Final O2 Saturation (%):	100.3	Lot No. (240mV):	
Meter Reset to (mg/L):	8.85	Exp. Date:	22-Jun-2021

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	28	20	238D	22-Jun-2021
100/	115	100	239D	22-Jun-2021
800/	829	800	239D	22-Jun-2021

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	958 mS/cmc	958 mS/cmc	1000 mS/cmc	22.4 deg C	OGD136/04-22-2021
	5 Point Calibration Check (Instrument Readings within +/- 10%)			No	

pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:35	20.52	4.22	142.2	4.00	OGB875/02-22-2022
10.00	07:27	21.58	10.39	-172.8	10.00	OGB273/02-22-2022
7.00 Check	07:30	22.10	7.05	-21.1	N/A	OGB273/02-02-2022

Analyst Name/Signature & Date Completed: Matt muto Date: 29-Jun-2020

Matt Muto

Reviewer Name/Signature & Date Completed: Date: 14-Jul-2020

FIELD CALIBRATION LOG SHEET

Site/Project/Location:	Gabreski				
Personnel:	Matt Muto				
Date:	30-Jun-2020	**Usage Start Time:**	07:06	**Usage End Time:**	19:06
					Usage = Time instrument used in field

INSTRUMENT ID NUMBERS		**METER ID NUMBERS**	
Make:	YSI	Make:	Geotech
Model:	ProPlus	Model:	portable turbidity meter
Serial Number:	18D102399	Serial Number:	17111524
ID Number:		ID Number:	

TURBIDITY METER ID NUMBERS		**DO METER ID NUMBERS**	
Make:		Make:	
Model:		Model:	
Serial Number:		Serial Number:	
ID Number:		ID Number:	

Dissolved Oxygen Calibration		**ORP Calibration**	
Water Temp (°C):	22.90	**Standard: 240 mV**	
Bar Pres (mmHg):	762.8	Temperature (°C):	20.80
Initial O2 Saturation (%):	101.1	Initial (mV):	232.1
Initial Reading (mg/L):	8.65	Reset to (mV):	240.0
Final O2 Saturation (%):	100.0	Lot No. (240mV):	
Meter Reset to (mg/L):	8.60	Exp. Date:	22-Jun-2021

Turbidity Calibration

Standard (NTU)	Initial (NTU)	Reset to (NTU)	Lot No. (0.0 NTU)	Exp. Date
20/	31	20	239D	22-Jun-2021
100/	111	100	239D	22-Jun-2021
800/	822	800	239D	22-Jun-2021

Specific Conductance Calibration

	Concentration	Initial Reading	Reset To	Temperature	Lot No. & Exp. Date
Standard # 1	989 mS/cmc	989 mS/cmc	1000 mS/cmc	22.5 deg C	OGD136/04-22-2021

5 Point Calibration Check (Instrument Readings within +/- 10%)

pH Calibration (* Record to two decimal places)

7.00 Buffer Check -- Immediately After Initial Calibration -- MUST BE within +/- 0.1 units of 7.00

7.00 Buffer Check -- Every 3 Hours After Initial Calibration -- MUST BE within +/- 0.2 units of 7.00

Buffer	Time	Temperature (oC)	Initial Reading	Input Reading	Reset To	Lot No. & Exp. Date
4.00	07:11	20.50	4.22	140.1	4.00	OGB875/02-22-2022
10.00	07:15	21.50	10.12	-168.5	10.00	OGB273/02-22-2022
7.00 Check	07:18	21.95	7.09	-10.2	N/A	OGB273/02-22-2022

Analyst Name/Signature & Date Completed: Matt muto Date: 30-Jun-2020

Reviewer Name/Signature & Date Completed: Date: 14-Jul-2020

APPENDIX E Well Survey Location Table

NY Air National Guard

Field Survey completed June 26, 2020

NAD 83 / NAVD 88

MW_ID	Northing	Easting	Elevation Top/Pipe	Elevation at Grade
GB-IRP7-MW03	247697.2616	1363304.2962	50.09	50.74
GB-IRP7-MW04	246986.0691	1364028.0802	45.91	46.51
GB-03-MW01	247744.6167	1359538.7551	48.38	48.98
GB-19-MW01	249111.5795	1364560.1014	46.38	47.08
GB-OB-MW01	245641.5568	1358808.9184	44.32	44.97
GB-OB-MW02	244916.7743	1359075.8765	43.73	44.38
GB-OB-MW03	245246.3952	1361338.4641	24.40	24.90
GB-OB-MW04	245744.0059	1364759.3634	29.60	30.50
GB-OB-MW05	246533.3933	1365680.1836	19.18	19.78
GB-OB-MW06	245844.4864	1366420.8479	8.18	5.23
GB-OB-MW07	250833.4613	1363486.2413	55.33	55.73
GB-OB-MW08	245040.3053	1359913.6205	44.26	44.91
GB-BB-MW01	248293.7739	1359369.5179	54.48	55.13
GB-BB-MW02	246994.4760	1359003.3999	53.68	54.28
IRP7-MW01	247138.6310	1363844.0452	42.31	42.96
MW-2	246519.2046	1363951.0961	40.03	40.63
IRP5-MW01	245987.3907	1359063.4666	44.62	45.27
ECR-SW7	246969.2205	1360136.3940	41.55	39.25
ECR-MW01	246710.2924	1359882.0629	43.27	43.87
SW-8	246021.0094	1360466.8845	34.89	32.29
SW-9	246063.0654	1360607.4240	33.16	30.46
MW-1	248116.0535	1365892.4522	24.84	22.44

Soil Boring_ID	Northing	Easting	Elevation Top/Pipe	Elevation at Grade
GB-03-SB01	247744.9167	1359538.7551		48.98
GB-03-SB02	247881.8333	1359519.1602		47.36
GB-19-SB01	249244.6657	1364487.3289		49.52
GB-19-SB02	249111.5795	1364560.1014		43.22
GB-19-SB03	249295.5877	1364241.1085		50.93

APPENDIX F Well Development Logs

WELL DEVELOPMENT LOG

Well ID:	GB-03-MW01		
Date:	03/09/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	
AOC:	3	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
50	None	15	N	Sunny

Depth to Bottom (Initial):	49.55 ft.	Date(s) Installed:		Driller:	ADT
Depth to Bottom (Final):	49.57 ft.	03/09/2020		Well Diameter:	2 in.
Depth to Water (Initial)	34 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	34.02 ft.	03/09/2020		Development Times	
Measuring Point:	Top of Casing			Start	13:37
Pump Setting (Intake):	49.2			Stop:	14:50
Water Column Volume:	2.5 gal.			Total:	72.8 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	1	15.2	7.48	0.624	9999	1	34.02	brown	none
1	17	14.2	6.19	0.42	34.3	1	34.03	grey	none
2	10	14.1	5.82	0.404	6.13	1	34.03	clear	none
3	10	14.3	5.96	0.518	9999	1	34.04	grey	none
4	10	14	5.86	0.429	148	1	34.03	clear	none
5	6	14.1	5.86	0.401	6.71	1	34.03	clear	none

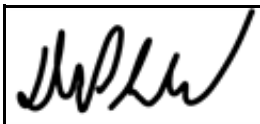
Total volume of Development water removed: (gallons) 54

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:



WELL DEVELOPMENT LOG

Well ID:	GB-19-MW01		
Date:	03/10/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	ADT/Cascade
AOC:	19	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
52	None	14	NE	Partly Cloudy

Depth to Bottom (Initial):	46.8 ft.	Date(s) Installed:		Driller:	ADT/cascade
Depth to Bottom (Final):	46.8 ft.	03/10/2020		Well Diameter:	2 in.
Depth to Water (Initial)	33.25 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	33.22 ft.	03/10/2020		Development Times	
Measuring Point:				Start	13:50
Pump Setting (Intake):	46.6			Stop:	14:47
Water Column Volume:	2.2 gal.			Total:	57.5 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Appearance of Water Odor
Start	1	13.7	5.77	0.111	9999	1	33.25	brown	petrocarbon
1	20	13.5	5.74	0.073	15.4	1	33.3	clear	petrocarbon
2	10	13.5	5.45	0.069	10.8	1	33.3	clear	petrocarbon
3	6	13.3	5.41	0.066	4.84	1	33.3	clear	petrocarbon
4	6	13.4	5.31	0.065	3.83	1	33.3	clear	petrocarbon
5	6	13.4	5.3	0.065	2.98	1	33.3	clear	petrocarbon

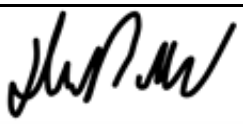
Total volume of Development water removed: (gallons) 49

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	petrocarbon	Odor:	petrocarbon
Sheen/Free Product:		Sheen/Free Product:	

Notes:

Geologist Signature:



WELL DEVELOPMENT LOG

Well ID:	GB-BB-MW01		
Date:	03/10/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	
AOC:	Upgradient	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
42	None	14	E	Partly Cloudy

Depth to Bottom (Initial):	53.73 ft.	Date(s) Installed:		Driller:	ADT
Depth to Bottom (Final):	53.75 ft.	03/10/2020		Well Diameter:	2 in.
Depth to Water (Initial)	39.45 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	39.47 ft.	03/10/2020		Development Times	
Measuring Point:	Top of Casing			Start	08:13
Pump Setting (Intake):	53.4			Stop:	09:16
Water Column Volume:	2.3 gal.			Total:	63.2 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	1	12.9	6.42	0.534	9999	1	39.48	brown	none
1	20	13.2	6.39	0.368	7.68	1	39.45	clear	none
2	10	13.3	6.12	0.357	8.16	1	39.47	clear	none
3	10	13.2	6.25	0.355	4.42	1	39.47	clear	none
4	5	13.3	6.34	0.352	2.88	1	39.47	clear	none
5	10	13.3	6.29	0.353	1.74	1	39.47	clear	none

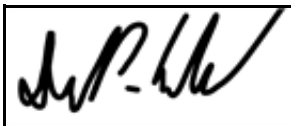
Total volume of Development water removed: (gallons) 56

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:



WELL DEVELOPMENT LOG

Well ID:	GB-BB-MW02		
Date:	03/09/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	
AOC:	Upgradient	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
52	None	14	N	Sunny

Depth to Bottom (Initial):	55.95 ft.	Date(s) Installed:		Driller:	ADT
Depth to Bottom (Final):	55.95 ft.	03/09/2020		Well Diameter:	2 in.
Depth to Water (Initial)	37.52 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	39.76 ft.	03/09/2020		Development Times	
Measuring Point:	Top of Casing			Start	15:25
Pump Setting (Intake):	55.6			Stop:	16:39
Water Column Volume:	3 gal.			Total:	73.5 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	1	13.8	6.12	0.407	9999	1	39.75	brown	none
1	15	13.9	5.98	0.426	15	1	39.75	clear	none
2	7	13.9	5.86	0.428	10.5	1	39.75	clear	none
3	7	14	5.87	0.422	4.87	1	39.77	clear	none
4	7	16.4	5.62	0.438	3.04	1	39.76	clear	none
5	8	13.9	5.85	0.422	2.41	1	39.76	clear	none
6	5	14.6	5.78	0.426	1.43	1	39.76	clear	none

Total volume of Development water removed: (gallons) 50

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID:	GB-IRP7-MW03
Date:	03/13/2020
Site Name:	Gabreski
AOC:	1
Project No.:	40001
Field Personnel:	Dan Chamberland
Contractor:	ADT/Cascade
Evacuation Method	submersible pump|surge block

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
48	Rain	14	N	Foggy

Depth to Bottom (Initial):	71.7 ft.	Date(s) Installed:		Driller:	ADT/CASCADE
Depth to Bottom (Final):	71.8 ft.	03/13/2020		Well Diameter:	2 in.
Depth to Water (Initial)	37.6 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	37.61 ft.	03/13/2020		Development Times	
Measuring Point:	Top of Casing			Start	08:51
Pump Setting (Intake):	71.5			Stop:	09:35
Water Column Volume:	5.6 gal.			Total:	44.7 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	2	12.7	7.43	0.109	9999	2.5	37.72	brown	none
1	10	12.9	7.48	0.096	243	2.5	37.72	grey	none
2	10	12.8	7.13	0.176	184	2.5	37.73	white	none
3	10	12.9	8.66	0.086	9999	2.5	37.72	brown	none
4	10	12.9	8	0.081	314	2.5	37.72	white	none
5	10	12.9	7.98	0.08	9999	2.5	37.71	brown	none
6	6	12.9	7.8	0.078	164	2.5	37.71	white	none
7	5	12.9	7.53	0.077	105	2.5	37.71	white	none
8	5	12.9	7.43	0.076	49.1	2.5	37.7	clear	none
9	5	13	7.39	0.076	45.2	2.5	37.7	clear	none
10	5	13	7.34	0.076	47.2	2.5	37.7	clear	none
11	5	12.9	7.33	0.075	44.2	2.5	37.7	clear	none

Total volume of Development water removed: (gallons) 83

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID:	GB-IRP7-MW04
Date:	03/13/2020
Site Name:	Gabreski
AOC:	1
Project No.:	40001
Field Personnel:	Dan Chamberland
Contractor:	ADT/Cascade
Evacuation Method	submersible pump|surge block

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
50	Rain	15	NE	Foggy

Depth to Bottom (Initial):	49.55 ft.	Date(s) Installed:		Driller:	ADT/CASCADE
Depth to Bottom (Final):	49.65 ft.	03/13/2020		Well Diameter:	2 in.
Depth to Water (Initial)	35.22 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	35.21 ft.	03/13/2020		Development Times	
Measuring Point:	Top of Casing			Start	10:32
Pump Setting (Intake):	49			Stop:	11:09
Water Column Volume:	2.3 gal.			Total:	37.3 min.

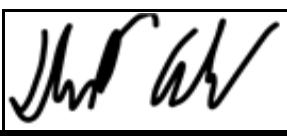
Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	2	13.5	7.4	0.073	9999	2.5	35.22	brown	none
1	10	13.8	6.95	0.057	61.8	2.5	35.2	clear	none
2	10	13.8	6.79	0.054	9999	2.5	35.2	brown	none
3	10	13.7	6.47	0.053	164	2.5	35.26	grey	none
4	5	13.8	6.58	0.055	9999	2.5	35.28	brown	none
5	5	13.8	6.57	0.052	216	2.5	35.28	grey	none
6	5	13.7	6.49	0.053	65.1	2.5	65.28	clear	none
7	5	13.7	6.39	0.052	30.7	2.5	35.28	clear	none
8	5	13.7	6.36	0.053	26.4	2.5	35.28	clear	none
9	5	13.7	6.34	0.052	9.6	2.5	35.28	clear	none
10	5	13.8	6.37	0.053	10.2	2.5	35.28	clear	none
11	5	13.7	6.34	0.052	10.3	2.5	35.28	clear	none

Total volume of Development water removed: (gallons) 72

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	Yes

Notes: Very minor sheen.

Geologist Signature: 

WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW01		
Date:	03/12/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	ADT/Cascade
AOC:	Downgradient	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
46	None	12	NW	Partly Cloudy

Depth to Bottom (Initial):	48.05 ft.	Date(s) Installed:		Driller:	ADT/Cascade
Depth to Bottom (Final):	49.1 ft.	03/12/2020		Well Diameter:	in.
Depth to Water (Initial)	32.34 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	32.35 ft.	03/12/2020		Development Times	
Measuring Point:	Top of Casing			Start	10:27
Pump Setting (Intake):	47.9			Stop:	11:03
Water Column Volume:	2.6 gal.			Total:	36.9 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	2	13.1	5.79	0.196	9999	2.5	32.42	brown	none
1	10	13.4	5.98	0.192	9999	2.5	32.45	brown	none
2	10	13.2	6.12	0.198	9999	2.5	32.47	brown	none
3	10	13.2	6.14	0.206	60.5	2.5	32.44	clear	none
4	10	13.2	6.09	0.215	9999	2.5	32.42	brown	none
5	5	13.3	6.09	0.206	52.1	2.5	32.41	clear	none
6	5	13.2	6.1	0.204	23	2.5	32.41	clear	none
7	5	13.2	6.1	0.205	13	2.5	32.41	clear	none
8	5	13.1	6.08	0.207	14	2.5	32.42	clear	none
9	5	13.2	6.09	0.207	9.4	2.5	32.42	clear	none
10	5	13.2	6.09	0.207	9.7	2.5	32.42	clear	
11	5	13.1	6.08	0.205	9.8	2.5	32.42	clear	none

Total volume of Development water removed: (gallons) 77

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW02		
Date:	03/11/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	ADT/Cascade
AOC:	Downgradient	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
51	None	8	SE	Mostly Cloudy

Depth to Bottom (Initial):	58.5 ft.	Date(s) Installed:	Driller:	ADT/Cascade	
Depth to Bottom (Final):	59.6 ft.	03/11/2020	Well Diameter:	2	in.
Depth to Water (Initial)	32.9 ft.	Date(s) Developed:	Casing Volume:		gal.
Depth to Water (Final):	32.98 ft.	03/11/2020	Development Times		
Measuring Point:	Top of Casing		Start	14:55	
Pump Setting (Intake):	58.3		Stop:	16:42	
Water Column Volume:	4.2 gal.		Total:	106.6	min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	1	13.3	6.38	0.243	9999	1	32.9	brown	none
1	5	13.4	6.49	0.307	9999	1	33.05	brown	none
2	5	14	6.61	0.268	9999	1	33	brown	none
3	5	14.2	6.43	0.267	9999	1	33	brown	none
4	5	14.1	6.3	0.291	9999	1	32.98	brown	none
5	5	14.1	6.34	0.296	9999	0.8	32.96	brown	none
6	5	14.1	6.33	0.305	9999	0.8	32.96	brown	none
7	5	14.3	6.28	0.324	9999	0.6	32.95	brown	none
8	5	13.4	6.3	0.294	115	0.6	32.97	grey	none
9	5	13.2	6.3	0.285	101.8	0.6	32.98	clear	none
10	5	13.2	6.26	0.286	109.7	0.5	32.98	clear	none

Total volume of Development water removed: (gallons) 51

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW03

Date:	03/11/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	
AOC:	Downgradient	Evacuation Method	
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
51	None	10	E	Sunny

Depth to Bottom (Initial):	70.7 ft.	Date(s) Installed:		Driller:	ADT/Cascade
Depth to Bottom (Final):	72.75 ft.	03/11/2020		Well Diameter:	2 in.
Depth to Water (Initial)	14.1 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	14 ft.	03/11/2020		Development Times	
Measuring Point:	Top of Casing			Start	09:51
Pump Setting (Intake):	70.5			Stop:	12:16
Water Column Volume:	9.2 gal.			Total:	144.9 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	1	12.1	5.79	0.407	9999	1.2	14.1	brown	none
1	15	12.5	6.24	0.441	9999	1.2	14.2	brown	none
2	12	12.5	6.24	0.424	274	1.2	14.2	grey	none
3	12	12.6	5.91	0.423	290	1.2	14.17	grey	none
4	12	12.6	5.86	0.424	223	1.2	14.16	grey	none
5	12	12.8	5.72	0.427	222	1.2	14.1	grey	none
6	12	12.9	5.75	0.427	184	1.2	14.08	grey	none
7	12	12.4	5.72	0.429	131	1.2	14.1	white	none
8	12	12.3	5.71	0.427	125	1.2		clear	none

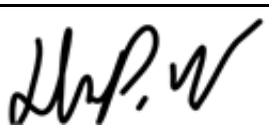
Total volume of Development water removed: (gallons) 100

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes: We had to stop after reading #4 to empty our drums at the base.

Geologist Signature:



WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW04
Date:	03/12/2020
Site Name:	Gabreski
AOC:	Downgradient
Project No.:	40001
Field Personnel:	Dan Chamberland
Contractor:	ADT/CASCADE
Evacuation Method	submersible pump|surge block

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
45	None	6	W	Partly Cloudy

Depth to Bottom (Initial):	47.73 ft.	Date(s) Installed:		Driller:	ADT/Cascade
Depth to Bottom (Final):	47.75 ft.	03/12/2020		Well Diameter:	2 in.
Depth to Water (Initial)	22.14 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	22.15 ft.	03/12/2020		Development Times	
Measuring Point:	Top of Casing			Start	08:52
Pump Setting (Intake):	47.5			Stop:	09:27
Water Column Volume:	4.2 gal.			Total:	35.2 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	5	11.7	6.86	0.126	136	2.5	22.42	grey	none
1	10	12	5.9	0.066	9999	2.5	22.33	brown	none
2	10	12	5.85	0.049	89.6	2.5	22.32	clear	none
3	5	12	5.63	0.056	9999	2.5	22.3	brown	none
4	5	11.8	5.67	0.048	108	2.5	22.3	clear	none
5	8	11.9	5.49	0.052	9999	2.5	22.3	brown	none
6	8	11.9	5.53	0.047	41.3	2.5	22.3	clear	none
7	8	11.7	5.47	0.046	33.5	2.5	22.3	clear	none
8	8	11.7	5.43	0.046	19	2.5	22.3	clear	none
9	8	11.8	5.37	0.046	19.7	2.5	22.3	clear	none
10	8	11.8	5.31	0.046	19.2	2.5	22.3	clear	none
11	8	11.8	5.31	0.047	19.4	2.5	22.3	clear	none

Total volume of Development water removed: (gallons) 91

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	grey	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW05
Date:	03/10/2020
Site Name:	Gabreski
AOC:	Downgradient
Project No.:	40001
Field Personnel:	Dan Chamberland
Contractor:	ADT/Cascade
Evacuation Method	surge block|waterra

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
50	None	8	SW	Partly Cloudy

Depth to Bottom (Initial):	91.92 ft.	Date(s) Installed:	03/10/2020
Depth to Bottom (Final):	97.72 ft.	Date(s) Developed:	03/10/2020 to 03/13/2020
Depth to Water (Initial)	12.35 ft.	Driller:	ADT/Cascade.
Depth to Water (Final):	11.9 ft.	Well Diameter:	in.
Measuring Point:	Top of Casing	Casing Volume:	gal.
Pump Setting (Intake):	91	Development Times	
Water Column Volume:	3.2 gal.	Start	10:12
		Stop:	12:54
		Total:	74.5 min.

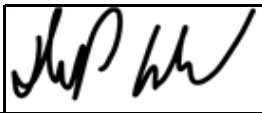
Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	2	11	7.24	0.175	9999	0.5	12.63	brown	none
1	10	11.5	6.31	0.086	9999	3	14.26	brown	none
2	10	11.5	6.24	0.069	9999	2	14.36	brown	none
3	10	11.5	6.15	0.071	9999	1	14.35	brown	none
4	5	11.5	6.15	0.078	9999	1	13.6	brown	none
5	5	11.4	6.24	0.068	9999	1	13.62	brown	none
6	5	11.4	6.2	0.068	9999	1	13.6	brown	none
7	5	11.5	6.2	0.067	9999	1	13.61	brown	none
8	5	11.5	6	0.066	9999	1	13.6	brown	none
9	5	11.5	6.13	0.067	9999	1	13.6	brown	none
10	5	11.4	6.15	0.065	542	1	13.6	brown	none
11	5	11.4	6.14	0.065	501	1	13.6	brown	none
12	5	11.7	6.5	0.077	9999	1	13.6	brown	none
13	5	11.7	6.47	0.07	9999	1.5	13.6	brown	none
14	5	11.7	6.48	0.068	9999	1.5	13.6	brown	none
15	5	11.7	6.48	0.066	823	1.5	13.6	brown	none
16	5	11.7	6.49	0.067	949	1.5	13.6	brown	none
17	5	11.7	6.5	0.066	9999	1.5	13.6	brown	none
18	5	11.7	6.54	0.067	9999	1.5	13.6	brown	none

Total volume of Development water removed: (gallons) 107

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	brown
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes: Well never cleared up. All other parameters stable.

Geologist Signature: 

WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW06

Date:	03/11/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	ADT/Cascade
AOC:	Downgradient	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
45	None	3	E	Sunny

Depth to Bottom (Initial):	38.75 ft.	Date(s) Installed:		Driller:	ADT/Cascade
Depth to Bottom (Final):	38.75 ft.	03/03/2020		Well Diameter:	2 in.
Depth to Water (Initial)	4.62 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	4.77 ft.	03/11/2020		Development Times	
Measuring Point:	Top of Casing			Start	08:17
Pump Setting (Intake):	38.5			Stop:	09:11
Water Column Volume:	5.6 gal.			Total:	53.3 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	1	10.6	6.78	0.145	9999	1.5	4.81	brown	none
1	15	11.6	5.51	0.065	9999	1.5	4.8	brown	none
2	12	11.3	5.19	0.065	9999	1.2	4.8	brown	none
3	8	11.6	5.04	0.06	213	1.2	4.8	brown	none
4	8	11.7	5.15	0.061	190	1.2	4.8	grey	none
5	8	11.8	5.07	0.059	143	1.2	4.79	white	none
6	8	11.4	4.97	0.059	374	1.2	4.77	grey	none
7	8	10.8	5.01	0.058	283	1.2	4.77	grey	none

Total volume of Development water removed: (gallons) 68

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	grey
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:

WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW07
Date:	03/10/2020
Site Name:	Gabreski
AOC:	Downgradient
Project No.:	40001
Field Personnel:	
Contractor:	
Evacuation Method	

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky

Depth to Bottom (Initial):	83.02 ft.	Date(s) Installed:		Driller:	ADT/Cascade
Depth to Bottom (Final):	ft.	03/10/2020		Well Diameter:	in.
Depth to Water (Initial)	40.06 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	40.1 ft.	03/10/2020		Development Times	
Measuring Point:	Top of Casing			Start	11:40
Pump Setting (Intake):	74			Stop:	13:08
Water Column Volume:	7 gal.			Total:	88 min.

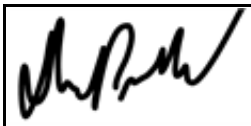
Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	2	12.97	7.73	0.137	9999	1	40.28	brown	none
1	18	13	7.5	0.125	9999	1	40.1	grey	none
2	10	13.6	6.83	0.126	455	1	40.12	grey	none
3	8	13.7	6.78	0.126	254	0.8	40.1	grey	none
4	10	13.3	6.8	0.119	67.7	0.9	40.1	white	none
5	10	13.1	6.35	0.115	9.9	0.9	40.1	clear	none
6	10	13.35	5.97	0.116	9.9	1	40.1	clear	none
7	8	13.2	6.06	0.113	7.24	1	40.1	clear	none

Total volume of Development water removed: (gallons) 76

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:		Sheen/Free Product:	

Notes:

Geologist Signature: 

WELL DEVELOPMENT LOG

Well ID:	GB-OB-MW08		
Date:	03/11/2020	Field Personnel:	Dan Chamberland
Site Name:	Gabreski	Contractor:	ADT/Cascade
AOC:	Downgradient	Evacuation Method	submersible pump|surge block
Project No.:	40001		

Weather

Temperature °F	Precipitation	Wind Speed mph	Wind Direciton	Sky
51	None	12	SE	Sunny

Depth to Bottom (Initial):	60.75 ft.	Date(s) Installed:		Driller:	ADT/Cascade
Depth to Bottom (Final):	61.3 ft.	03/11/2020		Well Diameter:	4 in.
Depth to Water (Initial)	33.5 ft.	Date(s) Developed:		Casing Volume:	gal.
Depth to Water (Final):	33.39 ft.	03/11/2020		Development Times	
Measuring Point:	Top of Casing			Start	12:49
Pump Setting (Intake):	61.1			Stop:	14:02
Water Column Volume:	4.4 gal.			Total:	73.5 min.

Reading #	Volume Removed Gallons	Temp. °C	pH s.u.	Conductivity mS/cm	Turbidity NTU	Approximate Flow Rate gal/min	DTW ft.	Appearance of Water Color	Odor
Start	1	13.2	6.17	0.224	9999	1.2	33.5	brown	none
1	20	13.1	6.39	0.241	375	1.2	33.4	brown	none
2	10	13.3	6.32	0.245	303	1.2	33.4	grey	none
3	12	13.2	6.34	0.24	214	1.2	33.4	grey	none
4	10	13.3	6.29	0.243	156	1.2	33.4	grey	none
5	10	13.4	6.27	0.242	90.7	1.2	33.39	clear	none
6	10	13.4	6.28	0.241	82.1	1.2	33.38	clear	none
7	10	13.2	6.28	0.238	85	1.2	33.39	clear	none

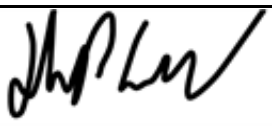
Total volume of Development water removed: (gallons) 83

Development Water Characteristics:

Physical Appearance at start		Physical Appearance at end	
Color:	brown	Color:	clear
Odor:	none	Odor:	none
Sheen/Free Product:	No	Sheen/Free Product:	No

Notes:

Geologist Signature:



APPENDIX G Groundwater Sampling Logs

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	1-Former FTA	Date:	06/17/2020
Well ID:	GB-IRP7-MW03	Samplers:	Matt Muto				

Purge Start Date:	06/22/2020		Time:	11:44	Purge End Date:	06/22/2020		Time:	12:14
Weather:	Wind:	10 mph, NE	Precipitation:	None		Sky:	Sunny	Temperature °F:	75
Well Labeled:	Yes		Well Secured:	Yes		Comments:			
PID SN:			Well Headspace (PID mu):			0		Odor:	none
Water Level Instrument:	Heron					Serial No.:	023214		
SWL beginning (BTOC):	37.8		WL After pump install (BTOC):			37.8		Max Drawdown (in.):	0
Well Casing (inches):	2				Borehole diameter:	4		Sandpack length (ft.):	12
Screen Length:	61 - 71				Parameters Measured With:		YSI 18D102399		
Water Column height (ft.):	33.85		Total Purge Volume (gallons):		2.04		Purge Method:		Low Flow
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:		300		
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:		HDPE
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	66	Total Pump + Tubing + Flow Cell Vol.:			200
Well Casing Vol. (gallons):	5.52			Sandpack Vol. (gal.):	0.3		Total Well Volume (gal.):		5.82
Depth of pump inlet (BTOC):	66			Rationale:					

PURGE CYCLE

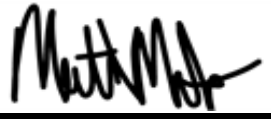
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
11:44	0	0	37.8	13.4	6.08	14.28	252.8	0.056		491	
11:47	3	0.2	37.8	13.5	5.93	11.02	259.6	0.054		128	
11:50	3	0.2	37.8	13.5	5.83	10.16	264.8	0.053		47.2	
11:53	3	0.2	37.8	13.5	5.46	9.99	282.7	0.052		23.7	
11:56	3	0.2	37.8	13.5	5.45	9.79	280.9	0.052		20.6	
11:59	3	0.2	37.8	13.5	5.54	9.77	275.1	0.052		9.43	
12:02	3	0.2	37.8	13.5	5.61	9.78	270	0.051		4.75	
12:05	3	0.2	37.8	13.5	5.63	9.78	267.7	0.051		2.5	
12:08	3	0.2	37.8	13.5	5.65	9.74	266.8	0.051		2.43	
12:11	3	0.2	37.8	13.6	5.65	9.67	266.1	0.051		1.78	
12:14	3	0.2	37.8	13.5	5.66	9.66	265.4	0.051		0.79	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
12:14	3	0.24	37.8	13.5	5.66	9.66	265.4	0.051	0	0.79	0

Sample Type:	MW	Sample Number:	GB-IRP7-MW03-01	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	17-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	55-gallon				
Comments:				Drum No.:	2
Prepared by:	Matt Muto				
Date Prepared:	22-Jun-2020				



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	1-Former FTA	Date:	06/25/2020
Well ID:	GB-IRP7-MW04	Samplers:	Matt Muto				

Purge Start Date:	06/25/2020		Time:	09:54	Purge End Date:	06/25/2020	Time:	10:18	
Weather:	Wind:	5 mph, N	Precipitation:	None	Sky:	Sunny	Temperature °F:	72	
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0		Odor:	none	
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	34.67		WL After pump install (BTOC):		34.67		Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	39.65 - 49.65		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	14.98		Total Purge Volume (gallons):		1.2		Purge Method:	Low Flow	
Max Purge Rate mL/min.:	200		Sampling Flow Rate mL/min:		200				
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:	HDPE	
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	39	Total Pump + Tubing + Flow Cell Vol.:		150	
Well Casing Vol. (gallons):	2.44		Sandpack Vol. (gal.):		1.23	Total Well Volume (gal.):		3.67	
Depth of pump inlet (BTOC):	39		Rationale:						

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
09:54	0	0	34.67	14.2	7.24	8.93	258.3	0.036		45.3	
09:58	4	0.2	34.67	14.3	5.84	8.6	311.1	0.037		7.59	
10:02	4	0.2	34.67	14.2	5.4	8.45	309.3	0.037		2.33	
10:06	4	0.2	34.67	14.2	5.18	8.56	307	0.036		1.83	
10:10	4	0.2	34.67	14.3	5.2	8.61	294.7	0.036		0.02	
10:14	4	0.2	34.67	14.2	5.2	8.61	284.3	0.036		0.3	
10:18	4	0.2	34.67	14.2	5.18	8.49	284.3	0.036		0.36	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
10:18	4	0.2	34.67	14.2	5.18	8.49	284.3	0.036	0	0.36	0

Sample Type:	MW	Sample Number:	GB-IRP7-MW04-01		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	25-Jun-2020	By: Matt Muto	Discharge Water Dispostion:		dumped on
Comments:					Drum No.:		
Prepared by:							
Date Prepared:	25-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	3	Date:	06/19/2020				
Well ID:	GB-03-MW01	Samplers:	Matt Muto								
Purge Start Date:	06/19/2020	Time:	07:33	Purge End Date:	06/19/2020	Time:	08:15				
Weather:	Wind:	14 mph, S	Precipitation:	None	Sky:	Sunny	Temperature °F:	78			
Well Labeled:	Yes	Well Secured:	Yes	Comments:							
PID SN:		Well Headspace (PID mu):		0	Odor:	none					
Water Level Instrument:	Heron			Serial No.:	023214						
SWL beginning (BTOC):	34.22	WL After pump install (BTOC):		34.22	Max Drawdown (in.):	0					
Well Casing (inches):	2	Borehole diameter:		4	Sandpack length (ft.):	12					
Screen Length:	39.9 - 49.9	Parameters Measured With:		YSI 18D102399							
Water Column height (ft.):	15.32	Total Purge Volume (gallons):		2.6	Purge Method:	Low Flow					
Max Purge Rate mL/min.:		250	Sampling Flow Rate mL/min:								
Pump Type:	submersible	Pump Vol.:		100	Tubing Material:	HDPE					
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	44	Total Pump + Tubing + Flow Cell Vol.:	200				
Well Casing Vol. (gallons):	2.5	Sandpack Vol. (gal.):		1.21	Total Well Volume (gal.):	3.71					
Depth of pump inlet (BTOC):	44	Rationale:									

PURGE CYCLE

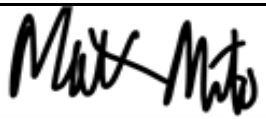
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
07:33	0	0	34.22	14	6.52	11.67	220.2	0.18		950	
07:36	3	0.2	34.22	14.2	5.77	10.71	250.4	0.19		348	
07:39	3	0.2	34.22	14.3	5.81	10.42	247.9	0.192		232	
07:42	3	0.2	34.22	14.4	5.99	10.12	237.7	0.185		110	
07:45	3	0	34.22	14.4	6.09	10.05	233.5	0.187		51.8	
07:48	3	0.2	34.22	14.4	6.18	9.93	230.3	0.189		44.3	
07:51	3	0.2	34.22	14.4	6.24	9.97	229.1	0.186		23.8	
07:54	3	0.2	34.22	14.4	6.27	9.88	230	0.19		21.3	
07:57	3	0.2	34.22	14.2	6.26	9.85	232.7	0.202		20.9	
08:00	3	0.2	34.22	14.2	6.26	9.86	233.6	0.199		19	
08:03	3	0.2	34.22	14.2	6.28	9.83	233.8	0.199		17.1	
08:06	3	0.2	34.22	14.2	6.29	9.85	234.1	0.2		14.3	
08:09	3	0.2	34.22	14.2	6.3	9.87	234.9	0.202		10.6	
08:12	3	0.2	34.22	14.2	6.31	9.88	235.3	0.201		10.3	

Low-Flow Groundwater Purge And Sample Log

08:15	3	0.2	34.22	14.3	6.31	9.82	236.2	0.203		10.1	

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
08:15	3	0.2	34.22	14.3	6.31	9.82	236.2	0.203	0	10.1	0

Sample Type:	MW	Sample Number:	GB-03-MW01-01			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	22-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:	GB-19062020-FB					Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	7	Date:	06/16/2020		
Well ID:	IRP7-MW01		Samplers:	Matt Muto							
Purge Start Date:	06/16/2020		Time:	10:19	Purge End Date:		06/16/2020	Time:	10:52		
Weather:	Wind:	10 mph, NE	Precipitation:	None		Sky:	Sunny	Temperature °F:	75		
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0		Odor:	none		
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	31.29		WL After pump install (BTOC):			31.29		Max Drawdown (in.):	0		
Well Casing (inches):	2		Borehole diameter:			4		Sandpack length (ft.):	12		
Screen Length:	31 - 41		Parameters Measured With:			YSI 18D102399					
Water Column height (ft.):	10.36		Total Purge Volume (gallons):		2.2		Purge Method:	Low Flow			
Max Purge Rate mL/min.:			250	Sampling Flow Rate mL/min:		250					
Pump Type:	submersible		Pump Vol.:	100		Tubing Material:	HDPE				
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	36	Total Pump + Tubing + Flow Cell Vol.:		200			
Well Casing Vol. (gallons):	1.69		Sandpack Vol. (gal.):	1.45		Total Well Volume (gal.):		3.14			
Depth of pump inlet (BTOC):	36		Rationale:								

PURGE CYCLE

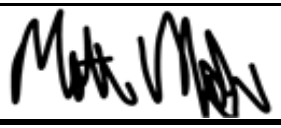
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
10:19	0	0	31.29	14.5	6.25	7.65	261.1	0.063		727	
10:22	3	0.2	31.29	14.5	5.37	8.03	290.2	0.057		475	
10:25	3	0.2	31.29	14.6	4.99	7.66	305.2	0.057		133	
10:28	3	0.2	31.29	15.3	5.01	6.99	298.9	0.06		85.8	
10:31	3	0.2	31.29	15.1	5.13	6.87	291	0.062		63.8	
10:34	3	0.2	31.29	15.7	5.19	6.3	286.3	0.064		39.7	
10:37	3	0.2	31.29	15.2	5.11	6.76	287.1	0.062		19.9	
10:40	3	0.2	31.29	15.1	5.12	6.78	286.3	0.061		9.82	
10:43	3	0.2	31.29	15.2	5.14	6.72	282.4	0.062		7.31	
10:46	3	0.2	31.29	15.5	5.18	6.3	279.6	0.062		6.29	
10:49	3	0.2	31.29	15.6	5.19	6.25	277.7	0.063		5.8	
10:52	3	0.2	31.29	15.6	5.2	6.44	276.3	0.062		5.51	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
10:52	3	0.2	31.29	15.6	5.2	6.44	276.3	0.062	0	5.51	0

Sample Type:	Existing MW	Sample Number:	IRP7-MW01-01	Sample Equipment:	submersible and HDPE		
Duplicate:				MS/MSD:			
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:			
Sample Equipment Decon:		Date:	16-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	19	Date:	06/18/2020		
Well ID:	GB-19-MW01		Samplers:	Matt Muto							
Purge Start Date:	06/18/2020		Time:	14:49	Purge End Date:	06/18/2020		Time:	15:35		
Weather:	Wind:	10 mph, S	Precipitation:	None		Sky:	Sunny		Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	33.5		WL After pump install (BTOC):			33.5			Max Drawdown (in.):	0	
Well Casing (inches):	2				Borehole diameter:	4			Sandpack length (ft.):	12	
Screen Length:	36 - 46				Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	13.3		Total Purge Volume (gallons):		3.1		Purge Method:		Low Flow		
Max Purge Rate mL/min.:			250		Sampling Flow Rate mL/min:		250				
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:		HDPE		
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	41	Total Pump + Tubing + Flow Cell Vol.:			200		
Well Casing Vol. (gallons):	2.17			Sandpack Vol. (gal.):	1.31	Total Well Volume (gal.):			3.48		
Depth of pump inlet (BTOC):	41			Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
14:49	0	0	33.5	13.7	4.94	3.89	302.2	0.028		719	
14:52	3	0.2	33.5	13.8	5.25	4.31	265	0.029		382	
14:55	3	0.2	33.5	13.8	5.32	5.14	251.9	0.03		240	
14:58	3	0.2	33.5	13.7	5.35	5.41	239.4	0.029		230	
15:01	3	0.2	33.5	13.7	5.35	5.52	238.6	0.029		103	
15:04	3	0.2	33.5	13.8	5.37	5.48	235.9	0.029		101	
15:07	3	0.2	33.5	13.8	5.36	5.38	234.2	0.029		97	
15:10	3	0.2	33.5	13.7	5.32	5.69	230.4	0.028		77.4	
15:14	4	0.3	33.5	13.7	5.31	5.7	229.6	0.028		36	
15:17	3	0.2	33.5	13.6	5.3	5.73	228.7	0.028		27.7	
15:20	3	0.2	33.5	13.6	5.29	5.76	226.4	0.028		15.9	
15:23	3	0.2	33.5	13.7	5.31	5.72	224.5	0.028		12.3	
15:26	3	0.2	33.5	13.7	5.3	5.74	224.1	0.028		10.8	

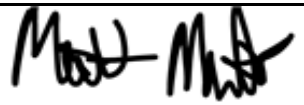
Low-Flow Groundwater Purge And Sample Log

15:29	3	0.2	33.5	13.6	5.3	5.83	222.6	0.028		9.09	
15:32	3	0.2	33.5	13.7	5.32	5.73	219.5	0.028		8.6	
15:35	3	0.2	33.5	13.8	5.31	5.78	218.3	0.028		7.2	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
15:35	3	0.2	33.5	13.8	5.31	5.78	218.3	0.028	0	7.2	0

Sample Type:	MW	Sample Number:	GB-19-MW01-01		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	18-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	22	Date:	06/17/2020
Well ID:	MW-2	Samplers:	Matt Muto				

Purge Start Date:	06/22/2020		Time:	10:37	Purge End Date:	06/22/2020		Time:	11:12
Weather:	Wind:	10 mph, NE	Precipitation:	None	Sky:	Sunny		Temperature °F:	75
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0			Odor:	none
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	30.11		WL After pump install (BTOC):		30.11			Max Drawdown (in.):	0
Well Casing (inches):	1		Borehole diameter:		2			Sandpack length (ft.):	12
Screen Length:	29 - 39		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	9.74		Total Purge Volume (gallons):		2.3			Purge Method:	Low Flow
Max Purge Rate mL/min.:			200		Sampling Flow Rate mL/min:			200	
Pump Type:	peristaltic		Pump Vol.:		100			Tubing Material:	HDPE
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	34	Total Pump + Tubing + Flow Cell Vol.:			200
Well Casing Vol. (gallons):	0.4			Sandpack Vol. (gal.):	0.37	Total Well Volume (gal.):			0.77
Depth of pump inlet (BTOC):	34			Rationale:					

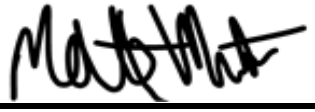
PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
10:37	0	0	30.11	14.6	5.98	10.49	209.3	0.048		156	
10:40	3	0.2	30.11	14.3	5.99	9.78	212.7	0.047		110	
10:43	3	0.2	30.11	14.3	6.05	9.43	214.6	0.048		59.2	
10:46	3	0.2	30.11	14.4	6.1	9.29	215	0.048		40	
10:49	3	0.2	30.11	14.5	6.12	9.16	215.3	0.048		29.7	
10:52	3	0.2	30.11	14.5	6.13	9.04	216.3	0.049		19.4	
10:55	3	0.2	30.11	14.6	6.15	9.02	217.2	0.049		14.8	
10:58	3	0.2	30.11	14.8	6.17	8.78	218.8	0.049		8.69	
11:01	3	0.2	30.11	14.8	6.18	8.7	219.5	0.049		4.89	
11:04	3	0.2	30.11	14.9	6.18	8.64	219.8	0.049		4.03	
11:07	3	0.2	30.11	14.9	6.18	8.58	220.4	0.049		1.21	
11:10	3	0.2	30.11	14.8	6.13	8.91	222.2	0.048		1.26	
11:12	2	0.1	30.11	14.8	6.13	8.97	224.5	0.048		1	

Low-Flow Groundwater Purge And Sample Log

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
11:12	2	0.1	30.11	14.8	6.13	8.97	224.5	0.048	0	1	0

Sample Type:	Existing MW	Sample Number:	MW-2-01	Sample Equipment:	peristaltic and HDPE		
Duplicate:				MS/MSD:			
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:			
Sample Equipment Decon:		Date:	17-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/18/2020
Well ID:	ECR-MW01	Samplers:	Matt Muto				

Purge Start Date:	06/18/2020		Time:	09:33	Purge End Date:	06/18/2020		Time:	10:21
Weather:	Wind:	15 mph, SW	Precipitation:	None		Sky:	Sunny	Temperature °F:	70
Well Labeled:	Yes		Well Secured:	Yes		Comments:			

PID SN:		Well Headspace (PID mu):		0		Odor:	none
Water Level Instrument:	Heron			Serial No.:		023214	
SWL beginning (BTOC):	30.5	WL After pump install (BTOC):		30.5		Max Drawdown (in.):	3.6
Well Casing (inches):	2	Borehole diameter:		4		Sandpack length (ft.):	12
Screen Length:	30 - 40	Parameters Measured With:		YSI 18D102399			
Water Column height (ft.):	11.6	Total Purge Volume (gallons):		1.6		Purge Method:	Low Flow
Max Purge Rate mL/min.:	150	Sampling Flow Rate mL/min:		150			
Pump Type:	submersible	Pump Vol.:		100		Tubing Material:	HDPE
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	35	Total Pump + Tubing + Flow Cell Vol.:	200
Well Casing Vol. (gallons):	1.89	Sandpack Vol. (gal.):		1.39		Total Well Volume (gal.):	3.28
Depth of pump inlet (BTOC):	35	Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
09:33	0	0	30.5	21.1	6.83	7.25	248.8	0.19		69.3	
09:36	3	0.1	30.5	20.6	6.4	6.34	251.8	0.192		61.2	
09:39	3	0.1	30.5	20.7	6.32	6.12	247.8	0.19		65.5	
09:42	3	0.1	30.5	20.8	6.26	5.98	241.5	0.189		59.6	
09:45	3	0.1	30.5	20.9	6.25	5.76	237.4	0.187		55	
09:48	3	0.1	30.2	21	6.25	5.61	232.3	0.187		56.2	
09:51	3	0.1	30.5	21.1	6.23	5.62	227.5	0.189		50	
09:54	3	0.1	30.5	21.2	6.22	5.57	223.6	0.191		49.2	
09:57	3	0.1	30.5	21.2	6.22	5.45	221.7	0.191		46.6	
10:00	3	0.1	30.5	21.7	6.22	5.54	218.3	0.193		40.1	
10:03	3	0.1	30.5	22	6.23	5.34	214.3	0.195		35.5	
10:06	3	0.1	30.5	22.3	6.23	5.08	211	0.197		30.8	

Low-Flow Groundwater Purge And Sample Log

10:09	3	0.1	30.5	22	6.23	4.98	209	0.2		28.7	
10:12	3	0.1	30.5	22	6.24	4.67	206.8	0.202		26.4	
10:15	3	0.1	30.5	22	6.24	4.22	204.4	0.205		23.6	
10:18	3	0.1	30.5	22	6.24	4.2	204.1	0.205		21.1	
10:21	3	0.1	30.5	22	6.25	4.15	203	0.207		19.5	

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (^{o}C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
10:21	3	0.1	30.5	22	6.25	4.15	203	0.207	0	19.5	0

Sample Type:	Existing MW	Sample Number:	ECR-MW01-01	Sample Equipment:	submersible and HDPE		
Duplicate:				MS/MSD:			
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:			
Sample Equipment Decon:		Date:	18-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/18/2020
Well ID:	ECR-SW7	Samplers:	Matt Muto				

Purge Start Date:	06/18/2020		Time:	08:29	Purge End Date:	06/18/2020	Time:	09:01	
Weather:	Wind:	9 mph, SW	Precipitation:	None	Sky:	Sunny	Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0		Odor:	none	
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	28.39		WL After pump install (BTOC):		28.39		Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	24 - 34		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	6.21		Total Purge Volume (gallons):		1.1		Purge Method:	Low Flow	
Max Purge Rate mL/min.:	150		Sampling Flow Rate mL/min:		150				
Pump Type:	peristaltic		Pump Vol.:		100		Tubing Material:	HDPE	
Flow Cell Vol.:	100	Vol./ft.: 0	Total ft.:	32	Total Pump + Tubing + Flow Cell Vol.:		200		
Well Casing Vol. (gallons):	1.01		Sandpack Vol. (gal.):		1.66	Total Well Volume (gal.):		2.67	
Depth of pump inlet (BTOC):	32		Rationale:						

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
08:29	0	0	28.39	15.4	7.39	12.67	186	0.114		22.9	
08:32	3	0.1	28.39	15.2	6.93	10.33	194.4	0.113		14.5	
08:35	3	0.1	28.39	15.2	6.95	10.32	192.4	0.114		10.6	
08:38	3	0.1	28.39	15.3	7.05	10.1	183.9	0.114		8.96	
08:41	3	0.1	28.39	15.3	7.16	9.82	175.7	0.114		7.27	
08:44	3	0.1	28.39	15.4	7.28	9.5	168.3	0.114		6.08	
08:47	3	0.1	28.39	15.4	7.33	9.51	163.8	0.114		4.92	
08:50	3	0.1	28.39	15.4	7.35	9.49	162.5	0.115		2.91	
08:53	3	0.1	28.39	15.5	7.38	9.5	161.3	0.115		2.82	
08:56	3	0.1	28.39	15.4	7.41	9.35	159.9	0.115		1.98	
08:59	3	0.1	28.39	15.5	7.4	9.24	161.5	0.115		1.14	
09:01	2	0.1	28.39	15.6	7.42	9.23	161.2	0.115		0.95	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
09:01	2	0.1	28.39	15.6	7.42	9.23	161.2	0.115	0	0.95	0

Sample Type:	Existing MW	Sample Number:	ECR-SW7-01	Sample Equipment:	peristaltic and HDPE		
Duplicate:				MS/MSD:			
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:			
Sample Equipment Decon:		Date:	22-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/18/2020
Well ID:	IRP5-MW01	Samplers:	Matt Muto				

Purge Start Date:	06/18/2020		Time:	11:21	Purge End Date:	06/18/2020		Time:	11:50
Weather:	Wind:	15 mph, N	Precipitation:	None		Sky:	Sunny	Temperature °F:	70
Well Labeled:	Yes		Well Secured:	Yes		Comments:			
PID SN:			Well Headspace (PID mu):			0		Odor:	none
Water Level Instrument:	Heron					Serial No.:	023214		
SWL beginning (BTOC):	33.1		WL After pump install (BTOC):			33.1		Max Drawdown (in.):	0.1
Well Casing (inches):	2				Borehole diameter:	4		Sandpack length (ft.):	12
Screen Length:	33 - 43				Parameters Measured With:		YSI 18D102399		
Water Column height (ft.):	9.9		Total Purge Volume (gallons):		2.1		Purge Method:		Low Flow
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:		300		
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:		HDPE
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	38	Total Pump + Tubing + Flow Cell Vol.:			200
Well Casing Vol. (gallons):	1.62			Sandpack Vol. (gal.):		1.47	Total Well Volume (gal.):		3.09
Depth of pump inlet (BTOC):	38			Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
11:21	0	0	33.1	14.5	6.55	12.57	238.7	0.141		184	
11:24	3	0.2	33.1	14.5	6.44	11.62	241.2	0.141		155	
11:27	3	0.2	33.1	14.5	6.11	10.73	255.3	0.143		47.6	
11:30	3	0.2	33.1	14.4	6.13	10.55	251.7	0.137		12.2	
11:33	3	0.2	33.1	14.4	6.16	10.48	249	0.137		8.12	
11:36	3	0.2	33.1	14.4	6.17	10.27	238.7	0.143		7.9	
11:41	5	0.4	33.1	14.4	6.17	10.39	240.2	0.143		6.4	
11:45	4	0.3	33.1	14.4	6.17	10.4	240.9	0.143		4.2	
11:50	5	0.4	33.11	14.4	6.17	10.42	242.1	0.143		4.01	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
11:50	5	0.4	33.11	14.4	6.17	10.42	242.1	0.143	0	4.01	0

Sample Type:	Existing MW	Sample Number:	IRP5-MW01-01		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	17-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:	Submitted 1.5 bottles had to sample due to flight conflict					Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/25/2020
Well ID:	MW-1	Samplers:	Matt Muto				

Purge Start Date:	06/25/2020		Time:	12:51	Purge End Date:	06/25/2020		Time:	13:10
Weather:	Wind:	4 mph, NW	Precipitation:	None		Sky:	Sunny	Temperature °F:	75
Well Labeled:	Yes		Well Secured:	Yes		Comments:			

PID SN:		Well Headspace (PID mu):	0		Odor:	none	
Water Level Instrument:	Heron			Serial No.:	023214		
SWL beginning (BTOC):	14.65	WL After pump install (BTOC):	14.65		Max Drawdown (in.):	0	
Well Casing (inches):	1	Borehole diameter:	4		Sandpack length (ft.):	12	
Screen Length:	12.01 - 22.01	Parameters Measured With:	YSI 18D102399				
Water Column height (ft.):	7.36	Total Purge Volume (gallons):	1		Purge Method:	Low Flow	
Max Purge Rate mL/min.:	200	Sampling Flow Rate mL/min:					
Pump Type:	submersible	Pump Vol.:	50		Tubing Material:	HDPE	
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	18	Total Pump + Tubing + Flow Cell Vol.:	100
Well Casing Vol. (gallons):	0.3	Sandpack Vol. (gal.):	0.4		Total Well Volume (gal.):	0.7	
Depth of pump inlet (BTOC):	18	Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
12:51	0	0	14.65	13.3	5.89	7.46	310.4	0.043		128	
12:55	4	0.2	14.65	13	5.24	6.45	317.5	0.047		8.2	
12:59	4	0.2	14.65	13.3	5.25	6.05	308.7	0.047		0.52	
13:03	4	0.2	14.65	13.3	5.29	6.14	308.5	0.046		0.02	
13:07	4	0.2	14.65	13	5.41	6.54	299.8	0.046		0.02	
13:10	3	0.2	14.65	13	5.39	6.64	300.9	0.045		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
13:10	3	0.2	14.65	13	5.39	6.64	300.9	0.045	0	0.02	0

Sample Type:	Existing MW	Sample Number:	MW-1-01	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	25-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	dumped on				
Comments:				Drum No.:	
Prepared by:	Matt Muto				
Date Prepared:	25-Jun-2020				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/17/2020
Well ID:	SW-8	Samplers:	Matt Muto				

Purge Start Date:	06/22/2020		Time:	08:29	Purge End Date:	06/22/2020		Time:	09:18
Weather:	Wind:	10 mph, NE	Precipitation:	None		Sky:	Sunny	Temperature °F:	75
Well Labeled:	Yes		Well Secured:	Yes		Comments:			

PID SN:		Well Headspace (PID mu):	0	Odor:	none		
Water Level Instrument:	Heron			Serial No.:	023214		
SWL beginning (BTOC):	23.3	WL After pump install (BTOC):	23.3	Max Drawdown (in.):	0		
Well Casing (inches):	2	Borehole diameter:	4	Sandpack length (ft.):	12		
Screen Length:	42 - 52	Parameters Measured With:	YSI 18D102399				
Water Column height (ft.):	28.9	Total Purge Volume (gallons):	3.3	Purge Method:	Low Flow		
Max Purge Rate mL/min.:	200	Sampling Flow Rate mL/min:	200				
Pump Type:	peristaltic	Pump Vol.:	100	Tubing Material:	HDPE		
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	47	Total Pump + Tubing + Flow Cell Vol.:	200
Well Casing Vol. (gallons):	4.72	Sandpack Vol. (gal.):	0.54	Total Well Volume (gal.):	5.26		
Depth of pump inlet (BTOC):	47	Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
08:29	0	0	23.3	13.9	5.63	0.99	291.7	0.054		93.5	
08:32	3	0.1	23.3	14.1	5.49	0.49	290.3	0.054		66.7	
08:35	3	0.2	23.3	14.1	5.27	0.5	298.9	0.054		67.9	
08:38	3	0.2	23.3	14.1	5.3	0.42	293.3	0.056		65.5	
08:42	4	0.2	23.3	14.3	5.53	0.33	275.4	0.062		52.1	
08:45	3	0.2	23.3	14.3	5.58	0.29	270.7	0.066		48.6	
08:48	3	0.2	23.3	14.7	5.61	0.27	265.4	0.067		45.5	
08:51	3	0.2	23.3	14.6	5.68	0.25	259	0.071		44.8	
08:54	3	0.2	23.3	14.6	5.73	0.32	254.9	0.072		45.7	
08:57	3	0.2	23.3	14.6	5.75	0.21	248.5	0.083		39.7	
09:00	3	0.2	23.3	14.6	5.78	0.2	242.9	0.084		34.6	
09:03	3	0.2	23.3	14.6	5.82	0.19	235.7	0.085		34.7	

Low-Flow Groundwater Purge And Sample Log

09:06	3	0.2	23.3	14.1	5.83	0.19	228.8	0.089		25	
09:09	3	0.2	23.3	14.1	5.89	0.14	205.1	0.087		25.2	
09:12	3	0.2	23.3	14.1	5.89	0.14	202.1	0.087		24.2	
09:15	3	0.2	23.3	14.1	5.9	0.15	201.1	0.087		22.1	
09:18	7	0.4	23.3	14.1	5.9	0.14	200.1	0.087		20.1	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (^{o}C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
09:18	7	0.4	23.3	14.1	5.9	0.14	200.1	0.087	0	20.1	0

Sample Type:	Existing MW	Sample Number:	SW-8-01	Sample Equipment:	peristaltic and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	16-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	55-gallon				
Comments:				Drum No.:	2
Prepared by:	Matt Muto				
Date Prepared:	22-Jun-2020				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/17/2020
Well ID:	SW-9	Samplers:	Matt Muto				

Purge Start Date:	06/17/2020		Time:	09:38	Purge End Date:	06/17/2020	Time:	10:14	
Weather:	Wind:	10 mph, NE	Precipitation:	None	Sky:	Sunny	Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0		Odor:	none	
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	21.4		WL After pump install (BTOC):		21.4		Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	42 - 52		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	30.8		Total Purge Volume (gallons):		2.4		Purge Method:	Low Flow	
Max Purge Rate mL/min.:	200		Sampling Flow Rate mL/min:		500				
Pump Type:	peristaltic		Pump Vol.:		100		Tubing Material:	HDPE	
Flow Cell Vol.:	100	Vol./ft.: 0	Total ft.:	47	Total Pump + Tubing + Flow Cell Vol.:		200		
Well Casing Vol. (gallons):	5.03		Sandpack Vol. (gal.):		0.45	Total Well Volume (gal.):		5.48	
Depth of pump inlet (BTOC):	47		Rationale:						

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
09:38	0	0	21.4	15.4	5.46	0.35	212.8	0.061		29.3	
09:41	3	0.2	21.4	15.6	5.36	0.25	208.2	0.061		27.6	
09:44	3	0.2	21.4	14.5	5.27	0.18	204	0.06		87	
09:47	3	0.2	21.4	14.7	5.27	0.16	195.8	0.06		40	
09:50	3	0.2	21.4	14.8	5.3	0.18	183.6	0.061		25.8	
09:53	3	0.2	21.4	15	5.23	0.22	176.5	0.062		25.6	
09:56	3	0.2	21.4	15.4	5.33	0.2	165.2	0.063		18.4	
09:59	3	0.2	21.4	14.9	5.41	0.18	151.2	0.062		18.1	
10:02	3	0.2	21.4	14.8	5.37	0.17	151.9	0.063		17.3	
10:05	3	0.2	21.4	14.8	5.35	0.15	148.7	0.063		17.9	
10:08	3	0.2	21.4	14.8	5.36	0.14	145.3	0.063		18.6	
10:11	3	0.2	21.4	14.8	5.38	0.14	142.6	0.063		18.3	

Low-Flow Groundwater Purge And Sample Log

10:14	3	0.2	21.4	14.9	5.39	0.14	139.7	0.064		18.6	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
10:14	3	0.2	21.4	14.9	5.39	0.14	139.7	0.064	0	18.6	0

Sample Type:	Existing MW	Sample Number:	SW-9-01		Sample Equipment:	peristaltic and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	17-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	3
Prepared by:	Matt Muto						
Date Prepared:	17-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/16/2020		
Well ID:	GB-OB-MW01		Samplers:	Matt Muto							
Purge Start Date:	06/16/2020		Time:	18:00	Purge End Date:	06/16/2020		Time:	18:30		
Weather:	Wind:	10 mph, NE	Precipitation:	None		Sky:	Sunny		Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	33.61		WL After pump install (BTOC):			33.61			Max Drawdown (in.):	24.1	
Well Casing (inches):	2		Borehole diameter:			2			Sandpack length (ft.):	12	
Screen Length:	38 - 48		Parameters Measured With:			YSI 18D102399					
Water Column height (ft.):	14.98		Total Purge Volume (gallons):			2			Purge Method:	Low Flow	
Max Purge Rate mL/min.:			200		Sampling Flow Rate mL/min:				200		
Pump Type:	submersible		Pump Vol.:					Tubing Material:	HDPE		
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	43	Total Pump + Tubing + Flow Cell Vol.:			100		
Well Casing Vol. (gallons):	2.44			Sandpack Vol. (gal.):		1.23	Total Well Volume (gal.):		3.67		
Depth of pump inlet (BTOC):	43			Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
18:00	0	0	33.61	13.7	6.98	9.81	216.6	0.21		129	
18:03	3	0.2	33.61	13.9	5.9	9.56	256.1	0.187		97.2	
18:06	3	0.2	33.61	14	5.86	9.28	252.7	0.18		66.7	
18:09	3	0.2	33.61	14.2	6.03	9.47	239.6	0.165		43.6	
18:12	3	0.2	31.6	14.4	6.33	9.44	227.8	0.162		41.2	
18:15	3	0.2	33.61	14.7	6.23	9.09	226.9	0.177		33.5	
18:18	3	0.2	33.61	13.9	6.11	9.5	227.1	0.167		9.22	
18:21	3	0.2	33.61	14	6.12	9.41	240.5	0.179		7.52	
18:24	3	0.2	33.61	13.9	6.11	9.37	240.7	0.174		7.15	
18:27	3	0.2	33.61	13.9	6.11	9.37	240	0.172		6.55	

Low-Flow Groundwater Purge And Sample Log

18:30	3	0.2	33.61	13.8	6.04	9.37	247	0.171		5.5	

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
18:30	3	0.2	33.61	13.8	6.04	9.37	247	0.171	0	5.5	0

Sample Type:	MW	Sample Number:	GB-OB-MW01-01			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	22-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	3
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/17/2020		
Well ID:	GB-OB-MW02		Samplers:	Matt Muto							
Purge Start Date:	06/17/2020		Time:	18:02	Purge End Date:		06/17/2020	Time:	18:32		
Weather:	Wind:	15 mph, N	Precipitation:	None			Sky:	Sunny	Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes			Comments:				
PID SN:			Well Headspace (PID mu):				0		Odor:	none	
Water Level Instrument:	Heron						Serial No.:	023214			
SWL beginning (BTOC):	34.05		WL After pump install (BTOC):				34.05		Max Drawdown (in.):	11.9	
Well Casing (inches):	2				Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	50 - 60				Parameters Measured With:			YSI 18D102399			
Water Column height (ft.):	25.55		Total Purge Volume (gallons):			2		Purge Method:		Low Flow	
Max Purge Rate mL/min.:			250		Sampling Flow Rate mL/min:			250			
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:		HDPE		
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	55		Total Pump + Tubing + Flow Cell Vol.:			200	
Well Casing Vol. (gallons):	4.17			Sandpack Vol. (gal.):		0.71	Total Well Volume (gal.):			4.88	
Depth of pump inlet (BTOC):	55			Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
18:02	0	0	34.05	13.3	6.32	11.39	265.5	0.213		321	
18:05	3	0.2	34.05	13.4	6.34	9.05	261.7	0.211		181	
18:08	3	0.2	34.05	13.5	6.35	8.83	258.5	0.208		24.5	
18:11	3	0.2	34.05	13.5	6.34	8.73	258.3	0.207		19.5	
18:14	3	0.2	34.05	13.5	6.29	8.72	261	0.206		14.4	
18:17	3	0.2	34.05	13.5	6.27	8.73	260.8	0.205		12.6	
18:20	3	0.2	34.05	13.5	6.31	8.63	258	0.207		8.36	
18:23	3	0.2	34.05	13.5	6.34	8.68	256.4	0.204		8.18	
18:26	3	0.2	34.05	13.5	6.35	8.69	255.3	0.204		5.04	
18:29	3	0.2	35.04	13.5	6.36	8.69	254.4	0.203		5.64	

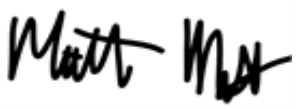
Low-Flow Groundwater Purge And Sample Log

18:32	3	0.2	35.04	13.5	6.36	8.69	254.3	0.204		5.08	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
18:32	3	0.2	35.04	13.5	6.36	8.69	254.3	0.204	0	5.08	0

Sample Type:	MW	Sample Number:	GB-OB-MW02-01		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	22-Jun-2020	By: Matt Muto	Discharge Water Dispostion:		55-gallon
Comments:					Drum No.:	3	
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/16/2020		
Well ID:	GB-OB-MW03		Samplers:	Matt Muto							
Purge Start Date:	06/16/2020		Time:	12:54	Purge End Date:		06/16/2020	Time:	13:38		
Weather:	Wind:	10 mph, NE	Precipitation:	None		Sky:	Sunny	Temperature °F:	75		
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0		Odor:	none		
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	14.22		WL After pump install (BTOC):			14.22		Max Drawdown (in.):	0		
Well Casing (inches):	2		Borehole diameter:			4		Sandpack length (ft.):	12		
Screen Length:	65 - 75		Parameters Measured With:			YSI 18D102399					
Water Column height (ft.):	58.48		Total Purge Volume (gallons):		2.6		Purge Method:	Low Flow			
Max Purge Rate mL/min.:			200		Sampling Flow Rate mL/min:		200				
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:	HDPE			
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	70	Total Pump + Tubing + Flow Cell Vol.:		100			
Well Casing Vol. (gallons):	9.54		Sandpack Vol. (gal.):		-0.9	Total Well Volume (gal.):		8.64			
Depth of pump inlet (BTOC):	70		Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
12:54	0	0	14.22	13.3	5.67	7.17	272.5	0.304		89.5	
12:59	5	0.3	14.22	13.5	5.3	6.94	290.8	0.311		58.4	
13:02	3	0.2	14.22	13.6	5.29	6.85	289.5	0.311		42.2	
13:06	4	0.2	14.22	13.5	5.39	6.71	281.9	0.31		38.1	
13:09	3	0.2	14.22	13.5	5.45	6.51	277.2	0.309		39.9	
13:13	4	0.2	14.22	13.5	5.48	6.52	273.7	0.308		39.7	
13:16	3	0.2	14.22	13.4	5.49	6.48	272.7	0.309		34.9	
13:20	4	0.2	14.22	13.4	5.5	6.63	270.8	0.309		26.2	
13:23	3	0.2	14.22	13.4	5.5	6.67	270.2	0.31		24.9	
13:26	3	0.2	14.22	13.4	5.5	6.79	268.3	0.31		24.4	

Low-Flow Groundwater Purge And Sample Log

13:30	4	0.2	14.22	13.5	5.51	6.71	266.4	0.31		24.1	
13:33	3	0.2	14.22	13.5	5.52	6.73	265.2	0.311		19.2	
13:35	2	0.1	14.22	13.5	5.52	6.71	264.1	0.311		17.1	
13:38	3	0.2	14.22	13.4	5.53	6.75	262.7	0.31		18.8	

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (^{o}C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
13:38	3	0.2	14.22	13.4	5.53	6.75	262.7	0.31	0	18.8	0

Sample Type:	MW	Sample Number:	GB-OB-MW03-01			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	22-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:	GB-16062020-FB					Drum No.:	3
Prepared by:							
Date Prepared:	22-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/15/2020		
Well ID:	GB-OB-MW04		Samplers:	Matt Muto							
Purge Start Date:	06/15/2020		Time:	17:58	Purge End Date:		06/15/2020	Time:	18:48		
Weather:	Wind:	2 mph, N	Precipitation:		None		Sky:	Sunny	Temperature °F:	65	
Well Labeled:	Yes		Well Secured:		Yes		Comments:				
PID SN:			Well Headspace (PID mu):				0		Odor:	none	
Water Level Instrument:	Heron						Serial No.:	023214			
SWL beginning (BTOC):	22.79		WL After pump install (BTOC):				22.79		Max Drawdown (in.):	0	
Well Casing (inches):	2				Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	38 - 48				Parameters Measured With:			YSI 18D102399			
Water Column height (ft.):	25.01		Total Purge Volume (gallons):			3.3		Purge Method:	Low Flow		
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:			300			
Pump Type:	peristaltic		Pump Vol.:		100			Tubing Material:	HDPE		
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	43		Total Pump + Tubing + Flow Cell Vol.:		200		
Well Casing Vol. (gallons):	4.08			Sandpack Vol. (gal.):		0.73		Total Well Volume (gal.):	4.81		
Depth of pump inlet (BTOC):	43			Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
17:58	0	0	22.8	13.5	5.35	8.5	101	0.033		222	
18:03	5	0.3	22.8	13.4	5.31	9.17	128	0.033		208	
18:08	5	0.3	22.8	13.1	5.2	9.56	155.5	0.032		127	
18:13	5	0.3	22.8	13.1	6.61	9.77	216.7	0.034		66.8	
18:20	7	0.5	22.8	13	5.68	9.52	269.5	0.034		44.7	
18:25	5	0.3	22.8	13.1	5.08	9.33	279.7	0.034		35.2	
18:28	3	0.2	22.8	13.2	4.96	9.43	275.4	0.033		17.1	
18:32	4	0.3	22.8	13.1	5.01	9.39	267.9	0.033		11.1	
18:35	3	0.2	22.8	13.1	5.05	9.43	263.3	0.033		9.82	
18:38	3	0.2	22.8	13.1	5.03	9.45	263.7	0.033		6.49	
18:41	3	0.2	22.8	13	5.05	9.46	260.7	0.033		7.71	

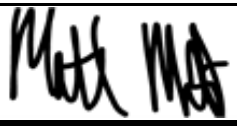
Low-Flow Groundwater Purge And Sample Log

18:45	4	0.3	22.8	13	5.06	9.56	261.3	0.033		7.42	
18:48	3	0.2	22.8	12.9	5.04	9.58	261.4	0.033		7.77	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
18:48	3	0.2	22.8	12.9	5.04	9.58	261.4	0.033	0	7.77	0

Sample Type:	MW	Sample Number:	GB-OB-MW04-01		Sample Equipment:	peristaltic and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:	GB-15062020-EB	
Sample Equipment Decon:		Date:	15-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:	FB collected here					Drum No.:	3
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient/Upgradient (Off Base)	Date:	06/15/2020				
Well ID:	GB-OB-MW05	Samplers:	Matt Muto								
Purge Start Date:	06/15/2020	Time:	16:29	Purge End Date:	06/15/2020	Time:	17:25				
Weather:	Wind:	5 mph, N	Precipitation:	None	Sky:	Sunny	Temperature °F:	70			
Well Labeled:	Yes	Well Secured:	Yes	Comments:							
PID SN:		Well Headspace (PID mu):		0	Odor:	none					
Water Level Instrument:	Heron			Serial No.:	023214						
SWL beginning (BTOC):	12.35	WL After pump install (BTOC):		12.35	Max Drawdown (in.):	0					
Well Casing (inches):	1	Borehole diameter:		2	Sandpack length (ft.):	12					
Screen Length:	87 - 97	Parameters Measured With:		YSI 18D102399							
Water Column height (ft.):	84.97	Total Purge Volume (gallons):		2.4	Purge Method:	Low Flow					
Max Purge Rate mL/min.:		150	Sampling Flow Rate mL/min:		150						
Pump Type:	peristaltic	Pump Vol.:		100	Tubing Material:	HDPE					
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	92	Total Pump + Tubing + Flow Cell Vol.:		150			
Well Casing Vol. (gallons):	3.47	Sandpack Vol. (gal.):		-0.55	Total Well Volume (gal.):			2.92			
Depth of pump inlet (BTOC):	92	Rationale:									

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
16:29	0	0	12.35	13.5	8.9	5.33	303.9	0.051		210	
16:34	5	0.2	12.35	13.1	6.78	3.77	388.5	0.051		204	
16:38	4	0.2	12.35	13.4	6.54	3.04	395.4	0.051		149	
16:43	5	0.2	12.35	13.1	6.6	2.77	386.9	0.051		68.3	
16:49	6	0.2	12.35	13.2	6.44	2.62	388.8	0.051		63.9	
16:53	4	0.2	12.35	13.2	6.36	2.53	389.4	0.051		48.4	
16:57	4	0.2	12.35	13.5	6.31	2.51	388.6	0.051		41.7	
17:02	5	0.2	12.35	13.7	6.25	2.45	389.2	0.052		40	
17:07	5	0.2	12.35	13.8	6.17	2.41	390.4	0.052		32.9	
17:12	5	0.2	12.35	13.3	6.17	2.49	391	0.051		31.3	
17:16	4	0.2	12.35	13.2	6.1	2.47	394.9	0.051		31.7	

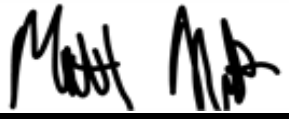
Low-Flow Groundwater Purge And Sample Log

17:20	4	0.2	12.35	13.5	6.11	2.48	393.8	0.051		33.9	
17:25	5	0.2	12.35	13.5	6.13	2.46	391.9	0.051		32.8	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (^{o}C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
17:25	5	0.2	12.35	13.5	6.13	2.46	391.9	0.051	0	32.8	0

Sample Type:	MW	Sample Number:	GB-OB-MW05-01			Sample Equipment:	peristaltic and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	15-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/17/2020		
Well ID:	GB-OB-MW06		Samplers:	Matt Muto							
Purge Start Date:	06/17/2020		Time:	15:06	Purge End Date:		06/17/2020	Time:	15:55		
Weather:	Wind:	10 mph, S	Precipitation:		None		Sky:	Sunny	Temperature °F:	75	
Well Labeled:	Yes		Well Secured:		Yes		Comments:				
PID SN:			Well Headspace (PID mu):				0		Odor:	none	
Water Level Instrument:	Heron						Serial No.:	023214			
SWL beginning (BTOC):	5.02		WL After pump install (BTOC):				5.02		Max Drawdown (in.):	0	
Well Casing (inches):	2				Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	25 - 35				Parameters Measured With:			YSI 18D102399			
Water Column height (ft.):	32.83		Total Purge Volume (gallons):			3		Purge Method:	Low Flow		
Max Purge Rate mL/min.:			200		Sampling Flow Rate mL/min:			200			
Pump Type:	peristaltic		Pump Vol.:		100			Tubing Material:	HDPE		
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	30		Total Pump + Tubing + Flow Cell Vol.:		200		
Well Casing Vol. (gallons):	5.36			Sandpack Vol. (gal.):		0.35	Total Well Volume (gal.):		5.71		
Depth of pump inlet (BTOC):	30			Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
15:06	0	0	5.02	14.8	5.77	11.35	311.8	0.055		96.6	
15:09	3	0.2	5.02	14.8	4.93	9.05	323.7	0.053		76.2	
15:12	3	0.2	5.02	14.6	4.59	9.08	340.8	0.053		62.2	
15:16	4	0.2	5.02	14.7	4.59	8.99	339.4	0.052		56.7	
15:20	4	0.2	5.02	14.7	4.71	8.96	330.4	0.052		53.1	
15:23	3	0.2	5.02	14.5	4.8	9.01	325.4	0.052		46.8	
15:27	4	0.2	5.02	14.6	4.9	9.01	318.4	0.051		39.5	
15:30	3	0.2	5.02	14.6	4.9	9.02	318.1	0.051		39.3	
15:33	3	0.2	5.02	14.7	4.93	8.88	315.5	0.051		31.8	
15:36	3	0.2	5.02	14.7	4.95	8.84	314.6	0.051		29.4	

Low-Flow Groundwater Purge And Sample Log

15:39	3	0.2	5.02	14.6	4.96	8.84	313.8	0.051		28.7	
15:43	4	0.2	5.02	14.7	4.97	8.82	312.7	0.051		20.4	
15:46	3	0.2	5.02	14.8	4.99	8.78	311.6	0.05		20.1	
15:49	3	0.2	5.02	14.7	4.98	8.83	311.8	0.051		19.7	
15:52	3	0.2	5.02	14.8	4.99	8.83	311.3	0.051		19.4	
15:55	3	0.2	5.02	14.8	5.01	8.77	309.2	0.051		19.1	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (^{o}C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
15:55	3	0.2	5.02	14.8	5.01	8.77	309.2	0.051	0	19.1	0

Sample Type:	MW	Sample Number:	GB-OB-MW06-01		Sample Equipment:	peristaltic and HDPE	
Duplicate:	GB-OB-MW96-01				MS/MSD:	MS/MSD-GB-OB-MW96-01	
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	17-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	3
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient/Upgradient (Off Base)	Date:	06/18/2020
Well ID:	GB-OB-MW07	Samplers:	Matt Muto				

Purge Start Date:	06/18/2020		Time:	13:31	Purge End Date:	06/18/2020	Time:	14:13	
Weather:	Wind:	10 mph, W	Precipitation:	None	Sky:	Sunny	Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0		Odor:	none	
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	40.18		WL After pump install (BTOC):		40.18		Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	73 - 83		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	43.54		Total Purge Volume (gallons):		2.9		Purge Method:	Low Flow	
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:		300		
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:	HDPE	
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	78	Total Pump + Tubing + Flow Cell Vol.:		200	
Well Casing Vol. (gallons):	7.11			Sandpack Vol. (gal.):	-0.17	Total Well Volume (gal.):		6.94	
Depth of pump inlet (BTOC):	78			Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
13:31	0	0	40.18	12.5	6.47	12.96	301.9	0.032		811	
13:33	2	0.2	40.18	12.9	4.96	10.66	335.4	0.039		354	
13:36	3	0.2	40.18	13	5.05	10.61	326.9	0.039		212	
13:39	3	0.2	40.18	13.2	5.08	10.47	322.2	0.038		144	
13:43	4	0.3	40.18	13.1	5.2	10.46	314.7	0.038		128	
13:46	3	0.2	40.18	13.1	5.22	10.49	311.9	0.037		65.1	
13:49	3	0.2	40.18	13.2	5.24	10.38	308.7	0.038		59.6	
13:52	3	0.2	40.18	13.2	5.23	10.35	308.1	0.038		56.8	
13:55	3	0.2	40.18	13.2	5.23	10.38	306.7	0.038		42.3	
13:58	3	0.2	40.18	13.1	5.25	10.39	305.1	0.039		34.5	

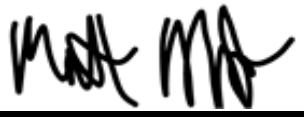
Low-Flow Groundwater Purge And Sample Log

14:01	3	0.2	40.18	13.2	5.25	10.34	304.3	0.039		33.7	
14:04	3	0.2	40.18	13.1	5.26	10.34	303.8	0.039		30.9	
14:07	3	0.2	40.18	13.1	5.28	10.28	302.4	0.039		30.6	
14:10	3	0.2	40.18	13.2	5.29	10.27	301.7	0.038		23.8	
14:13	3	0.2	40.18	13.2	5.27	10.37	302.8	0.039		25.4	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (^{o}C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
14:13	3	0.2	40.18	13.2	5.27	10.37	302.8	0.039	0	25.4	0

Sample Type:	MW	Sample Number:	GB-OB-MW07-01			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	18-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:	FB collected here					Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/17/2020		
Well ID:	GB-OB-MW08		Samplers:	Matt Muto							
Purge Start Date:	06/17/2020		Time:	16:53	Purge End Date:		06/17/2020	Time:	17:25		
Weather:	Wind:	15 mph, N	Precipitation:		None		Sky:	Sunny	Temperature °F:	76	
Well Labeled:	Yes		Well Secured:		Yes		Comments:				
PID SN:			Well Headspace (PID mu):				0		Odor:	none	
Water Level Instrument:	Heron						Serial No.:	023214			
SWL beginning (BTOC):	33.95		WL After pump install (BTOC):				33.95		Max Drawdown (in.):	12	
Well Casing (inches):	2		Borehole diameter:				4		Sandpack length (ft.):	12	
Screen Length:	53 - 63		Parameters Measured With:				YSI 18D102399				
Water Column height (ft.):	27.3		Total Purge Volume (gallons):			2.2		Purge Method:	Low Flow		
Max Purge Rate mL/min.:			250		Sampling Flow Rate mL/min:						
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:	HDPE			
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	58		Total Pump + Tubing + Flow Cell Vol.:		200		
Well Casing Vol. (gallons):	4.46		Sandpack Vol. (gal.):		0.62		Total Well Volume (gal.):		5.08		
Depth of pump inlet (BTOC):	58		Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
16:53	0	0	33.95	13.6	5.95	8.84	269.4	0.161		23.8	
16:57	4	0.3	33.95	13.6	5.92	8.82	271.2	0.161		23.9	
17:00	3	0.2	33.95	13.6	6.04	8.71	265.4	0.162		23.9	
17:04	4	0.3	33.95	13.6	6.08	8.68	263.6	0.161		16.4	
17:07	3	0.2	32.95	13.5	6.11	8.58	262.8	0.162		9.4	
17:10	3	0.2	32.95	13.6	6.12	8.59	262.2	0.162		7.83	
17:13	3	0.2	32.95	13.6	6.13	8.56	262.2	0.163		7.39	
17:16	3	0.2	32.95	13.6	6.14	8.6	261.5	0.162		5.44	
17:19	3	0.2	32.95	13.6	6.15	8.48	261.1	0.162		3.23	
17:22	3	0.2	32.95	13.6	6.15	8.51	260.7	0.162		2.87	

Low-Flow Groundwater Purge And Sample Log

17:25	3	0.2	32.95	13.6	6.16	8.49	260.7	0.163		2.56	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (^{o}C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
17:25	3	0.2	32.95	13.6	6.16	8.49	260.7	0.163	0	2.56	0

Sample Type:	MW	Sample Number:	GB-OB-MW08-01	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	22-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	55-gallon				
Comments:	GB-17062020-FB			Drum No.:	3
Prepared by:	Matt Muto				
Date Prepared:	22-Jun-2020				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Upgradient On Base Boundary	Date:	06/19/2020				
Well ID:	GB-BB-MW01	Samplers:	Matt Muto								
Purge Start Date:	06/19/2020	Time:	10:01	Purge End Date:	06/19/2020	Time:	10:33				
Weather:	Wind:	9 mph, W	Precipitation:	None	Sky:	Sunny	Temperature °F:	78			
Well Labeled:	Yes	Well Secured:	Yes	Comments:							
PID SN:		Well Headspace (PID mu):		0	Odor:	none					
Water Level Instrument:	Heron			Serial No.:	023214						
SWL beginning (BTOC):	39.6	WL After pump install (BTOC):		39.6	Max Drawdown (in.):	0					
Well Casing (inches):	2	Borehole diameter:		4	Sandpack length (ft.):	12					
Screen Length:	44 - 54	Parameters Measured With:		YSI 18D102399							
Water Column height (ft.):	14.19	Total Purge Volume (gallons):		2.2	Purge Method:	Low Flow					
Max Purge Rate mL/min.:		300	Sampling Flow Rate mL/min:								
Pump Type:	submersible	Pump Vol.:		100	Tubing Material:	HDPE					
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	49	Total Pump + Tubing + Flow Cell Vol.:		200			
Well Casing Vol. (gallons):	2.32	Sandpack Vol. (gal.):		1.26	Total Well Volume (gal.):			3.58			
Depth of pump inlet (BTOC):	49	Rationale:									

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
10:01	0	0	39.6	14.3	6.32	11.36	258.3	0.188		443	
10:04	3	0.2	39.6	14.5	6.05	9.82	263.3	0.193		196	
10:07	3	0.2	39.6	14.8	6.16	9.47	255.5	0.191		89.2	
10:10	3	0.2	39.6	15	6.21	9.34	252	0.19		43.3	
10:13	3	0.2	39.6	15	6.22	9.34	251.5	0.19		30.9	
10:16	3	0.2	39.6	15.2	6.24	9.23	249.5	0.19		14.7	
10:19	3	0.2	39.6	15	6.24	9.42	249.5	0.189		8.23	
10:22	3	0.2	39.6	14.8	6.24	9.43	249.2	0.192		8.6	
10:26	4	0.3	39.6	14.8	6.24	9.34	248.2	0.192		7.3	
10:29	3	0.2	39.6	14.8	6.24	9.32	246.7	0.192		8.31	
10:33	4	0.3	39.6	14.9	6.25	9.29	245.1	0.191		7.21	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
10:33	4	0.3	39.6	14.9	6.25	9.29	245.1	0.191	0	7.21	0

Sample Type:	MW	Sample Number:	GB-BB-MW01-01	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	22-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	55-gallon				
Comments:				Drum No.:	3
Prepared by:	Matt Muto				
Date Prepared:	22-Jun-2020				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Upgradient On Base Boundary	Date:	06/19/2020		
Well ID:	GB-BB-MW02		Samplers:	Matt Muto							
Purge Start Date:	06/19/2020		Time:	08:52	Purge End Date:		06/19/2020	Time:	09:31		
Weather:	Wind:	9 mph, N	Precipitation:	None		Sky:	Sunny		Temperature °F:	78	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	40.2		WL After pump install (BTOC):			40.2			Max Drawdown (in.):	0	
Well Casing (inches):	2				Borehole diameter:	4			Sandpack length (ft.):	12	
Screen Length:	46 - 56				Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	16.7		Total Purge Volume (gallons):		2.6				Purge Method:	Low Flow	
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:						
Pump Type:	submersible		Pump Vol.:		100		Tubing Material:		HDPE		
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	51	Total Pump + Tubing + Flow Cell Vol.:			200		
Well Casing Vol. (gallons):	2.73			Sandpack Vol. (gal.):	1.14	Total Well Volume (gal.):			3.87		
Depth of pump inlet (BTOC):	51			Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
08:52	0	0	40.2	14.2	6.3	14.01	259.7	0.207		151	
08:55	3	0.2	40.2	14.3	6.24	9.89	258.1	0.233		78.5	
08:58	3	0.2	40.2	14.3	6.24	9.6	257	0.244		61.9	
09:01	3	0.2	40.2	14.3	6.24	9.4	255.8	0.248		57.9	
09:04	3	0.2	40.2	14.4	6.21	9.29	256.7	0.252		49.9	
09:07	3	0.2	40.2	14.3	6.2	9.29	256.6	0.257		45.1	
09:10	3	0.2	40.2	14.3	6.2	9.22	256.1	0.259		38.4	
09:13	3	0.2	40.2	14.4	6.2	9.2	255	0.252		28.5	
09:16	3	0.2	40.2	14.4	6.21	9.14	254.5	0.257		24.4	
09:19	3	0.2	40.2	14.4	6.21	9.11	253.6	0.253		17.5	
09:22	3	0.2	40.2	14.5	6.22	9.07	251.2	0.249		12	
09:25	3	0.2	40.2	14.5	6.23	9.09	250.6	0.244		7.95	

Low-Flow Groundwater Purge And Sample Log

09:28	3	0.2	40.2	14.5	6.22	9.13	251	0.252		7.49	
09:31	3	0.2	40.2	14.4	6.22	9.15	250.8	0.257		6.24	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
09:31	3	0.2	40.2	14.4	6.22	9.15	250.8	0.257	0	6.24	0

Sample Type:	MW	Sample Number:	GB-BB-MW02-01			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	22-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	55-gallon
Comments:						Drum No.:	2
Prepared by:	Matt Muto						
Date Prepared:	22-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	1-Former FTA	Date:	06/30/2020
Well ID:	GB-IRP7-MW03	Samplers:	Matt Muto				

Purge Start Date:	06/30/2020		Time:	11:28	Purge End Date:	06/30/2020	Time:	12:02	
Weather:	Wind:	6 mph, SW	Precipitation:	None	Sky:	Sunny	Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0		Odor:	none	
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	37.97		WL After pump install (BTOC):		37.97		Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	61.64 - 71.64		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	33.67		Total Purge Volume (gallons):		2.4		Purge Method:	Low Flow	
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:				
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:	HDPE	
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	66	Total Pump + Tubing + Flow Cell Vol.:		100	
Well Casing Vol. (gallons):	5.49		Sandpack Vol. (gal.):		0.31	Total Well Volume (gal.):		5.8	
Depth of pump inlet (BTOC):	66		Rationale:						

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
11:28	0	0	37.97	13.5	5.51	9.98	317.2	0.051		197	
11:31	3	0.2	37.97	13.5	5.63	9.56	309.4	0.052		143	
11:35	4	0.3	37.97	13.9	5.74	9.03	300.3	0.053		93.4	
11:38	3	0.2	37.97	13.9	5.85	9.08	296	0.053		26.9	
11:41	3	0.2	37.97	13.9	5.77	9.38	301.8	0.053		23.8	
11:44	3	0.2	37.97	13.6	5.75	9.32	302.9	0.052		24.4	
11:48	4	0.3	37.97	13.5	5.73	9.29	299.6	0.052		22.3	
11:51	3	0.2	37.97	13.5	5.73	9.26	298.5	0.052		24.6	
11:54	3	0.2	37.97	13.5	5.74	9.31	298.2	0.052		22.8	
11:57	3	0.2	37.97	13.5	5.74	9.3	298.6	0.052		18.7	
11:59	2	0.2	37.97	13.5	5.73	9.27	299	0.052		18.2	
12:02	3	0.2	37.97	13.5	5.74	9.28	298.6	0.052		18	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
12:02	3	0.2	37.97	13.5	5.74	9.28	298.6	0.052	0	18	0

Sample Type:	MW	Sample Number:	GB-IRP7-MW03-02		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	30-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	1-Former FTA	Date:	06/30/2020
Well ID:	GB-IRP7-MW04	Samplers:	Matt Muto				

Purge Start Date:	06/30/2020		Time:	10:44	Purge End Date:	06/30/2020		Time:	11:08
Weather:	Wind:	4 mph, SW	Precipitation:	None		Sky:	Sunny	Temperature °F:	79
Well Labeled:	Yes		Well Secured:	Yes		Comments:			
PID SN:			Well Headspace (PID mu):			0		Odor:	none
Water Level Instrument:	Heron					Serial No.:	023214		
SWL beginning (BTOC):	35.73		WL After pump install (BTOC):			35.73		Max Drawdown (in.):	0
Well Casing (inches):	2		Borehole diameter:			4		Sandpack length (ft.):	12
Screen Length:	39.65 - 49.65		Parameters Measured With:			YSI 18D102399			
Water Column height (ft.):	13.92		Total Purge Volume (gallons):		1.6		Purge Method:		Low Flow
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:				
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:		HDPE
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	44	Total Pump + Tubing + Flow Cell Vol.:			100
Well Casing Vol. (gallons):	2.27		Sandpack Vol. (gal.):		1.28	Total Well Volume (gal.):			3.55
Depth of pump inlet (BTOC):	44		Rationale:						

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
10:44	0	0	35.73	14	5.68	10.08	331.3	0.036		137	
10:47	3	0.2	35.73	14	5.38	9.35	335.8	0.036		53.4	
10:50	3	0.2	35.73	14	5.34	8.98	334	0.036		38.6	
10:53	3	0.2	35.73	14	5.32	8.47	333	0.036		10.9	
10:56	3	0.2	35.73	14	5.31	8.47	333	0.036		5.25	
10:59	3	0.2	35.73	14.3	5.32	8.06	332.2	0.037		1.88	
11:02	3	0.2	35.73	14.2	5.36	8.23	329.6	0.036		0.39	
11:05	3	0.2	35.73	14.1	5.28	8.39	334.3	0.037		0.02	
11:08	3	0.2	35.73	14.1	5.26	8.68	335.6	0.036		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
11:08	3	0.2	35.73	14.1	5.26	8.68	335.6	0.036	0	0.02	0

Sample Type:	MW	Sample Number:	GB-IRP7-MW04-02		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	30-Jun-2020	By: Matt Muto	Discharge Water Dispostion:		dumped on
Comments:					Drum No.:		
Prepared by:	Matt Muto						
Date Prepared:	30-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	3	Date:	06/29/2020				
Well ID:	GB-03-MW01	Samplers:	Matt Muto								
Purge Start Date:	06/29/2020	Time:	14:23	Purge End Date:	06/29/2020	Time:	14:57				
Weather:	Wind: 3 mph, SW	Precipitation:	None	Sky:	Sunny	Temperature °F:	71				
Well Labeled:	Yes	Well Secured:	Yes	Comments:							
PID SN:		Well Headspace (PID mu):		0		Odor:	none				
Water Level Instrument:	Heron			Serial No.:	023214						
SWL beginning (BTOC):	34.35	WL After pump install (BTOC):		34.35		Max Drawdown (in.):	0				
Well Casing (inches):	2	Borehole diameter:		4		Sandpack length (ft.):	12				
Screen Length:	39.52 - 49.52	Parameters Measured With:		YSI 18D102399							
Water Column height (ft.):	15.17	Total Purge Volume (gallons):		2.4		Purge Method:	Low Flow				
Max Purge Rate mL/min.:		300	Sampling Flow Rate mL/min:								
Pump Type:	submersible	Pump Vol.:	50	Tubing Material:	HDPE						
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	44	Total Pump + Tubing + Flow Cell Vol.:	100				
Well Casing Vol. (gallons):	2.48	Sandpack Vol. (gal.):	1.21	Total Well Volume (gal.):	3.69						
Depth of pump inlet (BTOC):	44	Rationale:									

PURGE CYCLE

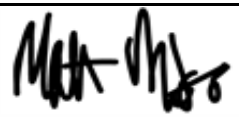
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
14:23	0	0	34.35	14.2	6.35	9.75	296.9	0.2		835	
14:27	4	0.3	34.35	14.2	6.3	9.59	293.4	0.2		182	
14:30	3	0.2	34.35	14.2	6.31	9.55	292.9	0.204		157	
14:34	4	0.3	34.35	14.2	6.09	9.53	305.4	0.204		67.9	
14:37	3	0.2	34.35	14.2	6.18	9.46	300.6	0.206		56	
14:41	4	0.3	34.35	14.2	6.28	9.49	295.9	0.205		35.7	
14:45	4	0.3	34.35	14.2	6.3	9.47	295.9	0.21		14.7	
14:48	3	0.2	34.35	14.2	6.3	9.46	295.5	0.208		9.96	
14:51	3	0.2	34.35	14.4	6.33	9.41	295	0.206		1.39	
14:54	3	0.2	34.35	14.3	6.33	9.38	295.4	0.208		1.25	
14:57	3	0.2	34.35	14.3	6.33	9.4	295.3	0.208		0.95	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
14:57	3	0.2	34.35	14.3	6.33	9.4	295.3	0.208	0	0.95	0

Sample Type:	MW	Sample Number:	GB-03-MW01-02			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	13-Jul-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	7	Date:	06/25/2020				
Well ID:	IRP7-MW01	Samplers:	Matt Muto								
Purge Start Date:	06/25/2020	Time:	10:43	Purge End Date:	06/25/2020	Time:	11:07				
Weather:	Wind:	6 mph, SE	Precipitation:	None	Sky:	Sunny	Temperature °F:	75			
Well Labeled:	Yes	Well Secured:	Yes	Comments:							
PID SN:		Well Headspace (PID mu):		0	Odor:	none					
Water Level Instrument:	Heron			Serial No.:	023214						
SWL beginning (BTOC):	31.41	WL After pump install (BTOC):		31.41	Max Drawdown (in.):	0					
Well Casing (inches):	2	Borehole diameter:		4	Sandpack length (ft.):	12					
Screen Length:	31.6 - 41.6	Parameters Measured With:		YSI 18D102399							
Water Column height (ft.):	10.19	Total Purge Volume (gallons):		1.8	Purge Method:	Low Flow					
Max Purge Rate mL/min.:		250	Sampling Flow Rate mL/min:								
Pump Type:	submersible	Pump Vol.:		100	Tubing Material:	HDPE					
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	36	Total Pump + Tubing + Flow Cell Vol.:	150				
Well Casing Vol. (gallons):	1.66	Sandpack Vol. (gal.):		1.46	Total Well Volume (gal.):	3.12					
Depth of pump inlet (BTOC):	36	Rationale:									

PURGE CYCLE

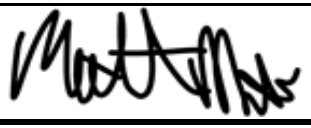
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
10:43	0	0	31.41	13.8	5.03	9.14	308.4	0.052		78.1	
10:47	4	0.3	31.41	13.8	5.05	8.43	307.5	0.055		21.9	
10:51	4	0.3	31.41	13.8	4.96	7.71	310.1	0.055		5.74	
10:55	4	0.3	31.41	13.8	4.99	7.64	308	0.055		1.73	
10:59	4	0.3	31.41	13.8	5	7.56	307.3	0.055		0.02	
11:03	4	0.3	31.41	13.8	5.01	7.41	307.1	0.056		0.02	
11:07	4	0.3	31.41	13.7	5.02	7.46	306.3	0.056		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
11:07	4	0.3	31.41	13.7	5.02	7.46	306.3	0.056	0	0.02	0

Sample Type:	Existing MW	Sample Number:	IRP7-MW01-02	Sample Equipment:	submersible and HDPE		
Duplicate:				MS/MSD:			
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:			
Sample Equipment Decon:		Date:	25-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	25-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	19	Date:	06/30/2020				
Well ID:	GB-19-MW01	Samplers:	Matt Muto								
Purge Start Date:	06/30/2020	Time:	14:14	Purge End Date:	06/30/2020	Time:	14:42				
Weather:	Wind:	3 mph, N	Precipitation:	None	Sky:	Sunny	Temperature °F:	82			
Well Labeled:	Yes	Well Secured:	Yes	Comments:							
PID SN:		Well Headspace (PID mu):	0	Odor:	none						
Water Level Instrument:	Heron	Serial No.:	023214								
SWL beginning (BTOC):	33.67	WL After pump install (BTOC):	33.67	Max Drawdown (in.):	0						
Well Casing (inches):	2	Borehole diameter:	4	Sandpack length (ft.):	12						
Screen Length:	36.76 - 46.76	Parameters Measured With:	YSI 18D102399								
Water Column height (ft.):	13.09	Total Purge Volume (gallons):	1.94	Purge Method:	Low Flow						
Max Purge Rate mL/min.:	300	Sampling Flow Rate mL/min:									
Pump Type:	submersible	Pump Vol.:	50	Tubing Material:	HDPE						
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	41	Total Pump + Tubing + Flow Cell Vol.:	100				
Well Casing Vol. (gallons):	2.14	Sandpack Vol. (gal.):	1.32	Total Well Volume (gal.):	3.46						
Depth of pump inlet (BTOC):	41	Rationale:									

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
14:14	0	0	33.67	13.3	5.03	5.3	354.3	0.027		121	
14:17	3	0.2	33.67	13.3	5.13	5.2	336.8	0.028		24.8	
14:21	4	0.3	33.67	13.3	5.19	5.32	317.1	0.027		10.8	
14:24	3	0.2	33.67	13.4	5.21	5.77	306	0.027		5.71	
14:27	3	0.2	33.67	13.3	5.17	5.89	300.6	0.028		3.32	
14:30	3	0.2	33.67	13.3	5.22	5.72	294.7	0.028		3.83	
14:33	3	0.2	33.67	13.3	5.21	5.85	290.5	0.027		1.55	
14:36	3	0.2	33.67	13.3	5.22	5.74	287	0.027		1.41	
14:39	3	0.2	33.67	13.3	5.2	5.81	286.5	0.027		0.72	
14:42	3	0.2	33.67	13.3	5.21	5.78	283.9	0.027		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
14:42	3	0.24	33.67	13.3	5.21	5.78	283.9	0.027	0	0.02	0

Sample Type:	MW	Sample Number:	GB-19-MW01-02		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	30-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	22	Date:	06/30/2020		
Well ID:			Samplers:	Matt Ivers							
Purge Start Date:	06/30/2020		Time:	09:56	Purge End Date:	06/30/2020		Time:	10:30		
Weather:	Wind:	6 mph, W	Precipitation:	None		Sky:	Sunny		Temperature °F:	80	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	30.22		WL After pump install (BTOC):			30.22			Max Drawdown (in.):	0	
Well Casing (inches):	2				Borehole diameter:	4			Sandpack length (ft.):	12	
Screen Length:	29.8 - 39.8				Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	9.58		Total Purge Volume (gallons):		1.2		Purge Method:		Low Flow		
Max Purge Rate mL/min.:			150		Sampling Flow Rate mL/min:						
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:		HDPE		
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	34	Total Pump + Tubing + Flow Cell Vol.:			100		
Well Casing Vol. (gallons):	1.56		Sandpack Vol. (gal.):		1.49	Total Well Volume (gal.):			3.05		
Depth of pump inlet (BTOC):	34		Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
09:56	0	0	30.22	14.8	6.03	8.85	258.7	0.053		460	
10:00	4	0.2	30.22	14.4	6.01	8.5	263.7	0.049		204	
10:03	3	0.1	30.22	14.3	6.06	8.38	262.9	0.048		71.1	
10:06	3	0.1	30.22	14.4	6.08	8.3	263.5	0.048		52.1	
10:09	3	0.1	30.22	14.2	6.11	8.27	264.2	0.048		33.6	
10:12	3	0.1	30.22	14.3	6.09	8.19	267.4	0.048		17.7	
10:15	3	0.1	30.22	14.3	6.1	8.21	269.1	0.048		11.4	
10:18	3	0.1	30.22	14.2	6.06	8.24	273	0.048		4.83	
10:21	3	0.1	30.22	14.2	6.08	8.17	273.5	0.047		2.24	
10:24	3	0.1	30.22	14.3	6.09	8.21	275.2	0.047		1.13	
10:27	3	0.1	30.22	14.2	6.08	8.22	276.3	0.047		0.51	
10:30	3	0.1	30.22	14.3	6.09	8.19	277	0.048		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
10:30	3	0.1	30.22	14.3	6.09	8.19	277	0.048	0	0.02	0

Sample Type:	Existing MW	Sample Number:	-02	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	dumped on				
Comments:				Drum No.:	
Prepared by:	Matt Muto				
Date Prepared:	30-Jun-2020				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient	Date:	06/29/2020		
Well ID:	ECR-MW01		Samplers:	Matt Muto							
Purge Start Date:	06/29/2020		Time:	09:12	Purge End Date:	06/29/2020		Time:	09:53		
Weather:	Wind:	2 mph, W	Precipitation:	None		Sky:	Sunny		Temperature °F:	72	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	30.65		WL After pump install (BTOC):			30.65			Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:			4			Sandpack length (ft.):	12	
Screen Length:	32.09 - 42.09		Parameters Measured With:			YSI 18D102399					
Water Column height (ft.):	11.44		Total Purge Volume (gallons):			2.8			Purge Method:	Low Flow	
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:						
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:		HDPE		
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	37	Total Pump + Tubing + Flow Cell Vol.:			100		
Well Casing Vol. (gallons):	1.87		Sandpack Vol. (gal.):		1.4	Total Well Volume (gal.):			3.27		
Depth of pump inlet (BTOC):	37		Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
09:12	0	0	30.65	14.4	6.97	9.49	282.9	0.156		263	
09:15	3	0.2	30.65	14.6	6.35	7.83	293.3	0.176		280	
09:18	3	0.2	30.65	14.5	6.19	7.66	292.9	0.195		163	
09:21	3	0.2	30.65	14.5	5.95	7.53	300.9	0.191		126	
09:24	3	0.2	30.65	14.5	5.98	7.47	296.2	0.196		92.9	
09:27	3	0.2	30.65	14.4	6.04	7.51	292.3	0.199		74.1	
09:30	3	0.2	30.65	14.4	6.07	7.5	289.4	0.199		50.7	
09:33	3	0.2	30.65	14.4	6.08	7.5	288	0.2		37.7	
09:36	3	0.2	30.65	14.4	6.1	7.52	286.7	0.197		16.2	
09:39	3	0.2	30.65	14.4	6.12	7.57	285.2	0.202		11.9	
09:43	4	0.3	30.65	14.4	6.15	7.58	283.3	0.203		1.71	
09:47	4	0.3	30.65	14.4	6.15	7.59	283.7	0.205		0.06	
09:50	3	0.2	30.65	14.4	6.16	7.59	283.4	0.203		0.02	

Low-Flow Groundwater Purge And Sample Log

09:53	3	0.2	30.65	14.4	6.16	7.6	283.3	0.204		0.02	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
09:53	3	0.2	30.65	14.4	6.16	7.6	283.3	0.204	0	0.02	0

Sample Type:	Existing MW	Sample Number:	ECR-MW01-02		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	29-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/29/2020
Well ID:	ECR-SW7	Samplers:	Matt Muto				

Purge Start Date:	06/29/2020	Time:	08:13	Purge End Date:	06/29/2020	Time:	08:40		
Weather:	Wind:	2 mph, W	Precipitation:	None	Sky:	Sunny	Temperature °F:	74	
Well Labeled:	Yes	Well Secured:	Yes	Comments:					
PID SN:		Well Headspace (PID mu):		0		Odor:	none		
Water Level Instrument:	Heron			Serial No.:	023214				
SWL beginning (BTOC):	28.1	WL After pump install (BTOC):		28.1		Max Drawdown (in.):	0		
Well Casing (inches):	2	Borehole diameter:		4		Sandpack length (ft.):	12		
Screen Length:	24.58 - 34.58	Parameters Measured With:		YSI 18D102399					
Water Column height (ft.):	6.49	Total Purge Volume (gallons):		1.8		Purge Method:	Low Flow		
Max Purge Rate mL/min.:		200	Sampling Flow Rate mL/min:						
Pump Type:	submersible	Pump Vol.:	50		Tubing Material:	HDPE			
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	29	Total Pump + Tubing + Flow Cell Vol.:	100		
Well Casing Vol. (gallons):	1.06			Sandpack Vol. (gal.):	1.64	Total Well Volume (gal.):	2.7		
Depth of pump inlet (BTOC):	29	Rationale:							

PURGE CYCLE

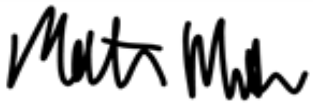
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
08:13	0	0	28.1	15.1	7.37	9.63	242.2	0.115		4.23	
08:16	3	0.2	28.1	15.2	7.13	9.29	245.7	0.116		17.8	
08:19	3	0.2	28.1	15.1	7.05	9.05	246.1	0.116		11.3	
08:22	3	0.2	28.1	15.1	7.08	8.96	242.1	0.117		6.85	
08:25	3	0.2	28.1	15.1	7.22	8.94	235.3	0.117		3.71	
08:28	3	0.2	28.1	15.1	7.17	8.92	233.2	0.116		2.88	
08:31	3	0.2	28.1	15.1	7.26	9.04	232.7	0.117		1.03	
08:34	3	0.2	28.1	15.1	7.27	9.01	232.4	0.117		0.33	
08:37	3	0.2	28.1	15.1	7.28	9.11	232.3	0.117		0.02	
08:40	3	0.2	28.1	15.1	7.23	9.22	236.3	0.117		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
08:40	3	0.2	28.1	15.1	7.23	9.22	236.3	0.117	0	0.02	0

Sample Type:	Existing MW	Sample Number:	ECR-SW7-02	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	dumped on				
Comments:				Drum No.:	
Prepared by:	Matt Muto				
Date Prepared:	29-Jun-2020				



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient	Date:	06/29/2020		
Well ID:	IRP5-MW01		Samplers:	Matt Muto							
Purge Start Date:	06/29/2020		Time:	10:37	Purge End Date:	06/29/2020		Time:	11:00		
Weather:	Wind:	4 mph, N	Precipitation:	None		Sky:	Sunny		Temperature °F:	72	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	33.25		WL After pump install (BTOC):			33.25			Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:			4			Sandpack length (ft.):	12	
Screen Length:	32.95 - 42.95		Parameters Measured With:			YSI 18D102399					
Water Column height (ft.):	9.7		Total Purge Volume (gallons):		1.6		Purge Method:		Low Flow		
Max Purge Rate mL/min.:			300	Sampling Flow Rate mL/min:							
Pump Type:	submersible		Pump Vol.:			Tubing Material:	HDPE				
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	37	Total Pump + Tubing + Flow Cell Vol.:			50		
Well Casing Vol. (gallons):	1.58		Sandpack Vol. (gal.):		1.48	Total Well Volume (gal.):			3.06		
Depth of pump inlet (BTOC):	37		Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
10:37	0	0	33.25	14.5	6.49	10.59	289.6	0.162		73.9	
10:40	3	0.2	33.25	14.5	6.5	9.7	285.8	0.162		25.6	
10:44	4	0.3	33.25	14.5	6.5	9.7	285.6	0.158		12.6	
10:47	3	0.2	33.25	14.5	6.51	9.67	285.4	0.157		8.98	
10:50	3	0.2	33.25	14.5	6.51	9.63	285.3	0.156		4.36	
10:53	3	0.2	33.25	14.5	6.52	9.64	284.9	0.154		0.27	
10:56	3	0.2	33.25	14.5	6.52	9.62	285	0.153		0.02	
11:00	4	0.3	33.25	14.5	6.51	9.61	285	0.154		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
11:00	4	0.3	33.25	14.5	6.51	9.61	285	0.154	0	0.02	0

Sample Type:	Existing MW	Sample Number:	IRP5-MW01-02	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	dumped on				
Comments:				Drum No.:	
Prepared by:	Matt Muto				
Date Prepared:	29-Jun-2020				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/30/2020
Well ID:	MW-1	Samplers:	Matt Muto				

Purge Start Date:	06/30/2020		Time:	16:06	Purge End Date:	06/30/2020		Time:	16:24
Weather:	Wind:	2 mph, N	Precipitation:	None		Sky:	Sunny	Temperature °F:	80
Well Labeled:	Yes		Well Secured:	Yes		Comments:			
PID SN:			Well Headspace (PID mu):			0		Odor:	none
Water Level Instrument:	Heron					Serial No.:	023214		
SWL beginning (BTOC):	14.75		WL After pump install (BTOC):			14.75		Max Drawdown (in.):	0
Well Casing (inches):	1		Borehole diameter:			2		Sandpack length (ft.):	12
Screen Length:	11.01 - 22.01		Parameters Measured With:			YSI 18D102399			
Water Column height (ft.):	7.26		Total Purge Volume (gallons):		1.2	Purge Method:		Low Flow	
Max Purge Rate mL/min.:			200		Sampling Flow Rate mL/min:				
Pump Type:	submersible		Pump Vol.:		50	Tubing Material:		HDPE	
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	17	Total Pump + Tubing + Flow Cell Vol.:		100	
Well Casing Vol. (gallons):	0.3		Sandpack Vol. (gal.):		0.4	Total Well Volume (gal.):		0.7	
Depth of pump inlet (BTOC):	17		Rationale:						

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
16:06	0	0	14.75	13.5	5.43	8.04	332.9	0.043		146	
16:09	3	0.2	14.75	13.3	5.13	6.59	344.3	0.043		13.5	
16:12	3	0.2	14.75	13.3	5.07	5.88	347.2	0.045		2.21	
16:15	3	0.2	14.75	13.2	5.03	5.87	348.4	0.045		0.29	
16:18	3	0.2	14.75	13.2	5.18	5.82	339	0.045		0.02	
16:21	3	0.2	14.75	13.2	5.25	5.86	334.8	0.045		0.02	
16:24	3	0.2	14.75	13.3	5.35	5.99	328.8	0.044		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
16:24	3	0.2	14.75	13.3	5.35	5.99	328.8	0.044	0	0.02	0

Sample Type:	Existing MW	Sample Number:	MW-1-02	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	dumped on				
Comments:				Drum No.:	
Prepared by:	Matt Muto				
Date Prepared:	30-Jun-2020				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient	Date:	06/30/2020
Well ID:	SW-8	Samplers:	Matt Muto				

Purge Start Date:	06/30/2020		Time:	08:16	Purge End Date:	06/30/2020		Time:	08:55
Weather:	Wind:	2 mph, SW	Precipitation:	None		Sky:	Sunny	Temperature °F:	79
Well Labeled:	Yes		Well Secured:	Yes		Comments:			

PID SN:		Well Headspace (PID mu):	0			Odor:	none
Water Level Instrument:	Heron			Serial No.:	023214		
SWL beginning (BTOC):	23.49	WL After pump install (BTOC):	23.49			Max Drawdown (in.):	0
Well Casing (inches):	2	Borehole diameter:	4			Sandpack length (ft.):	12
Screen Length:	42.49 - 52.49	Parameters Measured With:	YSI 18D102399				
Water Column height (ft.):	29	Total Purge Volume (gallons):	2.6			Purge Method:	Low Flow
Max Purge Rate mL/min.:		200	Sampling Flow Rate mL/min:				
Pump Type:	submersible	Pump Vol.:	50			Tubing Material:	HDPE
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	47	Total Pump + Tubing + Flow Cell Vol.:	100
Well Casing Vol. (gallons):	4.73	Sandpack Vol. (gal.):	0.54	Total Well Volume (gal.):		5.27	
Depth of pump inlet (BTOC):	47	Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
08:16	0	0	23.49	14.8	6.99	2.19	286.1	0.061		104	
08:19	3	0.2	23.49	14.2	5.24	0.88	352.4	0.06		95.6	
08:22	3	0.2	23.49	14.3	5.07	0.62	343.7	0.06		75.3	
08:25	3	0.2	23.49	14.3	5.16	0.44	326.9	0.06		64.7	
08:28	3	0.2	23.49	14.3	5.28	0.37	313.6	0.06		58.9	
08:31	3	0.2	23.49	14.3	5.4	0.31	301.8	0.062		56.8	
08:34	3	0.2	23.49	14.3	5.52	0.26	287.4	0.064		52.4	
08:37	3	0.2	23.49	14.3	5.54	0.23	279.8	0.067		47.2	
08:40	3	0.2	23.49	14.5	5.58	0.21	274.5	0.068		43.4	
08:43	3	0.2	23.49	14.5	5.6	0.26	271.6	0.067		46.3	
08:46	3	0.2	23.49	14.5	5.61	0.22	265.5	0.068		45.7	
08:49	3	0.2	23.49	14.5	5.62	0.19	256.1	0.067		17.9	

Low-Flow Groundwater Purge And Sample Log

08:52	3	0.2	23.49	14.5	5.7	0.18	247	0.067		16	
08:55	3	0.2	23.49	14.5	5.74	0.17	238.6	0.067		16.7	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
08:55	3	0.2	23.49	14.5	5.74	0.17	238.6	0.067	0	16.7	0

Sample Type:	Existing MW	Sample Number:	SW-8-02	Sample Equipment:	submersible and HDPE		
Duplicate:				MS/MSD:			
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:			
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	30-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient	Date:	06/30/2020		
Well ID:	SW-9		Samplers:	Matt Muto							
Purge Start Date:	06/30/2020		Time:	09:01	Purge End Date:	06/30/2020		Time:	09:34		
Weather:	Wind:	mph,	Precipitation:			Sky:		Temperature °F:			
Well Labeled:			Well Secured:			Comments:					
PID SN:			Well Headspace (PID mu):					Odor:			
Water Level Instrument:						Serial No.:					
SWL beginning (BTOC):	21.55		WL After pump install (BTOC):					Max Drawdown (in.):	0		
Well Casing (inches):			Borehole diameter:					Sandpack length (ft.):			
Screen Length:	-		Parameters Measured With:								
Water Column height (ft.):	-21.55		Total Purge Volume (gallons):	2.2				Purge Method:			
Max Purge Rate mL/min.:			200	Sampling Flow Rate mL/min:							
Pump Type:			Pump Vol.:			Tubing Material:					
Flow Cell Vol.:		Vol./ft.:	0	Total ft.:		Total Pump + Tubing + Flow Cell Vol.:		0			
Well Casing Vol. (gallons):	0		Sandpack Vol. (gal.):	0		Total Well Volume (gal.):		0			
Depth of pump inlet (BTOC):			Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
09:01	0	0	21.55	14.1	5.48	1.45	277.1	0.06		66	
09:04	3	0.2	21.55	14.2	5.2	0.58	271.6	0.06		40.2	
09:07	3	0.2	21.55	14.1	5.14	0.34	259.1	0.06		31.4	
09:10	3	0.2	21.55	14.2	5.12	0.24	251.8	0.06		27	
09:13	3	0.2	21.55	14.2	5.13	0.2	241.5	0.061		18.7	
09:16	3	0.2	21.55	14.3	5.22	0.17	229.8	0.061		10.5	
09:19	3	0.2	21.55	14.2	5.16	0.15	224.7	0.062		7.22	
09:22	3	0.2	21.55	14.2	5.16	0.14	221.7	0.064		5.32	
09:25	3	0.2	21.55	14.2	5.15	0.13	208.4	0.065		5.89	
09:28	3	0.2	21.55	14.2	5.23	0.12	206.7	0.065		5.38	
09:31	3	0.2	21.55	14.2	5.23	0.11	206.3	0.065		4.72	
09:34	3	0.2	21.55	14.3	5.25	0.11	200.6	0.065		4.81	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
09:34	3	0.2	21.55	14.3	5.25	0.11	200.6	0.065	0	4.81	0

Sample Type:	Existing MW	Sample Number:	SW-9-02	Sample Equipment:	and		
Duplicate:				MS/MSD:			
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:			
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	30-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient/Upgradient (Off Base)	Date:	6/28/2020
Well ID:	GB-OB-MW01	Samplers:	Matt Muto				

Purge Start Date:	6/28/2020		Time:	15:30	Purge End Date:	6/28/2020	Time:	16:00	
Weather:	Wind:	10 mph, NE	Precipitation:	None	Sky:	Sunny	Temperature °F:	75	
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0		Odor:	none	
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	33.52		WL After pump install (BTOC):		33.52		Max Drawdown (in.):	24.39	
Well Casing (inches):	2		Borehole diameter:		2		Sandpack length (ft.):	12	
Screen Length:	38 - 48		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	14.48		Total Purge Volume (gallons):		2		Purge Method:	Low Flow	
Max Purge Rate mL/min.:			200		Sampling Flow Rate mL/min:		200		
Pump Type:	submersible		Pump Vol.:				Tubing Material:	HDPE	
Flow Cell Vol.:	100	Vol./ft.:	0	Total ft.:	43	Total Pump + Tubing + Flow Cell Vol.:		100	
Well Casing Vol. (gallons):	2.44			Sandpack Vol. (gal.):	1.23	Total Well Volume (gal.):		3.67	
Depth of pump inlet (BTOC):	43			Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
15:30	0	0	33.52	14.1	7.02	9.99	222.2	0.31		222	
15:33	3	0.2	33.52	14.1	5.78	9.27	247.9	0.161		75.2	
15:36	3	0.2	33.52	14	5.72	9.28	231.1	0.167		62.8	
15:39	3	0.2	33.52	14.2	6.03	9.26	239.6	0.165		75.8	
15:42	3	0.2	33.52	14.4	5.68	9.44	228.7	0.162		44.4	
15:45	3	0.2	33.52	14.4	6.23	9.11	222.8	0.187		33.9	
15:48	3	0.2	33.52	14.1	6.11	9.52	222.4	0.181		7.22	
15:51	3	0.2	33.52	14	6.12	9.31	222.9	0.172		5.22	
15:54	3	0.2	33.52	14.1	5.71	9.21	222.3	0.162		3.1	
15:57	3	0.2	33.52	14.4	5.72	9.21	222.2	0.162		1.12	

Low-Flow Groundwater Purge And Sample Log

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
16:00	3	0.2	33.52	14	5.72	9.21	222	0.162		0.2	

Sample Type:	MW	Sample Number:	GB-OB-MW01-01	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	28-Jun-20	By:	Matt Muto
Discharge Water Dispostion:	55-gallon				
Comments:				Drum No.:	3
Prepared by:	Matt Muto				
Date Prepared:	28-Jun-20				

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient/Upgradient (Off Base)	Date:	06/30/2020
Well ID:	GB-OB-MW02	Samplers:	Matt Muto				

Purge Start Date:	06/30/2020		Time:	16:49	Purge End Date:	06/30/2020	Time:	17:39	
Weather:	Wind:	5 mph, NW	Precipitation:	None	Sky:	Sunny	Temperature °F:	85	
Well Labeled:	Yes		Well Secured:	Yes	Comments:				
PID SN:			Well Headspace (PID mu):		0		Odor:	none	
Water Level Instrument:	Heron				Serial No.:	023214			
SWL beginning (BTOC):	34.27		WL After pump install (BTOC):		34.27		Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:		4		Sandpack length (ft.):	12	
Screen Length:	49.55 - 59.55		Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	25.28		Total Purge Volume (gallons):		3.4		Purge Method:	Low Flow	
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:				
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:	HDPE	
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	54	Total Pump + Tubing + Flow Cell Vol.:		100	
Well Casing Vol. (gallons):	4.13			Sandpack Vol. (gal.):	0.72	Total Well Volume (gal.):		4.85	
Depth of pump inlet (BTOC):	54			Rationale:					

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
16:49	0	0	34.27	13.4	5.98	9.72	305.6	0.18		398	
16:52	3	0.2	34.27	13.5	6.14	9.01	300.1	0.173		226	
16:55	3	0.2	34.27	13.5	6.21	8.95	297.6	0.172		163	
16:58	3	0.2	34.27	13.5	6.24	8.92	297.1	0.174		149	
17:02	4	0.3	34.27	13.4	6.27	8.92	296.9	0.18		137	
17:05	3	0.2	34.27	13.4	6.28	8.75	295.9	0.184		137	
17:08	3	0.2	34.27	13.4	6.28	8.76	295.7	0.185		121	
17:12	4	0.3	34.27	13.4	6.28	8.72	296.3	0.188		115	
17:15	3	0.2	34.27	13.4	6.31	8.81	295.2	0.188		58.7	
17:18	3	0.2	34.27	13.4	6.31	8.78	295.1	0.186		40	

Low-Flow Groundwater Purge And Sample Log

17:21	3	0.2	34.27	13.4	6.31	8.79	295.2	0.186		30.3	
17:24	3	0.2	34.27	13.4	6.32	8.78	294.9	0.186		21.1	
17:27	3	0.2	34.27	13.4	6.32	8.78	294.7	0.186		11.8	
17:30	3	0.2	34.27	13.4	6.32	8.79	294.6	0.186		4.16	
17:33	3	0.2	34.27	13.4	6.32	8.79	294.3	0.182		2.44	
17:36	3	0.2	34.27	13.4	6.33	8.79	294.3	0.185		1.33	
17:39	3	0.2	34.27	13.4	6.33	8.79	294.5	0.185		0.63	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
17:39	3	0.2	34.27	13.4	6.33	8.79	294.5	0.185	0	0.63	0

Sample Type:	MW	Sample Number:	GB-OB-MW02-02		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	30-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient/Upgradient (Off Base)	Date:	06/28/2020				
Well ID:	GB-OB-MW03	Samplers:	Matt Muto								
Purge Start Date:	06/28/2020	Time:	18:32	Purge End Date:	06/28/2020	Time:	18:57				
Weather:	Wind:	8 mph, W	Precipitation:	None	Sky:	Sunny	Temperature °F:	74			
Well Labeled:	Yes	Well Secured:	Yes	Comments:							
PID SN:		Well Headspace (PID mu):		0	Odor:	none					
Water Level Instrument:	Heron			Serial No.:	023214						
SWL beginning (BTOC):	14.4	WL After pump install (BTOC):		14.4	Max Drawdown (in.):	0					
Well Casing (inches):	2	Borehole diameter:		4	Sandpack length (ft.):	12					
Screen Length:	62.79 - 72.79	Parameters Measured With:		YSI 18D102399							
Water Column height (ft.):	58.39	Total Purge Volume (gallons):		1.7	Purge Method:	Low Flow					
Max Purge Rate mL/min.:		250	Sampling Flow Rate mL/min:								
Pump Type:	submersible	Pump Vol.:		50	Tubing Material:	HDPE					
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	68	Total Pump + Tubing + Flow Cell Vol.:	100				
Well Casing Vol. (gallons):	9.53	Sandpack Vol. (gal.):	-0.9	Total Well Volume (gal.):	8.63						
Depth of pump inlet (BTOC):	68	Rationale:									

PURGE CYCLE

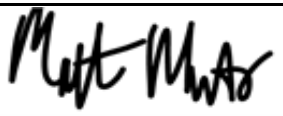
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
18:32	0	0	14.4	13.3	6.77	8.05	269.5	0.311		48.1	
18:36	4	0.3	14.4	13.3	5.94	7.41	268.6	0.31		18.4	
18:39	3	0.2	14.4	13.3	5.77	7.38	269	0.31		12.8	
18:42	3	0.2	14.4	13.3	5.5	7.27	269.3	0.31		8.85	
18:45	3	0.2	14.4	13.3	5.45	7.2	269.2	0.31		4.64	
18:48	3	0.2	14.4	13.3	5.41	7.18	271.4	0.309		4.11	
18:51	3	0.2	14.4	13.2	5.39	7.18	273.7	0.308		2.61	
18:54	3	0.2	14.4	13.2	5.37	7.15	276.4	0.308		2.24	
18:57	3	0.2	14.4	13.2	5.38	7.12	278	0.307		1.84	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
18:57	3	0.2	14.4	13.2	5.38	7.12	278	0.307	0	1.84	0

Sample Type:	MW	Sample Number:	GB-OB-MW03-02	Sample Equipment:	submersible and HDPE
Duplicate:				MS/MSD:	
Sample Filtered:	No	Filter Type/Size:		Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto
Discharge Water Dispostion:	dumped on				
Comments:				Drum No.:	
Prepared by:	Matt Muto				
Date Prepared:	30-Jun-2020				



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/25/2020		
Well ID:	GB-OB-MW04		Samplers:	Matt Muto							
Purge Start Date:	06/25/2020		Time:	14:31	Purge End Date:		06/25/2020	Time:	14:57		
Weather:	Wind:	2 mph, SW	Precipitation:	None		Sky:	Sunny		Temperature °F:	80	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	22.95		WL After pump install (BTOC):			22.95			Max Drawdown (in.):	0	
Well Casing (inches):	2		Borehole diameter:			4			Sandpack length (ft.):	12	
Screen Length:	37.75 - 47.75		Parameters Measured With:			YSI 18D102399					
Water Column height (ft.):	24.8		Total Purge Volume (gallons):			1.8			Purge Method:	Low Flow	
Max Purge Rate mL/min.:			250		Sampling Flow Rate mL/min:						
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:		HDPE		
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	42	Total Pump + Tubing + Flow Cell Vol.:			100		
Well Casing Vol. (gallons):	4.05		Sandpack Vol. (gal.):		0.74	Total Well Volume (gal.):			4.79		
Depth of pump inlet (BTOC):	42		Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
14:31	0	0	22.95	12.7	5.06	11.51	351.2	0.032		211	
14:35	4	0.2	22.95	12.7	4.75	9.82	356.4	0.032		34.8	
14:39	4	0.3	22.95	12.7	4.74	9.67	354.2	0.032		9.22	
14:43	4	0.3	22.95	12.6	4.77	9.7	352.9	0.032		4.83	
14:47	4	0.3	22.95	12.6	4.81	9.65	351	0.032		0.02	
14:51	4	0.3	22.95	12.6	4.83	9.63	350.7	0.032		0.02	
14:57	6	0.4	22.95	12.6	4.84	9.62	350.3	0.032		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
14:57	6	0.4	22.95	12.6	4.84	9.62	350.3	0.032	0	0.02	0

Sample Type:	MW	Sample Number:	GB-OB-MW04-02			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	25-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	25-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/25/2020		
Well ID:	GB-OB-MW05		Samplers:	Matt Muto							
Purge Start Date:	06/25/2020		Time:	13:29	Purge End Date:		06/25/2020	Time:	14:09		
Weather:	Wind:	2 mph, S	Precipitation:	None		Sky:	Sunny		Temperature °F:	78	
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0			Odor:	none	
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	12.5		WL After pump install (BTOC):			12.5			Max Drawdown (in.):	0	
Well Casing (inches):	1				Borehole diameter:	4			Sandpack length (ft.):	12	
Screen Length:	87.33 - 97.33				Parameters Measured With:		YSI 18D102399				
Water Column height (ft.):	84.83		Total Purge Volume (gallons):		2.2		Purge Method:		Low Flow		
Max Purge Rate mL/min.:			200		Sampling Flow Rate mL/min:						
Pump Type:	peristaltic		Pump Vol.:		50		Tubing Material:		HDPE		
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	92	Total Pump + Tubing + Flow Cell Vol.:			100		
Well Casing Vol. (gallons):	3.46			Sandpack Vol. (gal.):	-0.55	Total Well Volume (gal.):			2.91		
Depth of pump inlet (BTOC):	92			Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
13:29	0	0	12.5	13.4	5.81	3.61	297.7	0.05		17.5	
13:33	4	0.2	12.5	13.2	5.61	2.46	302.5	0.05		17.79	
13:37	4	0.2	12.5	13.1	5.7	2.14	291.4	0.051		16.41	
13:41	4	0.2	12.5	13.2	5.87	2.1	279.2	0.051		16.33	
13:45	4	0.2	12.5	13.2	5.9	2.1	273.6	0.051		16.7	
13:49	4	0.2	12.5	13.2	5.91	2.06	270.4	0.051		14.3	
13:53	4	0.2	12.5	13.3	5.89	2.1	269.7	0.051		14	
13:57	4	0.2	12.5	13.2	5.89	2.08	266.5	0.051		14.3	
14:00	3	0.2	12.5	13.2	5.87	2.07	266	0.051		11.1	
14:03	3	0.2	12.5	13.3	5.94	1.99	258.8	0.051		7.4	
14:06	3	0.2	12.5	13.2	5.78	1.95	267.8	0.051		7.4	

Low-Flow Groundwater Purge And Sample Log

14:09	3	0.2	12.5	13.2	5.91	2.03	258.3	0.051		8.03	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
14:09	3	0.2	12.5	13.2	5.91	2.03	258.3	0.051	0	8.03	0

Sample Type:	MW	Sample Number:	GB-OB-MW05-02		Sample Equipment:	peristaltic and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	25-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	25-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient/Upgradient (Off Base)	Date:	06/29/2020
Well ID:	GB-OB-MW06	Samplers:	Matt Muto				

Purge Start Date:	06/29/2020	Time:	16:55	Purge End Date:	06/29/2020	Time:	17:12		
Weather:	Wind:	2 mph, SE	Precipitation:	None	Sky:	Sunny	Temperature °F:	71	
Well Labeled:	Yes	Well Secured:	Yes	Comments:					
PID SN:		Well Headspace (PID mu):		0	Odor:	none			
Water Level Instrument:	Heron			Serial No.:	023214				
SWL beginning (BTOC):	4.77	WL After pump install (BTOC):		4.77	Max Drawdown (in.):	0			
Well Casing (inches):	2	Borehole diameter:		4	Sandpack length (ft.):	12			
Screen Length:	27.89 - 37.89	Parameters Measured With:		YSI 18D102399					
Water Column height (ft.):	33.12	Total Purge Volume (gallons):		1.1	Purge Method:	Low Flow			
Max Purge Rate mL/min.:		200	Sampling Flow Rate mL/min:						
Pump Type:	submersible	Pump Vol.:	50	Tubing Material:	HDPE				
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	32	Total Pump + Tubing + Flow Cell Vol.:	100		
Well Casing Vol. (gallons):	5.4	Sandpack Vol. (gal.):	0.34	Total Well Volume (gal.):	5.74				
Depth of pump inlet (BTOC):	32	Rationale:							

PURGE CYCLE

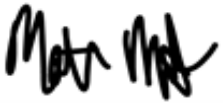
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
16:55	0	0	4.77	13.6	6.55	9.88	365.1	0.047		2.52	
17:00	5	0.3	4.77	13.4	4.79	9.32	407.7	0.047		0.39	
17:03	3	0.2	4.77	13.3	4.55	9.25	413.3	0.047		0.02	
17:06	3	0.2	4.77	13.3	4.58	9.24	403.5	0.046		0.02	
17:09	3	0.2	4.77	13.3	4.64	9.18	399.8	0.045		0.02	
17:12	3	0.2	4.77	13.3	4.74	9.17	391.6	0.045		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
17:12	3	0.2	4.77	13.3	4.74	9.17	391.6	0.045	0	0.02	0

Sample Type:	MW	Sample Number:	GB-OB-MW06-02			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	29-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001		Site:	GB		AOC:	Downgradient/Upgradient (Off Base)	Date:	06/30/2020		
Well ID:	GB-OB-MW07		Samplers:	Matt Muto							
Purge Start Date:	06/30/2020		Time:	13:14	Purge End Date:		06/30/2020	Time:	13:53		
Weather:	Wind:	5 mph, NW	Precipitation:	None		Sky:	Sunny	Temperature °F:	75		
Well Labeled:	Yes		Well Secured:	Yes		Comments:					
PID SN:			Well Headspace (PID mu):			0		Odor:	none		
Water Level Instrument:	Heron					Serial No.:	023214				
SWL beginning (BTOC):	40.25		WL After pump install (BTOC):			40.25		Max Drawdown (in.):	0		
Well Casing (inches):	2		Borehole diameter:			4		Sandpack length (ft.):	12		
Screen Length:	73.73 - 83.73		Parameters Measured With:			YSI 18D102399					
Water Column height (ft.):	43.48		Total Purge Volume (gallons):		2.6		Purge Method:	Low Flow			
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:						
Pump Type:	submersible		Pump Vol.:		50		Tubing Material:	HDPE			
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	78	Total Pump + Tubing + Flow Cell Vol.:		100			
Well Casing Vol. (gallons):	7.1		Sandpack Vol. (gal.):		-0.17	Total Well Volume (gal.):		6.93			
Depth of pump inlet (BTOC):	78		Rationale:								

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
13:14	0	0	40.25	12.8	5.59	12.34	363.8	0.029		76.14	
13:17	3	0.2	40.25	12.7	5.36	10.84	364.7	0.031		74.8	
13:20	3	0.2	40.25	12.8	5.03	10.42	374.5	0.04		63.1	
13:23	3	0.2	40.25	13.1	5.12	9.9	365	0.041		61.5	
13:26	3	0.2	40.25	12.8	5.2	10.13	356.2	0.043		48.8	
13:29	3	0.2	40.25	12.8	5.22	10.08	352.9	0.043		43.3	
13:32	3	0.2	40.25	12.8	5.24	10.05	348.9	0.044		31.5	
13:35	3	0.2	40.25	12.8	5.26	10.02	347.1	0.043		20.9	
13:38	3	0.2	40.25	12.8	5.26	10.03	345.8	0.044		16.4	
13:41	3	0.2	40.25	12.8	5.29	10.04	343.3	0.043		9.2	

Low-Flow Groundwater Purge And Sample Log

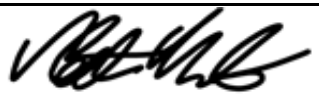
13:44	3	0.2	40.25	12.8	5.3	10.03	342.4	0.044		7.76	
13:47	3	0.2	40.25	12.8	5.29	10.02	342.9	0.044		6.08	
13:50	3	0.2	40.25	12.8	5.29	10.04	342.5	0.044		3.45	
13:53	3	0.2	40.25	12.8	5.31	10.04	341.8	0.043		2	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
13:53	3	0.2	40.25	12.8	5.31	10.04	341.8	0.043	0	2	0

Sample Type:	MW	Sample Number:	GB-OB-MW07-02			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	30-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	30-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Downgradient/Upgradient (Off Base)	Date:	06/29/2020
Well ID:	GB-OB-MW08	Samplers:	Matt Muto				

Purge Start Date:	06/29/2020		Time:	17:34	Purge End Date:	06/29/2020		Time:	17:52
Weather:	Wind:	5 mph, NW	Precipitation:	None		Sky:	Sunny	Temperature °F:	71
Well Labeled:	Yes		Well Secured:	Yes		Comments:			
PID SN:			Well Headspace (PID mu):			0		Odor:	none
Water Level Instrument:	Heron					Serial No.:	023214		
SWL beginning (BTOC):	34.11		WL After pump install (BTOC):			34.11		Max Drawdown (in.):	0
Well Casing (inches):	2		Borehole diameter:			4		Sandpack length (ft.):	12
Screen Length:	51.25 - 61.25		Parameters Measured With:			YSI 18D102399			
Water Column height (ft.):	27.14		Total Purge Volume (gallons):		1.2	Purge Method:		Low Flow	
Max Purge Rate mL/min.:			300		Sampling Flow Rate mL/min:				
Pump Type:	submersible		Pump Vol.:		50	Tubing Material:		HDPE	
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	56	Total Pump + Tubing + Flow Cell Vol.:		100	
Well Casing Vol. (gallons):	4.43		Sandpack Vol. (gal.):		0.63	Total Well Volume (gal.):		5.06	
Depth of pump inlet (BTOC):	56		Rationale:						

PURGE CYCLE

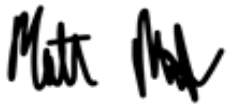
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
17:34	0	0	34.11	13.7	5.7	9.41	327.7	0.16		14.7	
17:37	3	0.2	34.11	13.7	5.88	8.71	325.4	0.161		4.96	
17:40	3	0.2	34.11	13.7	6.01	8.44	321.2	0.163		0.02	
17:43	3	0.2	34.11	13.7	6.05	8.25	319.8	0.165		0.02	
17:46	3	0.2	34.11	13.8	6.1	8.4	316.4	0.162		0.02	
17:49	3	0.2	34.11	13.8	6.12	8.39	315.8	0.162		0.02	
17:52	3	0.2	34.11	13.7	6.14	8.42	315	0.161		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
17:52	3	0.2	34.11	13.7	6.14	8.42	315	0.161	0	0.02	0

Sample Type:	MW	Sample Number:	GB-OB-MW08-02			Sample Equipment:	submersible and HDPE
Duplicate:						MS/MSD:	
Sample Filtered:	No	Filter Type/Size:				Equipment Rinsate Sample No.:	
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	29-Jun-2020						



Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Upgradient On Base Boundary	Date:	06/29/2020
Well ID:	GB-BB-MW01	Samplers:	Matt Muto				

Purge Start Date:	06/29/2020	Time:	11:45	Purge End Date:	06/29/2020	Time:	12:26		
Weather:	Wind:	3 mph, N	Precipitation:	None	Sky:	Sunny	Temperature °F:	71	
Well Labeled:	Yes	Well Secured:	Yes	Comments:					
PID SN:		Well Headspace (PID mu):	0	Odor:	none				
Water Level Instrument:	Heron	Serial No.:	023214						
SWL beginning (BTOC):	39.7	WL After pump install (BTOC):	39.7	Max Drawdown (in.):	36				
Well Casing (inches):	2	Borehole diameter:	4	Sandpack length (ft.):	12				
Screen Length:	43.77 - 53.77	Parameters Measured With:	YSI 18D102399						
Water Column height (ft.):	14.07	Total Purge Volume (gallons):	2.9	Purge Method:	Low Flow				
Max Purge Rate mL/min.:	300	Sampling Flow Rate mL/min:							
Pump Type:	submersible	Pump Vol.:	50	Tubing Material:	HDPE				
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	48	Total Pump + Tubing + Flow Cell Vol.:	100		
Well Casing Vol. (gallons):	2.3	Sandpack Vol. (gal.):	1.27	Total Well Volume (gal.):	3.57				
Depth of pump inlet (BTOC):	50	Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
11:45	0	0	39.7	14.6	6.22	9.64	318	0.195		467	
11:48	3	0.2	39.7	14.5	6.14	9.31	315.5	0.194		134	
11:51	3	0.2	39.7	14.5	6.13	9.21	313.9	0.195		70.5	
11:56	5	0.4	39.7	15.5	6.18	8.43	307.2	0.201		46.7	
12:00	4	0.3	39.7	14.8	6.16	9.02	307.3	0.195		29.7	
12:04	4	0.3	39.7	14.8	6.18	9.03	304.1	0.197		10.6	
12:07	3	0.2	39.7	14.8	6.18	9.06	301.7	0.197		7.66	
12:10	3	0.2	39.7	14.7	6.19	9.03	298.1	0.197		6.44	
12:14	4	0.3	36.7	14.7	6.19	9.02	297.7	0.197		5.12	
12:17	3	0.2	39.7	14.7	6.2	9.03	297	0.197		4.73	
12:20	3	0.2	39.7	14.7	6.21	9.02	295	0.197		3.97	
12:23	3	0.2	39.7	14.7	6.21	9	294.7	0.197		3.33	

Low-Flow Groundwater Purge And Sample Log

12:26	3	0.2	39.7	14.8	6.21	8.99	294.1	0.197		3.26	

SAMPLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
12:26	3	0.2	39.7	14.8	6.21	8.99	294.1	0.197	0	3.26	0

Sample Type:	MW	Sample Number:	GB-BB-MW01-02		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	29-Jun-2020						

Low-Flow Groundwater Purge And Sample Log

Project No.:	40001	Site:	GB	AOC:	Upgradient On Base Boundary	Date:	06/29/2020
Well ID:	GB-BB-MW02	Samplers:	Matt Muto				

Purge Start Date:	06/29/2020	Time:	13:29	Purge End Date:	06/29/2020	Time:	13:56		
Weather:	Wind:	4 mph, W	Precipitation:	None	Sky:	Partly Cloudy	Temperature °F:	79	
Well Labeled:	Yes	Well Secured:	Yes	Comments:					
PID SN:		Well Headspace (PID mu):	0	Odor:	none				
Water Level Instrument:	Heron	Serial No.:	023214						
SWL beginning (BTOC):	40.32	WL After pump install (BTOC):	40.32	Max Drawdown (in.):	0				
Well Casing (inches):	2	Borehole diameter:	4	Sandpack length (ft.):	12				
Screen Length:	45.9 - 55.9	Parameters Measured With:	YSI 18D102399						
Water Column height (ft.):	15.58	Total Purge Volume (gallons):	1.8	Purge Method:	Low Flow				
Max Purge Rate mL/min.:	300	Sampling Flow Rate mL/min:							
Pump Type:	submersible	Pump Vol.:	50	Tubing Material:	HDPE				
Flow Cell Vol.:	50	Vol./ft.:	0	Total ft.:	50	Total Pump + Tubing + Flow Cell Vol.:	100		
Well Casing Vol. (gallons):	2.54	Sandpack Vol. (gal.):	1.2	Total Well Volume (gal.):	3.74				
Depth of pump inlet (BTOC):	50	Rationale:							

PURGE CYCLE

Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	Comments
13:29	0	0	40.32	14.4	6.22	9.13	317.5	0.265		148	
13:32	3	0.2	40.32	14.6	6.17	8.83	313	0.281		63.8	
13:35	3	0.2	40.32	14.6	5.98	8.83	319.6	0.282		34.5	
13:38	3	0.2	40.32	14.7	6.06	8.77	308.3	0.262		14.8	
13:41	3	0.2	40.32	14.7	6.15	8.69	296.8	0.259		9.61	
13:44	3	0.2	40.32	14.7	6.19	8.7	286	0.257		4.68	
13:47	3	0.2	40.32	14.8	6.21	8.72	281.1	0.255		2.04	
13:50	3	0.2	40.32	14.8	6.23	8.64	273.9	0.252		1.41	
13:53	3	0.2	40.32	14.8	6.24	8.71	271.7	0.255		0.72	
13:56	3	0.2	40.32	14.8	6.25	8.66	269.3	0.254		0.02	

Low-Flow Groundwater Purge And Sample Log

SAMPLE

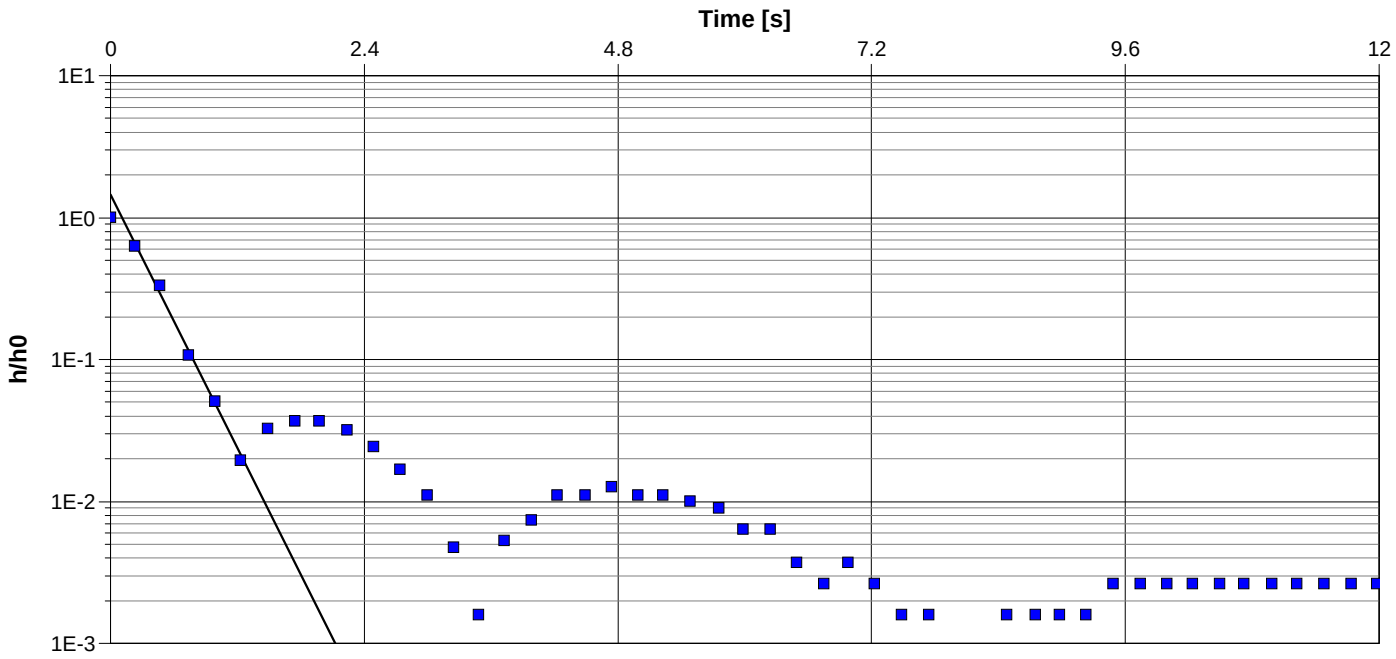
Actual Time	Elapsed Time	Volume Purged (gals)	Depth to Water (ft)	Temp (°C)	pH	DO	ORP mV	Conductivity (mmhos/cm)	TDS ppm	Turbidity (NTU)	VOC Collection Flow Rate
13:56	3	0.2	40.32	14.8	6.25	8.66	269.3	0.254	0	0.02	0

Sample Type:	MW	Sample Number:	GB-BB-MW02-02		Sample Equipment:	submersible and HDPE	
Duplicate:					MS/MSD:		
Sample Filtered:	No	Filter Type/Size:			Equipment Rinsate Sample No.:		
Sample Equipment Decon:		Date:	29-Jun-2020	By:	Matt Muto	Discharge Water Dispostion:	dumped on
Comments:						Drum No.:	
Prepared by:	Matt Muto						
Date Prepared:	29-Jun-2020						

APPENDIX H Slug Test Results

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-03-MW01-F2	Test Well: GB-03-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 49.54 ft		

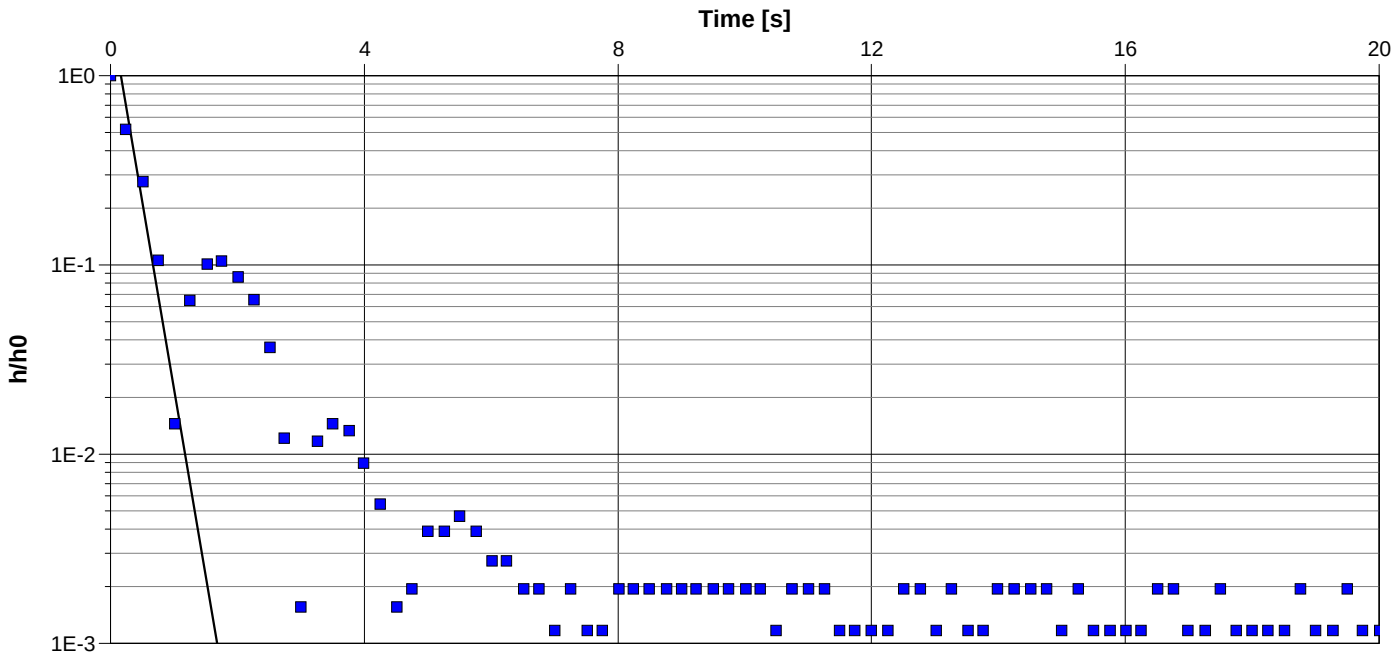


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-03-MW01	3.56×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-03-MW01-R1	Test Well: GB-03-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/2/2020
Aquifer Thickness: 49.54 ft		

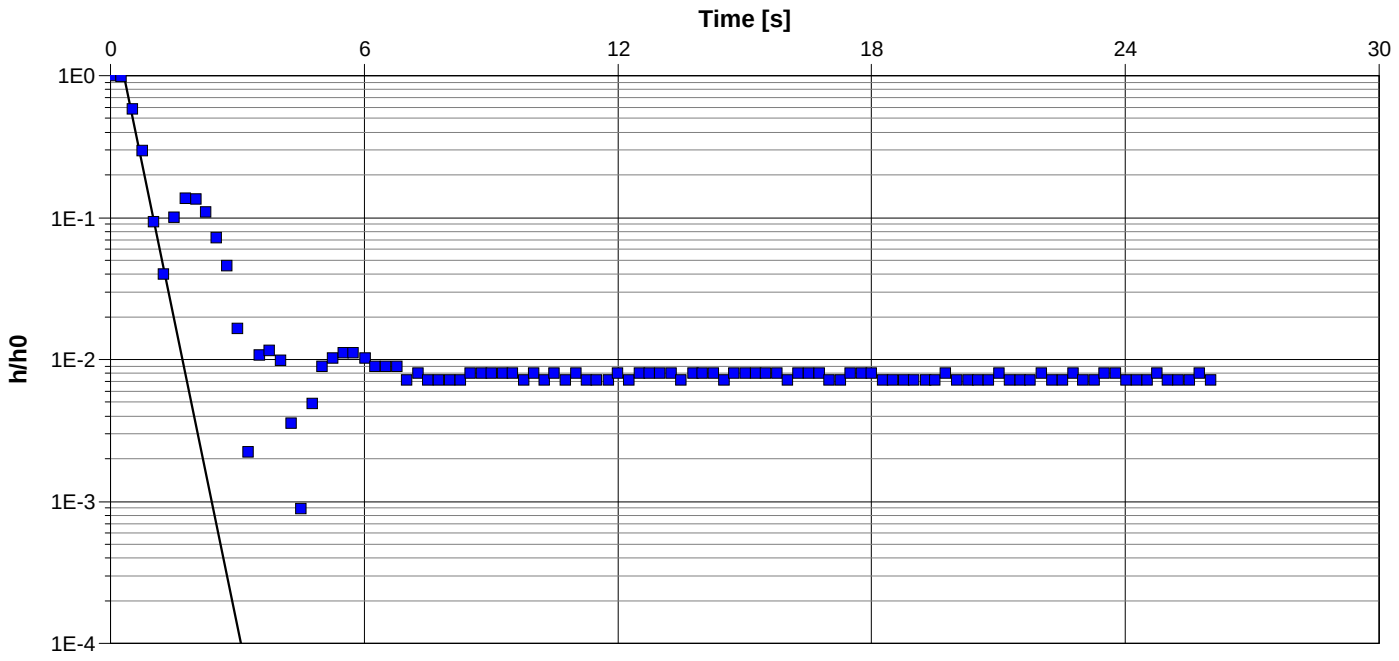


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-03-MW01	4.73×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-03-MW01-R2	Test Well: GB-03-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 49.54 ft		

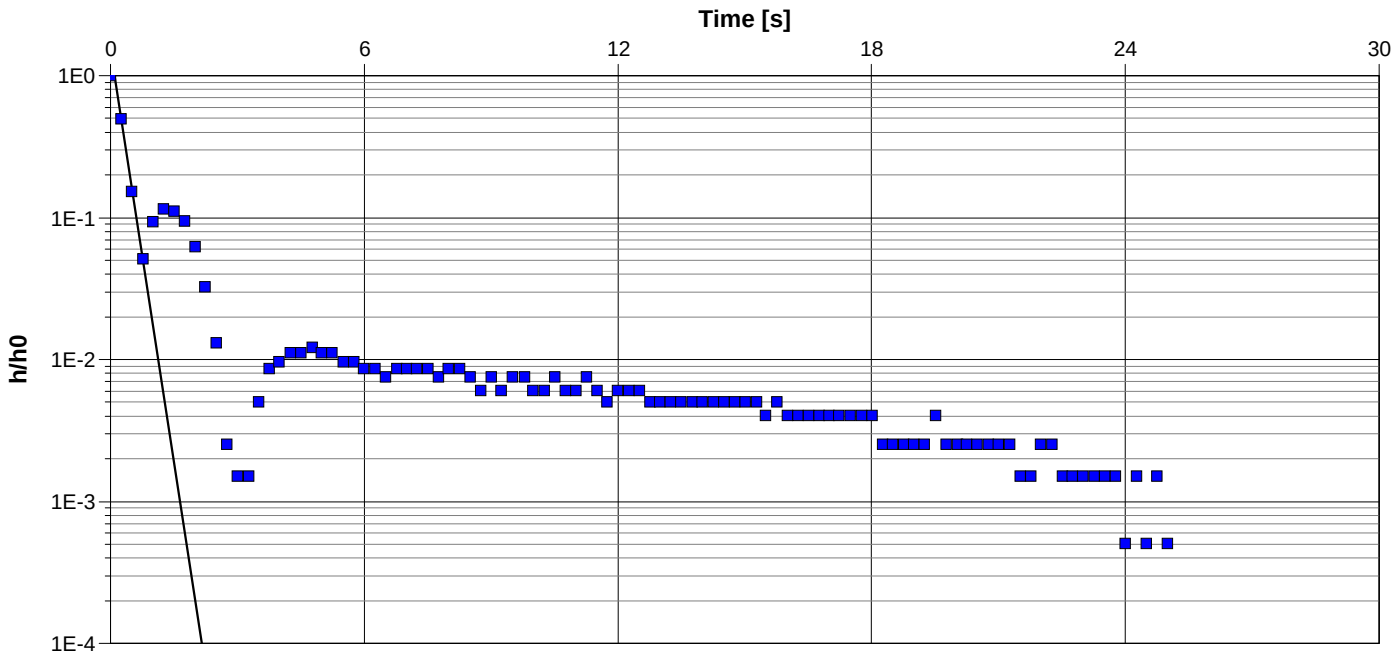


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-03-MW01	3.46×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-BB-MW01-R1	Test Well: GB-BB-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/7/2020
Aquifer Thickness: 53.79 ft		

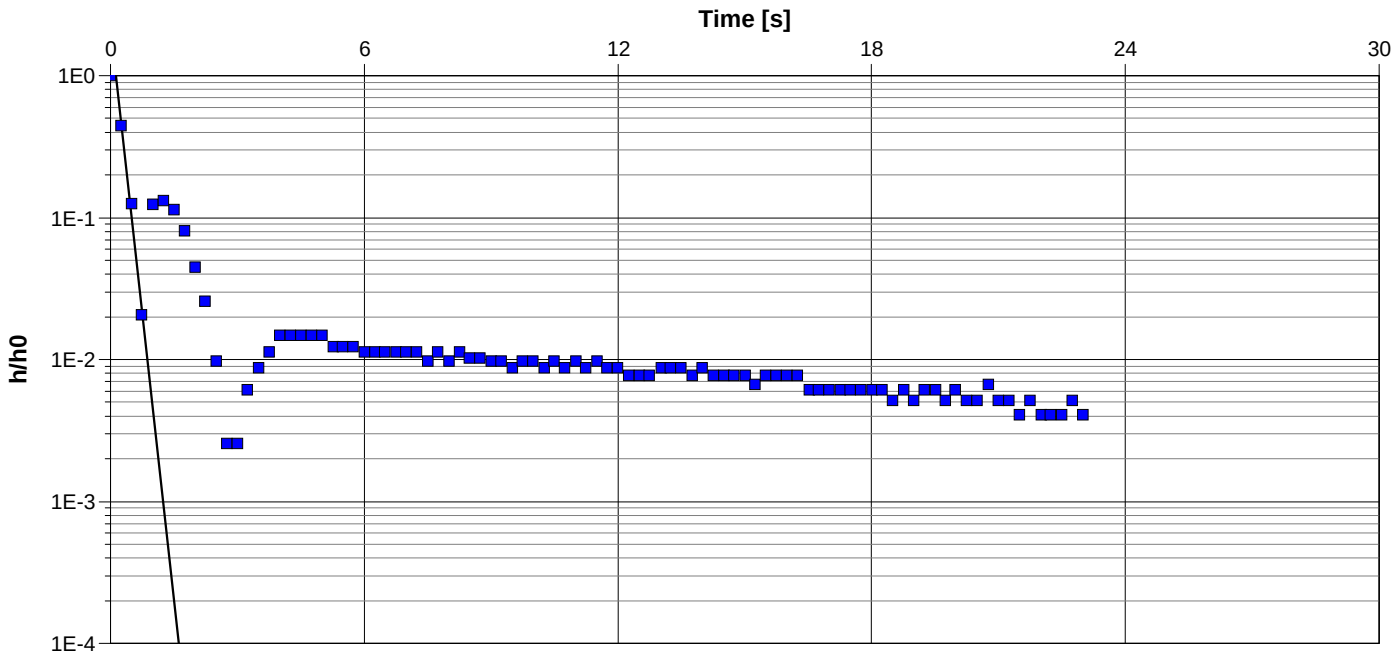


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-BB-MW01	4.64×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-BB-MW01-R2	Test Well: GB-BB-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/7/2020
Aquifer Thickness: 53.79 ft		

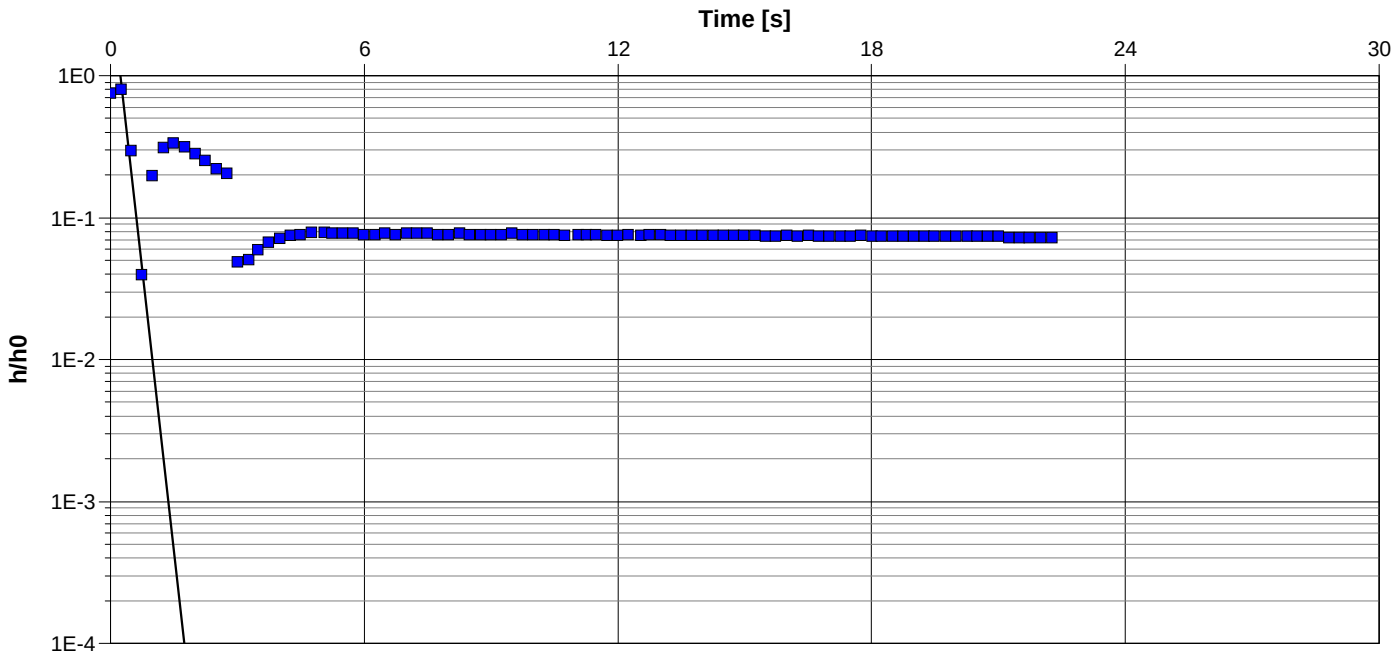


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-BB-MW01	6.44×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-BB-MW01-R4	Test Well: GB-BB-MW01
Test Conducted by:		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/7/2020
Aquifer Thickness: 53.79 ft		

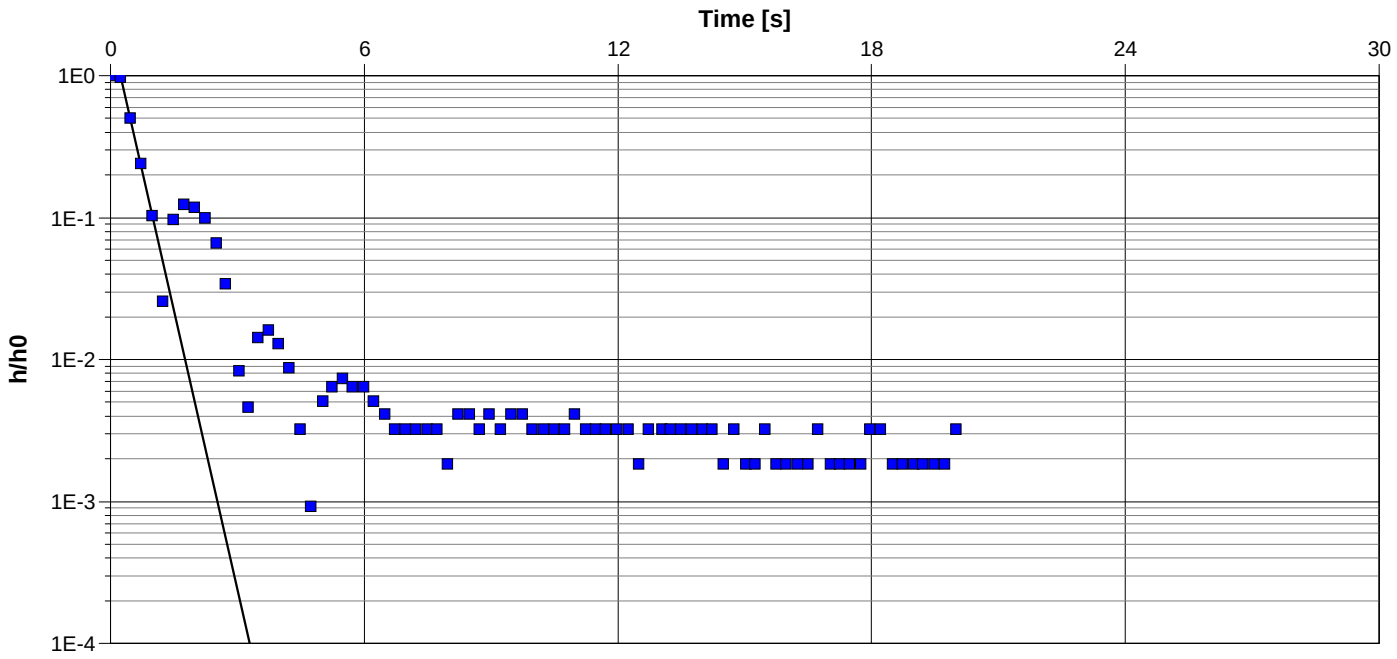


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-BB-MW01	6.33×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-BB-MW02-R3	Test Well: GB-BB-MW02
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 56.90 ft		

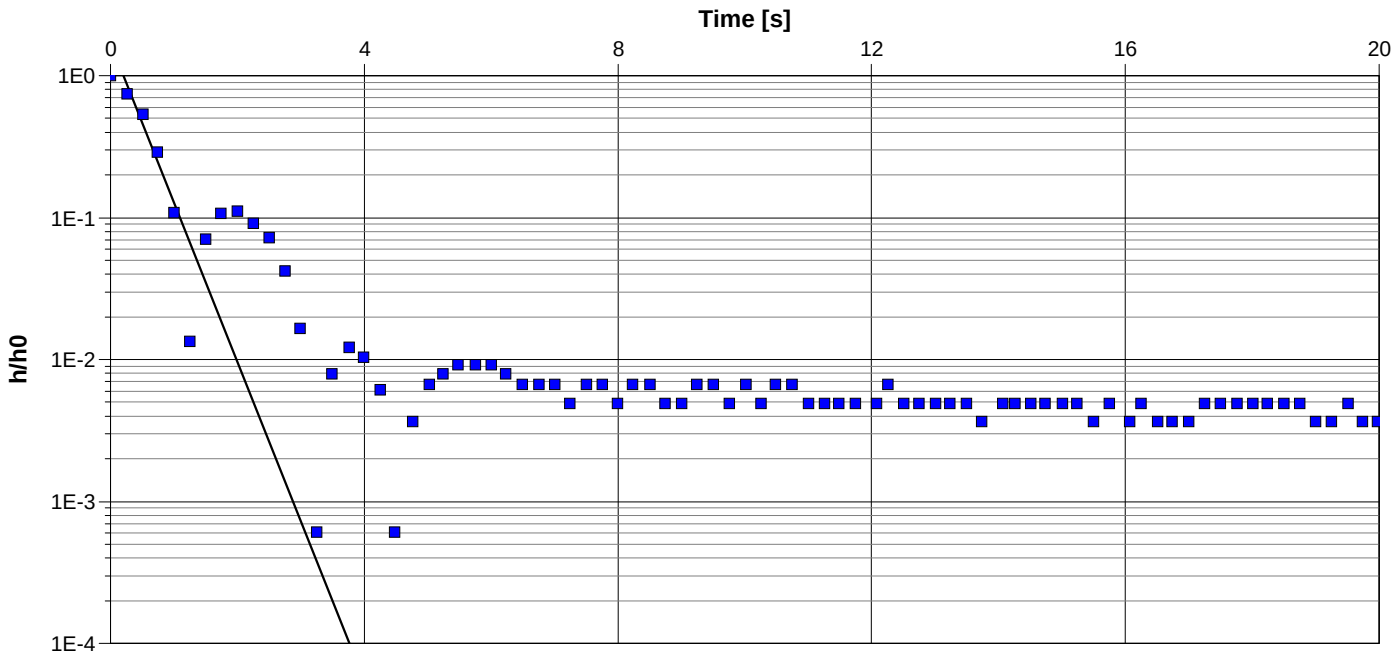


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-BB-MW02	3.13×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-BB-MW02-R1	Test Well: GB-BB-MW02
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 56.90 ft		

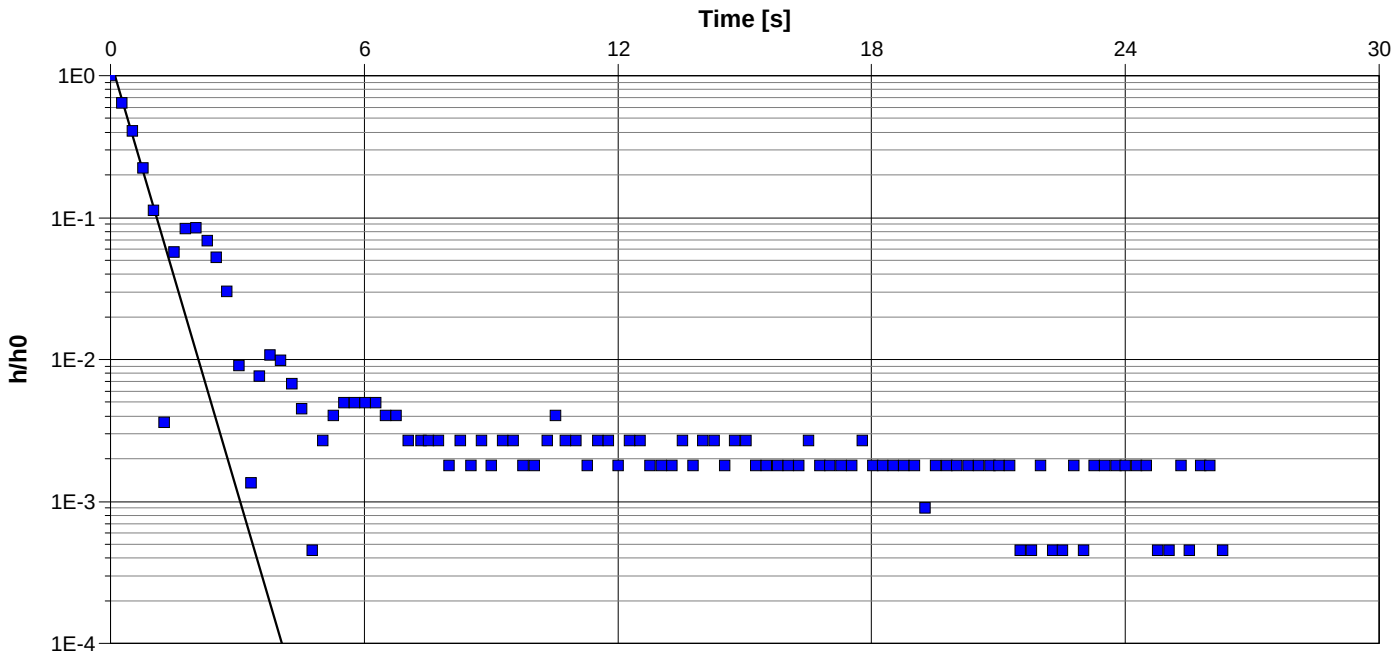


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-BB-MW02	2.68×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-BB-MW02-R2	Test Well: GB-BB-MW02
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 56.90 ft		

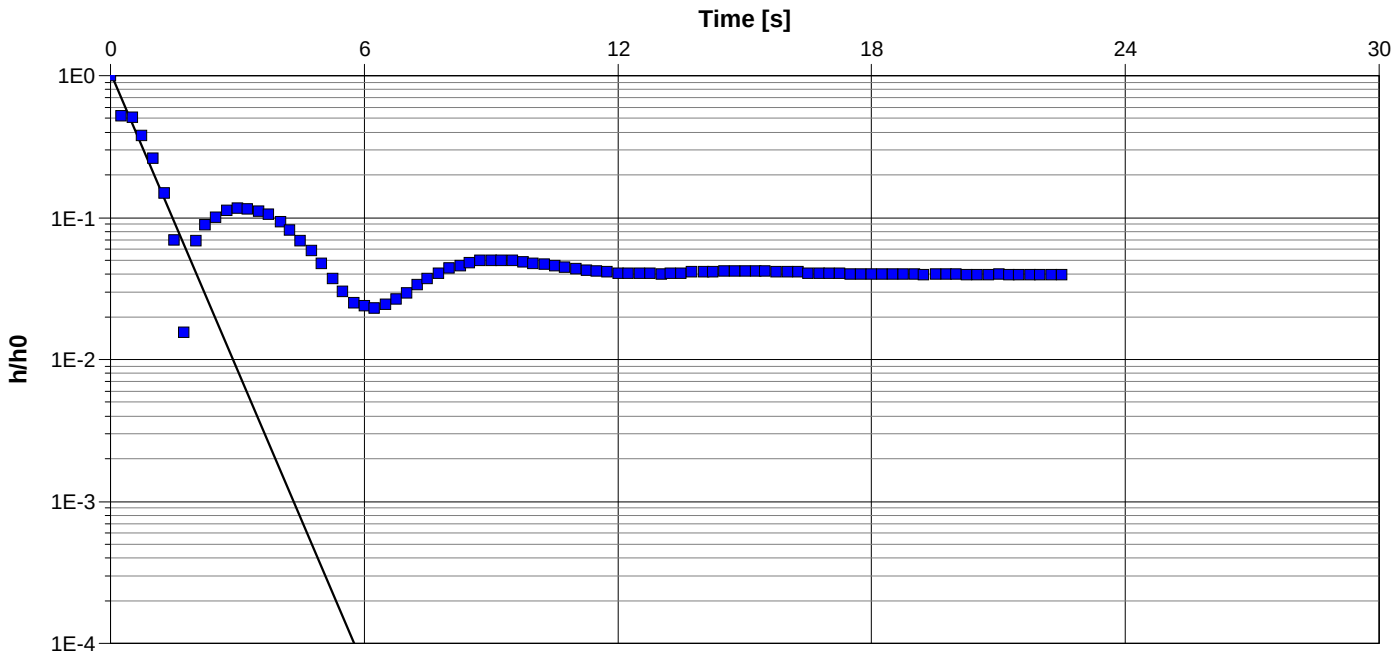


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-BB-MW02	2.42×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-IRP7-MW03-R1	Test Well: GB-IRP7-MW03
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/7/2020
Aquifer Thickness: 71.65 ft		

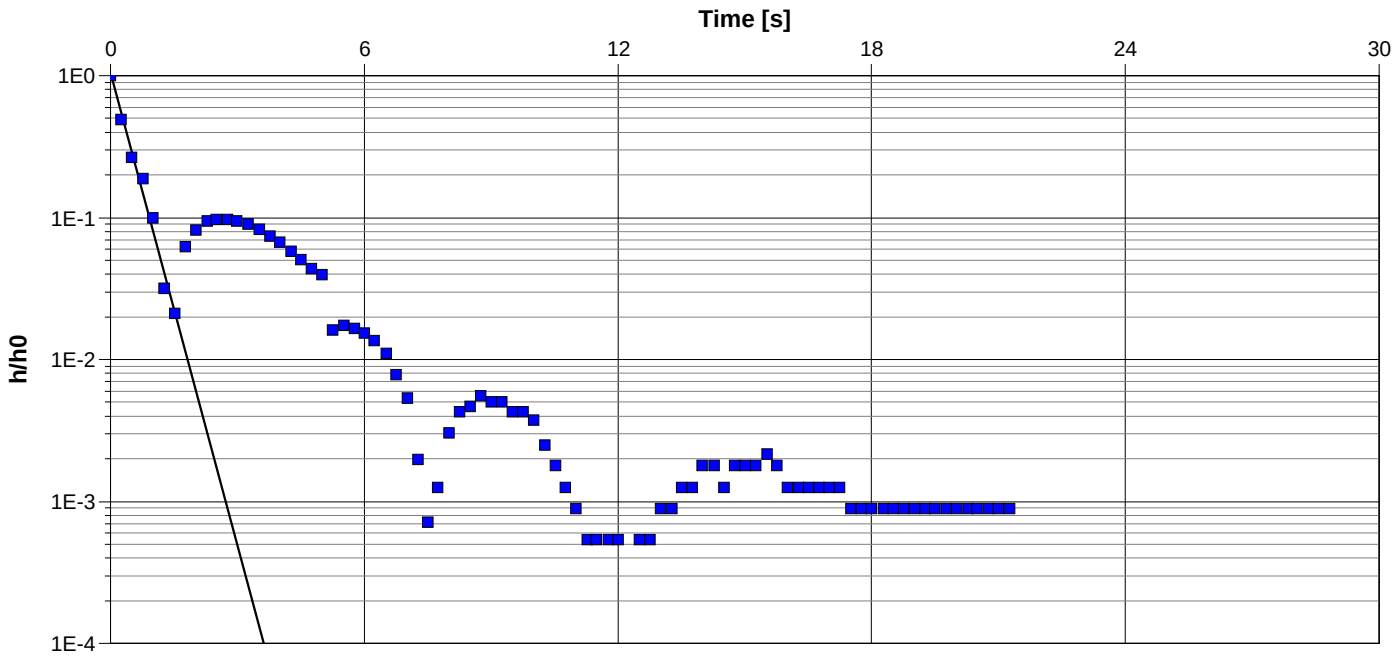


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-IRP7-MW03	1.67×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-IRP7-MW03-R2	Test Well: GB-IRP7-MW03
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 71.65 ft		

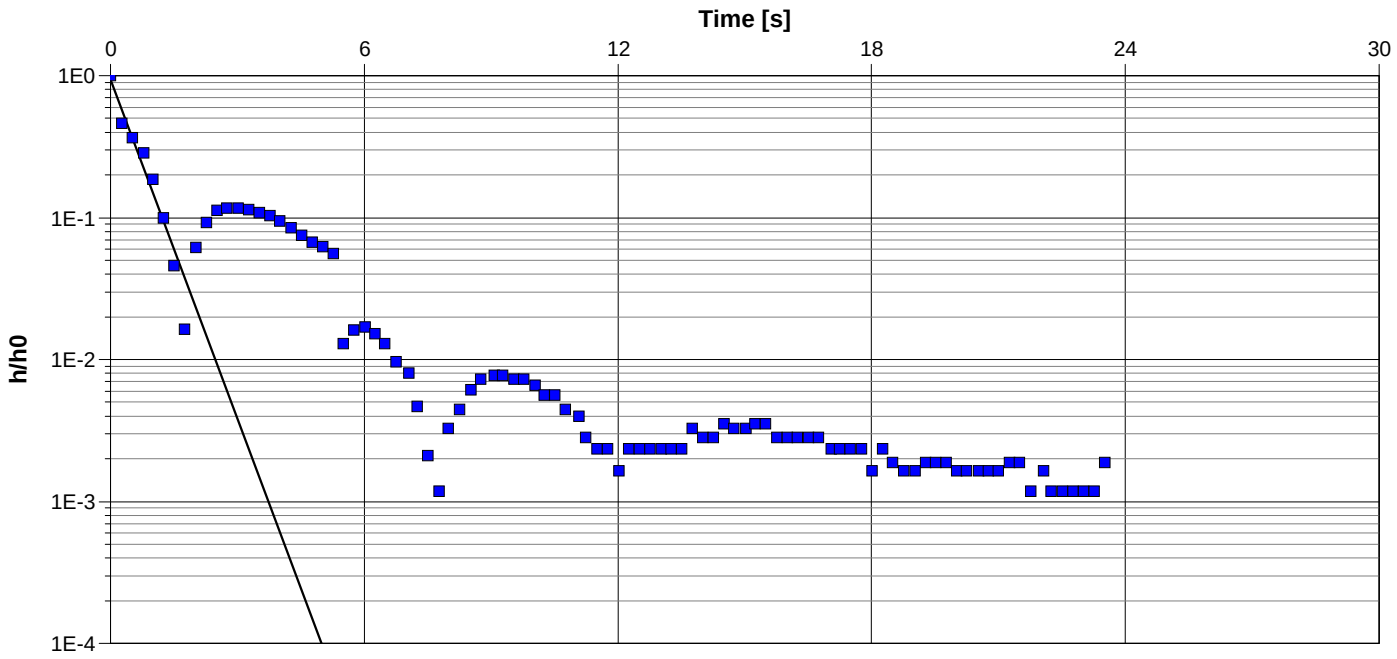


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-IRP7-MW03	2.65×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-IRP7-MW03-R3	Test Well: GB-IRP7-MW03
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/7/2020
Aquifer Thickness: 71.65 ft		

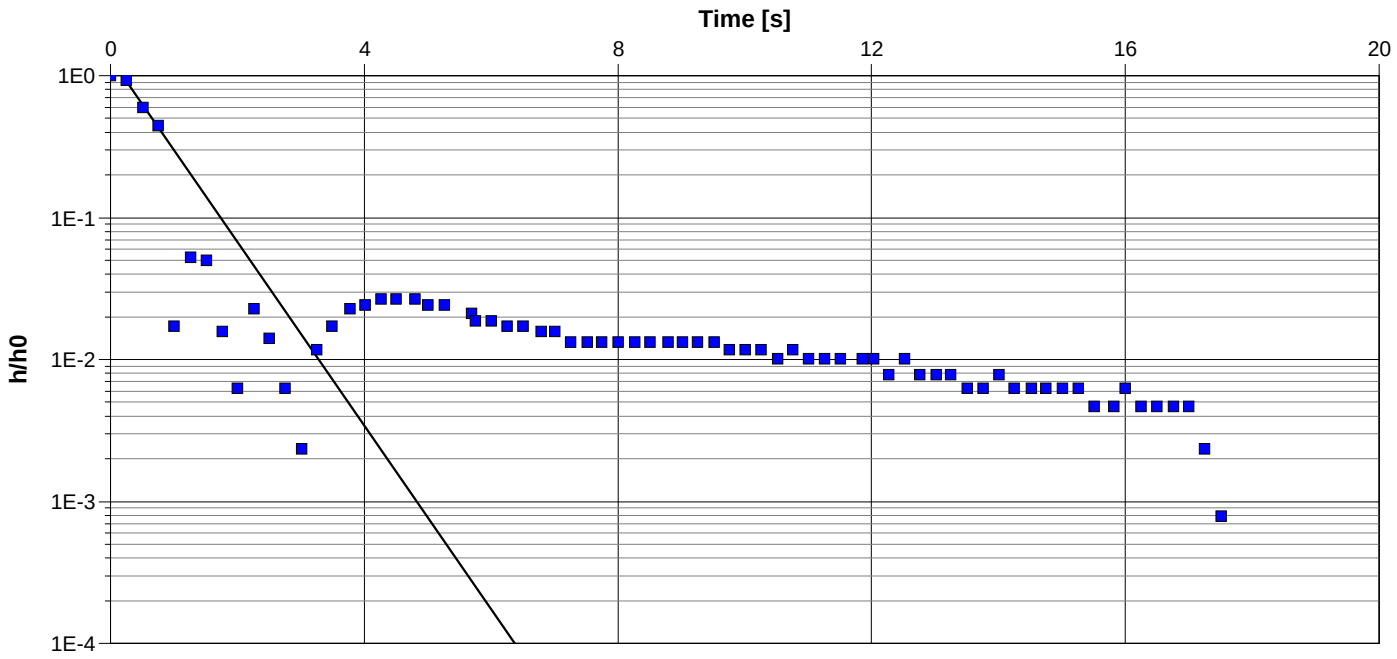


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-IRP7-MW03	1.90×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-IRP7-MW04-F1	Test Well: GB-IRP7-MW04
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 49.64 ft		

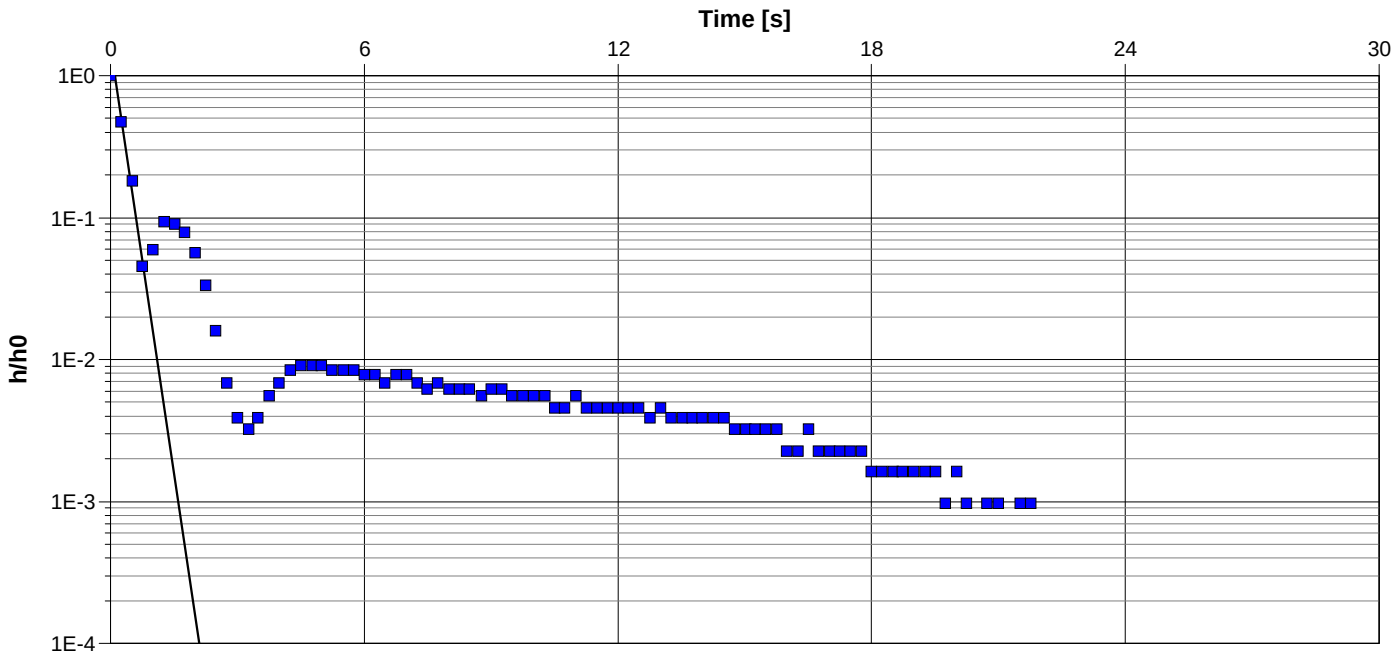


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-IRP7-MW04	1.55×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-IRP7-MW04-R2	Test Well: GB-IRP7-MW04
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 49.64 ft		

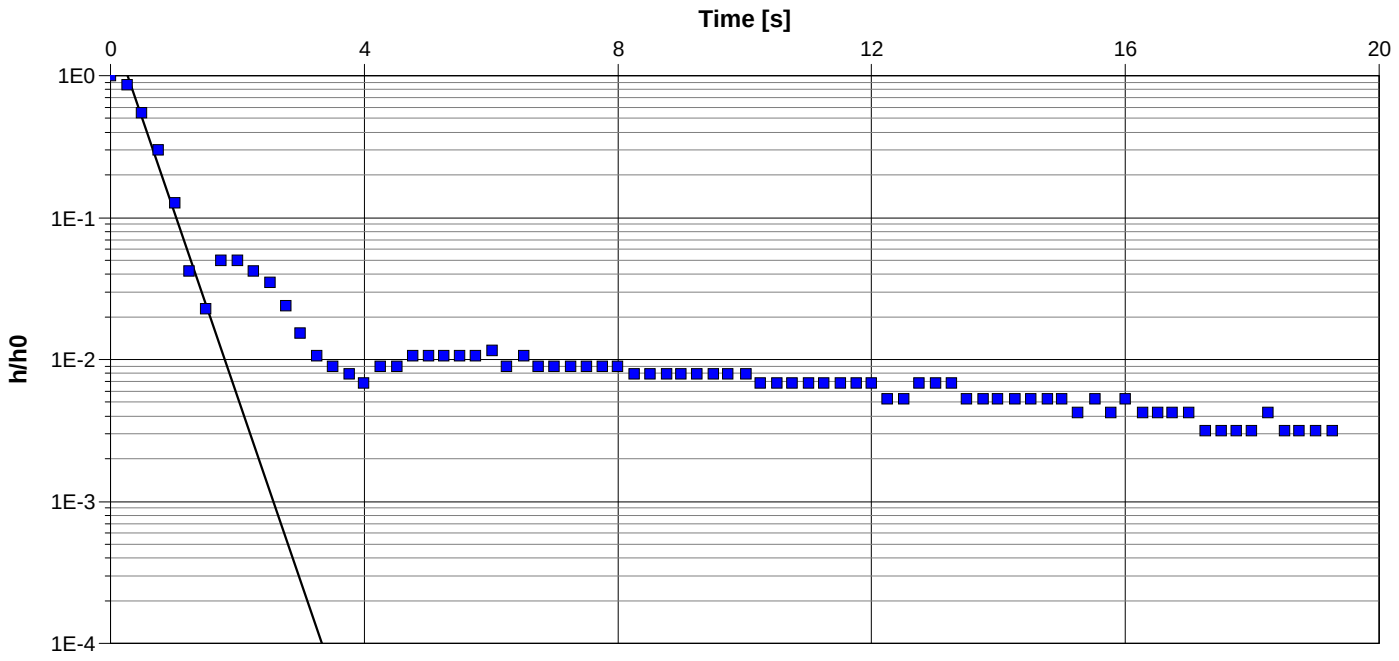


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-IRP7-MW04	4.79×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-IRP7-MW04-R3	Test Well: GB-IRP7-MW04
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/7/2020
Aquifer Thickness: 49.64 ft		

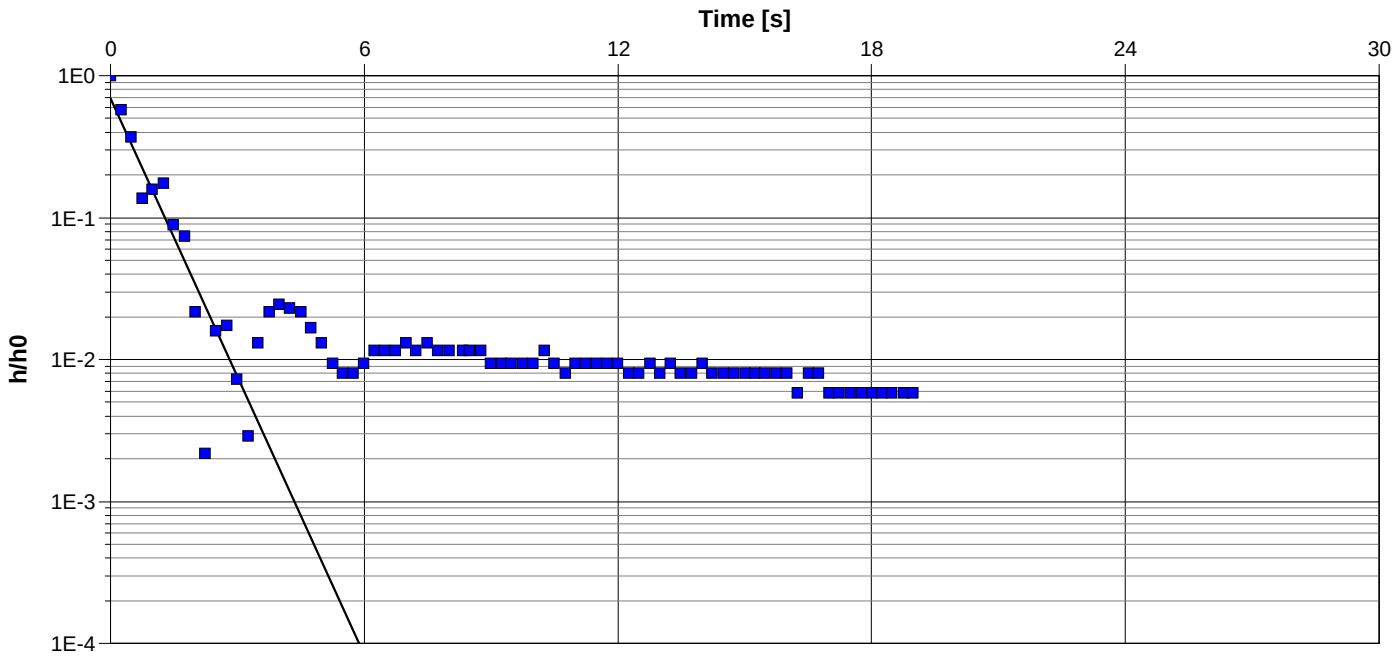


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-IRP7-MW04	3.12×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW01-F1	Test Well: GB-OB-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 48.07 ft		

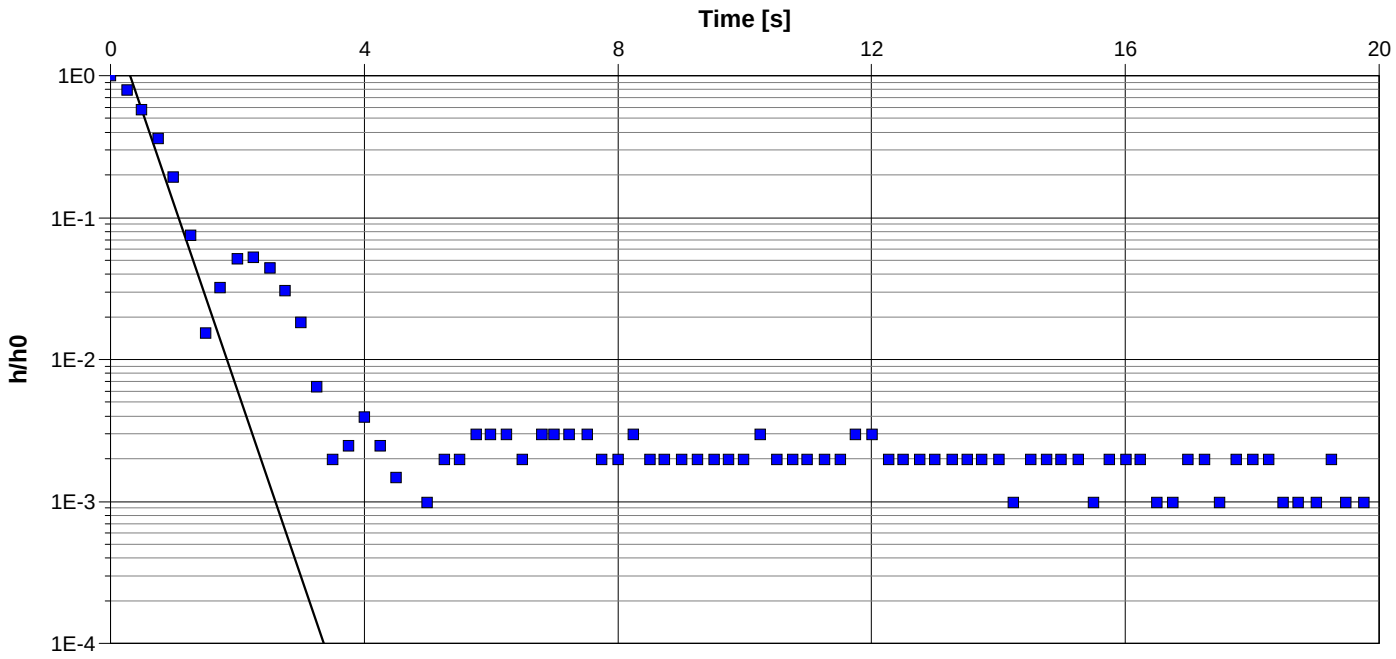


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW01	1.56×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW01-R1	Test Well: GB-OB-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/2/2020
Aquifer Thickness: 48.07 ft		

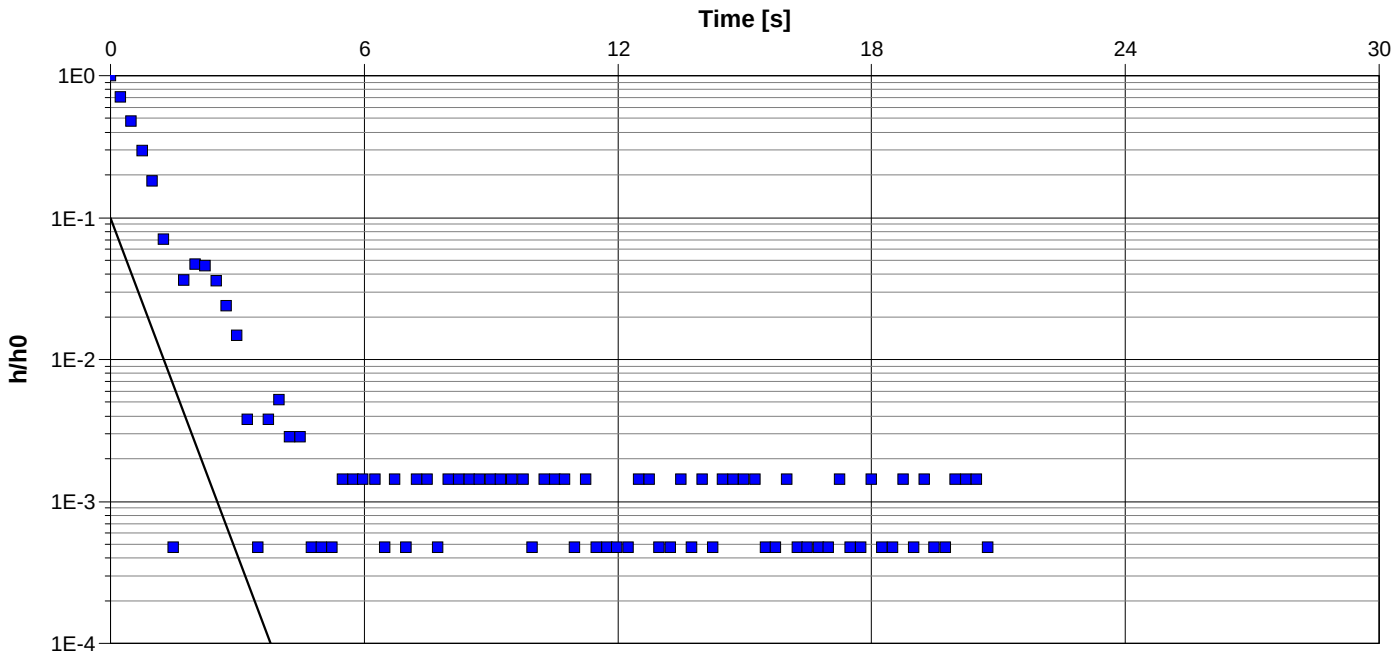


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW01	3.13×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW01-R2	Test Well: GB-OB-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 48.07 ft		

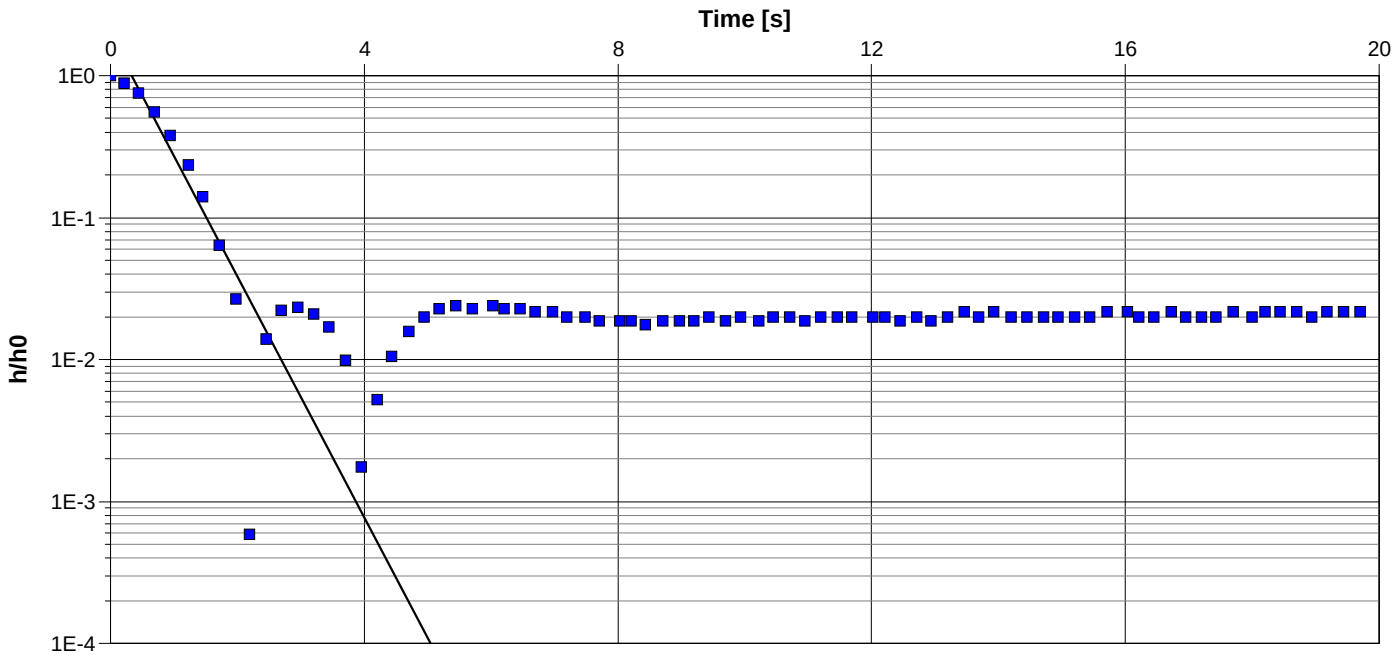


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW01	1.89×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW02-R1	Test Well: GB-OB-MW02
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/2/2020
Aquifer Thickness: 48.07 ft		

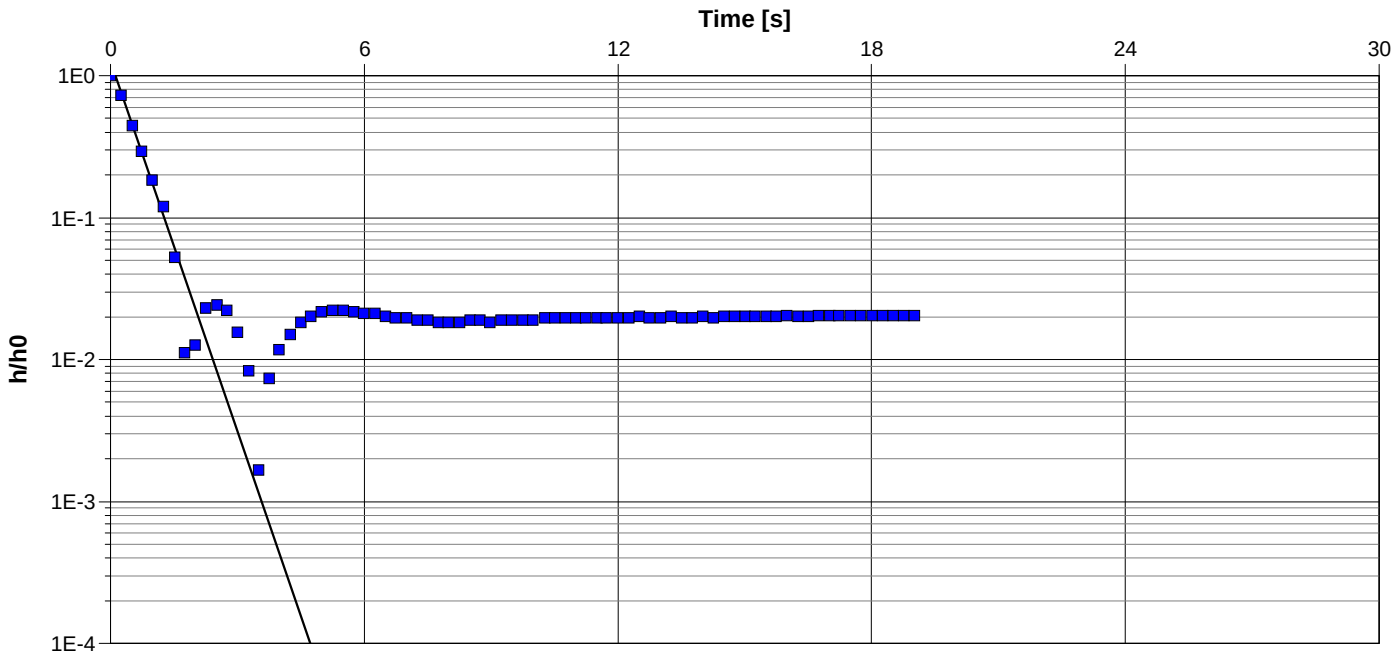


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW02	2.03×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW02-R2	Test Well: GB-OB-MW02
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 48.07 ft		

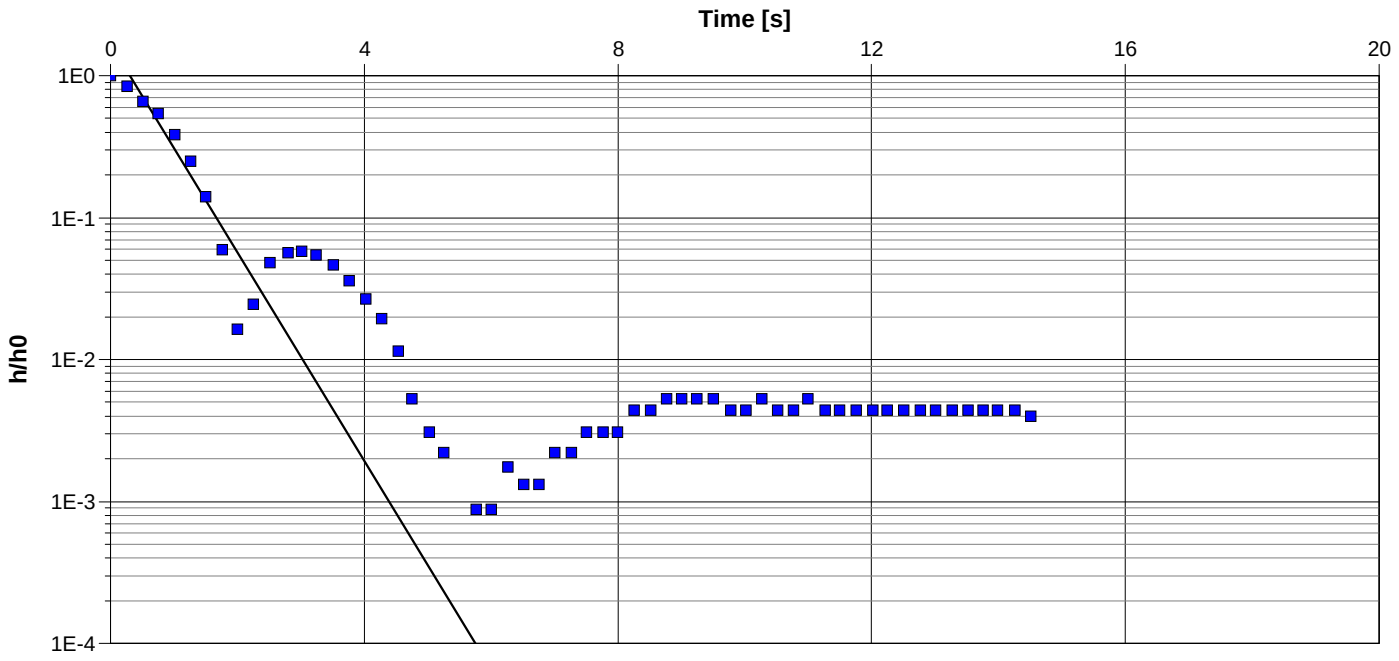


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW02	2.08×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW02-R3	Test Well: GB-OB-MW02
Test Conducted by:		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/7/2020
Aquifer Thickness: 48.07 ft		

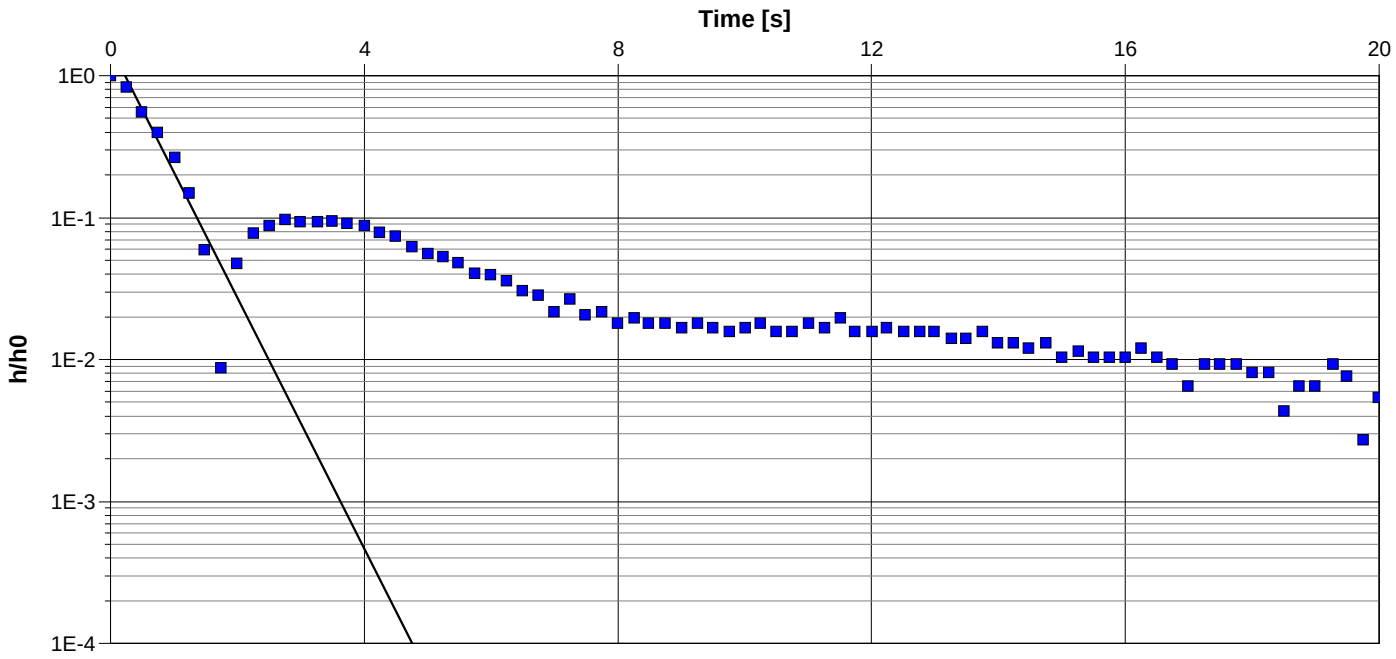


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW02	1.76×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW03-R1	Test Well: GB-OB-MW03
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 72.80 ft		

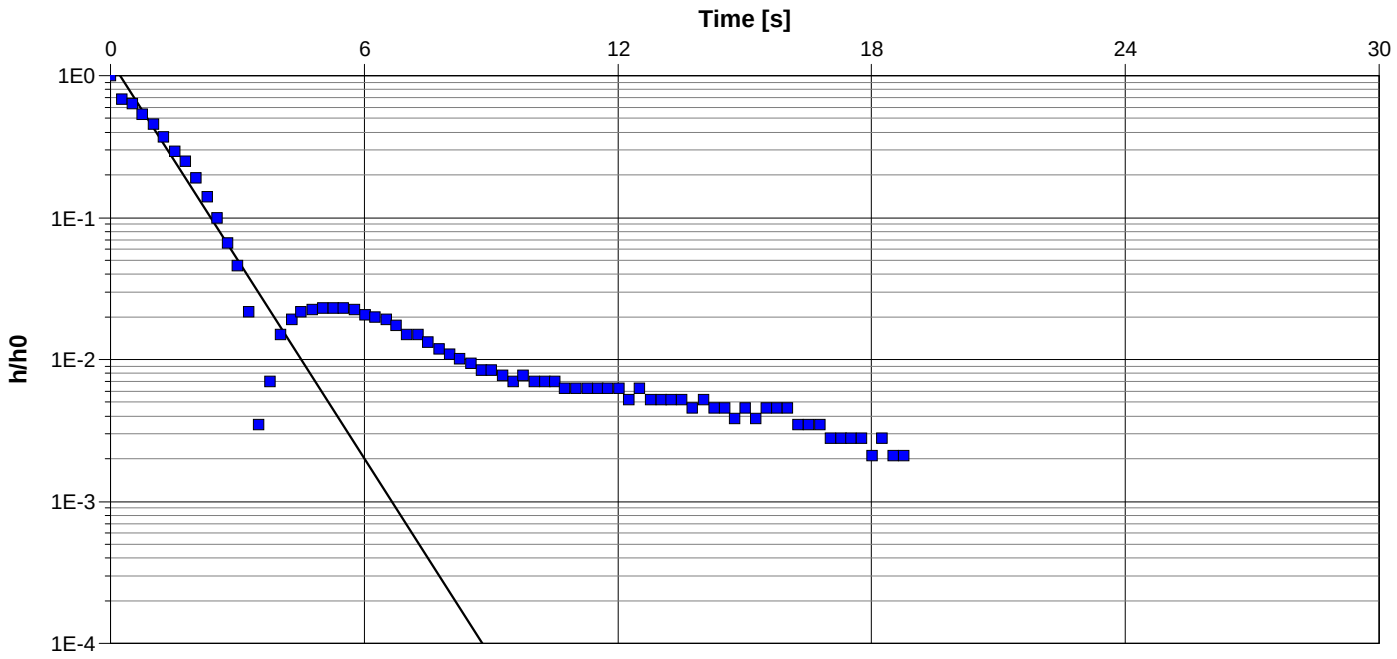


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW03	2.11×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW03-R2	Test Well: GB-OB-MW03
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 72.80 ft		

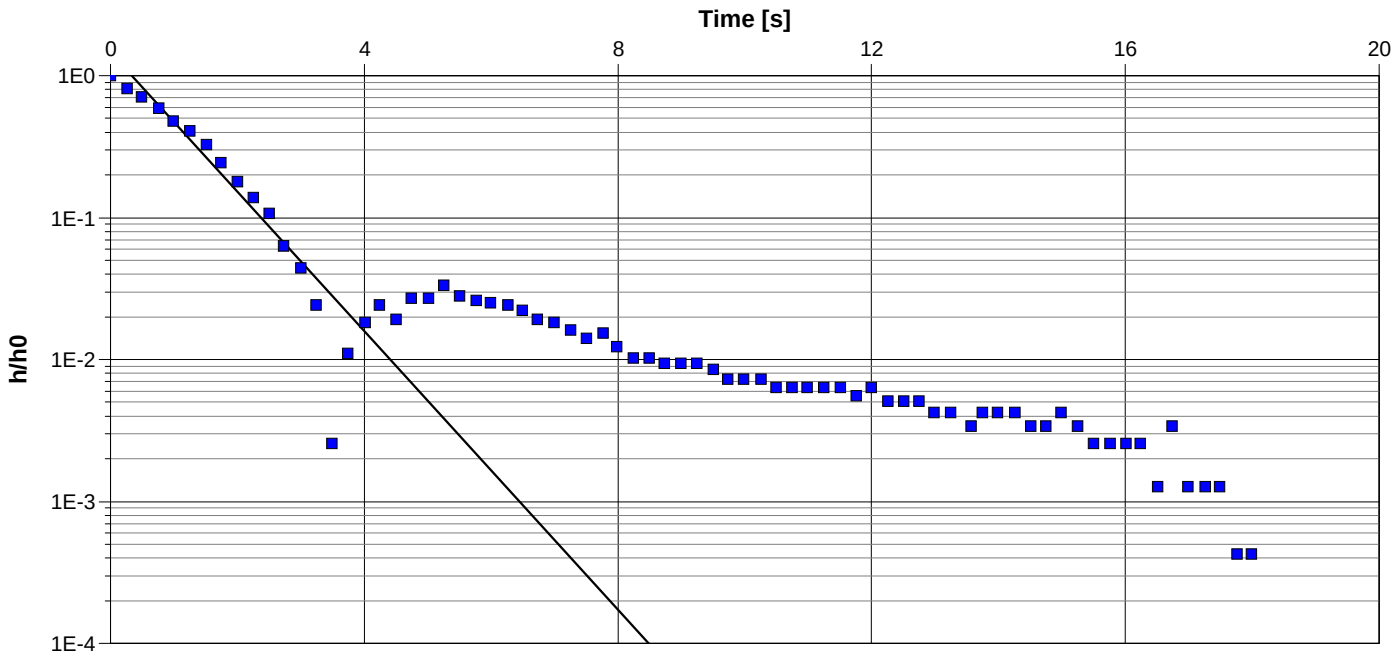


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW03	1.12×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW03-R3	Test Well: GB-OB-MW03
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/9/2020
Aquifer Thickness: 72.80 ft		

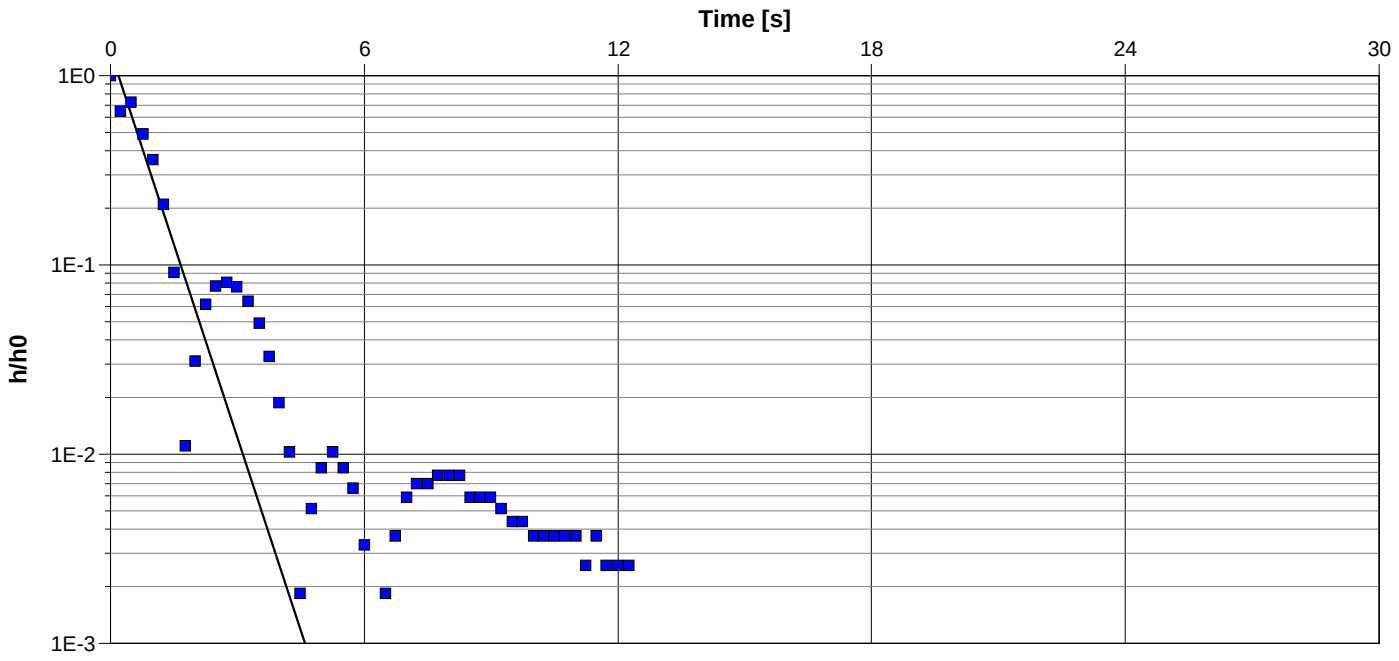


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW03	1.17×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW04-R1	Test Well: GB-OB-MW04
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 47.75 ft		

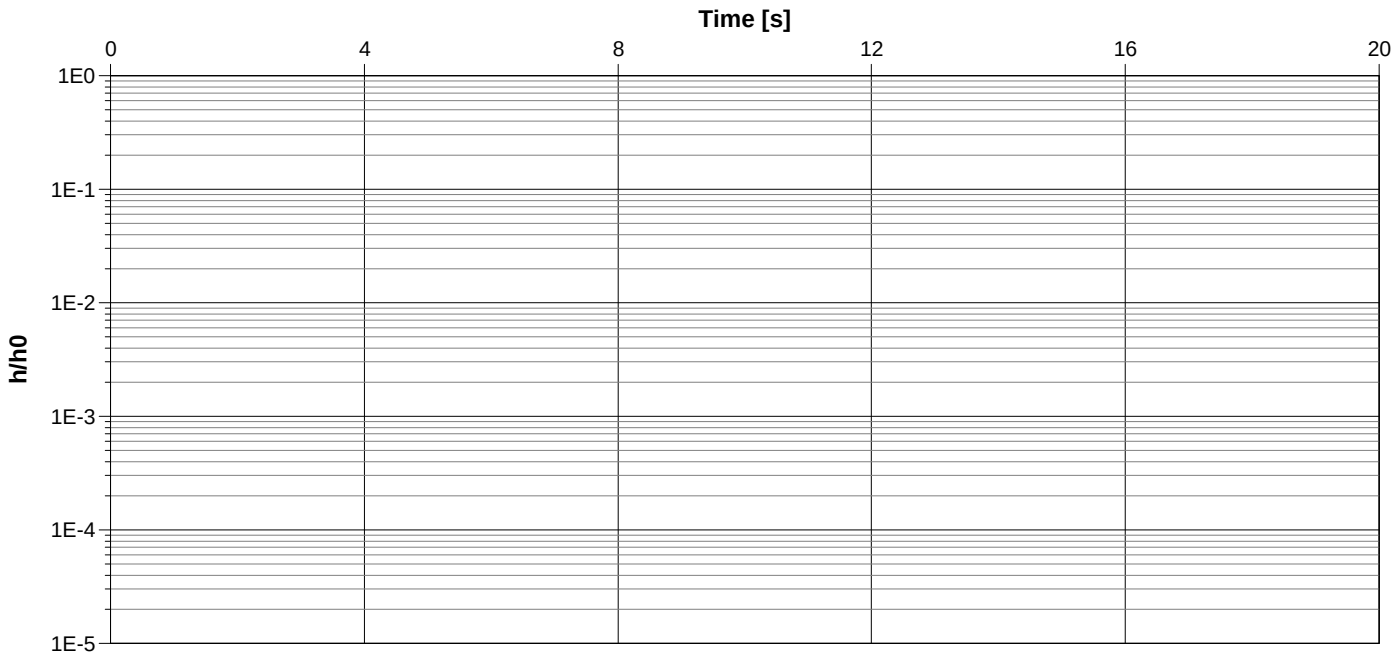


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW04	1.63×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW04-R2	Test Well: GB-OB-MW04
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/9/2020
Aquifer Thickness: 47.75 ft		

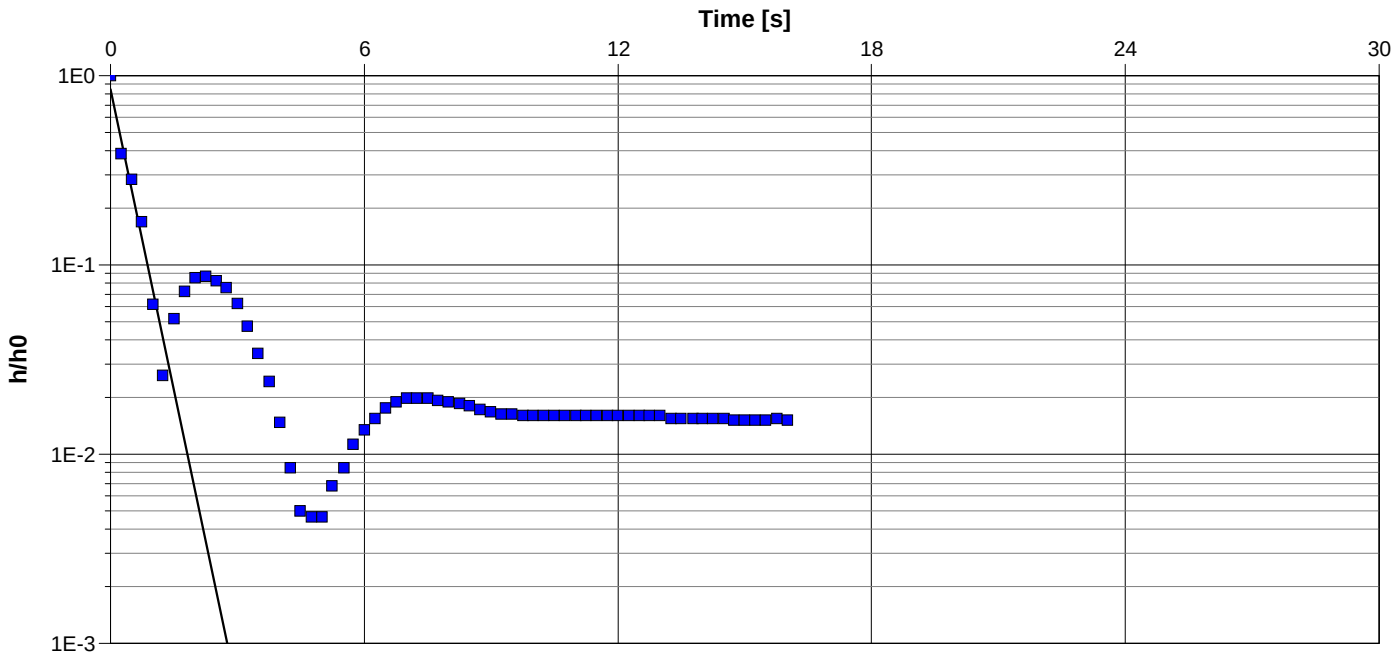


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW04	2.16×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW04-R3	Test Well: GB-OB-MW04
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/12/2020
Aquifer Thickness: 47.75 ft		

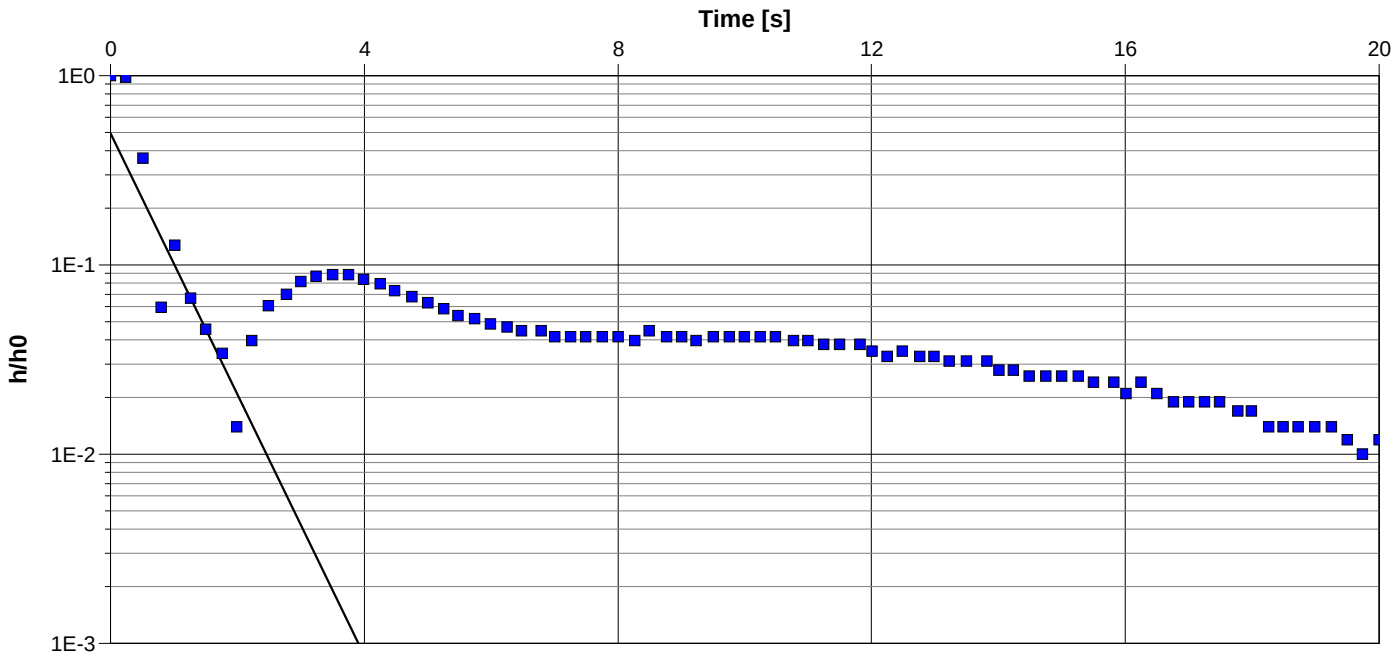


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW04	2.54×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW06-F2	Test Well: GB-OB-MW06
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 37.85 ft		

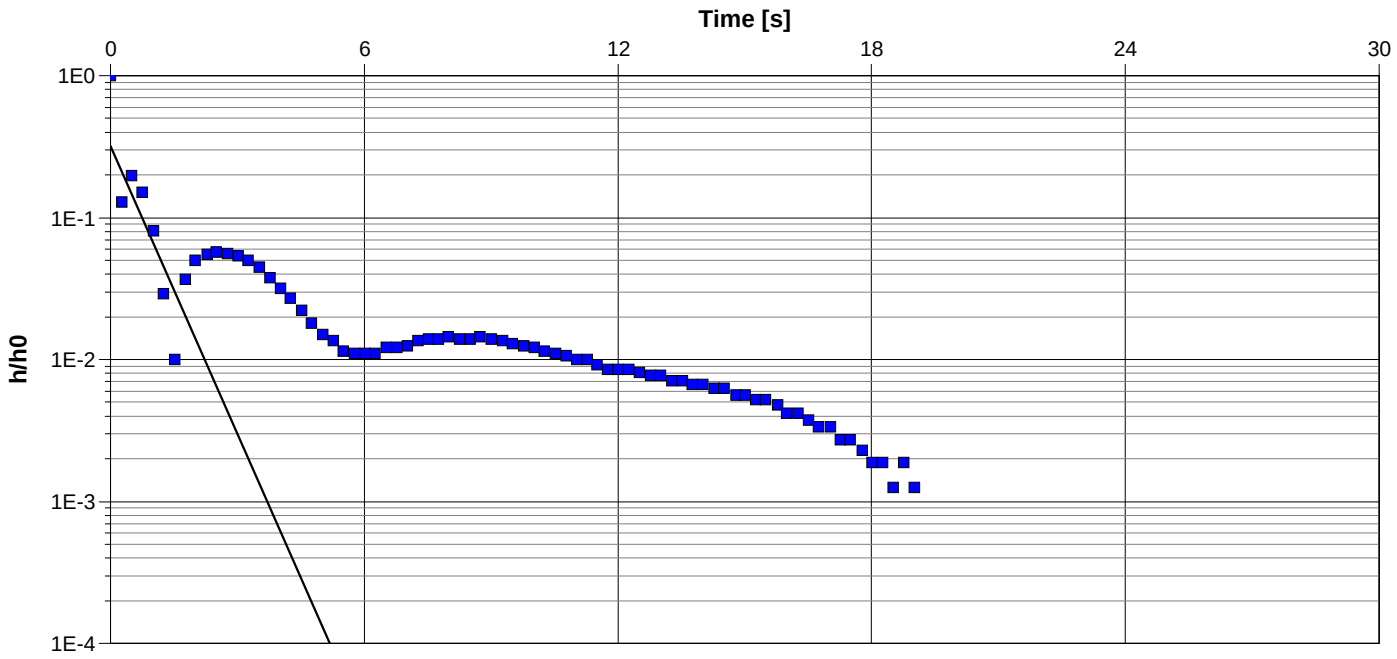


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW06	1.65×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW06-R1	Test Well: GB-OB-MW06
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 37.85 ft		

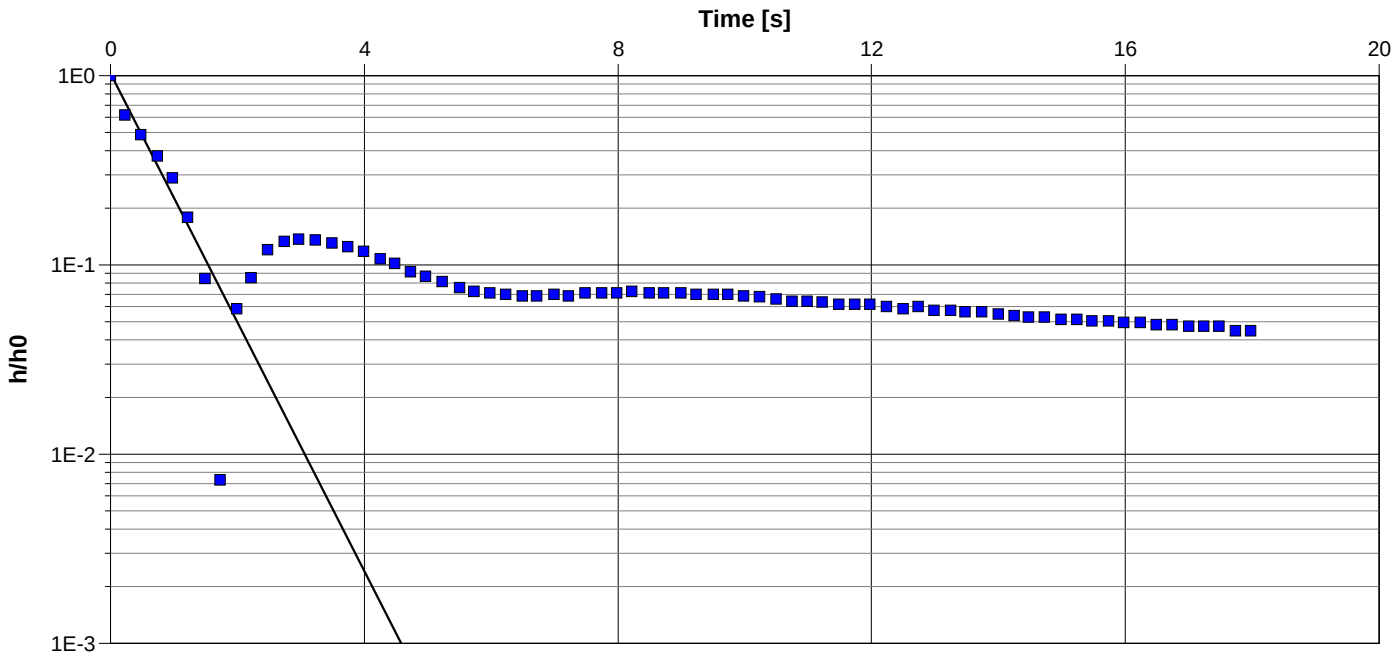


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW06	1.62×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW06-R2	Test Well: GB-OB-MW06
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/9/2020
Aquifer Thickness: 37.85 ft		

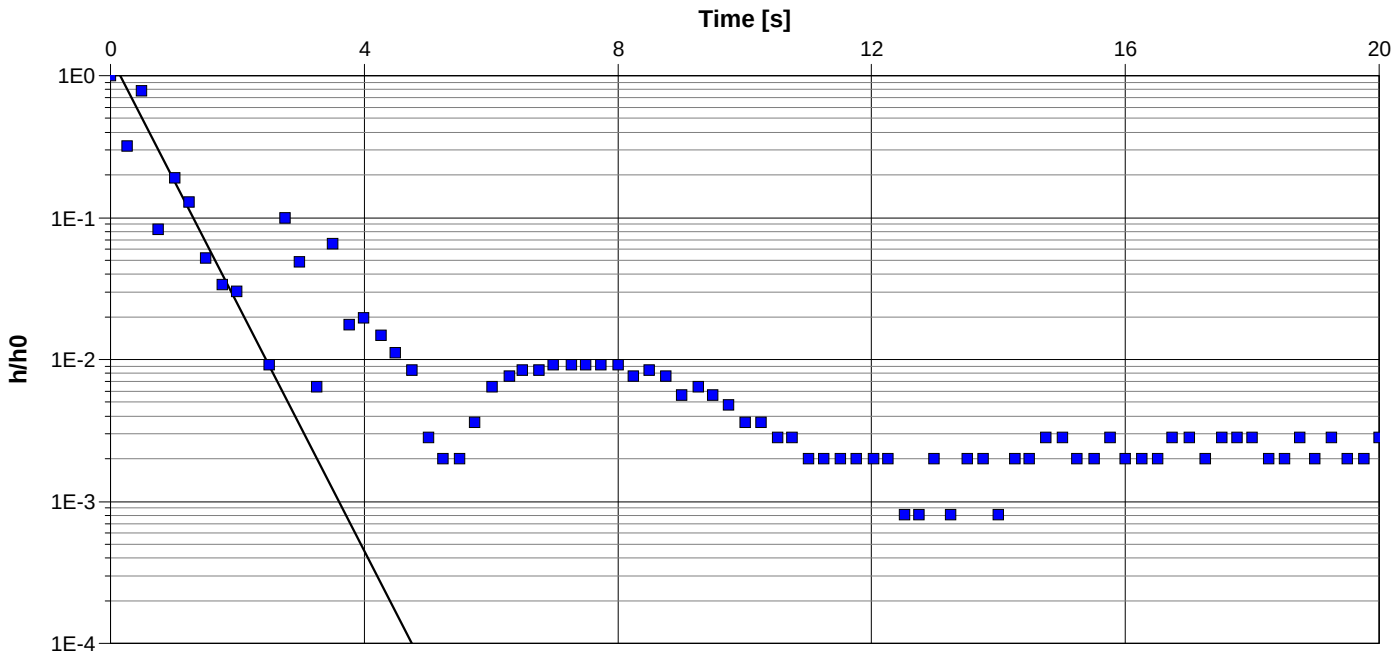


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW06	1.57×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	**Slug Test Analysis Report**
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW07-F3	Test Well: GB-OB-MW07
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 83.73 ft		

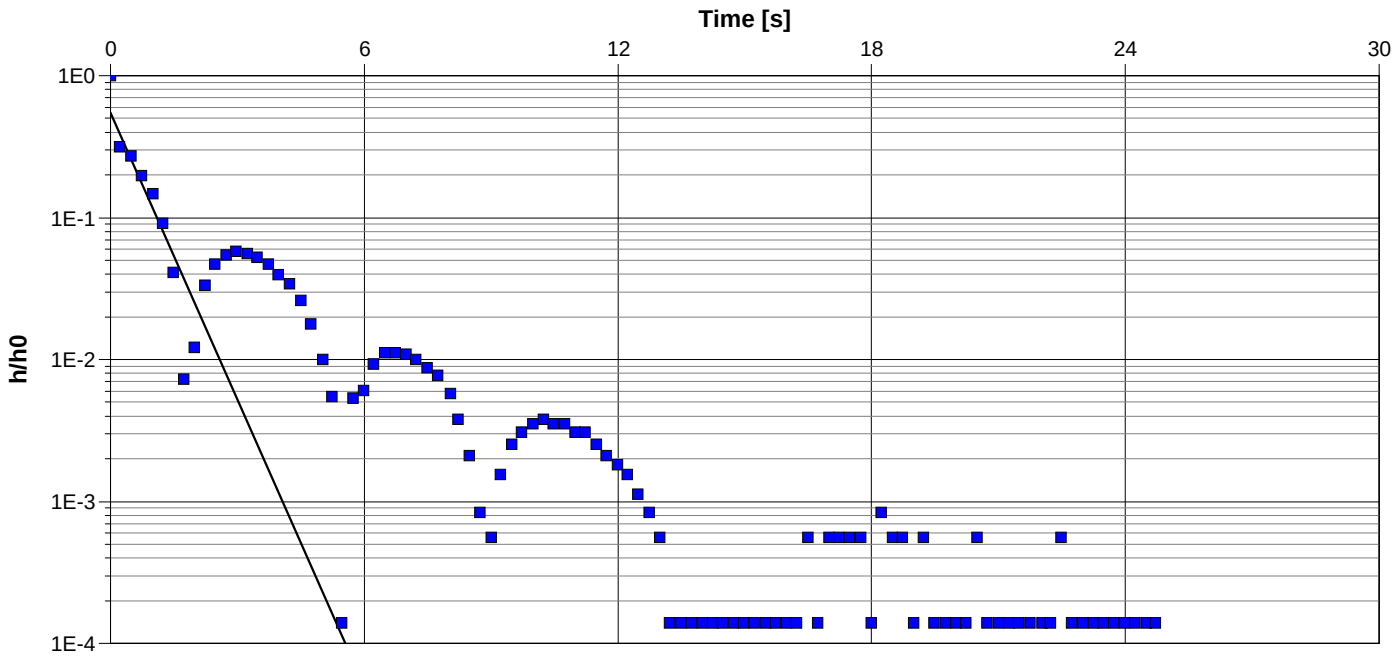


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW07	2.08×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW07-R1	Test Well: GB-OB-MW07
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 83.73 ft		

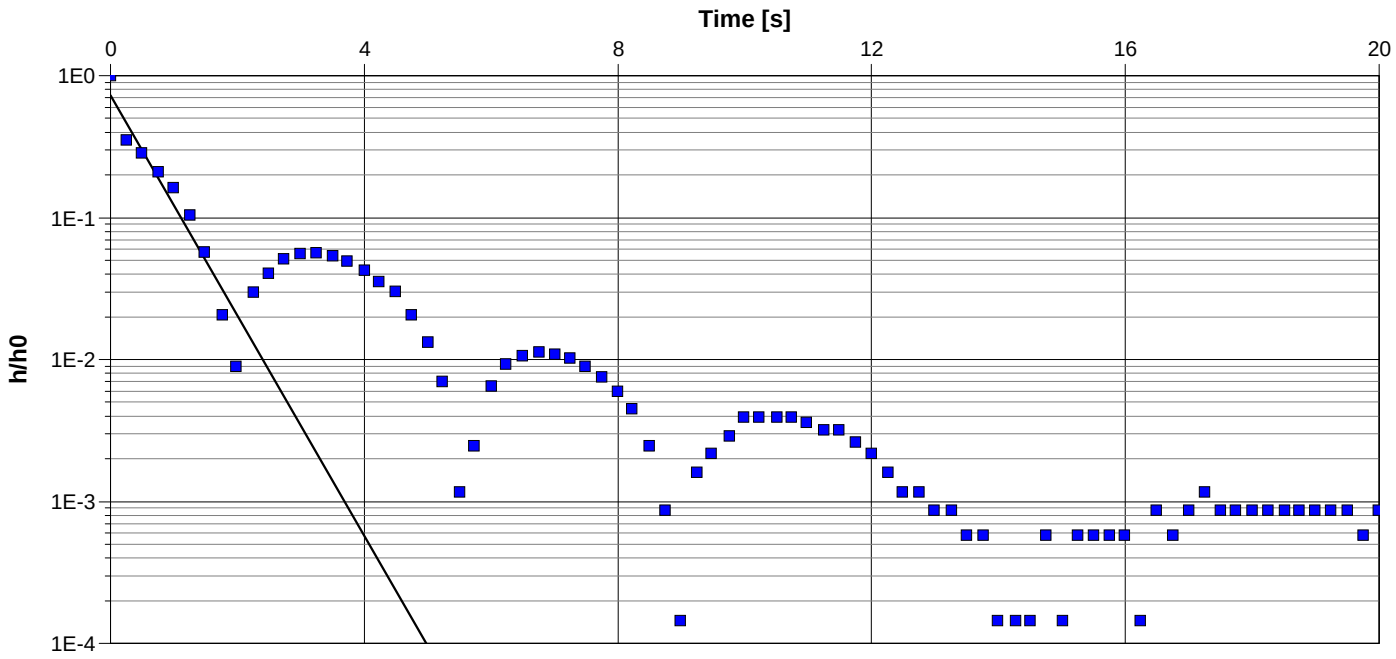


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW07	1.61×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW07-R2	Test Well: GB-OB-MW07
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/9/2020
Aquifer Thickness: 83.73 ft		

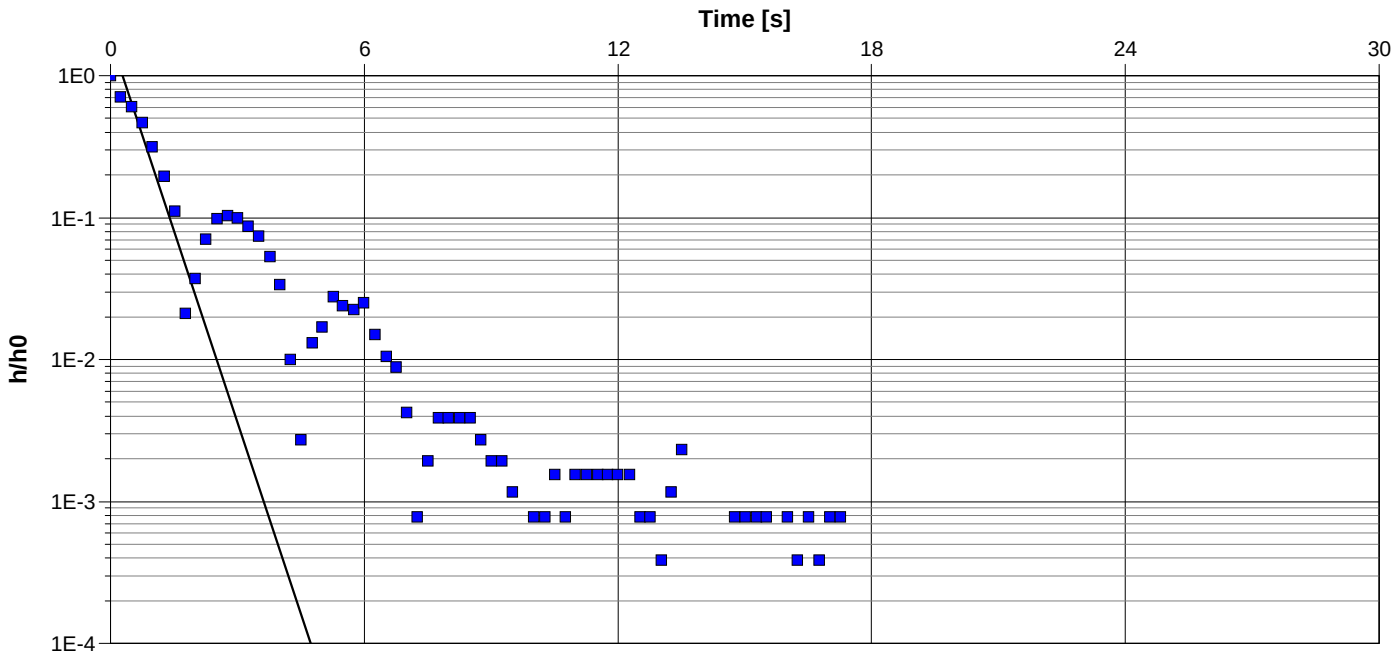


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW07	1.86×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW08-R1	Test Well: GB-OB-MW08
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 61.29 ft		

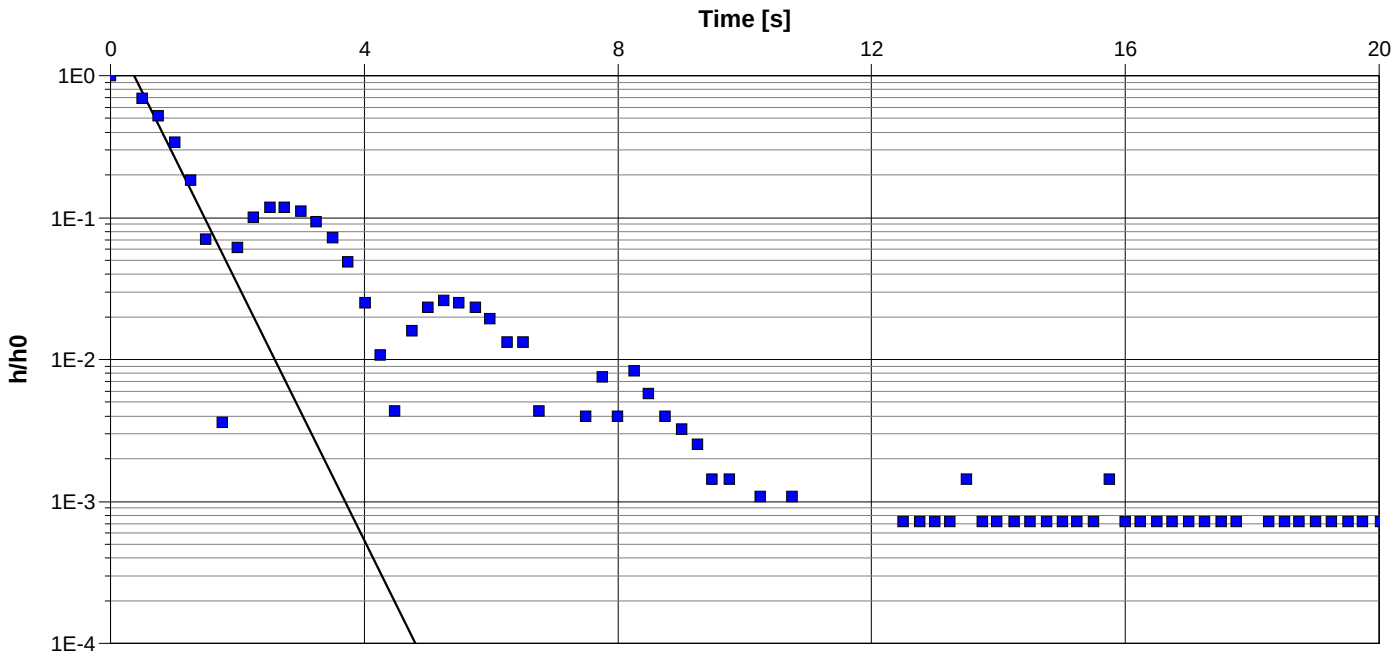


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW08	2.15×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW08-R2	Test Well: GB-OB-MW08
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/9/2020
Aquifer Thickness: 61.29 ft		

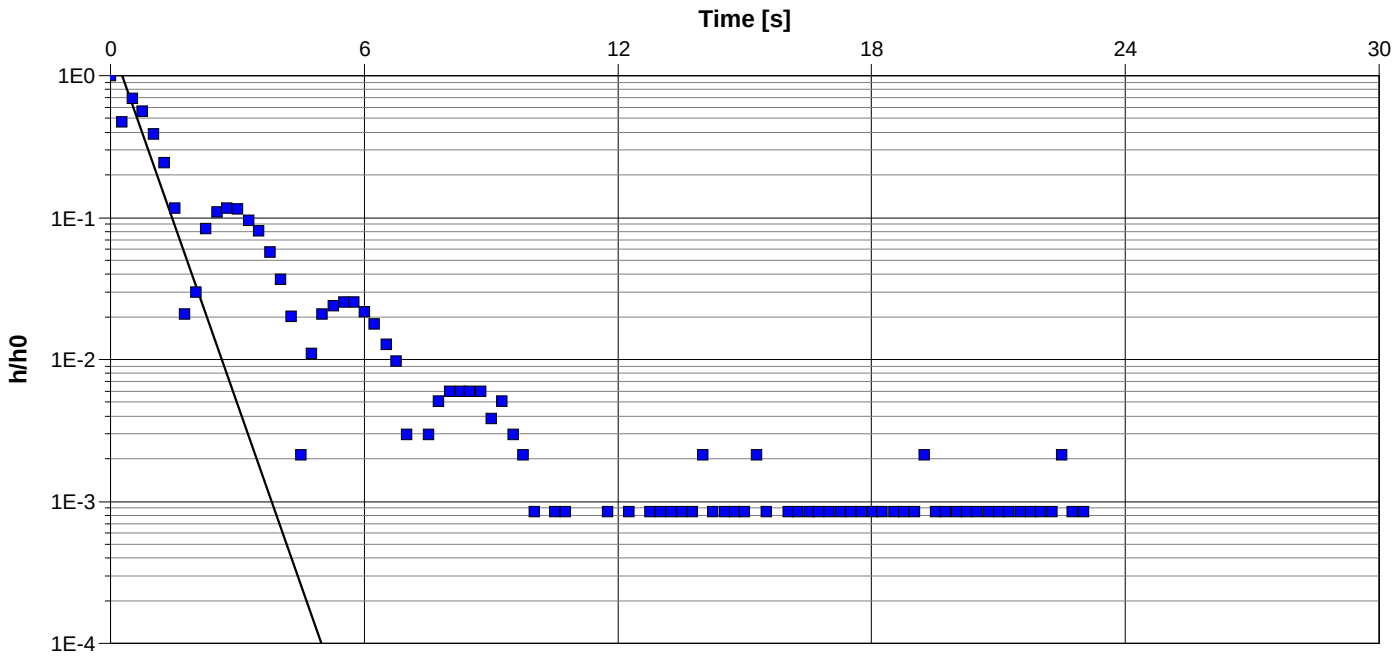


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW08	2.16×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-OB-MW08-R3	Test Well: GB-OB-MW08
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/12/2020
Aquifer Thickness: 61.29 ft		

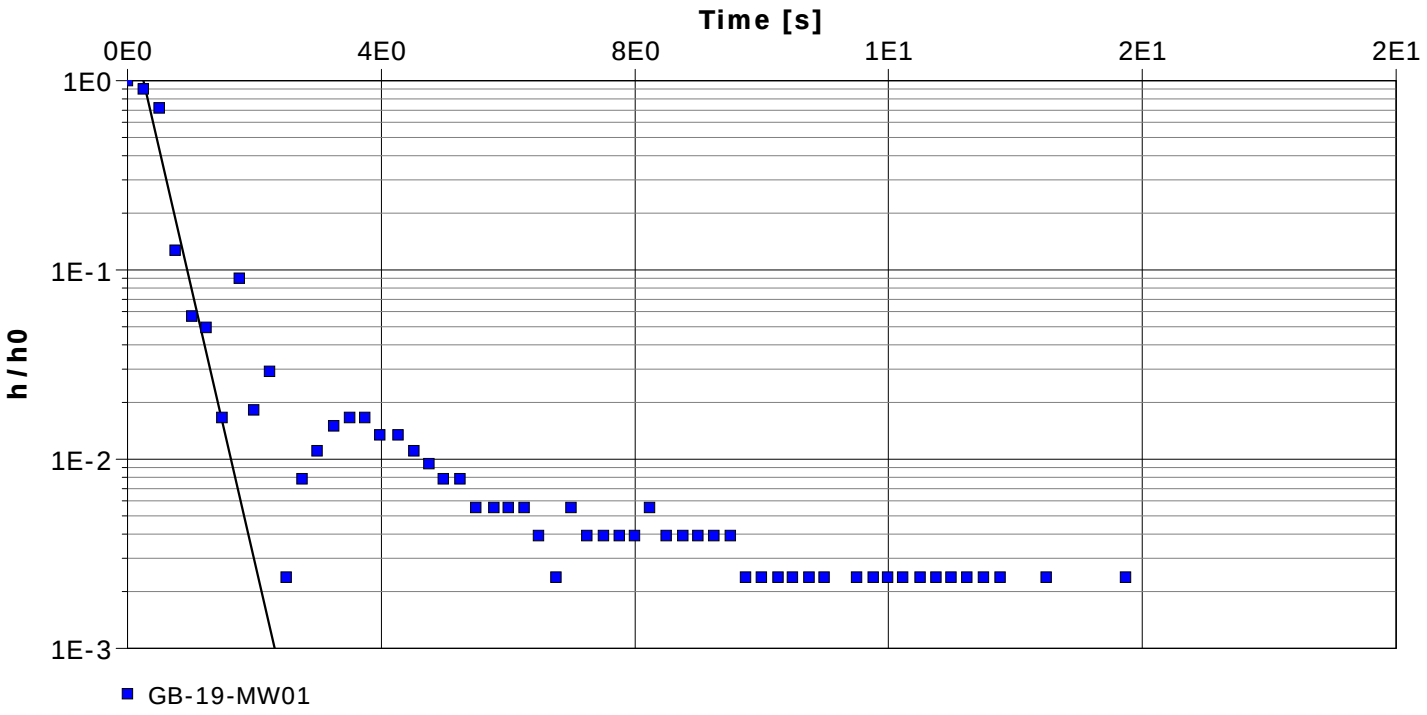


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-OB-MW08	2.03×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-19-MW01-F1	Test Well: GB-19-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 46.80 ft		

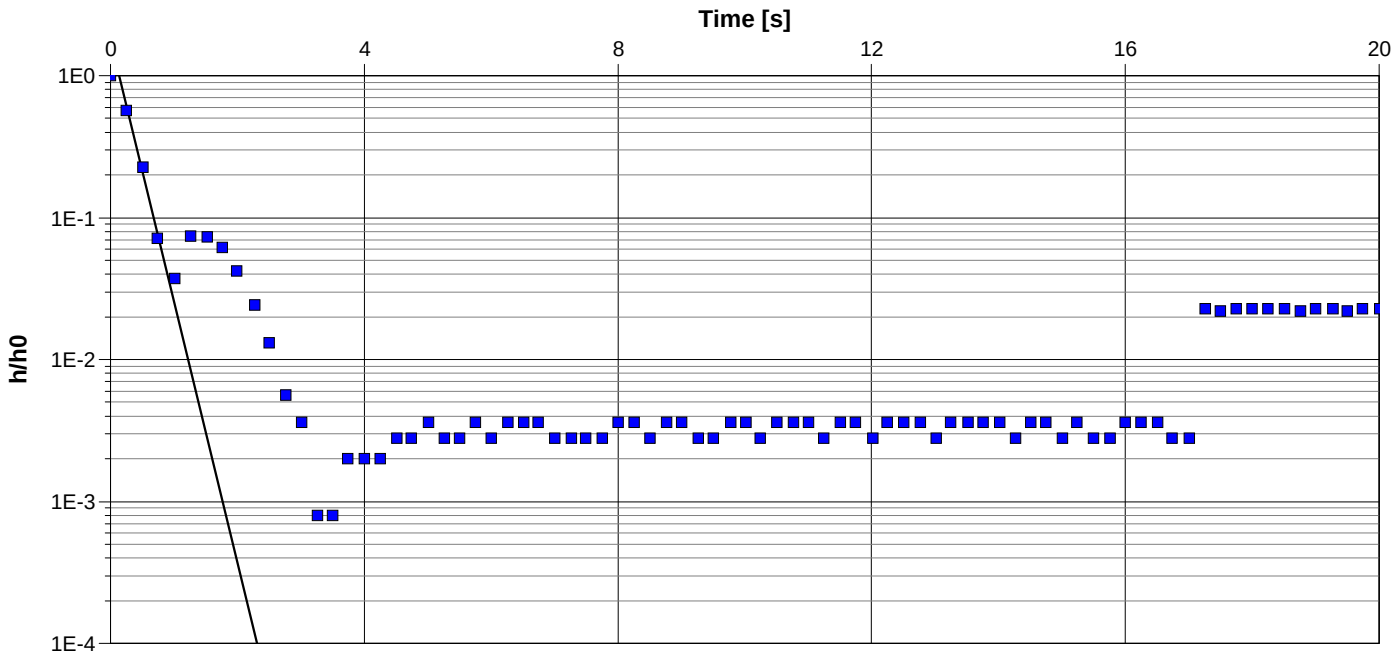


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-19-MW01	3.47×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-19-MW01-R1	Test Well: GB-19-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 46.80 ft		

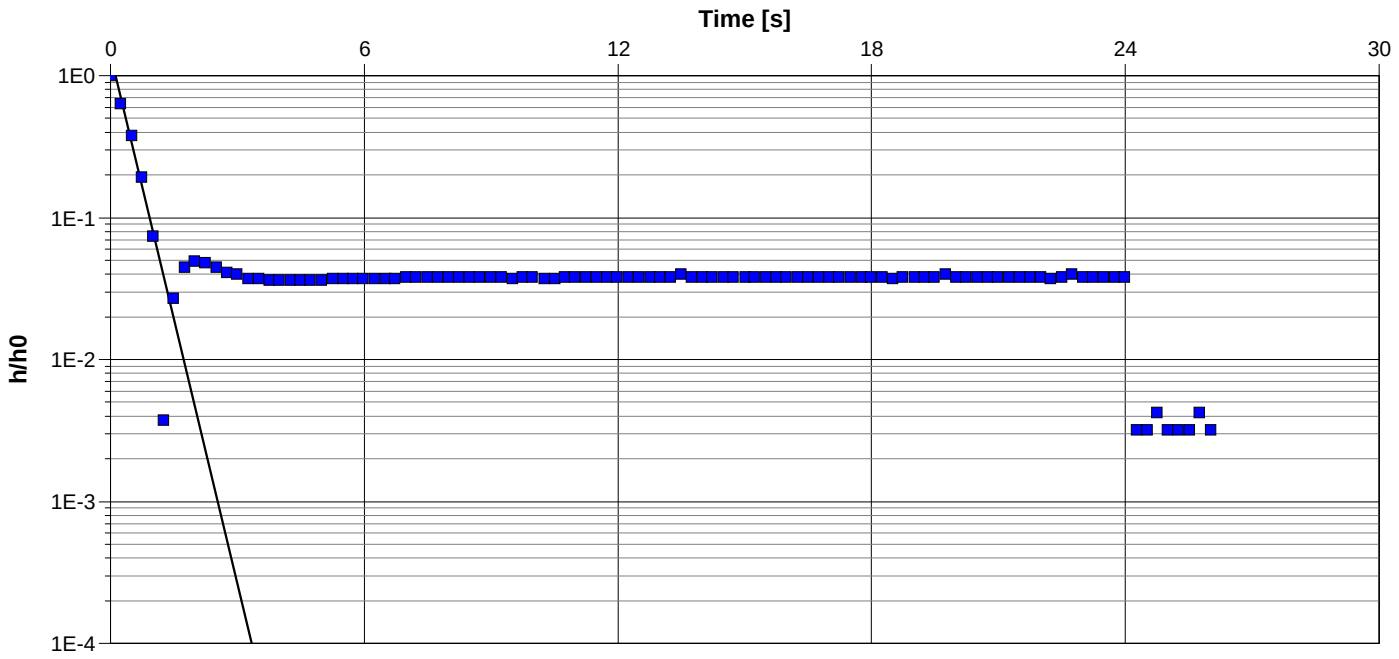


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-19-MW01	4.40×10^{2}	

Parsons 100 High Street 4th Floor Boston, MA 02110	Slug Test Analysis Report
	Project: ANGB Gabreski
	Number: 110100.40000
	Client: ANGB

Location: Westhampton Beach NY	Slug Test: GB-19-MW01-R2	Test Well: GB-19-MW01
Test Conducted by: Matt Muto		Test Date: 7/6/2020
Analysis Performed by: MM	Bouwer & Rice	Analysis Date: 10/1/2020
Aquifer Thickness: 46.80 ft		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [ft/d]	
GB-19-MW01	2.97×10^{2}	

APPENDIX I Surface Water Sampling Logs

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/10/2020 10:45

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
40	18	N	Mostly Cloudy	Rain

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBAR-SW02-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Very slow moving water.
DEPTH TO BOTTOM:	0.3
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.827549 / -72.6375015

SAMPLE DESCRIPTION

COLOR:	black-brown
ODOR:	none
SUSPENDED MATTER:	Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	8.64	REDOX:	218
pH:	4.81	DISSOLVED O2:	1.73
CONDUCTIVITY:	0.221	TURBIDITY:	970

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBAR-SW02-0.0-0.2
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/10/2020 11:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SAMPLE PHOTO:

Caption:	

LOCATION PHOTO:

Caption:	

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/09/2020 10:35

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
36	15	SE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBAR-SW03-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Moving water. Shallow, clear.
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8269938 / -72.6374889

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	9.65	REDOX:	216
pH:	5.56	DISSOLVED O2:	4.43
CONDUCTIVITY:	0.191	TURBIDITY:	6

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBAR-SW03-0.0-0.2
DUPLICATE:	GB-OBAR-SW93-0.0-0.2
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/09/2020 10:40
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/09/2020 09:45

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
38	2	E	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBAR-SW04-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water, clear.
DEPTH TO BOTTOM:	1
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8215255 / -72.6372565

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	6.12	REDOX:	176
pH:	5.63	DISSOLVED O2:	4.37
CONDUCTIVITY:	0.304	TURBIDITY:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBAR-SW04-0.0-0.2
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/09/2020 09:50
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 16:35

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
38	10	N	Partly Cloudy	None

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-OBNP-SW01-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Still water
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8398724 / -72.6161809

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	3.4	REDOX:	241
pH:	3.69	DISSOLVED O2:	10.91
CONDUCTIVITY:	0.023	TURBIDITY:	68.5

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBNP-SW01-0.0-0.2
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 17:30
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 15:00

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
43	12	NE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBNP-SW02-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Clear, slow moving water.
DEPTH TO BOTTOM:	0.6
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8392616 / -72.6156962

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	6.49	REDOX:	291
pH:	4.7	DISSOLVED O2:	9.6
CONDUCTIVITY:	0.058	TURBIDITY:	49

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBNP-SW02-0.0-0.2
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 16:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 14:25

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
35	10	E	Partly Cloudy	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SW01-0.0-0.3
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Standing water
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8344762 / -72.6184335

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed.

FIELD TESTS

TEMPERATURE:	9.16	REDOX:	161
pH:	7.25	DISSOLVED O2:	11.07
CONDUCTIVITY:	0.103	TURBIDITY:	15.8

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBOIP-SW01-0.0-0.3
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 14:25
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 15:00

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
42	10	NE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SW02-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Clear, slow moving water.
DEPTH TO BOTTOM:	0.6
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8355952 / -72.6173401

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	6.49	REDOX:	291
pH:	4.7	DISSOLVED O2:	9.6
CONDUCTIVITY:	0.058	TURBIDITY:	49

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBOIP-SW02-0.0-0.2
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 16:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 15:25

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
42	14	NE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SW03-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water.
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8352966 / -72.6157082

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	4.82	REDOX:	261
pH:	4.72	DISSOLVED O2:	7.7
CONDUCTIVITY:	0.042	TURBIDITY:	33

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBOIP-SW03-0.0-0.2
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/09/2020 17:01
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 15:55

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
44	12	NE	Partly Cloudy	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SW04-0.0-0.2
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Clear, slow moving water.
DEPTH TO BOTTOM:	0.5
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8376065 / -72.6156331

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	6.85	REDOX:	206
pH:	4.5	DISSOLVED O2:	3.74
CONDUCTIVITY:	0.043	TURBIDITY:	61.7

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBOIP-SW04-0.0-0.2
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 17:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 13:05

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
41	6	N	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SW01-0.0-0.3
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water. Clear.
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8330416 / -72.6179918

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	11.76	REDOX:	118
pH:	7.81	DISSOLVED O2:	6.26
CONDUCTIVITY:	0.211	TURBIDITY:	55.5

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBQC-SW01-0.0-0.3
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 13:05
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 12:30

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
40	14	NE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SW02-0.1-0.4
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water. Clear.
DEPTH TO BOTTOM:	0.5
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8303068 / -72.6178887

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	10.81	REDOX:	57
pH:	7.4	DISSOLVED O2:	8.31
CONDUCTIVITY:	15.9	TURBIDITY:	98.8

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBQC-SW02-0.1-0.4
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 12:40
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 11:55

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
38	12	SE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SW03-0.1-0.3
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	0.5
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.8289135 / -72.6183927

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	9.51	REDOX:	8
pH:	6.57	DISSOLVED O2:	5.63
CONDUCTIVITY:	60.4	TURBIDITY:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBQC-SW03-0.1-0.3
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 12:05
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SAMPLE PHOTO:

Caption:	

LOCATION PHOTO:

Caption:	

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 11:25

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
38	12	E	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SW04-0.1-0.3
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water, very clear.
DEPTH TO BOTTOM:	0.8
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.823186 / -72.6191849

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	No foaming observed

FIELD TESTS

TEMPERATURE:	8.03	REDOX:	235
pH:	5.52	DISSOLVED O2:	2.27
CONDUCTIVITY:	36.1	TURBIDITY:	0

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OBQC-SW04-0.1-0.3
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 11:30
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SAMPLE PHOTO:

Caption:	

LOCATION PHOTO:

Caption:	

APPENDIX J Sediment Sampling Logs

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/10/2020 09:55

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
38	16	E	Overcast	Rain

SAMPLERS:	Dan Chamberland
SAMPLE ID:	GB-OBAR-SD01-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	No water currently.
DEPTH OF WATER:	
LAT/LONG:	40.8319952 / -72.6394409

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Silt
MOISTURE:	moist

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBAR-SD01-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/10/2020 11:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/10/2020 10:50

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
40	18	W	Mostly Cloudy	Rain

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBAR-SD02-0.3-0.5
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.5 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Very slow moving water. Biomass buildup.
DEPTH OF WATER:	
LAT/LONG:	40.8275169 / -72.6375712

SAMPLE DESCRIPTION

COLOR:	gray-brown
ODOR:	none
TEXTURE:	Sandy Loam
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBAR-SD02-0.3-0.5
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/10/2020 11:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/09/2020 09:50

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
39	2	E	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBAR-SD04-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH OF WATER:	
LAT/LONG:	40.8214978 / -72.6373007

SAMPLE DESCRIPTION

COLOR:	black
ODOR:	none
TEXTURE:	Silt
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBAR-SD04-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/09/2020 09:55
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 16:40

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
37	10	N	Partly Cloudy	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBNP-SD01-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Still water.
DEPTH OF WATER:	
LAT/LONG:	40.8399435 / -72.6162366

SAMPLE DESCRIPTION

COLOR:	black-brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBNP-SD01-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/09/2020 17:25
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 15:10

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
42	12	NE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBNP-SD02-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Clear, still water.
DEPTH OF WATER:	
LAT/LONG:	40.8392894 / -72.6156732

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	organic
TEXTURE:	Silt
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBNP-SD02-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 16:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 14:35

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
39	2	N	Partly Cloudy	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SD01-0.5-0.5
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.2 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH OF WATER:	0.1
LAT/LONG:	40.8344657 / -72.6184364

SAMPLE DESCRIPTION

COLOR:	black
ODOR:	organic
TEXTURE:	Silt
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBOIP-SD01-0.5-0.5
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 14:35
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 15:10

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
42	10	NE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SD02-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH OF WATER:	
LAT/LONG:	40.8356128 / -72.6173007

SAMPLE DESCRIPTION

COLOR:	black-brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBOIP-SD02-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 16:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/09/2020 15:30

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
40	12	NE	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SD03-0.0-0.2
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water.
DEPTH OF WATER:	
LAT/LONG:	40.8353067 / -72.6156613

SAMPLE DESCRIPTION

COLOR:	black-brown
ODOR:	none
TEXTURE:	Silt
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBOIP-SD03-0.0-0.2
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 17:29
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 16:00

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
43	12	NE	Partly Cloudy	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBOIP-SD04-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH OF WATER:	
LAT/LONG:	40.8376413 / -72.6156584

SAMPLE DESCRIPTION

COLOR:	black-brown
ODOR:	chemical
TEXTURE:	Sand
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBOIP-SD04-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 17:00
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 13:10

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
41	10	N	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SD01-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water. Mucky sediment.
DEPTH OF WATER:	
LAT/LONG:	40.8330724 / -72.6179963

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Silt
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBQC-SD01-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 13:15
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 12:40

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
40		N	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SD02-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Very mucky.
DEPTH OF WATER:	
LAT/LONG:	40.8303033 / -72.6178935

SAMPLE DESCRIPTION

COLOR:	black
ODOR:	none
TEXTURE:	Silt
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBQC-SD02-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 12:45
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 12:00

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
39	12	E	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SD03-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Slow moving water.
DEPTH OF WATER:	
LAT/LONG:	40.8289055 / -72.6183925

SAMPLE DESCRIPTION

COLOR:	black
ODOR:	organic
TEXTURE:	Silt
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBQC-SD03-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 12:05
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SEDIMENT SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	02/08/2020 11:30

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
38	12	E	Sunny	None

SAMPLERS:	Dan Chamberland, Matt Muto
SAMPLE ID:	GB-OBQC-SD04-0.0-0.3
SAMPLING METHOD:	in situ extraction
DEPTH OF SAMPLE:	0.3 ft.

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	Clear, slow moving water.
DEPTH OF WATER:	
LAT/LONG:	40.8231807 / -72.6191525

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
TEXTURE:	Sand
MOISTURE:	wet

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
SAMPLE ID:	GB-OBQC-SD04-0.0-0.3
DUPlICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	02/08/2020 11:31
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

APPENDIX K Stormwater Sampling Logs

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 13:30

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	E	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-08-ST02
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Upstream from ANGB
LAT/LONG:	40.83691347, -72.64199695

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-08-ST02
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	08/29/2020 14:04
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 13:17

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	E	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-08-ST03
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Upstream from ANGB
LAT/LONG:	40.83754176, -72.64073412

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
SUSPENDED MATTER:	Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-08-ST03
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	08/29/2020 14:03
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 13:50

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	S	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-12-ST01
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.83360446, -72.64007493

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-12-ST01
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	08/29/2020 15:03
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 13:55

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	S	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-13-ST01
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	0.5
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.83350497, -72.64079023

SAMPLE DESCRIPTION

COLOR:	clear
ODOR:	none
SUSPENDED MATTER:	Not Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-13-ST01
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	08/29/2020 15:04
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 13:40

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	E	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-14-ST02
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Downstream from ANGB
LAT/LONG:	40.83458871, -72.64216071

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
SUSPENDED MATTER:	Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-14-ST02
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	09/01/2020 15:01
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 12:45

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	SE	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-B-ST01
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	10.3
FLOW DIRECTION:	E
UPSTREAM/DOWNSTREAN:	Upstream from ANGB
LAT/LONG:	40.84019, -72.64216

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
SUSPENDED MATTER:	Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-B-ST01
DUPLICATE:	GB-B-ST91
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	08/29/2020 13:59
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 12:30

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	E	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-B-ST02
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	5.4
FLOW DIRECTION:	SE
UPSTREAM/DOWNSTREAN:	Upstream from ANGB
LAT/LONG:	40.83850898, -72.64578951

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
SUSPENDED MATTER:	Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-B-ST02
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	08/29/2020 13:25
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

SURFACE WATER SAMPLING RECORD

SITE NAME:	Gabreski
PROJECT NUMBER:	100042.0052.110100.40001
SAMPLING DATE/TIME:	08/29/2020 13:05

WEATHER:

Temperature °F	Wind Speed mph	Wind Direction	Sky	Precipitation
70	10	E	Overcast	Rain

SAMPLERS:	Matt Muto
SAMPLE ID:	GB-OB-ST01
SAMPLING METHOD:	sample bottle

DESCRIPTION OF SAMPLING POINT

OBSERVATIONS:	
DEPTH TO BOTTOM:	3.3
FLOW DIRECTION:	S
UPSTREAM/DOWNSTREAN:	Upstream from ANGB
LAT/LONG:	40.83788, -72.64114

SAMPLE DESCRIPTION

COLOR:	brown
ODOR:	none
SUSPENDED MATTER:	Turbid
OTHER:	

FIELD TESTS

TEMPERATURE:		REDOX:	
pH:		DISSOLVED O2:	
CONDUCTIVITY:		TURBIDITY:	

SAMPLE ANALYSIS / QA/QC / CHAIN OF CUSTODY

ANALYSIS:	PFAS (EPA 537 Modified)
QA/QC SAMPLE ID:	GB-OB-ST01
DUPLICATE:	
EB SAMPLE ID:	
FB SAMPLE ID:	
QA/QC ANALYSIS:	PFAS (EPA 537 Modified)
DATE/TIME REFRIGERATED:	08/29/2020 14:01
CHAIN OF CUSTODY NUMBER:	
SHIPPED VIA:	FedEx
LABORATORY:	Test America

COMMENTS / MISCELLANEOUS

APPENDIX L Investigation-Derived Waste (IDW) Documentation

977074

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	NY2 572 824 249	2 1	978-621-0466	101520-1

5. Generator's Name and Mailing Address
106th RQW - Gabreski NYANG
150 Old Riverhead Rd. Bldg 250
Westhampton Beach, NY 11978
Generator's Phone:

Generator's Site Address (if different than mailing address)
106th RQW - Gabreski NYANG
Same

6. Transporter 1 Company Name: Freehold Cartage, Inc. — U.S. EPA ID Number: NJD 054 126 164

7. Transporter 2 Company Name: Veolia ES Technical Solutions — U.S. EPA ID Number: NJD080631369

8. Designated Facility Name and Site Address — U.S. EPA ID Number
Veolia ES Technical Solutions ***Waste to be dropped at Veolia - Flanders, NJ ***
7665 Highway 73, Port Arthur, TX 77640
Facility's Phone: 409-736-2821 — TXD 000 838 936

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NonRCRA, NonDOT regulated wastewater for incineration (totes)	4	TP	1000	G
2.	NonRCRA, NonDOT regulated waste soil for incineration	3	DM	165 ~~165~~ P	
3.				1,376	
4.					

13. Special Handling Instructions and Additional Information
Rec'd @ Veolia, Flanders on 10/16/20
M. Gaskill
1. Appt: PTA 975713 (water totes)
2. Appt: PTA 975718 (Soil drums)
Veolia SR7
ROAN-TFORT-6200-30480

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Laura Waters — Signature — Month: 10 Day: 15 Year: 20

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Wolky — Signature — Month: 10 Day: 15 Year: 20

Transporter 2 Printed/Typed Name: Mary K. Gaskill — Signature: Mary K. Gaskill — Month: 10 Day: 16 Year: 20

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month: Day: Year:

H040 H040

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Ellina Carpenter — Signature: Ellina Carpenter — Month: 10 Day: 28 Year: 20

VEOLIA
ENVIRONMENTAL SERVICES

SHIPPING DOCUMENT (Continuation Sheet)	21. Generator ID Number	22. Page	23. Shipping Document Tracking Number
	NY2572824249	2 of 2	101520-1

24. Generator's Name: 106th RQW - Gabreski NYANG

25. Transporter 3 Company Name: Freehold Cartage INC. U.S. EPA ID Number: NJD054121164

26. Transporter _____ Company Name: _____ U.S. EPA ID Number: _____

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Codes

For Transportation Purposes Only

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Shipment
Printed/Typed Name: Henry Patterson Signature: [signature] Month: 10 Day: 23 Year: 20

34. Transporter _____ Acknowledgment of Receipt of Shipment
Printed/Typed Name: _____ Signature: _____ Month: _____ Day: _____ Year: _____

DESIGNATED FACILITY

35. Discrepancy

36. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	NY2 572 824 249
2. Page 1 of	1
3. Emergency Response Phone	978-621-0466
4. Waste Tracking Number	1013202

GENERATOR

5. Generator's Name and Mailing Address
106th RQW - Gabreski NYANG
150 Old Riverhead Rd. Bldg 250
Westhampton Beach, NY 11978

Generator's Site Address (if different than mailing address)
106th RQW - Gabreski NYANG
Same

Generator's Phone:

6. Transporter 1 Company Name: Freehold Cartage, Inc. — U.S. EPA ID Number: NJD 054 126 164

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Veolia Environmental Services
1 Eden Ln, Flanders, NJ 07836
U.S. EPA ID Number: NJD 980 536 593
Facility's Phone: 973-347-7111

9. Waste Shipping Name and Description	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.
1. NonRCRA, NonDOT regulated empty tote	1	TP	100	P
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

1. Appl#: 975724 (empty tote for landfill/recycle)

Veolia SR# ROAN-TFORT-6200-30480

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Lorena Waters — Signature: [signature] — Month 10 Day 15 Year 20

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Robert Wallick — Signature: [signature] — Month 10 Day 15 Year 20
Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Michael Romano — Signature: [signature] — Month 10 Day 16 Year 20

169-BLC-O 6 10498 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

APPENDIX M Laboratory Analytical Reports

Laboratory Analytical Reports will be presented in the Final version of this Expanded Site Inspection Report, or upon request.

APPENDIX N Data Validation Reports

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: August 06, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers four (4) groundwater samples, two (2) field blank (FB) samples and two (2) equipment blank (EB) samples. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on June 15 and 16, 2020. The samples were logged under the following Sample Delivery Group (SDG):

410-4739

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were two FBs and two EBs. Equipment blanks and source blanks are associated with groundwater samples in this SDG because disposable equipment was not used for sample collection. A source blank (SB) was also associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the SB that was not included in this SDG, are discussed in detail in the Representativeness section of this DVR.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 5.2 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-OB-MW05-01	GW	X	
GB-OB-MW04-01	GW	X	
GB-15062020-FB	QC	X	Field Blank
GB-15062020-EB	QC	X	Equipment Blank
GB-IRP7-MW01-01	GW	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-OB-MW03-01	GW	X	
GB-16062020-FB	QC	X	Field Blank
GB-16062020-EB	QC	X	Equipment Blank

GW = groundwater; QC = water quality control sample

Notes:

1. Sample GB-IRP7-MW04 was listed on COC but not received by the lab. This sample was recollected on 6/25/20 and reported in SDG 410-5810.
2. GB-IRP7-MW01-01 was reported as sample IRP7-MW01 in the laboratory report because the incorrect ID was included on the COC.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of four (4) groundwater samples, two (2) FBs and two (2) EBs. The samples were collected on June 15 and 16, 2020 and were analyzed for

the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared and analyzed in two batches, on one instrument under one initial calibration (ICAL). In some cases, reanalysis was required and both analyses are included in the laboratory report; however, only one analysis for each sample is selected as reportable data. The initial analysis was selected as the most compliant run for each sample; therefore, only the initial analysis and the associated quality control (QC) samples are discussed in this report. It should be noted that PFOS in sample IRP7-MW01-01 was reported above the calibration curve at a 100x dilution. No further dilutions were

performed, and the data validator changed the qualifier from a "E" to a "J" as estimated. It should also be noted that the same sample was not analyzed undiluted due to the interference in the sample matrix.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), the LCS duplicate (LCSD), the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS and LCSD recoveries were within acceptance criteria except as follows.

Analyte	LCS %R	LCSD %R	Criteria
PFHxS	138	(131)	71-131%
PFNA	122	(113)	71-121%

( ) = indicates recovery criteria was met

No corrective action was necessary for either analyte listed above since the recoveries in the LCS were high and the associated sample results were non-detect.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the LCS/LCSD analyte results.

All LCS/LCSD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.

- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

Two laboratory method blanks (MBs) were associated with the PFAS analyses in this SDG. The method blanks were non-detect for all target PFAS.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all groundwater samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. Although there were associated samples with analytes that may have been affected by the SB contamination, the EBs taken the same day were non-detect, therefore no qualification was required due to possible SB contamination.

Data for the GW samples in this SDG was also evaluated against the EBs in this SDG, GB-15062020-EB and GB-16062020-EB, to determine the potential for cross-contamination resulting from the decontamination of stainless-steel pump used for sample collection. The EBs were non-detect for all target PFAS.

Two FBs were associated with the PFAS analyses in this SDG. The FBs were collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. The FBs were non-detect for all target PFAS.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. The validated data indicated that the laboratory correctly performed the analyses. Based on the data quality assessment, no results were rejected. Although minor QC exceedances were identified for this data set, all data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
IRP7-MW01-01	PFOS	ng/L	47,000 E	47,000 J	R4

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

R4: Result Exceeds Calibration Range

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by Sandra de las Fuentes

Report Date: August 10, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers thirteen (13) groundwater samples, two (2) field blank (FB) samples and two (2) equipment blank (EB) samples. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on June 16 through18, 2020. The samples were logged under the following Sample Delivery Group (SDG):

410-5015

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were one field duplicate (FD) sample, two EBs, two FBs, and one matrix spike/matrix spike duplicate (MS/MSD) pair. Equipment blanks and source blanks are associated with groundwater samples in this SDG because disposable equipment was not used for sample collection. An EB (GB-16062020-EB) and a FB (GB-16062020-FB) collected on June 16, 2020 were included in SDG 410-4739 and associated with sample GB-OB-MW01-01 in this SDG. A source blank (SB) was associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the EB from 410-4739 and the SB that was not included in this SDG, are discussed in detail in the Representativeness section of this DVR.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in two coolers. The samples were received by ELLE in good condition and at acceptable temperatures of 1.8 and 1.9 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-OB-MW01-01	GW	X	
SW-8-01	GW	X	
SW-9-01	GW	X	

Sample ID	Matrix	PFAS	COMMENTS
MW-2-01	GW	X	
GB-IRP7-MW03-01	GW	X	
GB-OB-MW06-01	GW	X	MS/MSD
GB-OB-MW96-01	GW	X	FD of GB-OB-MW06-01
GB-OB-MW08-01	GW	X	
GB-OB-MW02-01	GW	X	
GB-17062020-FB	QC	X	Field Blank
GB-170602020-EB	QC	X	Equipment Blank
GB-ECR-SW7-01	GW	X	
GB-ECR-MW01-01	GW	X	
GB-OB-MW07-01	GW	X	
GB-19-MW01-01	GW	X	
GB-18062020-FB	QC	X	Field Blank
GB-18062020-EB	QC	X	Equipment Blank

GW = Groundwater; SW = surface water; QC = water quality control sample

Notes:

1. GB-ECR-SW7-01 was reported as sample ECR-SW7-01 in the laboratory report because the incorrect ID was included on the COC.
2. GB-ECR-MW01-01 was reported as sample ECR-MW01-01 in the laboratory report because the incorrect ID was included on the COC.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of thirteen (13) groundwater samples, one (1) FD, two (2) FBs, two (2) EBs, and one (1) MS/MSD pair. The samples were collected on June 16 thru 18, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4

Analyte	CAS Number
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances. The samples were prepared and analyzed within the holding time required by the method. The samples were prepared in one batch and analyzed in two batches, on one instrument under one initial calibration (ICAL). In some cases, reanalysis was required and both analyses are included in the laboratory report; however, only one analysis for each sample is selected as reportable data. The initial analysis was selected as the most compliant run for each sample; therefore, only the initial analysis and the associated quality control (QC) samples are discussed in this report. It should be noted that the following samples were not analyzed undiluted due to the interference in the sample matrices: SW-8-01, SW-9-01, MW-2-01, GB-OB-MW08-01, ECR-SW7-01 and ECR-MW01-01.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), MS, MSD, the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards. Sample GB-OB-MW06-01 was designated for MS/MSD analysis on the COC.

All LCS recoveries were within acceptance criteria except as follows.

Analyte	LCS %R	Criteria
PFTriA	57	67-144%

The results for the analytes listed above in the two associated samples (GB-OB-MW01-01 and GB-19-MW01-01) were non-detect, and therefore qualified as estimated (UJ) due to the potential low bias.

All MS and MSD recoveries were within acceptance criteria except as follows.

Analyte	MS %R	MSD %R	Criteria
PFOS	(99)	163	54-139%

( ) = indicates recovery criteria was met

The parent sample concentration for PFOS was significantly greater than (more than 4 times) the amount spiked, resulting in the anomalous MSD recovery. Therefore, no corrective action was necessary, and this data was not qualified.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria except as follows.

Sample ID	Dilution	EIS	%R	Criteria
GB-19-MW01-01	1x	13C2-PFTeDA	12	20-180%
MW-2-01	10x	13C2-4:2-FTS	181	
MW-2-01	100x	13C2-6:2-FTS	412	
MW-2-01	10x	13C8-PFOS	276	

The results for the native target compounds associated with non-compliant EIS that were recovered below 20% but at or above 10% and above 180% but below 190% were qualified as estimated, "J" or "UJ". Those native target compounds associated with non-compliant EIS that were recovered below 10% and above 190% were qualified as rejected, "R".

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the MS/MSD analyte results. Precision was further evaluated by comparing the FD analyte results.

All MS/MSD RPDs were within acceptance criteria.

All FD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

Two laboratory method blanks were associated with the PFAS analyses in this SDG. The laboratory method blanks were non-detect for all target analytes except as follows.

Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
Batch # 15983	PFHxA	0.734 J	2.0
	PFOA	3.24	2.0
	PFHxS	4.3	2.0
	PFOS	8.57	2.0
	PFHpS	1.34 J	2.0
	6:2FTS	8.5	5.0

There were two samples associated with this method blank, GB-OB-MW01-01 and GB-19-MW01-01. For the analytes listed in the table above that had detections in the samples below the LOQs, qualify the associated sample results below the LOQs as non-detect (U) at the LOQs. No action was required for analytes that were detected above the LOQs. The B flags applied by the laboratory were removed by the data validator.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all groundwater samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. There were no associated samples with detections for the analytes listed below the LOQs. No corrective action was required for the associated samples for non-detect results or detections above the LOQ. Therefore, no qualification was required due to possible SB contamination.

GW sample GB-OB-MW01-01 in this SDG was evaluated against the EB in SDG 410-4739, both collected on June 16, 2020. GB-16062020-EB was collected to determine the potential for cross-contamination resulting from the decontamination of the stainless-steel pump. This EB was non-detect for all target PFAS analytes.

Data for the GW samples in this SDG was also evaluated against the EBs. GB-17062020-EB was collected to determine the potential for cross-contamination resulting from the decontamination of the peristaltic pump. This EB was non-detect for all target PFAS analytes.

GB-18062020-EB was collected to determine the potential for cross-contamination resulting from the decontamination of stainless-steel pump used for sample collection. This EB was non-detect for all target PFAS analytes, except as follows.

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
JFOSS-18062020-EB	PFOS	0.44 J	1.7

The field sample results associated with this EB was qualified as follows. If the associated sample result was below the LOQ then qualify as non-detect, "U", at the LOQ. Associated sample results detected above the LOQ and within five times the blank results were flagged as non-detect, "U", at the concentration found in the sample. Non-detect results associated to these EBs were not affected and were not qualified.

The FB collected on June 16, 2020 and reported in SDG 410-4739 was associated with sample GB-OB-MW01-01 from this SDG. The FB was collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. This FB was non-detect for all target PFAS.

Two FBs (GB-17062020-FB and GB-18062020-FB) were associated with the PFAS analyses in this SDG. The FBs were also collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. The FBs were non-detect for all target PFAS.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

Four results were qualified as rejected and are not considered valid; therefore, the completeness for the PFAS portion of this SDG is 98%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. Four results for PFAS were qualified as rejected due to extreme exceedances in the

associated EIS which caused the results to be unusable. Although minor QC exceedances were identified for this data set, all data other than the four rejected data points are considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-OB-MW01-01	PFTriA	ng/L	0.84 U	0.84 UJ	L3
GB-19-MW01-01	PFTriA	ng/L	0.77 U	0.77 UJ	L3
GB-19-MW01-01	PFTeA	ng/L	0.77 U	0.77 UJ	I12
MW-2-01	4:2FTS	ng/L	76	76 J	I12
MW-2-01	6:2FTS	ng/L	5100	5100 R	I12
MW-2-01	PFDS	ng/L	8.3 U	8.3 R	I12
MW-2-01	PFNS	ng/L	8.3 U	8.3 R	I12
MW-2-01	PFOS	ng/L	9900	9900 R	I12
GB-19-MW01-01	PFHxA	ng/L	330 E	330 J	R4
GB-19-MW01-01	PFPeA	ng/L	320 E	320 J	R4
GB-OB-MW01-01	6:2FTS	ng/L	2.1 JB	4.2 U	B4, Remove B
GB-OB-MW01-01	PFHpS	ng/L	8.6 B	8.6	Remove B
GB-OB-MW01-01	PFHxS	ng/L	180 B	180	Remove B
GB-OB-MW01-01	PFOA	ng/L	38 B	38	Remove B
GB-OB-MW01-01	PFOS	ng/L	290 B	290	Remove B
GB-19-MW01-01	6:2FTS	ng/L	42 B	42 U	B4, Remove B
GB-19-MW01-01	PFHpS	ng/L	8.4 B	8.4	Remove B
GB-19-MW01-01	PFHxS	ng/L	630 B	630	Remove B
GB-19-MW01-01	PFOA	ng/L	110 B	110	Remove B
GB-19-MW01-01	PFOS	ng/L	12 B	12 U	B4, Remove B

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.

J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

I12: EIS percent recovery infraction with no assignable bias

B4: Method blank infraction (Qualified detect)

R4: Result Exceeds Calibration Range

L3: LCS percent recovery infraction with low bias

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: August 06, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers four (4) groundwater samples, one (1) field blank (FB) sample and one (1) equipment blank (EB) sample. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on June 18 and 19, 2020. The samples were logged under the following Sample Delivery Group (SDG):

410-5202

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were one FB and one EB, collected on June 19, 2020. Equipment blanks and source blanks are associated with groundwater samples in this SDG because disposable equipment was not used for sample collection. A source blank (SB) was also associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. In addition, a FB and EB were collected and reported in SDG 410-5015. These blanks were associated with one sample (IRP5-MW01-01) in this SDG since they were collected on the same day. Discussion of the EB, FB and SB that were not included in this SDG, are discussed in detail in the Representativeness section of this DVR.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 2.2 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-IRP5-MW01-01	GW	X	
GB-BB-MW01-01	GW	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-BB-MW02-01	GW	X	
GB-03-MW01-01	GW	X	
GB-19062020-FB	QC	X	Field Blank
GB-19062020-EB	QC	X	Equipment Blank

GW = groundwater; QC = water quality control sample

Note: GB-IRP5-MW01-01 was reported as sample IRP5-MW01-01 in the laboratory report because the incorrect ID was included on the COC.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of four (4) groundwater samples, one (1) FB and one (1) EB. The samples were collected on June 18 and 19, 2020 and were analyzed for

the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared in one batch and analyzed in two batches, on one instrument under one initial calibration (ICAL). In some cases, reanalysis was required and both analyses are included in the laboratory report; however, only one analysis for each sample is selected as reportable data. The initial analysis was selected as the most compliant run for each sample; therefore, only the initial analysis and the associated quality control (QC) samples are discussed in this report.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS recoveries were within acceptance criteria.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria.

Precision

Precision is normally evaluated using the relative percent difference (RPD) obtained from duplicate analyte results. Precision was not evaluated since there were no duplicate analyses included in this SDG.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

One laboratory method blank (MB) was associated with the PFAS analyses in this SDG. The method blank was non-detect for all target PFAS.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all groundwater samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. Although there were associated samples with analytes that may have been affected by the SB contamination, the EBs taken the same day were non-detect, with one exception, as noted below. No qualification was required due to possible SB contamination.

An EB (GB-18062020-EB) was included and discussed in the DVR for 410-5015. There was one detection for PFOS which was below the LOQ as follows.

Field Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-18062020-EB	PFOS	0.44 J	1.7

Only one sample was associated with this EB, IRP5-MW01-01. PFOS was detected above the LOQ, therefore no corrective action was necessary.

Also discussed in DVR 410-5015 is the FB (GB-18062020-FB) that was associated with the sample in this SDG, IRP5-MW01-01. The FB was non-detect for all target PFAS.

Data for the GW samples in this SDG was also evaluated against the EB in this SDG, GB-19062020-EB, to determine the potential for cross-contamination resulting from the decontamination of stainless-steel pump used for sample collection. The EB was non-detect for all target PFAS.

An FB, GB-19062020-FB, was associated with the PFAS analyses in this SDG. The FB was collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. The FB was non-detect for all target PFAS.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. None of the data was rejected or qualified due to QC related deficiencies; therefore, all data is considered usable.

DATA QUALIFIER CHANGES

There were no qualifiers added, removed, or changed as a result of the data validation process.

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: August 06, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers five (5) groundwater samples, one (1) field blank (FB) sample and one (1) equipment blank (EB) sample. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on June 25, 2020. The samples were logged under the following Sample Delivery Group (SDG):

410-5810

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were one FB and one EB, collected on June 25, 2020. Equipment blanks and source blanks are associated with groundwater samples in this SDG because disposable equipment was not used for sample collection. A source blank (SB) was also associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the SB that was not included in this SDG, is discussed in detail in the Representativeness section of this DVR.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 5.6 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-IRP7-MW04-01	GW	X	
GB-IRP7-MW01-02	GW	X	
MW-1-01	GW	X	
GB-OB-MW05-02	GW	X	
GB-OB-MW04-02	GW	X	

Sample ID	Matrix	PFAS	COMMENTS
BG-25062020-FB	QC	X	Field Blank
BG-25062020-EB	QC	X	Equipment Blank

GW = groundwater; QC = water quality control sample

Note: GB-IRP7-MW01-02 was reported as sample IRP7-MW01-02 in the laboratory report because the incorrect ID was included on the COC.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of five (5) groundwater samples, one (1) FB and one (1) EB. The samples were collected on June 25, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared in one batch and analyzed in two batches, on one instrument under one initial calibration (ICAL). In some cases, reanalysis was required and both analyses are included in the laboratory report; however, only one analysis for each sample is selected as reportable data. The initial analysis was selected as the most compliant run for each sample; therefore, only the initial analysis and the associated quality control (QC) samples are discussed in this report. It should be noted that PFOS in sample IRP7-MW01-02 was reported above the calibration curve at a 100x dilution. No further dilutions were performed, and the data validator changed the qualifier from a “E” to a “J” as estimated. In addition, the following samples were not analyzed undiluted due to the interference in

the sample matrix: GB-IRP7-MW04-01, IRP7-MW01-02, MW-1-01 and GB-OB-MW04-02.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS recoveries were within acceptance criteria.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria.

Precision

Precision is normally evaluated using the relative percent difference (RPD) obtained from duplicate analyte results. Precision was not evaluated since there were no duplicate analyses included in this SDG.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

One laboratory method blank (MB) was associated with the PFAS analyses in this SDG. The method blank was non-detect for all target PFAS.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all groundwater samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. Although there were associated samples with analytes that may have been affected by the SB contamination, the EBs taken the same day were non-detect. Therefore, no qualification was required due to possible SB contamination.

Data for the GW samples in this SDG was also evaluated against the EB in this SDG, GB-25062020-EB, to determine the potential for cross-contamination resulting from the decontamination of stainless-steel pump used for sample collection. The EB was non-detect for all target PFAS.

An FB, GB-25062020-FB, was associated with the PFAS analyses in this SDG. The FB was collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. The FB was non-detect for all target PFAS.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. The validated data indicated that the laboratory correctly performed the analyses. Based on the data quality assessment, no results were rejected. Although minor QC exceedances were identified for this data set, all data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
IRP7-MW01-02	PFOS	ng/L	40,000 E	40,000 J	R4

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

R4: Result Exceeds Calibration Range

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: August 07, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers eight (8) groundwater samples, two (2) field blank (FB) samples and two (2) equipment blank (EB) samples. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on June 28 and 29, 2020. The samples were logged under the following Sample Delivery Group (SDG):

410-6195

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were two FBs and two EBs. Equipment blanks and source blanks are associated with groundwater samples in this SDG because disposable equipment was not used for sample collection. A source blank (SB) was associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the SB that was not included in this SDG, is discussed in detail in the Representativeness section of this DVR.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 1.1 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-OB-MW03-02	GW	X	
GB-OB-MW01-02	GW	X	
GB-28062020-FB	QC	X	Field Blank
GB-28062020-EB	QC	X	Equipment Blank
GB-ECR-SW7-02	GW	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-ECR-MW01-02	GW	X	
GB-IRP5-MW01-02	GW	X	
GB-BB-MW01-02	GW	X	
GB-BB-MW02-02	GW	X	
GB-03-MW01-02	GW	X	
GB-29062020-FB	QC	X	Field Blank
GB-29062020-EB	QC	X	Equipment Blank

GW = groundwater; SW = surface water; QC = water quality control sample

Notes:

1. GB-ECR-SW7-02 was reported as sample ECR-SW7-02 in the laboratory report because the incorrect ID was included on the COC.
2. GB-ECR-MW01-02 was reported as sample ECR-MW01-02 in the laboratory report because the incorrect ID was included on the COC.
3. GB-IRP5-MW01-02 was reported as sample IRP5-MW01-02 in the laboratory report because the incorrect ID was included on the COC.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified “J” as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of eight (8) groundwater samples, two (2) FBs and two (2) EBs. The samples were collected on June 28 and 29, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared and analyzed in two batches, on one instrument under one initial calibration (ICAL). In some cases, reanalysis was required and both analyses are included in the laboratory report; however, only one analysis for each sample is selected as reportable data. The initial analysis was selected as the most compliant run for each sample; therefore, only the initial analysis and the associated quality control (QC) samples are discussed in this report. It should be noted that the following samples were not analyzed undiluted due to the interference in the sample matrices: ECR-SW7-02 and ECR-MW01-02.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), the LCS duplicate (LCSD), the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS and LCSD recoveries were within acceptance criteria.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria except as follows.

Sample ID	Dilution	EIS	%R	Criteria
GB-BB-MW02-02	1x	13C2-4:2-FTS	194%	20-180%

Non-compliant EIS were qualified as rejected (R) when the recoveries were less than 10% or greater than 190%.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the two sets of LCS/LCSD analyte results.

All LCS/LCSD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared

and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

Two laboratory method blanks (MBs) were associated with the PFAS analyses in this SDG. The method blanks were non-detect for all target PFAS.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all groundwater samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. There were no associated samples with detections for the analytes listed below the LOQs. No corrective action was required for the associated samples for non-detect results or detections above the LOQ. Therefore, no qualification was required due to possible SB contamination.

Data for the GW samples in this SDG was also evaluated against the EBs in this SDG, GB-28062020-EB and GB-29062020-EB, to determine the potential for cross-contamination resulting from the decontamination of stainless-steel pump used for sample collection. The EBs were non-detect for all target PFAS, except as follows.

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-28062020-EB	PFOS	1.3 J	1.7

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-29062020-EB	PFHxS	0.47 J	1.6
	PFOS	7.3	1.6

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
	PFPeA	0.45 J	1.6
	6:2FTS	4.1	3.9

The field sample results associated with these EBs were qualified as follows. If the associated sample result was below the LOQ then qualify as non-detect, "U", at the LOQ. Associated sample results detected above the LOQ and within five times the blank results were flagged as non-detect, "U", at the concentration found in the sample. Non-detect results associated to these EBs were not affected and were not qualified.

Two FBs, GB-28062020-FB and GB-29062020-FB were associated with the PFAS analyses in this SDG. The FBs were collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. The FBs were non-detect for all target PFAS.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

One result for PFAS for the samples in this SDG was qualified as rejected and flagged "R" and all other results were usable. The completeness for the PFAS portion of this SDG is 99%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. One PFAS result was qualified as rejected due to extreme exceedances in the associated EIS which causes those results to be unusable. All other data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-BB-MW02-02	4:2FTS	ng/L	0.88 U	0.88 R	I12
GB-BB-MW01-02	PFOS	ng/L	4.1	4.1 U	B8
GB-BB-MW02-02	6:2FTS	ng/L	2.5 J	4.4 U	B8

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

I12: EIS percent recovery infraction with no assignable bias

B8: Equipment blank infraction (Qualified detect)

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: August 11, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers twelve (12) groundwater samples, one (1) field blank (FB) sample and one (1) equipment blank (EB) sample. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on June 29 and 30, 2020. The samples were logged under the following Sample Delivery Group (SDG):

410-6583

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were one field duplicate (FD) sample, one EB, one FB, and one matrix spike/matrix spike duplicate (MS/MSD) pair. Equipment blanks and source blanks are associated with groundwater samples in this SDG because disposable equipment was not used for sample collection. A FB and EB were collected and associated with the samples in this SDG that were collected on June 29, 2020 and discussed in DVR 410-6195. A source blank (SB) was associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the FB, EB and SB that were not included in this SDG, are discussed in detail in the Representativeness section of this DVR.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 2.2 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
SW-8-02	GW	X	
SW-9-02	GW	X	
MW-2-02	GW	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-IRP7-MW04-02	GW	X	
GB-IRP7-MW03-02	GW	X	MS/MSD
GB-IRP7-MW93-02	GW	X	FD of GB-IRP7-MW03-02
GB-OB-MW07-02	GW	X	
GB-19-MW01-02	GW	X	
MW-1-02	GW	X	
GB-30062020EB	QC	X	Equipment Blank
GB30062020-FB	QC	X	Field Blank
GB-OB-MW06-02	GW	X	
GB-OB-MW08-02	GW	X	
GB-OB-MW02-02	GW	X	

GW = Groundwater; SW = surface water; QC = water quality control sample

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified “J” as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of twelve (12) groundwater samples, one (1) FD, one (1) FB, one (1) EB, and one (1) MS/MSD pair. The samples were collected on June 29 and 30, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances. The samples were prepared and analyzed within the holding time required by the method. The samples were prepared in one batch and analyzed in two batches, on one instrument under one initial calibration (ICAL). In some cases, reanalysis was required and both

analyses are included in the laboratory report; however, only one analysis for each sample is selected as reportable data. The initial analysis was selected as the most compliant run for each sample; therefore, only the initial analysis and the associated quality control (QC) samples are discussed in this report. It should be noted that the following samples were not analyzed undiluted due to the interference in the sample matrices: SW-8-02, SW-9-02, MW-2-02, and GB-IRP7-MW04-02.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), LCS Duplicate (LCSD), MS, MSD, the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards. Sample GB-IRP7-MW03-02 was designated for MS/MSD analysis on the COC.

All LCS and LCSD recoveries were within acceptance criteria.

All MS and MSD recoveries were within acceptance criteria except as follows.

Analyte	MS %R	MSD %R	Criteria
PFHxS	45	21	71-131%
PFOS	26	-12	54-139%

The parent sample concentration for PFHxS and PFOS were significantly greater than (more than 4 times) the amount spiked, resulting in the anomalous recoveries. Therefore, no corrective action was necessary, and this data was not qualified.

All IIS recoveries were within acceptance criteria except as follows.

IIS	Sample ID	%R	Criteria
13C4-PFOS	GB0OB0MW02-02	48.6	50-150%

Qualification of the data is not necessary since IIS recovery only impacts EIS response.

All EIS recoveries were within acceptance criteria except as follows.

Sample ID	Dilution	EIS	%R	Criteria
MW-2-02	100x	13C2-6:2-FTS	365	20-180%
MW-2-02	10x, 100x	13C8-PFOS	321	
MW-1-02	1x	13C8-PFOSA	14	

The results for the native target compounds associated with non-compliant EIS that were recovered below 20% but at or above 10% and above 180% but below 190% were qualified as estimated, “J” or “UJ”. Those native target compounds associated with non-compliant EIS that were recovered below 10% and above 190% were qualified as rejected, “R”.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the MS/MSD analyte results. Precision was further evaluated by comparing the FD analyte results.

All MS/MSD RPDs were within acceptance criteria.

All FD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

Three laboratory method blanks were associated with the PFAS analyses in this SDG. The laboratory method blanks were non-detect for all target analytes except as follows.

Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
Batch # 20536	PFHxA	0.676 J	2.0
	PFOA	2.59	2.0
	PFHxS	2.96	2.0
	PFOS	10.8	2.0
	PFHpS	1.33 J	2.0
	6:2FTS	7.20	5.0

There were ten samples associated with this method blank. For the analytes listed in the table above that had detections in the samples below the LOQs, qualify the associated

sample results below the LOQs as non-detect (U) at the LOQs. No action was required for analytes that were detected above the LOQs. The B flags applied by the laboratory were removed by the data validator.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank sample is also associated with equipment blank, GB-29062020-EB, collected on June 29, 2020 and reported in SDG 410-6195 and with equipment blank, GB-30062020EB, collected on June 30, 2020 in this SDG. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The EBs collected on the same day as the samples were also evaluated, see below.

GB-29062020-EB was collected to determine the potential for cross-contamination resulting from the decontamination of stainless-steel pump used for sample collection. This EB was non-detect for all target PFAS analytes except as follows.

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-29062020-EB	PFHxS	0.47 J	1.6
	PFOS	7.3	1.6
	PFPeA	0.45 J	1.6
	6:2FTS	4.1	3.9

The field sample results associated with these EBs did not require qualifying since the associated samples GB-OB-MW06-02 and GB-OB-MW08-02 did not have detections below the LOQs for the analytes listed in the table above.

Data for the GW samples in this SDG was also evaluated against the EB in this SDG. GB-30062020EB was collected to determine the potential for cross-contamination resulting from the decontamination of the stainless-steel pump. This EB was non-detect for all target PFAS analytes.

Two FBs, GB-29062020-FB reported in SDG 410-6195 and GB30062020-FB reported in this SDG, were associated with the PFAS analyses. The FBs were collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. The FBs were non-detect for all target PFAS.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

Four results were qualified as rejected and are not considered valid; therefore, the completeness for the PFAS portion of this SDG is 98%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. Four results for PFAS were qualified as rejected due to extreme exceedances in the associated EIS which caused the results to be unusable. Although minor QC exceedances were identified for this data set, all data other than the four rejected data points are considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
SW-8-02	6:2FTS	ng/L	950 B	950	Remove B
SW-8-02	PFHpS	ng/L	150 B	150	Remove B
SW-8-02	PFHxS	ng/L	2300 B	2300	Remove B
SW-8-02	PFOA	ng/L	400 B	400	Remove B
SW-8-02	PFOS	ng/L	4600 B	4600	Remove B
GB-OB-MW06-02	PFHpS	ng/L	1.1 JB	1.7 U	B4, Remove B
GB-OB-MW06-02	PFHxS	ng/L	25 B	25	Remove B
GB-OB-MW06-02	PFOA	ng/L	8.4 B	8.4 U	B4, Remove B
GB-OB-MW06-02	PFOS	ng/L	110 B	110	Remove B
GB-OB-MW08-02	6:2FTS	ng/L	300 B	300	Remove B
GB-OB-MW08-02	PFHpS	ng/L	23 B	23	Remove B
GB-OB-MW08-02	PFHxS	ng/L	480 B	480	Remove B

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-OB-MW08-02	PFOA	ng/L	78 B	78	Remove B
GB-OB-MW08-02	PFOS	ng/L	2300 B	2300	Remove B
GB-OB-MW02-02	6:2FTS	ng/L	490 B	490	Remove B
GB-OB-MW02-02	PFHpS	ng/L	32 B	32	Remove B
GB-OB-MW02-02	PFHxS	ng/L	380 B	380	Remove B
GB-OB-MW02-02	PFOA	ng/L	82 B	82	Remove B
GB-OB-MW02-02	PFOS	ng/L	3600 B	3600	Remove B
SW-9-02	6:2FTS	ng/L	580 B	580	Remove B
SW-9-02	PFHpS	ng/L	34 B	34	Remove B
SW-9-02	PFHxS	ng/L	620 B	620	Remove B
SW-9-02	PFOA	ng/L	180 B	180	Remove B
SW-9-02	PFOS	ng/L	2400 B	2400	Remove B
MW-2-02	6:2FTS	ng/L	6500 B	6500 R	I12, Remove B
MW-2-02	PFDS	ng/L	8.9 U	8.9 R	I12
MW-2-02	PFHpS	ng/L	3600 B	3600	Remove B
MW-2-02	PFHxS	ng/L	8100 B	8100	Remove B
MW-2-02	PFNS	ng/L	8.9 U	8.9 R	I12
MW-2-02	PFOA	ng/L	6800 B	6800	Remove B
MW-2-02	PFOS	ng/L	9800 B	9800 R	I12, Remove B
GB-IRP7-MW04-02	6:2FTS	ng/L	1500 B	1500	Remove B
GB-IRP7-MW04-02	PFHpS	ng/L	430 B	430	Remove B
GB-IRP7-MW04-02	PFHxS	ng/L	1400 B	1400	Remove B
GB-IRP7-MW04-02	PFOA	ng/L	410 B	410	Remove B
GB-IRP7-MW04-02	PFOS	ng/L	9300 B	9300	Remove B
MW-1-02	PFHpS	ng/L	61 B	61	Remove B
MW-1-02	PFHxS	ng/L	2900 B	2900	Remove B
MW-1-02	PFOA	ng/L	65 B	65	Remove B
MW-1-02	PFOS	ng/L	2200 B	2200	Remove B
MW-1-02	PFOSA	ng/L	0.88 U	0.88 UJ	I12

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.

J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

I12: EIS percent recovery infraction with no assignable bias

B4: Method blank infraction (Qualified detect)

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: September 24, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers none (9) stormwater samples and one (1) field blank (FB) sample. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on August 29, 2020. The samples were logged under the following Sample Delivery Group (SDG):

410-12487

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were one field duplicate (FD) sample, one FB, and one matrix spike/matrix spike duplicate (MS/MSD) pair. Equipment blanks and source blanks are not associated with storm water sample collection because the samples were all surface water samples.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 1.3 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-B-ST02	SW	X	
GB-B-ST01	SW	X	MS/MSD
GB-OB-ST01	SW	X	
GB-08-ST03	SW	X	
GB-08-ST02	SW	X	COC incorrectly listed sample ID as GB-08-ST01
GB-14-ST02	SW	X	
GB-12-ST01	SW	X	
GB-13-ST01	SW	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-29082020-FB	QC	X	Field Blank
GB-B-ST91	SW	X	FD of GB-B-ST01

SW = Surface water; QC = water quality control sample

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of eight (8) storm water samples, one (1) FD, one (1) FB, and one (1) MS/MSD pair. The samples were collected on August 29, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances. The samples were prepared and analyzed within the holding time required by the method. The samples were prepared in one batch and analyzed in two batches, on one instrument under one initial calibration (ICAL). In some cases, reanalysis was required and both analyses are included in the laboratory report; however, only one analysis for each sample is selected as reportable data. The initial analysis was selected as the most compliant run for each sample; therefore, only the initial analysis and the associated quality control (QC) samples are discussed in this report. All samples were analyzed undiluted.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), MS, MSD, the EIS, and the Injection Internal Standards (IIS). It

should be noted that the laboratory report occasionally references the EIS as surrogate standards. Sample GB-B-ST01 was designated for MS/MSD analysis on the COC.

All LCS recoveries were within acceptance criteria.

All MS and MSD recoveries were within acceptance criteria except as follows:

Analyte	MS %R	MSD %R	Criteria
PFDA	138	137	61-132
PFHxA	141	143	67-132
PFOA	165	157	64-132
PFOS	(101)	131	54-129
PFPeS	160	170	71-137

( ) indicates recovery criteria was met

The analytes listed above all recovered high. PFDA was not detected in the parent sample, therefore corrective action was not necessary for the potential high bias. PFHxA, PFOA, PFOS and PFPeS were all qualified as estimated (J) for the potential high bias. It should be noted that PFPeS was qualified as rejected in GB-B-ST01, see EIS section below.

All IIS recoveries were within acceptance criteria except as follows.

IIS	Sample ID	%R	Criteria
13C3PFBA	GB-B-ST02	13.8	50-150%
13C3PFBA	GB-B-ST01	19.9	
13C3PFBA	GB-B-ST01 (MS)	16.6	
13C3PFBA	GB-B-ST01 (MSD)	14.3	
13C3PFBA	GB-08-ST03	32.4	
13C3PFBA	GB-12-ST01	27.3	
13C3PFBA	GB-B-ST91	14.8	
13PFOA	GB-B-ST02	39.2	

Qualification of the data is not necessary since IIS recovery only impacts EIS response.

All EIS recoveries were within acceptance criteria except as follows.

Sample ID	Dilution	EIS	%R	Criteria
GB-B-ST01	1X	13C3-PFBS	257	20-180%
GB-B-ST01	1X	13C5-PFPeA	231	
GB-B-ST01	1X	13C3-PFBS	257	
GB-B-ST02	1X	13C2-4:2-FTS	271	
GB-B-ST02	1X	13C2-6:2-FTS	371	
GB-B-ST02	1X	13C3-PFBS	187	
GB-B-ST91	1X	13C2-6:2-FTS	183	
GB-B-ST91	1X	13C3-PFBS	276	
GB-B-ST91	1X	13C8-PFOSA	16	

Sample ID	Dilution	EIS	%R	Criteria
GB-B-ST91	1X	13C5-PFPeA	242	
GB-B-ST91	1X	13C3-PFBS	276	
GB-B-ST91	1X	13C2-PFTeDA	9	
GB-OB-ST01	1X	13C2-4:2-FTS	184	
GB-08-ST03	1X	13C2-4:2-FTS	220	
GB-08-ST03	1X	13C2-6:2-FTS	184	
GB-08-ST03	1X	13C3-PFBS	203	
GB-08-ST03	1X	13C5-PFPeA	186	
GB-08-ST03	1X	13C3-PFBS	203	
GB-12-ST01	1X	13C2-4:2-FTS	228	
GB-12-ST01	1X	13C2-6:2-FTS	237	
GB-12-ST01	1X	13C3-PFBS	191	

The results for the native target compounds associated with non-compliant EIS that were recovered below 20% but at or above 10% and above 180% but below 190% were qualified as estimated, "J" or "UJ". Those native target compounds associated with non-compliant EIS that were recovered below 10% and above 190% were qualified as rejected, "R".

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the MS/MSD analyte results. Precision was further evaluated by comparing the FD analyte results.

All MS/MSD RPDs were within acceptance criteria.

All FD RPDs were within acceptance criteria, except as follows:

GB-B-ST01 / GB-B-ST91

Analyte	Parent (ng/L)	FD (ng/L)	RPD	Criteria
PFBA	14	4.2 U	NC	RPD ≤ 30
PFDA	1.1 U	4.8	NC	

NC = not calculated

The parent and FD samples were qualified as estimated and flagged "J" if detected or "UJ" if non-detect for both analytes listed in the table. PFBA was detected above the LOQ in the parent and was non-detect in the field duplicate, demonstrating significant variability. PFDA was non-detect in the parent and detected above the LOQ in the field duplicate, again demonstrated significant variability.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;

- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

One laboratory method blank was associated with the PFAS analyses in this SDG. The laboratory method blank was non-detect for all target analytes.

One FB, GB-29082020-FB, was associated with the PFAS analyses. The FB was collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. The FB was non-detect for all target PFAS.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

Sixteen results were qualified as rejected and are not considered valid; therefore, the completeness for the PFAS portion of this SDG is 93%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. Sixteen results for PFAS were qualified as rejected due to extreme exceedances in the associated EIS which caused the results to be unusable. Although minor QC exceedances were identified for this data set, all data other than the four rejected data points are considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-B-ST01	PFHxA	ng/L	9.1	9.1 J	M2
GB-B-ST01	PFOA	ng/L	33	33 J	M2
GB-B-ST01	PFOS	ng/L	21	21 J	M2
GB-B-ST01	PFBS	ng/L	0.94	0.94 R	I12
GB-B-ST01	PFPeA	ng/L	3.7	3.7 R	I12
GB-B-ST01	PFPeS	ng/L	1.4	1.4 R	I12, M2
GB-B-ST02	4:2FTS	ng/L	1.2 U	1.2 R	I12
GB-B-ST02	6:2FTS	ng/L	4.6 U	4.6 R	I12
GB-B-ST02	PFBS	ng/L	1.2 U	1.2 UJ	I12
GB-B-ST02	PFPeS	ng/L	1.2 U	1.2 UJ	I12
GB-B-ST91	6:2FTS	ng/L	4.2 U	4.2 UJ	I12
GB-B-ST91	PFBS	ng/L	1.5	1.5 R	I12
GB-B-ST91	PFOSA	ng/L	2.4	2.4 J	I12
GB-B-ST91	PFPeA	ng/L	4.9	4.9 R	I12
GB-B-ST91	PFPeS	ng/L	1.5	1.5 R	I12
GB-B-ST91	PFTeA	ng/L	1.0 U	1.0 R	I12
GB-OB-ST01	4:2FTS	ng/L	1.3	1.3 J	I12
GB-08-ST03	4:2FTS	ng/L	1.7	1.7 R	I12
GB-08-ST03	6:2FTS	ng/L	34	34 J	I12
GB-08-ST03	PFBS	ng/L	2.6	2.6 R	I12
GB-08-ST03	PFPeA	ng/L	2.9	2.9 J	I12
GB-08-ST03	PFPeS	ng/L	2.4	2.4 R	I12
GB-12-ST01	4:2FTS	ng/L	0.97	0.97 R	I12
GB-12-ST01	6:2FTS	ng/L	78	78 R	I12
GB-12-ST01	PFBS	ng/L	4.1	4.1 R	I12

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-12-ST01	PFPeS	ng/L	6.9	6.9 R	I12
GB-B-ST01	PFBA	ng/L	14	14 J	D1
GB-B-ST01	PFDA	ng/L	1.1 U	1.1 UJ	D1
GB-B-ST91	PFBA	ng/L	4.2 U	4.2 UJ	D1
GB-B-ST91	PFDA	ng/L	4.8	4.8 J	D1

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

I12: EIS percent recovery infraction with no assignable bias

M2: MS/MSD percent recovery infraction with high bias

D1: Field duplicate precision infraction

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: March 23, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers one source blank (SB). The sample was collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on January 17, 2020. The sample was logged under the following Sample Delivery Group (SDG):

2083770

The sample in this SDG was analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the sample IDs and requested parameters. The sample in this SDG is a field quality control (QC) sample.

The source blank consisted of onsite tap water used to rinse all reusable equipment poured directly into the appropriate clean sampling containers. The source blank is associated with all field samples collected using decontaminated equipment.

The sample was collected by Parsons and was shipped on ice to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The sample was received ELLE in good condition and at a temperature of 0.5 degrees Celsius. The sample was received by ELLE in good condition and at an acceptable temperature.

The sample was prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-HYDRANT-17012020	Water	X	Source Blank

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified*	EPA 537 Modified*	ng/l

ng/l = nanogram per liter

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. It should be noted that the final approved QAPP for this project indicated TestAmerica Sacramento was the primary laboratory. However, due to capacity issues with the laboratory, all samples were sent to, and analyzed by, ELLE. Therefore, the accuracy tolerances reported in the data packages do not match those listed in the project QAPP. Per the DOD QSM 5.1, statistically derived in-house tolerances should be used for PFAS analysis. As these tolerances differ between laboratories, the limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified “J” as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

ELLE lost DoD ELAP certification for PFTeA on January 20, 2020 because two proficiency testing (PT) samples failed low and outside the acceptance criteria for this analyte. Therefore, PFTeA results for samples analyzed after January 20, 2020 and prior to March 4, 2020, when the certification was reinstated, were qualified as estimated and flagged as estimated (“J” if detected, and “UJ” if non-detect).

A table detailing all data qualifiers applied, removed, or changed for the samples in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of one source blank. The sample was collected on January 17, 2020 and was analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The sample was prepared and analyzed within the holding time required by the method. The sample were prepared and analyzed in one batch on one instrument under a single initial calibration (ICAL). All analyses were performed undiluted. The sample was re-extracted and reanalyzed due to QC related deficiencies in the original analysis. The

laboratory reported the most compliant run. Only the final reported analyses and the associated QC are discussed in this report

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria.

All IIS recoveries were within acceptance criteria.

Precision

Precision is normally evaluated using the relative percent difference (RPD) obtained from duplicate analyte results. Precision was not evaluated since there were no duplicate analyses included in this SDG.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining laboratory blanks for cross contamination of samples during analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

One laboratory method blank was associated with the PFAS analyses in this SDG. The laboratory method blank was non-detect for all target analytes.

The source blank in this SDG consisted of the tap water used to decontaminate all reusable equipment collected from the fire hydrant on site. The source blank was non-detect for all target PFAS, with the following exceptions:

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. The results of this comparison are included in each applicable DVR.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. The validated data indicated that the laboratory correctly performed the analyses. Based

on the data quality assessment, no results were rejected. Although minor QC exceedances were identified for this data set, all data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifier was added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-HYDRANT-17012020	PFTeA	ng/l	0.84 U	0.84 UJ	P3

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

P3: Professional judgement

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: March 23, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers four (4) soil samples, one (1) equipment blank (EB), and one (1) field blank (FB). The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on February 10, 2020. The samples were logged under the following Sample Delivery Group (SDG):

2087250

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples associated with the samples in this SDG included one EB, and one FB. The FB was reported in SDG 2087259. A source blank (SB) was also associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the FD and SB that were not included in this SDG, are discussed in detail in the Representativeness section of this DVR. Percent moisture was determined for all soil samples.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 1.3 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-03-SB01-0-1	Soil	X	
GB-03-SB01-4-5	Soil	X	
GB-03-SB02-0-1	Soil	X	
GB-03-SB02-4-5	Soil	X	
GB-10022020-EB-HA	QC	X	Equipment Blank

QC = Water Quality Control samples.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Soil	EPA 537 Modified	EPA 537 Modified*	ng/g
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

Note: PFAS units for soil in the QAPP are in ug/kg (ppb). Lab reported soils in units of ng/g (ppb).

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

ELLE lost DoD ELAP certification for PFTeA on January 20, 2020 because two proficiency testing (PT) samples failed low and outside the acceptance criteria for this analyte. Therefore, PFTeA results for samples analyzed after January 20, 2020 and prior to March 4, 2020, when the certification was reinstated, were qualified as estimated and flagged as estimated ("J" if detected, and "UJ" if non-detect).

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of four (4) soil samples and one (1) EB. The samples were collected on February 10, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared and analyzed in three batches (two for soils and one for QC-water) and analyzed on one instrument under a single initial calibration (ICAL). The laboratory reported the most compliant run for each sample. Only the final reported analyses and the associated QC are discussed in this report.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), laboratory control sample duplicate (LCSD), the Extracted Internal

Standards (EIS), and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS recoveries were within acceptance criteria for both soil batches.

All LCS and LCSD recoveries were within acceptance criteria for the water batch, except as follows:

Batch 19193004

Analyte	LCS %R	LCDS %R	Criteria
PFTeA	(83)	78	79-134

( ) indicates the recovery met criteria.

The results for the analyte listed above in the associated EB sample was non-detect, therefore the result for PFTeA was qualified as estimated due to the potential low bias (UJ).

All EIS recoveries were within acceptance criteria.

All IIS recoveries were within acceptance criteria.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the LCS/LCSD analyte results in the water batch.

All LCS/LCSD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.

- Calculations were spot-checked and verified.

Three laboratory method blanks were associated with the PFAS analyses in this SDG. The laboratory method blanks were non-detect for all target analytes, except for the following.

Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
Batch # 20045010	PFBA	1.2 J	2.0

The method blank above was associated with two soil samples, GB-03-SB01-0-1 and GB-03-SB02-0-1. PFBA had detections in the samples below the LOQs, and the results were raised to the LOQs and qualified as non-detect (U). The "B" flags applied by the laboratory were removed by the date validator.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. SB results were reported in parts per trillion and soil units were reported in parts per billion. Due to the magnitude of difference in results, the soil sample results were not impacted by the low-level source blank contamination.

Data for the soil samples in this SDG was also evaluated against the EB in this SDG, GB-10022020-EB-HA to determine the potential for cross-contamination resulting from the decontamination of the drilling equipment. The equipment blank was non-detect for all target PFAS.

One FB, GB-10022020-FB, reported in SDG 2087259 was associated with all the samples in this SDG. The field blank was non-detect for all target PFAS analytes. Therefore, no qualifiers were required for the soil samples in this SDG due to field contamination.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. All sample LODs and LOQs for the samples were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ was less than the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. The validated data indicated that the laboratory correctly performed the analyses. Based on the data quality assessment, no results were rejected. Although minor QC exceedances were identified for this data set, all data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-03-SB01-0-1	PFBA	ng/g	1.3 JB	2.1 U	B4, remove B
GB-03-SB01-0-1	PFTeA	ng/g	0.42 U	0.42 UJ	P3
GB-03-SB01-4-5	PFTeA	ng/g	0.40 U	0.40 UJ	P3
GB-03-SB02-0-1	PFBA	ng/g	1.5 JB	2.1 U	B4, remove B
GB-03-SB02-0-1	PFTeA	ng/g	0.41 U	0.41 UJ	P3
GB-03-SB02-4-5	PFTeA	ng/g	0.39 U	0.39 UJ	P3
GB-10022020-EB-HA	PFTeA	ng/l	0.83 U	0.83 UJ	L3, P3

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.

J — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

B4: Method blank infraction (Qualified detect)

L3: LCS percent recovery infraction with low bias

P3: Professional judgement

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: February 24, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers fifteen (15) sediment samples. The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on February 8 through 10, 2020. The samples were logged under the following Sample Delivery Group (SDG):

2087258

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were one sediment field duplicate (FD), and matrix spike/matrix spike duplicate (MS/MSD) pair. There were three field blank (FB) samples reported in SDG 2087259 that were associated with the surface sediment samples in this SDG. Equipment blanks were not applicable to the samples included in this SDG. Percent moisture was determined for all sediment samples.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 4.3 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-OBQC-SD04	SED	X	
GB-OBQC-SD03	SED	X	
GB-OBQC-SD02	SED	X	
GB-OBQC-SD01	SED	X	
GB-OBOIP-SD01	SED	X	
GB-OBOIP-SD02	SED	X	
GB-OBOIP-SD03	SED	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-OBOIP-SD04	SED	X	
GB-OBNP-SD02	SED	X	MS/MSD
GB-OBNP-SD01	SED	X	
GB-OBAR-SD04	SED	X	
GB-OBAR-SD03	SED	X	
GB-OBAR-SD93	SED	X	FD of GB-OBAR-SD03
GB-OBAR-SD01	SED	X	
GB-OBAR-SD02	SED	X	

SED = Sediment

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Sediment	EPA 537 Modified	EPA 537 Modified*	ng/g

Note: PFAS units for sediment in the QAPP are in ug/kg (ppb). Lab reported sediments in units of ng/g (ppb).

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

ELLE lost DoD ELAP certification for PFTeA on January 20, 2020 because two proficiency testing (PT) samples failed low and outside the acceptance criteria for this analyte. Therefore, PFTeA results for samples analyzed after January 20, 2020 and prior

to March 4, 2020, when the certification was reinstated, were qualified as estimated and flagged as estimated ("J" if detected, and "UJ" if non-detect).

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of fourteen (14) sediment samples, one (1) sediment FD, and one (1) sediment MS/MSD set. The samples were collected on February 8 through 10, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG

were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared and analyzed in one batch and analyzed on one instrument under a single initial calibration (ICAL). The laboratory reported the most compliant run for each sample. Only the final reported analyses and the associated quality control (QC) samples are discussed in this report.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), the MS and MSD, the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards. The MS/MSD was performed on sample GB-OBNP-SD02.

All LCS, MS and MSD recoveries were within acceptance criteria.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the MS/MSD analyte results. Precision was further evaluated using the field duplicate results.

All MS/MSD RPDs were within acceptance criteria.

All FD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.

- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

One laboratory method blank was associated with the PFAS analyses in this SDG. The method blank was non-detect for all target PFAS.

FBs were collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. Three FBs (GB-08022020-FB, GB-09022020-FB and GB-10022020-FB) were associated with the sediment samples in this SDG, although reported in SDG 2087259. The field blanks were non-detect for all target PFAS, therefore no qualifiers were applied due to blank contamination.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. The validated data indicated that the laboratory correctly performed the analyses. Based on the data quality assessment, no results were rejected. Although minor QC exceedances were identified for this data set, all data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-OBQC-SD04	PFTeA	ng/g	0.46 U	0.46 UJ	P3
GB-OBQC-SD03	PFTeA	ng/g	2.8 U	2.8 UJ	P3
GB-OBQC-SD02	PFTeA	ng/g	1.9 U	1.9 UJ	P3
GB-OBQC-SD01	PFTeA	ng/g	0.93 U	0.93 UJ	P3
GB-OBOIP-SD01	PFTeA	ng/g	2.7 U	2.7 UJ	P3
GB-OBOIP-SD02	PFTeA	ng/g	4.3 U	4.3 UJ	P3
GB-OBOIP-SD03	PFTeA	ng/g	1.5 U	1.5 UJ	P3
GB-OBOIP-SD04	PFTeA	ng/g	5.8 U	5.8 UJ	P3
GB-OBNP-SD02	PFTeA	ng/g	0.53 U	0.53 UJ	P3
GB-OBNP-SD01	PFTeA	ng/g	3.5 U	3.5 UJ	P3
GB-OBAR-SD04	PFTeA	ng/g	4.5 U	4.5 UJ	P3
GB-OBAR-SD03	PFTeA	ng/g	6.3 U	6.3 UJ	P3
GB-OBAR-SD93	PFTeA	ng/g	4.6 U	4.6 UJ	P3
GB-OBAR-SD01	PFTeA	ng/g	0.55 U	0.55 UJ	P3
GB-OBAR-SD02	PFTeA	ng/g	0.76 U	0.76 UJ	P3

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

P3: Professional judgment

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: February 25, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers fifteen (15) surface water (SW) samples and three (3) field blanks (FB). The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on February 8 through 10, 2020. The samples were logged under the following Sample Delivery Group (SDG):

2087259

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples in this SDG were one SW field duplicate (FD), one SW matrix spike/matrix spike duplicate (MS/MSD) pair and three FBs. Equipment blanks were not applicable to the samples included in this SDG.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 0.8 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

It should be noted that sample GB-08-ST02 was mistakenly collected. All data for this sample was rejected.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-OBQC-SW04	SW	X	
GB-OBQC-SW03	SW	X	
GB-OBQC-SW02	SW	X	
GB-OBQC-SW01	SW	X	
GB-OBOIP-SW01	SW	X	
GB-OBOIP-SW02	SW	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-OBOIP-SW03	SW	X	
GB-OBOIP-SW04	SW	X	
GB-OBNP-SW02	SW	X	MS/MSD
GB-OBNP-SW01	SW	X	
GB-OBAR-SW04	SW	X	
GB-OBAR-SW03	SW	X	
GB-OBAR-SW93	SW	X	FD of GB-OBAR-SW03
GB-OBAR-SW02	SW	X	
GB-08022020-FB	QC	X	Field Blank
GB-09022020-FB	QC	X	Field Blank
GB-10022020-FB	QC	X	Field Blank
GB-08-ST02	SW	X	All data rejected

SW = Surface water; QC = Water Quality Control Sample

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified “J” as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

ELLE lost DoD ELAP certification for PFTeA on January 20, 2020 because two proficiency testing (PT) samples failed low and outside the acceptance criteria for this analyte. Therefore, PFTeA results for samples analyzed after January 20, 2020 and prior to March 4, 2020, when the certification was reinstated, were qualified as estimated and flagged as estimated ("J" if detected, and "UJ" if non-detect).

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of fourteen (14) SW samples, one (1) SW FD, and one (1) sediment MS/MSD set. The samples were collected on February 8 through 10, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1

Analyte	CAS Number
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared and analyzed in two batches and analyzed on one instrument under a single initial calibration (ICAL). The laboratory reported the most compliant run for each sample. Only the final reported analyses and the associated quality control (QC) samples are discussed in this report.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), laboratory control sample duplicate (LCSD), the MS and MSD, the EIS, and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards. The MS/MSD was performed on sample GB-OBNP-SW02.

All LCS and LCSD recoveries were within acceptance criteria.

All MS and MSD recoveries were within acceptance criteria except as follows.

Analyte	MS %R	MSD %R	Criteria
PFDS	60	37	69-124
PFTeA	(108)	55	79-134
PFTriA	16	8	67-144

( ) = Indicates recovery criteria was met.

The analytes listed above all recovered low. PFDS and PFTriA were not detected in the parent sample and therefore qualified as estimated (UJ) for the potential low bias. PFTeA was qualified as rejected, due to the EIS recovery noted below.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria except as follows:

Sample ID	Dilution	EIS	%R	Criteria
GB-OBNP-SW02	1X	13C2-PFTeDA	1	20-180%
GB-OBNP-SW01	1X	13C2-4:2-FTS	197	

The field sample results associated with the non-compliant EIS were qualified as rejected when the recoveries were less than 10% or greater than 190% and were flagged “R”.

The field sample results associated with the non-compliant EIS were qualified as estimated and were flagged “J/UJ”.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the LCS/LCSD, MS/MSD analyte results. Precision was further evaluated using the field duplicate results.

All LCS/LCSD RPDs were within acceptance criteria.

All MS/MSD RPDs were within acceptance criteria, except as follows:

Analyte	RPD	Criteria
PFDS	47	30
PFTeA	65	
PFTriA	65	

The parent sample was non-detect for all three analytes listed above, therefore no corrective action was necessary. It should be noted that PFTeA was previously rejected due to the EIS exceedance noted above.

All FD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

Two laboratory method blanks were associated with the PFAS analyses in this SDG. The laboratory method blanks were non-detect for all target analytes, except for the following.

Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
Batch # 20050018	PFOS	1.6 J	2.0

The method blank above was associated with seven SW samples. All PFOS results in the associated samples were detected above the LOQs. ELLE applied "B" flags to the PFOS results, although the data validator removed them.

FBs were collected by pouring PFAS-free water into the appropriate sampling containers on-site in the area samples were being collected. Three FBs (GB-08022020-FB, GB-09022020-FB and GB-10022020-FB) were associated with the SW samples in this SDG. The field blanks were non-detect for all target PFAS, therefore no qualifiers were applied due to blank contamination.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

Two results for PFAS for the samples in this SDG was qualified as rejected and flagged "R" due to data quality issues. In addition, all results for sample GB-08-ST02 were rejected as the sample was mistakenly collected. All other results were usable. The completeness for the PFAS portion of this SDG is 94%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. Sample LODs and LOQs were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ values were below the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. Two PFAS results were qualified as rejected due to extreme exceedances in the associated EIS which causes those results to be unusable. All other data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-OBQC-SW04	PFTeA	ng/l	0.77 U	0.77 UJ	P3
GB-OBQC-SW04	PFOS	ng/l	28 B	28	P3
GB-OBQC-SW03	PFTeA	ng/l	0.82 U	0.82 UJ	P3
GB-OBQC-SW03	PFOS	ng/l	110 B	110	P3
GB-OBQC-SW02	PFTeA	ng/l	0.77 U	0.77 UJ	P3
GB-OBQC-SW01	PFTeA	ng/l	0.93 U	0.93 UJ	P3
GB-OBOIP-SW01	PFOS	ng/l	3.5 B	3.5	P3
GB-OBOIP-SW01	PFTeA	ng/l	0.84 U	0.84 UJ	P3
GB-OBOIP-SW02	PFTeA	ng/l	9.9 U	9.9 UJ	P3
GB-OBOIP-SW03	PFOS	ng/l	4.8 B	4.8	P3
GB-OBOIP-SW03	PFTeA	ng/l	0.85 U	0.85 UJ	P3
GB-OBOIP-SW04	PFTeA	ng/l	0.79 U	0.79 UJ	P3
GB-OBNP-SW02	PFDS	ng/l	0.87 U	0.87 UJ	M3
GB-OBNP-SW02	PFTeA	ng/l	0.87 U	0.87 R	I12, P3, M3
GB-OBNP-SW02	PFTriA	ng/l	0.87 U	0.87 UJ	M3
GB-OBNP-SW01	4:2FTS	ng/l	0.89 U	0.89 R	I12
GB-OBNP-SW01	PFOS	ng/l	6.4 B	6.4	P3
GB-OBNP-SW01	PFTeA	ng/l	0.89 U	0.89 UJ	P3
GB-OBAR-SW04	PFTeA	ng/l	9.9 U	9.9 UJ	P3
GB-OBAR-SW03	PFTeA	ng/l	0.84 U	0.84 UJ	P3
GB-OBAR-SW03	PFOS	ng/l	100 B	100	P3
GB-OBAR-SW93	PFTeA	ng/l	0.83 U	0.83 UJ	P3
GB-OBAR-SW93	PFOS	ng/l	110 B	110	P3
GB-OBAR-SW02	PFTeA	ng/l	9.9 U	9.9 UJ	P3
GB-08022020-FB	PFTeA	ng/l	0.97 U	0.97 UJ	P3
GB-09022020-FB	PFTeA	ng/l	0.91 U	0.91 UJ	P3
GB-10022020-FB	PFTeA	ng/l	0.88 U	0.88 UJ	P3
GB-08-ST02	All analytes	ng/l	Result	Result R	P3

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

I12: EIS percent recovery infraction with no assignable bias

P3: Professional judgment

M3: MS/MSD percent recovery infraction with low bias

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: March 31, 2020

Parsons - Austin

INTRODUCTION

The following data validation summary report covers seven (7) soil samples, one (1) equipment blank (EB), and one (1) field blank (FB). The samples were collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on February 25, 2020. The samples were logged under the following Sample Delivery Group (SDG):

2089530

The samples in this SDG were analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the samples included in this SDG. The field quality control (QC) samples associated with the samples in this SDG included one EB, one FB and matrix spike/matrix spike duplicate (MS/MSD) pair. A source blank (SB) was also associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the SB that was not included in this SDG, are discussed in detail in the Representativeness section of this DVR. Percent moisture was determined for all soil samples.

All samples were collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The samples were received by ELLE in good condition and at an acceptable temperature of 1.4 degrees Celsius.

The samples were prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-19-SB01-0-1	Soil	X	
GB-19-SB01-4-5	Soil	X	
GB-19-SB02-0-1	Soil	X	
GB-19-SB02-4-5	Soil	X	
GB-19-SB92-4-5	Soil	X	FD of GB-19-SB02-4-5
GB-19-SB03-0-1	Soil	X	

Sample ID	Matrix	PFAS	COMMENTS
GB-19-SB03-4-5	Soil	X	
GB-25022020-FB	QC		Field Blank
GB-25022020-EB-HA	QC	X	Equipment Blank

QC = Water Quality Control samples.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Soil	EPA 537 Modified	EPA 537 Modified*	ng/g
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

Note: PFAS units for soil in the QAPP are in ug/kg (ppb). Lab reported soils in units of ng/g (ppb).

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified “J” as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

ELLE lost DoD ELAP certification for PFTeA on January 20, 2020 because two proficiency testing (PT) samples failed low and outside the acceptance criteria for this analyte. Therefore, PFTeA results for samples analyzed after January 20, 2020 and prior to March 4, 2020, when the certification was reinstated, were qualified as estimated and flagged as estimated (“J” if detected, and “UJ” if non-detect).

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of six (6) soil samples, one (1) MS/MSD pair, one (1) FD, one (1) EB and one (1) FB. The samples were collected on February 25, 2020 and were analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All samples in this SDG were analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The samples were prepared and analyzed within the holding time required by the method. The samples were prepared and analyzed in two batches (one for soils and one for QC-waters) and analyzed on one instrument under a single initial calibration (ICAL). The

laboratory reported the most compliant run for each sample. Only the final reported analyses and the associated QC are discussed in this report.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), laboratory control sample duplicate (LCSD), the MS and MSD, the Extracted Internal Standards (EIS), and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards. The MS/MSD was performed on sample GC-19-SB01-0-1.

All LCS and LCSD recoveries were within acceptance criteria for both batches.

All MS and MSD recoveries were within acceptance criteria for the soil batch.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria except as follows:

Sample ID	Dilution	EIS	%R	Criteria
GB-19-SB01-4-5	1x	d5-NEtFOSAA	18	20-180%
GB-19-SB01-4-5	1x	d3-NMeFOSAA	15	
GB-19-SB02-0-1	1x	d3-NMeFOSAA	17	
GB-19-SB02-4-5	1x	d3-NMeFOSAA	15	
GB-19-SB92-4-5	1x	d5-NEtFOSAA	16	
GB-19-SB92-4-5	1x	d3-NMeFOSAA	15	

Non-compliant EIS were qualified as estimated (J/UJ) when the recovery was either less than 20% or greater than 180%.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the LCS/LCSD analyte results in the water batch. Precision was further evaluated using the field duplicate results.

All LCS/LCSD RPDs were within acceptance criteria.

All MS/MSD RPDs were within acceptance criteria.

All FD RPDs were non-detect; therefore, precision was considered acceptable.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and

- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

Two laboratory method blanks were associated with the PFAS analyses in this SDG. The laboratory method blanks were non-detect for all target analytes.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the samples in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to all samples collected with reusable (i.e. decontaminated) equipment to evaluate the possibility of cross-contamination. SB results were reported in parts per trillion and soil units were reported in parts per billion. Due to the magnitude of difference in results, the soil sample results were not impacted by the low-level source blank contamination.

Data for the soil samples in this SDG was also evaluated against the EB in this SDG, GB-25022020-EB-HA, to determine the potential for cross-contamination resulting from the decontamination of the drilling equipment. The equipment blank was non-detect for all target PFAS, except as follows:

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-25022020-EB-HA	PFOS	0.67 J	1.8

One FB, GB-25022020-FB, was associated with all the samples in this SDG. The field blank was non-detect for all target PFAS analytes, except as follows:

Field Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-25022020-FB	PFOS	0.81 J	1.8

Due to the magnitude of difference in results, the soil sample results were not impacted by the low-level source blank contamination.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. All sample LODs and LOQs for the samples were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ was less than the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. The validated data indicated that the laboratory correctly performed the analyses. Based on the data quality assessment, no results were rejected. Although minor QC exceedances were identified for this data set, all data is considered usable for the purposes of this project.

DATA QUALIFIER CHANGES

The following data qualifiers were added, removed, or changed as a result of the data validation process:

Sample ID	Analyte	Units	Original Result	Final Result	Reason Code
GB-19-SB01-4-5	NEtFOSAA	ng/g	0.40 U	0.40 UJ	I12
GB-19-SB01-4-5	NMeFOSAA	ng/g	0.40 U	0.40 UJ	I12
GB-19-SB02-0-1	NMeFOSAA	ng/g	0.41 U	0.41 UJ	I12
GB-19-SB02-4-5	NMeFOSAA	ng/g	0.41 U	0.41 UJ	I12
GB-19-SB92-4-5	NEtFOSAA	ng/g	0.40 U	0.40 UJ	I12
GB-19-SB92-4-5	NMeFOSAA	ng/g	0.40 U	0.40 UJ	I12
GB-25022020-FB	PFTeA	ng/l	0.89 U	0.89 UJ	P3
GB-25022020-EB-HA	PFTeA	ng/l	0.89 U	0.89 UJ	P3

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

REASON CODE DEFINITIONS

Reason codes were used to document the logic behind all data validation qualifiers. The following reason codes for data qualification were associated with the samples in this SDG:

I12: EIS percent recovery infraction with no assignable bias

P3: Professional judgement

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: April 7, 2020
Parsons - Austin

INTRODUCTION

The following data validation summary report covers one (1) equipment blank (EB). The sample was collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on March 4, 2020. The sample was logged under the following Sample Delivery Group (SDG):

2090741

The sample in this SDG was analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the sample included in this SDG. The field quality control (QC) samples associated with the samples in this SDG included one EB. A source blank (SB) was also associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the SB that was not included in this SDG, are discussed in detail in the Representativeness section of this DVR.

The EB sample was not associated with any of the field samples from the site and was collected for informational purposes only.

All sample was collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The sample was received by ELLE in good condition and at an acceptable temperature of 0.6 degrees Celsius.

The sample was prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-04032020-EB-PP	QC	X	Equipment Blank

QC = Water Quality Control sample.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of one (1) EB. The sample was collected on March 4, 2020 and was analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4

Analyte	CAS Number
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All sample in this SDG was analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The sample was prepared and analyzed within the holding time required by the method. The sample was prepared and analyzed in one batch and analyzed on one instrument under a single initial calibration (ICAL). The laboratory reported the most compliant run for each sample. Only the final reported analyses and the associated QC are discussed in this report.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), laboratory control sample duplicate (LCSD), the Extracted Internal Standards (EIS), and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS and LCSD recoveries were within acceptance criteria for both batches.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the LCS/LCSD analyte results.

All LCS/LCSD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

One laboratory method blank was associated with the PFAS analyses in this SDG. The laboratory method blank was non-detect for all target analytes.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the EB in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to the EB collected in this SDG. The EB was collected to evaluate the possibility of cross-contamination.

The EB was non-detect for all target PFAS analytes, except as follows:

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-04032020-EB-PP	PFOS	0.80 J	1.8

The EB sample was not associated with any of the field samples from the site, the EB sample was collected for informational purposes only.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. All sample LODs and LOQs for the samples were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ was less than the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. None of the data was rejected or qualified due to QC related deficiencies; therefore, all data is considered usable.

DATA QUALIFIER CHANGES

No data qualifiers were added, removed, or changed as a result of the data validation process for this SDG.

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. However, the reported LOD is approximate and may or may not accurately and precisely represent the concentration necessary to detect the analyte in the sample.
U	Analyte was not detected and is reported as less than the LOD. The LOD has been adjusted for any dilution or concentration of the sample.

DATA VALIDATION SUMMARY REPORT

for samples collected from

GABRESKI AIR NATIONAL GUARD BASE

WESTHAMPTON, LONG ISLAND, NEW YORK

Data Validation by: Sandra de las Fuentes

Report Date: April 14, 2020
Parsons - Austin

INTRODUCTION

The following data validation summary report covers one (1) equipment blank (EB). The sample was collected from Gabreski Air National Guard (ANG) Base in Westhampton, Long Island, New York on March 12, 2020. The sample was logged under the following Sample Delivery Group (SDG):

2092150

The sample in this SDG was analyzed for per- and polyfluoroalkyl substances (PFAS) by U.S. EPA Method 537 modified. The following table details the sample included in this SDG. The field quality control (QC) samples associated with the samples in this SDG included one EB. A source blank (SB) was also associated with this SDG. The SB was collected on January 17, 2020 and is reported in SDG 2083770. Discussion of the SB that was not included in this SDG, are discussed in detail in the Representativeness section of this DVR.

The EB sample was not associated with any of the field samples from the site and was collected for informational purposes only.

All sample was collected by Parsons and shipped directly to Eurofins Lancaster Laboratories Environmental (ELLE) in one cooler. The sample was received by ELLE in good condition and at an acceptable temperature of 0.3 degrees Celsius.

The sample was prepared and analyzed following the procedures outlined in the project-specific Uniform Federal Policy - Quality Assurance Project Plan (UFP-QAPP) and the Department of Defense (DoD) Quality Systems Manual (QSM) Version 5.1.

SAMPLE IDs AND REQUESTED PARAMETERS

Sample ID	Matrix	PFAS	COMMENTS
GB-12032020-EB-PP2	QC	X	Equipment Blank

QC = Water Quality Control sample.

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

Parameter	Matrix	Prep Method	Analytical Method	Units
PFAS	Water	EPA 537 Modified	EPA 537 Modified*	ng/l

* PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15

EVALUATION CRITERIA

The Level IV data package submitted by the laboratory has been reviewed and verified following the guidelines outlined in the project-specific UFP-QAPP and DoD QSM 5.1. Data qualification was performed following the spirit of the National Functional Guidelines for Organic Data Review even though this document does not specifically include the method for PFAS.

Information reviewed in the data packages included sample results; field and laboratory quality control results; instrument calibration; calibration verifications; case narratives; sample receipt forms, and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the associated analytical method, DoD QSM and QAPP were met. The limits listed in the analytical reports from ELLE were used to evaluate accuracy.

Extracted Internal Standard (EIS) responses were only used to qualify data when the recovery was excessively high or excessively low. Data associated with EIS recoveries below 10% or above 190% were rejected. Data associated with EIS recoveries below 20% but at or above 10%, or above 180% but at or below 190%, were qualified "J" as estimated. At these extremes, the associated sample data were considered impacted and estimated, or significantly impacted and rejected. Data associated with EIS recoveries between 20% and 180% were not considered significantly impacted and no data qualifiers were applied for EIS recoveries within this range.

A table detailing the data qualifiers applied, removed, or changed for the sample in this SDG as a result of the data validation process is included at the end of this report.

PFAS

General

The PFAS portion of this SDG consisted of one (1) EB. The sample was collected on March 12, 2020 and was analyzed for the following target list of 24 PFAS compounds as specified in the project-specific UFP-QAPP.

Analyte	CAS Number
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4

Analyte	CAS Number
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Perfluorododecanoic acid (PFDoA)	307-55-1
Perfluorotridecanoic acid (PFTriA)	72629-94-8
Perfluorotetradecanoic acid (PFTeA)	376-06-7
Perfluorobutanesulfonic acid (PFBS)	375-73-5
Perfluorohexanesulfonic acid (PFHxS)	355-46-4
Perfluoroheptanesulfonic acid (PFHpS)	375-92-8
Perfluorooctanesulfonic acid (PFOS)	1763-23-1
Perfluorodecanesulfonic acid (PFDS)	335-77-3
Perfluorooctane sulfonamide (PFOSA)	754-91-6
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS)	27619-97-2
1H,1H,2H,2H-perfluorodecane sulfonate (8:2 FTS)	39108-34-4
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
Perflouro-1-nonanesulfonate (PFNS)	68259-12-1
Perfluoropentanesulfonic acid (PFPeS)	2706-91-4

The PFAS analyses were performed in accordance with U.S. EPA Method 537 Modified (PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15). All sample in this SDG was analyzed following the procedures outlined in the DoD QSM, version 5.1 and the project-specific UFP-QAPP with exception of the previously noted accuracy tolerances.

The sample was prepared and analyzed within the holding time required by the method. The sample was prepared and analyzed in one batch and analyzed on one instrument under a single initial calibration (ICAL). The laboratory reported the most compliant run for each sample. Only the final reported analyses and the associated QC are discussed in this report.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control sample (LCS), laboratory control sample duplicate (LCSD), the Extracted Internal Standards (EIS), and the Injection Internal Standards (IIS). It should be noted that the laboratory report occasionally references the EIS as surrogate standards.

All LCS and LCSD recoveries were within acceptance criteria for both batches.

All IIS recoveries were within acceptance criteria.

All EIS recoveries were within acceptance criteria.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the LCS/LCSD analyte results.

All LCS/LCSD RPDs were within acceptance criteria.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Comparing actual analytical procedures to those described in the DoD QSM and project-specific UFP-QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection and analysis.

The samples in this SDG were analyzed following the COC and the analytical procedures described in the DoD QSM and project-specific UFP-QAPP. All samples were prepared and analyzed within the holding time required by the method. The following QC elements were also evaluated:

- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All instrument sensitivity check (ISC) criteria were met.
- Raw data was spot-checked for qualitative and quantitative accuracy.
- Calculations were spot-checked and verified.

One laboratory method blank was associated with the PFAS analyses in this SDG. The laboratory method blank was non-detect for all target analytes.

The source blank GB-HYDRANT-17012020 reported in SDG 2083770 was associated with the EB in this SDG. The source blank sample consisted of onsite tap water used to rinse all reusable equipment. The source blank was non-detect for all target PFAS except as follows.

Analyte	Conc. (ng/L)	LOQ (ng/L)
PFHxA	0.47 J	1.7
PFHxS	0.48 J	1.7
PFOA	0.61 J	1.7
PFOS	0.58 J	1.7
PFOSA	1.5 J	1.7
PFPeA	0.42 J	1.7

The source blank results were compared to the EB collected in this SDG. The EB was collected to evaluate the possibility of cross-contamination.

The EB was non-detect for all target PFAS analytes, except as follows:

Equipment Blank ID	Analyte	Conc. (ng/L)	LOQ (ng/L)
GB-12032020-EB-PP2	PFOS	2.0	1.8
	PFOSA	1.1 J	1.8

The EB sample was not associated with any of the field samples from the site, the EB sample was collected for informational purposes only.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All results for PFAS for the samples in this SDG were considered usable. Therefore, the completeness for the PFAS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

COMPARABILITY

All data was generated using contract-specific standard methods and reported with known data quality, type of analysis, units, etc.

SENSITIVITY

The LOD and LOQ values reported for the samples were compared to those listed in the QAPP to ensure that sensitivity requirements were met. All sample LODs and LOQs for the samples were adjusted based on dilution and/or initial/final volumes.

The LOD and LOQ was less than the project action limit (PAL) listed in the QAPP for all target PFAS.

DATA USABILITY

The purpose of this data validation report is to ensure the integrity and reliability of analytical laboratory data. The data quality is evaluated based on precision, accuracy, representativeness, comparability, and completeness (PARCC) characteristics of the data. None of the data was rejected or qualified due to QC related deficiencies; therefore, all data is considered usable.

DATA QUALIFIER CHANGES

No data qualifiers were added, removed, or changed as a result of the data validation process for this SDG.

DATA QUALIFIER DEFINITIONS

The data qualifiers are defined in Table 36.2 of the project-specific UFP-QAPP, as follows:

R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. The data is unusable.
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APPENDIX O Response to Comments

Response to Comments will be presented in the Final version of this Expanded Site Inspection Report, or upon request.