ENVIRONMENTAL ASSESSMENT OF THE WAINSCOTT COMMERCIAL CENTER EAST HAMPTON, NEW YORK

Prepared for

Wainscott Commercial Center LLC
P.O. Box 1259
Wainscott, New York 11975

January 2019

ALPHA GEOSCIENCE

ALPHA
GEOSCIENCE

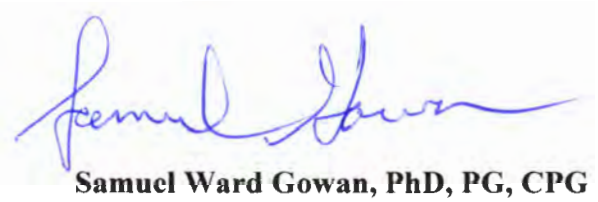
Geology
Hydrology
Remediation
Water Supply

ENVIRONMENTAL ASSESSMENT OF THE WAINSCOTT COMMERCIAL CENTER EAST HAMPTON, NEW YORK

Prepared for

Wainscott Commercial Center LLC
P.O. Box 1259
Wainscott, New York 11975

Prepared by



Samuel Ward Gowan, PhD, PG, CPG
Alpha Geological Services, DPC
679 Plank Road
Clifton Park, New York 12065

January 2019

TABLE OF CONTENTS

FIGURES

PLATES

APPENDICES

1.0 INTRODUCTION

This report provides an environmental assessment of the Wainscott Commercial Center (WCC) site in East Hampton, New York. The site is an approximate 70-acre parcel located between the Long Island Railroad (LIRR) on the north, Montauk Highway (New York Route 27) on the south, Hedges Lane on the east, and Wainscott Northwest Road on the west (Figure 1). The property is mostly open land with a few commercial and industrial facilities concentrated at the southern end of the property. The land use to the west, south, and east of the site is residential, and land beyond the LIRR to the north is occupied by the East Hampton Airport and East Hampton Industrial Park, which is located on both sides of Industrial Road (Figure 1).

The site owner, Wainscott Commercial Center LLC (WCC LLC) is proposing to develop the site for multi-use commercial and industrial tenants. The Town of East Hampton (Town) has raised concerns that ground water in the Town and also the surface water in Georgica Pond may already be impacted by conditions at the site, or could become impacted if the site is developed. Alpha Geological Services, D.P.C. (Alpha Geoscience, d.b.a.) (Alpha) was asked by WCC LLC to address these Town concerns. The concerns were addressed by Alpha primarily through a review of site history, a summary of regional environmental concerns, and an investigation of both the ground water beneath the site and the site soils.

2.0 METHODS OF ASSESSMENT

The objectives of this assessment were met by:

- Developing an understanding of the site history and important environmental concerns for the area by reviewing publicly available information from State, County, and Town documents and reviewing site information provided by WCC LCC;
- Conducting a hydrogeologic investigation that included the installation of monitoring wells that were used to determine the quality of the ground water, the source of ground water recharge, and the direction of ground water flow;

- Assessing whether the site has adversely impacted the existing ground water beneath the site and surrounding area, and assessing whether the site has impacted Georgica Pond;
- Utilizing the results of the historical review and the hydrogeological investigation to design and implement a soil investigation; and
- Analyzing the results of the hydrogeologic and soil investigations to assess the potential for impacts to the local ground water resources and Georgica Pond from the development of the WCC.

3.0 HISTORICAL BACKGROUND

3.1 Site History

The site was a sand and gravel mine when the WCC LCC owners purchased the property in 1984. According to information provided by WCC LCC (see List of Uses and Tenants at the WCC in Appendix A), the New York State mining permit ended in July of 1998 when the New York State Department of Environmental Conservation (NYSDEC) approved the final reclamation of the site and released the financial reclamation surety bond. The site was already in use by various commercial and industrial clients by 1998 as indicated by the list of prior uses and tenants in Appendix A. These tenants were located primarily at the southern end of the site, as they are now (Figure 1).

The owners of WCC initiated a proposal to subdivide the WCC site into 25 building lots around 1999. As part of that proposal, the Town, which was acting as the lead agency, identified ground water and Georgica Pond as significant resources that could be adversely impacted. The WCC owners conducted an initial investigation in 1999 and 2000 that included the drilling of eight soil borings, installing monitoring wells in those soil borings, collecting and analyzing water samples from those wells, and measuring the depth and elevation of the water table. The samples were tested at an analytical laboratory for general drinking water standards, total petroleum hydrocarbons, chlorinated herbicides, and organophosphorus pesticides. The results of this testing and an interpretation of the direction of ground water flow are provided and discussed in the hydrogeology investigation report provided in Appendix B. The results showed that ground water flow was from the northwest to the southeast across the site, and the ground water did not contain any herbicides,

pesticides, or hydrocarbon-related volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). The metals, iron and manganese, were found to be above New York State DOH drinking water standards at some locations.

WCC LLC asked Alpha to undertake this current environmental assessment of the site in 2017. During the course of this assessment, the Town of East Hampton Planning Department (the Town) submitted as Environmental Assessment Form (EAF) on September 5, 2018 (Shantz, 2018). The Town's EAF identified environmental concerns that included the potential for the construction of water supply wells in locations where ground water is, or is suspected to be, contaminated. The Town specifically raised concerns for excess levels of metals that were detected in ground water at a nearby sand and gravel mine and the presence of perfluorooctane sulfonate (PFOS) and perfluorooctanic acid (PFOA) discovered in numerous private wells in the area of the WCC. The Planning Board stated (Shantz, 2018) that it, *"feels that without substantial testing of soil and groundwater for a comprehensive list of potential contaminants it cannot be said that the proposed project will not present a significant adverse impact to human health or to groundwater. The existing/ongoing conditions of private well contamination in this area make it all the more important to prevent further damage which could also affect neighboring wells and Georgica Pond through groundwater travel and/or storm water run-off."*

3.2 Environmental Concerns

The historical use of the site provides an indication of potential contaminants that might be in the soil and ground water. The use of the site for mining is not a source of contamination. The subsequent tenants, which have been concentrated in the southern end of the site, raise the potential for the presence of hydrocarbons, such as diesel or other petroleum compounds that could be related to the diesel repair shop or heating systems, pesticides and nitrates related to landscaping operations, and other VOCs that might be related to the furniture repair business. The locations of these tenant-related activities are identified on Figure 2. All of the tenants utilize individual septic systems that could contribute nitrates to ground water.

Concerns for potential contamination of ground water, in the general areas within which the site lies, have been raised by the local community for hexavalent chromium, 1,4-dioxane, and per- and

polyfluoroalkyl substances (PFAS). These contaminants are known to have potential health effects if consumed. The attention given to hexavalent chromium and 1,4- dioxane is unrelated to any specific occurrence in the area; however, hexavalent chromium was pointed out as a potential pollutant at the site by a local citizen who identified a ready mix plant at the site as a potential source (see letter from Dr. James L. Tomarken of Suffolk County Department of Health Services (SCDHS) that is provided in Appendix C).

The PFAS concerns are directly associated with the occurrence of two PFAS; PFOS (perfluorooctane sulfonate) and PFOS (perfluorooctanoic acid), for which the United States Environmental Protection Agency (USEPA) has issued a health advisory level (HAL) of 0.07 parts per billion (ppb). The SCDHS initiated a private well survey in October 2017 for that portion of the Hamlet of Wainscott that is south of the East Hampton Airport and that surrounds the WCC site on the east, south, and west (Appendix D).The SCDHS announced an expansion of the residential well assessment area in May 2018 due to the detection of PFOS and PFOA in several residential wells (Appendix D).

According to the SCDHS water quality advisory issued on May 25, 2018 (Appendix D), *"PFAS have been used in a number of industrial and commercial products such as firefighting foam, as well as coatings that repel water, oil, stain and grease."* The October 2017 water quality advisory from the SCDHS (Appendix D) indicates that the airport had used or stored products that may have contained PFOS and PFOA; consequently, the airport is considered a potential source area. It was also reported in a local newspaper that a fire training exercise was conducted at the WCC site in June 2000 and that fire suppressant foam may have been used in that drill (Wright, 2018). An analysis to determine the exact location of the drill and research into whether that drill actually involved the use of fire suppressant foam is discussed in subsequent sections of this report.

4.0 RESULTS

A hydrogeologic/ground water investigation was conducted first, followed by a soil investigation. The hydrogeologic investigation included assessing the results of the earlier investigation conducted in 1999-2000 and the latter investigation conducted in late spring of 2018. The soil investigation was completed in December 2018.

4.1 Hydrogeologic Investigation

The primary objectives and the results of the hydrogeologic investigation are provided in Appendix B; consequently, there is no need to discuss these items here other than to repeat the key conclusions and provide any additional information gathered and analyzed since that report was finalized in November 2018. The most significant conclusions from that report are:

- Ground water flows beneath the site from the northwest toward the southeast.
- The ground water beneath the site is contained in a water table aquifer that is recharged by direct precipitation to the land surface at the site and also from direct precipitation to properties to the northwest of the site that include residential areas and the East Hampton Airport.
- The natural discharge zone for ground water flowing beneath the site is Georgica Pond.
- The ground water flow rate across the site is relatively rapid at an estimated velocity of 335 feet per year.
- The ground water quality beneath the site was found to be relatively clean with no detections of herbicides, pesticides, hydrocarbons related VOCs and SVOCs, hexavalent chromium, and 1,4-dioxane.
- Although most of the metals that were targeted for laboratory analysis were either not detected or were below the New York State Department of Health (NYSDOH) Part 5 drinking water standards, the water did contain levels of manganese and iron at concentrations above those standards; however, the standards for these two metals were established for aesthetic reasons (i.e. staining of household fixtures) and not for health reasons.
- Nitrates were detected in all of the wells at levels well below the New York State drinking water limit of 10 milligrams per liter (mg/L); consequently, the site is not a source of the nutrients entering Georgica Pond.
- PFAS were discovered in the ground water at levels for PFOA and PFOS that exceeded EPA health advisory levels (HALs) for these compounds. The appearance of these PFAS throughout the site with high levels on both the upgradient and downgradient sides of the site suggests a source off site to the northwest; however, an investigation of site soils for PFAS

was warranted and undertaken subsequent to the completion of the hydrogeologic report in order to evaluate the site of a fire training exercise.

The only additional hydrogeologic data that was collected after completion of the hydrogeologic report in November 2018 was a round of water level measurements on December 7, 2018. These measurements are included on Table 1 along with the previous three rounds of measurements.

The water level elevation data for all four dates of measurements are plotted on hydrographs provided on Figure 3. Other than the unusual spike in MW-1 on June 26, the data show a small decline through the summer and a rebound in December. The December water levels are generally higher than the previous measurements and reflect the unusually high amounts of rainfall that occurred in the area during November 2018 when 9.56 inches fell at the nearest National Oceanic and Atmospheric Administration (NOAA) weather station. The November rainfall was more than twice the normal average of 4.37 inches. The average (normal) monthly precipitation data and monthly precipitation data for Bridgehampton, NY are provided on Table 2.

An analysis of the depth to water below the land surface, when ground water was at its highest observed elevation on December 7, 2018, was conducted by comparing a water table contour map with the surface topography. Hydrographs showing that the water levels were at their highest level at the site in December of 2018 are provided on Figure 3. The water table contours were placed on the site topographic map and provided herein as Plate 1. The site topographic map was generated by Fox Land Surveying (Fox) of Westhampton Beach, New York. A copy of the map by Fox is included in Appendix D of the hydrogeologic report (see Appendix B herein). The resulting map of the depth to water is provided as Plate 2.

4.2 Soil Investigation

4.2.1 Purpose of the Soil Investigation

A soil investigation was conducted on December 6 and 7, 2018. The work plan for this soil investigation was developed based on the results of the hydrogeologic investigation, the historical locations of tenants at the site, and the historical use of the site for a fire training exercise.

The hydrogeologic investigation results indicate that there is no ground water contamination from hexavalent chromium, 1,4-dioxane, herbicides, pesticides, and nitrates; consequently, none of these contaminants were targeted during the soil investigation. Hydrocarbon compounds were also not detected at the site during the 1999/2000 ground water investigation; however, the presence of a diesel engine repair shop at the site of a former furniture repair business (Figure 2) led to a decision to conduct a focused drilling and sampling program in that area and also to screen soil samples throughout the site for VOCs.

Concentrations of iron and manganese were found in the ground water at levels above the New York State drinking water standards of 0.3 mg/L for each of these metals in both 1999 and 2018 (see Tables 3 and 5 and Figures 10 and 11 in Appendix B). These elevated metals were detected on both the upgradient and downgradient sides of the site in 1999 and primarily on the downgradient side in 2018. Although the iron at the site was close to the averages and within the range of concentrations typically found in Suffolk County Water Supply wells (see Table in Appendix F of Appendix B herein), the manganese concentrations in ground water at the site were slightly higher than the average and the maximums typical for water supply wells in the county. The hydrogeologic investigation results (Appendix B) indicate that at least some, and possibly all, of the elevated iron and manganese is coming from offsite sources upgradient from the site. Regardless, a sampling plan was developed to assess whether the site soils are a potential source. The hydrogeologic results did not identify a particular area of the site; consequently, testing of metals in the soil was conducted throughout the entire site.

The PFAS ground water testing results (Appendix B) indicated the presence of PFOS and PFOA throughout the site, but the results also demonstrated that high concentrations are present on both the upgradient and downgradient sides of the site (see Figure 9 in Appendix B). These results indicate the presence of an upgradient source, but do not rule out a contributing source at the site.

An anecdotal reference to the alleged use of fire suppressant foam was included with the photographs contained in a Southampton Press article authored by Michael Wright in March 2018. The article contains three pictures with captions indicating the use of fire retardant (also fire suppressant) foam during a plane-crash training exercise at the Wainscott gravel pit in June 2000.

An analysis of the three ground-based photographs from Mr. Wright's newspaper article along with an air photograph from Google Earth (see photographs in Appendix E) shows the interpreted location of the bus that was the target of the fire training exercise. The location is interpreted based on the position of the bus against the site perimeter embankment, the presence of a dark-toned material pile behind the green fire truck (E-1) that is present to the east of the location on the air photograph (E-4), and the presence of a tree extending out over the perimeter slope near the bus (E-2) that is near the interpreted location on E-4. This general area, which is outlined on Figure 2, was targeted for testing of PFAS in soil.

4.2.2 Soil Sampling Program

A total of nineteen (19) soil borings were drilled at the site using a Power Probe 9100 direct push drilling rig on December 6 and 7, 2018. The approximate locations of these holes are provided on Figure 4. The locations were estimated in the field using a hand-held global positioning system (GPS) instrument. The soil materials encountered at each location were logged by a licensed Professional Geologist from Alpha (see geologic logs in Appendix F). Each soil sample collected from the direct push boreholes was visually inspected for contamination, checked for odors from VOCs, and screened for the presence of VOCs using a photoionization detector (PID). A log of the PID readings is provided in Appendix G. Samples were collected from each soil boring and placed in sample containers provided by Con-Test Analytical Laboratory of East Longmeadow, MA. Each sample container was placed with ice in a laboratory-supplied cooler, along with the chain of custody, and submitted to Con-Test for analysis. Additional details of the soil sampling program are provided as follows:

- Samples (grab samples) for metals analysis were selected from soil brought to the surface at each soil boring. The grab samples were taken from depths ranging from 0.5 feet to 2.0 feet below the ground surface. Each sample was submitted to Con-Test for the following Resource Conservation and Recovery Act (RCRA) – 8 metals plus iron and manganese:
    - Arsenic
    - Barium
    - Cadmium
    - Chromium

    - Iron
    - Lead
    - Manganese
    - Mercury
    - Selenium
    - Silver
- All of the samples brought to the surface were evaluated by screening for olfactory (odor), visual, and PID responses for VOCs; however, no VOCs were detected above background (see Appendices F and G; consequently, the only samples selected for laboratory analysis of petroleum-related VOCs and SVOCs were from the soil borings near the current diesel maintenance facility (SB-17, SB-18, and SB-19) (Figure 4). These samples were submitted to Con-Test for analysis following the New York State Department of Environmental Conservation soil cleanup policy (Commissioner's Policy, CP-51) using analytical Method 8260 VOCs and Method 8270 SVOCs. These samples were collected from depths ranging from 6 to 8 feet below the ground surface.
- Sampling for PFAS was conducted from depths of 0 – 0.5 feet at locations adjacent to soil borings SB-1, SB-2, and SB-3. These locations were from undisturbed ground approximately one (1) foot from the respective soil boring; consequently, they are assigned the same name and location as the soil boring. Sampling was conducted by the Alpha geologist using separate stainless steel trowels for each location. Each trowel was washed prior to use using deionized (DI) water purchased from CVS pharmacy on December 5, 2018. The DI water was submitted to Con-Test for analysis of PFAS, and did not contain PFAS. The sampling was conducted using gloves supplied for the PFAS sampling by Con-Test, and the field geologist avoided handling substances or articles that could contain PFAS during preparation and conducting the sampling. The sample containers provided by Con-Test were filled, placed in the Con-Test-supplied cooler with ice, and submitted to the laboratory along with the chain of custody.

4.2.3 Soil Sampling Results

4.2.3.1 Site Soils

The soil boring logs (Appendix F) confirm the results of the hydrogeologic investigation (Appendix B) that indicate that the site soils consist of fill above the fine to coarse sands of the Upper Glacial Aquifer. The fill is predominantly a fine to coarse sand and trace gravel. Four of the nineteen soil borings encountered a small quantity of anthropogenic (man-made) fill material; such as brick, cement, concrete, and wood chips; that were within the predominantly fine to coarse sand fill.

4.2.3.2 Soil Sample Analytical Results

The soil analytical results were non-detect for VOCs and SVOCs (Table 3). These results are consistent with the visual, olfactory, and PID readings (Appendix G) that also did not identify the presence of VOCs. These results are also consistent with ground water sampling results from the 1999 investigation.

The laboratory results for the RCRA-8 metals and manganese were all below the NYSDEC unrestricted use soil cleanup objectives (SCO) (Table 4); consequently, these metals do not pose an environmental threat. There is no NYSDEC SCO for iron, which is not an environmental threat. Regardless, the NYSDEC conducted a survey of iron concentrations in New York as part of the NYSDEC's establishment of SCOs (NYSDEC, 2006). Appendix D of the NYSDEC (2006) SCO document provides maps of iron concentrations found in "Source-Distant " areas, which are at least 15 meters from a potential pollution source and "Habitat areas" that are at least 15 meters from areas of regular human activity. The concentrations of iron in the soils at the site are at the lower end of the typical concentrations mapped by the NYSDEC throughout rural Upstate New York; consequently, Alpha considers these results to represent background concentrations.

The PFAS results for the soils are provided on Table 5 for soil borings SB-1, SB-2, and SB-3. The laboratory results indicate that no PFOA or PFOS was detected. Only very low concentrations of two PFAS; PFTrDA in SB-1 and SB-2, and PFUnA in SB-1, 2, and 3; were encountered. These two PFAS do not have an EPA HAL and are unregulated. The soil sampling results for PFAS were validated by Alpha's chemist to assess the data usability (Appendix H). All of the laboratory analytical data for PFAS were found to be usable.

5.0 DISCUSSION OF RESULTS

The ultimate goals of this assessment were to identify current site impacts on the water resources followed by an evaluation of potential impacts to those resources when the site is fully developed. These assessments require knowledge of current physical conditions (geology, hydrogeology, ground water quality and soil quality) in order to determine if pollutants exist at the site in the soil and ground water, to determine the potential sources of these pollutants and determine what water resources (receptors) could be affected if pollutants exist and are moving along with the ground water. The assessment also assesses the relative potential that the proposed development and use of the site could result in impacts to the receptors beyond whatever currently may be occurring. The current environmental impacts are addressed first followed by future potential impacts.

5.1 Assessment of Current Environmental Impacts

This discussion is subdivided into the physical hydrogeologic conditions for the site and surrounding area; onsite soil and ground water quality and likely sources of ground water contaminants; and current impacts of the site on water resources.

5.1.1 Current Physical Site Conditions

The site lies in a depression relative to the surrounding area as the result of it being a former sand and gravel mine. Only a small portion in the southeast corner is relatively level and close to the elevation of the adjacent properties. The surface of the bottom of the depression is moderately level with the exception of scattered piles of fill materials sitting on the relatively level surface. These topographic characteristics are evident on the topographic map generated by Fox Land Surveying of West Hampton Beach that has been included as the base in Plate 1 and also is provided in the Hydrogeologic Report in Appendix B.

The relatively level floor of the site and the scattered piles consist of fill brought to the site and graded (leveled) throughout most of the site on behalf of the owner of WCC LLC. The soil at the site consists of fine to coarse sand fill with trace gravel that overlies similar geologic material at depth. The fill sand contains small quantities of anthropogenic (human made) material.

Runoff from storm events is mostly retained on site by virtue of the fact that the site is lower than the surrounding properties. There may be a small quantity of runoff leaving the site in the southeast corner, near Montauk highway, but that is a very low percentage of the site storm water runoff. The runoff retained on site is either evaporated, transpirated (drawn up by vegetation and transpired) or is percolated to the water table.

The water table beneath the site lies between 3.0 to more than 10.0 feet below the land surface (Plate 2). Since Plate 2 is based on the water table (Plate 1) that was affected by abnormally high recharge during the month of November 2018, it is Alpha's interpretation that the water table on December 7, 2018 was close to its seasonal high level. The interpretation that water table was close to a seasonal high is further supported by the fact that rainfall was also significantly higher than normal in September and October. The data provided on Table 2 and Figure 5 show that September rainfall was 0.95 inches above normal, October was 2.18 inches above normal, and November was 5.19 inches above normal. The months of October and November are also times of the year when evaporation and transpiration are low due to a low sun angle and dormant vegetation.

Ground water flow beneath the site is from the northwest to the southeast. This was the situation in December 2018 (Plate 1) and also during all of the other dates of measurement by Alpha (see Hydrogeology Report in Appendix B). This direction of ground water flow is consistent with an interpretation of the flow direction in the region by the U.S. Geological Survey (USGS) (Monti et al, 2013) and the flow direction at the East Hampton Airport determined by AECOM (2018). The water table is an unconfined aquifer that receives its recharge from direct precipitation and from surface water runoff that collects on the land surface at the site. Recharge occurs at the site and from areas up the hydraulic gradient (upgradient) to the northwest. This upgradient recharge area includes portions of the East Hampton Airport and the East Hampton Town Industrial Park (Figure 6).

Ground water flows down the hydraulic gradient (downgradient) to the southeast toward its natural recharge area at Georgica Pond (Figure 6). Ground water, which passes beneath the site as it flows to Georgica Pond, passes under approximately six residences southeast and downgradient of the site.

Alpha's research shows that the site is located south of, and not within, both the recharge Overlay District Critical Environmental Area (CEA) as designated by the Town and the Special Groundwater

Protection Area (South Fork) CEA as designated by Suffolk County (see Figures I-1 and I-2 in Appendix I). Portions of these CEAs are located downgradient from the site along the east side of the site.

5.1.2 Current Quality of the Site Ground Water and Soil

The ground water beneath the site met NYSDOH Part-5 drinking water standards with the exception of iron and manganese. The ground water also contained PFOA and PFOS at levels above their EPA HALs of 70 parts per trillion (ppt). All of the rest of the metals and compounds of concern; which included petroleum-related VOCs and SVOCs, metals, nonmetals (ammonia, nitrates, and chloride), emergent contaminants (hexavalent chromium and 1,4-dioxane), chlorinated herbicides, and organophosphorus pesticides; were all within drinking water standards.

The site soils were also evaluated for VOCs and SVOCs by screening for vapors and visual observation, and by laboratory analysis of samples from at several locations. No VOCs or SVOCs were detected in the site soils.

Iron and manganese were both found in ground water beneath the site at levels above the NYSDOH Part-5 drinking water limits of 0.3 ppm each and 0.5 ppm combined. Elevated levels of these metals were detected on both the upgradient and downgradient sides of the site; consequently, there is an upgradient source. The results for iron are within the ranges detected in ground water elsewhere in Suffolk County, while manganese detected onsite appeared to be slightly higher and may represent a source in the area. The soil testing for RCRA metals and both iron and manganese also were at levels typical for uncontaminated soils throughout upstate New York.

The only contaminants of concern found within the ground water at the site are PFOS and PFOA, which were found above the EPA HAL of 70 ppt on both the upgradient and downgradient sides of the site. These results, at a minimum, indicate an upgradient source. The East Hampton Airport and a portion of the East Hampton Industrial Park are directly upgradient and within the recharge zone for ground water passing beneath the site (Figure 6). The NYSDEC contractor, AECOM, found PFOA and PFOS at levels higher than the EPA HAL of 70 ppt (roughly equivalent to 70 nanograms per liter (ng/L) at four locations at the airport (AECOM, 2018). The areas where these compounds were detected above the HALs are provided as areas of concern (AOC) in the AECOM report and are

shown herein on Figure 7. Two of the areas are directly upgradient of the site (AOC-3 and 4, Figure 7). One of these two AOCs (AOC-3) contains the Aircraft Rescue and Firefighting Facility (ARFF) that is located at the East Hampton Airport, and the second AOC (AOC-4) includes the burn (firefighting) training center in the East Hampton Town Industrial Park (AECOM, 2018). The other two AOCs (AOC-1 and 2) are upgradient from the eastern portion of the area of residential well testing by the SCDHS that is provided in Appendix D. These are areas where firefighting foam use was documented by AECOM (2018).

Regardless of the apparent upgradient source for the site PFOA and PFOS detections in ground water, Alpha undertook an investigation to evaluate the alleged application of PFAS containing fire suppressant foam during a fire training exercise in June 2000 (Appendix E), as reported by Wright (2018). No PFOA or PFOS were detected in the three soil samples collected by Alpha in the area of that fire training exercise.

The lack of PFOA and PFOS at the site of the fire training exercise is consistent with a comparison of the site photographs taken by Mr. Wright with photographs contained in the AECOM report. The AECOM example of the use of a fire suppressant foam for a training exercise on a bus (Appendix J) shows a thick coating of foam on the both the bus and the ground. This thick foam on the ground and bus in the AECOM produced photographs does not look like the thinner, sparse suds that appear on the ground and bus in the pictures from the WCC site training exercise (Appendix E). The suds at the WCC site appear more consistent with the use of a surfactant such as detergent (soap).

The soapy appearance of the water used at the site in June of 2000 is corroborated by a statement from a fireman who was onsite at the time. According to an affidavit from Mr. James J. McCaffrey, Jr., who was the Chief of the Bridgehampton Fire Department and was onsite during the drill in June 2000, fire suppressant foam was not used at the site during the training exercise (Appendix K). Mr. McCaffrey indicated that a wetting agent was used. Mr. McCaffrey is still a member of the fire department and is a member of the Board of Commissions of the Bridgehampton Fire District. No other information is available from either the Bridgehampton Fire District or the East Hampton Fire Department (whose equipment (see Appendix E) and personnel also participated in the June 2000 training exercise) regarding the June 2000 training exercise at the site (Appendix L).

5.1.3 Current Impacts to Water Resources by the WCC Site

There is no evidence of impacts to either ground water or Georgica Pond by the WCC site. Elevated levels of PFOA and PFAS did not come from the site. Poor quality water that is the product of nutrient loading, primarily by nitrogen and phosphorus, has been identified as the most important contributor to the degradation of Georgica Pond from harmful algal blooms (HABs) (Wise and Bellone, 2017). Wastewater discharge is considered the primary source of nitrogen (Lombardo Associates, 2015). Although phosphorus was not reported in the laboratory analyses, nitrate and chloride testing is sufficient to assess whether there is nutrient loading at the site from wastewater discharges. The low concentration of nitrates in the ground water beneath the site demonstrates that the site is not the source of elevated nitrates in Georgica Pond.

Regardless of the fact that the WCC site is not the source of PFAS, iron and manganese contamination in the water table, the WCC will also be impacted by the presence of those elements and compounds in the water. The impacts on the residential community and those utilizing the WCC site are being addressed by installing municipal water system in Wainscott. According to the Suffolk County Water Authority (SCWA, 2018), 45,000 feet of water main have been installed in Wainscott to address the PFAS issue. It is planned that development of all future lots at the site will include connection to the newly created and expanded Wainscott Water Supply District as the exclusive water supplier to the site.

5.2 Assessment of Future Environmental Impacts

The primary changes to the site in the future will consist of grading the surface fill material, adding access roads, constructing buildings, installing public water supply mains and subsequent end user connections, and installing individual septic systems with leach fields on each lot. The majority of storm water runoff will be contained within the site, as it is now, where it will be removed from the surface by the combined effects of evaporation, transpiration, and percolation to ground water as it is now. The most significant environmental concern will be from point source discharges of nitrates to the subsurface at septic leach fields.

No impacts to ground water are anticipated since the septic systems will be installed to meet SCDHS requirements and approvals. The commercial standards for sewage disposal systems (SCDHS, 2017)

provide the following prohibitions that are already achievable based on the contents of the soil and ground water investigation provided in this report. The commercial standards from the SCDHS document (SCDHS, 2017) are quoted below in italics followed by Alpha's comments.

Sewage Disposal Systems shall not be located:

a) In any area subject to imminent erosion, which cannot be controlled so as to protect the sewage disposal system(s);

There are no obvious erosion issues at the site.

b) In areas where the highest recorded groundwater level is less than one foot below the original ground surface;

The hydrogeologic investigation demonstrated that the water table was three or more feet below the land surface across the site when the water table was likely near its seasonal high. Mapping by Alpha has shown where material could be added when grading the site during development to provide even more separation, if desired.

c) In areas with existing slopes greater than 15%, unless the site can be properly graded in accordance with these standards. Refer to Section XXII – Final Grading and Backfilling;

There is sufficient room at the site to avoid the steep side slopes, which will likely remain as vegetated slopes to form a buffer for the surrounding residential properties.

d) In areas where the existing sub-soils contain meadow mat, bog, silts, clays, or other impervious material extending below the groundwater table;

The hydrogeologic and soil investigations demonstrated that there are no impervious materials extending below the water table.

The scopes of the hydrogeologic and soil investigations by Alpha do not provide sufficient information to address prohibitions e, f, and g. The final prohibition is as follows:

h) In any area which may reasonably be expected to create a public health risk.

There are currently no areas within the site that may reasonably be expected to create a public health risk. The proper spacing as required for regulatory approval will control the

proximity of septic systems to water supplies in the future as the site is permitted and developed.

It is Alpha's opinion, within a reasonable degree of scientific certainty, that there will not be any adverse impacts to the ground water or Georgica Pond if the WCC site is developed.

6.0 CONCLUSIONS

This environmental assessment was conducted to assess whether there are any current impacts to ground water quality and Georgica Pond by the WCC site and whether there is a potential for future impacts to those water resources if the 70-acre site is developed for multi-use commercial and industrial tenants. The site is currently a reclaimed sand and gravel mine with multi-use commercial and industrial tenants at the southern end, and the rest of the property (70 to 75% of the site acreage) is undeveloped. In the future, the site will be developed into individual lots with access roads, buildings, and individual septic systems. Storm water will be contained on site and allowed to evaporate, transpirate, and percolate to the water table as occurs now.

The assessment of current and potential future impacts was conducted by identifying environmental contaminants of concern to the local community, researching past users of the site, conducting a hydrogeologic investigation, and conducting a soil investigation. The following are the key conclusions developed from this environmental assessment. These conclusions are separated between general physical conditions, the current impacts to water resources, and the future impacts to water resources.

6.1 General Physical Conditions

The following conclusions were drawn from this assessment about the physical condition of the site:

- The water table lies between 3.0 to slightly more than 8.0 feet below the site and is more than 10.0 feet below ground surface around the edges of the site.
- Ground water flow beneath the site is from the northwest toward the southeast.
- Ground water is recharged from direct precipitation to the land surface and from storm water runoff that collects on the surface and percolates to the water table.

- The recharge areas for the water table beneath the site are from the site itself and from areas to the northwest that include residential property, the East Hampton Airport, and the East Hampton Industrial Park.
- The primary discharge zone for the ground water flowing beneath the site is Georgica Pond.
- The ground water beneath the site is contaminated with PFOA and PFOS that are at concentrations above the EPA HAL of 70 ppt at some locations beneath the site.
- The elevated concentrations of PFOA and PFOS were on both the upgradient and downgradient sides of the site.
- Elevated concentrations of iron and manganese were found in the ground water on both the upgradient and downgradient sides of the site.
- The ground water in the water table beneath the site met NYSDOH drinking water standards for all other tested parameters, which include hexavalent chromium, 1,4-dioxane, metals (other than iron and manganese), nitrates, chlorides, ammonia, hydrocarbon-related VOCs and SVOCs, chlorinated herbicides, and organophosporus pesticides.
- The soil investigation revealed that the soils above the fine to coarse sand of the "Upper Glacial Aquifer" consist of a fine to coarse sand that is silty at a few locations and contains small amounts of anthropogenic (man-made) materials (cement, concrete, brick, and wood chips) with the fine to coarse sand in four of the nineteen soil borings.
- The soils at the site are not contaminated and do not contain RCRA-8 metals, manganese, petroleum-related SVOCs and VOCs at or above NYS soil cleanup objectives; the iron at the site is consistent with background concentrations in New York; and there were no PFOA and PFOS in the soil at the location of the fire training exercise conducted in June 2000.

6.2 Current Impacts to Water Resources by the WCC Site

The following conclusions, regarding current impacts to water resources, were developed from the soil and hydrogeologic investigations:

- There is no evidence of pollutants entering ground water at the WCC site.
- The elevated levels of nitrates causing the hazardous algal blooms in Georgica Pond are not coming from the WCC site.

- The PFOS and PFOA detected in residential wells downgradient of the WCC site is passing beneath the site from sources upgradient from the WCC site from locations that include the East Hampton Airport and the East Hampton Industrial Park.
- The WCC site is not causing the PFOS and PFOA contamination throughout Wainscott and is not contributing to the PFOA and PFOS contamination downgradient of the site.
- There are no current impacts to either the Town's Recharge Overlay District or Suffolk County's Special Groundwater Protection Area.

6.3 Future Impacts to Water Resources by the WCC Site

The following conclusions were developed with regard to potential future impacts from development of the WCC site:

- The only significant change of environmental significance by further development of the WCC site is the addition of individual septic systems for each new commercial/industrial tenant.
- The depth to the water table and other physical characteristics of the site show that the site can support septic systems that will meet Suffolk County requirements that were established to prevent nitrate loading of ground water and surface water.
- There will be no significant impacts to water resources (ground water (which includes the Town Recharge Overlay District and the County Special Groundwater Protection Area) or Georgica Pond) by the further development of the WCC.

7.0 REFERENCES

AECOM; 2018. Site Characterization Report, East Hampton Airport, Wainscott, Suffolk County, New York, Consulting Report for NYSDEC Division of Environmental Remediation, November 30, 2018; 26 pp.

Lombardo Associates, Inc.; 2015. East Hampton Town Wide Wastewater Management Plan; Report to the Town of East Hampton by Lombardo Associates, Inc., FPM Group and Woods Hole Group; June 8, 2015; 552 pp.

Monti, J. Jr., Como, M., Bussiolano, M.; 2013. Water-Table and Potentiometric Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, April – May 2010; Scientific Investigations Map 3270, Water Table – Sheet 1 of 4, U.S. Department of the Interior, U.S. Geological Survey.

NYSDEC; 2006. New York State Brownfield Cleanup Program; Development of Soil Cleanup Objectives Technical Support Document; prepared by the NYSDEC and NYSDOH, September 2006; 368 pp (without Appendices).

Shantz, Eric; 2018. Letter and EAF to the Town of East Hampton Planning Board from the Town Planning Department regarding the Wainscott Commercial Center – Preliminary Subdivision; September 5, 2018, 22 pp.

SCDHS; 2017. Standards for Approval of Plans and Construction for Sewage Disposal Systems for Other than Single Family Residences; December 29, 2017; 129 pp.

SCWA; 2018. SCWA, Town of East Hampton, Announce Completion of Wainscott Water Main Installation; Press Release by the SCWA and Town of East Hampton, December 21, 2018; 4 pp.

Wise, W. and Bellone, S.; 2017. Suffolk County Harmful Algal Bloom Action Plan, joint report by New York Sea Grant and Suffolk County; September 2017; 74 pp.

Wright, Michael, 2018. *Wainscott Homeowner Sues Over Well Contamination;* The Southampton Press; March 22, 2018.

TABLES

TABLE 1
Ground Water Elevation Measurements - 2018
Wainscott Commercial Center
Suffolk County, New York

Well	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-6A		MW-7		MW-8		SG-1*		Georgica Pond USGS Monitoring Station
TOC Elevation (ft rmsl)	14.48		18.94		19.16		18.65		22.36		18.98		18.06		18.49		23.27		20.31		
Date	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	SWE	SWE
6/7 - 8/2018	6.02	8.46	9.33	9.61	8.54	10.62	8.74	9.91	11.57	10.79	8.48	10.50	7.58	10.48	8.58	9.91	15.24	8.03	2.19	18.12	5.88 / 5.85
6/26/2018	2.31	12.17	9.53	9.41	8.69	10.47	8.86	9.79	11.71	10.65	8.65	10.33	7.75	10.31	8.76	9.73	15.37	7.90	2.31	18.00	5.81
9/20/2018	6.88	7.60	10.33	8.61	9.80	9.36	9.89	8.76	12.79	9.57	9.70	9.28	8.76	9.30	9.71	8.78	15.87	7.40	2.27	18.04	5.75
12/7/2018	6.37	8.11	9.35	9.59	8.45	10.71	8.71	9.94	11.44	10.92	8.35	10.63	7.45	10.61	8.49	10.00	15.71	7.56	2.15	18.16	**4.22

Notes: Survey was performed by Fox Land Surveying of Westhampton Beach, NY

Elevations referenced to NAV Datum (MSL 1988).

TOC = Top of PVC Casing (Measuring Point) Elevation

DTW = Depth to Ground Water from TOC (feet)

WTE = Water Table Elevation (ft rmsl)

SWE = Surface Water Elevation (ft rmsl)

* Staff Gauge , measurements are from top of wooden stake; stake was broken as of 9/20/18, taped back together. Was broken again on 12/7/2018 and set back up for measurement Elevation of the top of the Staff Gauge is estimated from the Topographic Survey Map

** The USGS 12 year average for Georgica Pond on 12/7

TABLE 2
2018 Monthly Total Precipitation for Bridgehamton, NY

Month	Precipitation (in.)	Number of Missing Days	Normal
January	4.56	0	4.04
February	5.08	1	3.67
March	4.71	0	5.07
April	3.21	0	4.52
May	2.33	0	3.79
June	3.16	0	4.14
July	3.31	2	3.45
August	4.22	0	4.02
September	5.55	0	4.60
October	6.28	0	4.10
November	9.56	0	4.37
December	4.75	1	4.37
2018 Total	56.72	4	50.14

Station: Bridgehampton, Suffolk County (FIPS 36103), NY;
National Oceanic and Atmospheric Administration ID (GHCN): USC0030089
Other Station IDs: 300889 (Coop); BDGN6 (NWS LI)
Station Location: 40.9520°, -72.2980°
Station Elevation: 42' rmsl
Climate Division: COASTAL (NY04)
source: Northeast Regional Climate Center, Cornell University;
http://climod2.nrcc.cornell.edu/

TABLE 3

VOCs/SVOCs Soil Analytical Results - Wainscott Commercial Center
Town of East Hampton, Suffolk County, New York

NYSDEC CP-51 Petroleum-Related Volatile Organic Compound	NYSDEC Unrestricted Use SCO (ppm)	SB-17 (4-6') 12/7/2018	SB-18 (6') 12/7/2018	SB-19 (6') 12/7/2018
Methyl tert-Butyl Ether (MTBE)	0.93	ND <0.0033	ND <0.0063	ND <0.0035
Benzene	0.06	ND <0.0016	ND <0.0031	ND <0.0017
Ethylbenzene	1.0	ND <0.0016	ND <0.0031	ND <0.0017
Toluene	0.7	ND <0.0016	ND <0.0031	ND <0.0017
m+p Xylene	0.26	ND <0.0033	ND <0.0063	ND <0.0035
o-Xylene	0.26	ND <0.0016	ND <0.0031	ND <0.0017
Isopropylbenzene	NS	ND <0.0016	ND <0.0031	ND <0.0017
n-Propylbenzene	3.9	ND <0.0016	ND <0.0031	ND <0.0017
p-Isopropyltoluene	NS	ND <0.0016	ND <0.0031	ND <0.0017
1,2,4-Trimethylbenzene	3.6	ND <0.0016	ND <0.0031	ND <0.0017
1,3,5-Trimethylbenzene	8.4	ND <0.0016	ND <0.0031	ND <0.0017
n-Butylbenzene	12	ND <0.0016	ND <0.0031	ND <0.0017
sec-Butylbenzene	11	ND <0.0016	ND <0.0031	ND <0.0017
tert-Butylbenzene	5.9	ND <0.0016	ND <0.0031	ND <0.0017
Naphthalene	12	ND <0.0033	ND <0.0063	ND <0.0035

NYSDEC CP-51 Petroleum-Related Semi-Volatile Organic Compound	NYSDEC Unrestricted Use SCO (ppm)	SB-17 (4-6') 12/7/2018	SB-18 (6-7') 12/7/2018	SB-19 (6-8') 12/7/2018
Naphthalene	12	ND <0.19	ND <0.20	ND <0.19
Anthracene	100	ND <0.19	ND <0.20	ND <0.19
Fluorene	30	ND <0.19	ND <0.20	ND <0.19
Phenanthrene	100	ND <0.19	ND <0.20	ND <0.19
Pyrene	100	ND <0.19	ND <0.20	ND <0.19
Fluoranthene	100	ND <0.19	ND <0.20	ND <0.19
Acenaphthene	20	ND <0.19	ND <0.20	ND <0.19
Acenaphthylene	100	ND <0.19	ND <0.20	ND <0.19
Benzo(g,h,i)perylene	100	ND <0.19	ND <0.20	ND <0.19
Benzo(a)anthracene	1.0	ND <0.19	ND <0.20	ND <0.19
Benzo(b)fluoranthene	1.0	ND <0.19	ND <0.20	ND <0.19
Benzo(k)fluoranthene	0.8	ND <0.19	ND <0.20	ND <0.19
Benzo(a)pyrene	1.0	ND <0.19	ND <0.20	ND <0.19
Chrysene	1.0	ND <0.19	ND <0.20	ND <0.19
Indeno(1,2,3-cd)pyrene	0.5	ND <0.19	ND <0.20	ND <0.19
Dibenz(a,h)anthracene	0.33	ND <0.19	ND <0.20	ND <0.19

Notes:

All soil results are reported in milligrams per kilogram (mg/kg), approximately parts per million (ppm)

ND = Not Detected at reporting limit indicated

6NYCRR Part 375.6 Unrestricted Use Soil Cleanup Objective (SCO) or NYSDEC Commissioner's Policy CP-51 Supplemental Soil Cleanup Objective (SSCO)

NS = No SCO or SSCO established

TABLE 4
Metals Soil Analytical Results - Wainscott Commercial Center
Town of East Hampton, Suffolk County, New York

Analyte	NYSDEC Unrestricted Use SCO (ppm)	SB-1 (0.5-1.0') 12/6/2018	SB-2 (0.6-1.1') 12/6/2018	SB-3 (0.7-1.1') 12/6/2018	SB-4 (0.6-1.1') 12/6/2018	SB-5 (0.5-1.0') 12/6/2018	SB-6 (0.8-1.2') 12/6/2018	SB-7 (1.0-1.5') 12/6/2018	SB-8 (1.0-1.5') 12/6/2018	SB-9 (1.5-2.0') 12/6/2018	SB-10 (0.5-1.0') 12/6/2018
Arsenic	13	1.5 J	0.93 J	ND <1.7	5.5	2.6	1.7 J	11	2.8	4.1	ND <1.7
Barium	350	18	14	5.0	16	13	15	24	12	21	4.7
Cadmium	2.5	0.13 J	ND <0.18	ND <0.17	0.27	0.15 J	0.13 J	0.48	0.16 J	0.27	ND <0.17
Chromium	30	5.4	3.9	1.9	8.2	9.5	5.8	14	4.5	7.7	2.2
Iron	NS	4800	3300	1900	7700	6900	4100	13000	3700	5800	2200
Lead	63	31	20	1.4	12	8.5	6.1	15	9	17	2.5
Manganese	1600	69	45	46	86	52	56	120	45	56	22
Mercury	0.18	0.033	0.029	0.0096 J	0.16	0.014 J	0.022 J	0.023 J	0.017 J	0.064	0.0041 J
Selenium	3.9	ND <3.5	ND <3.5	ND <3.5	ND <3.8	ND <3.7	ND <3.7	ND <3.7	ND <3.7	ND <3.6	ND <3.5
Silver	2.0	ND <0.35	ND <0.35	ND <0.35	ND <0.38	ND <0.37	ND <0.37	ND <0.37	ND <0.37	ND <0.36	ND <0.35

Analyte	NYSDEC Unrestricted Use SCO (ppm)	SB-11 (0.8-1.2') 12/6/2018	SB-12 (0.7-1.3') 12/6/2018	SB-13 (1.0-1.5') 12/6/2018	SB-14 (0.8-1.2') 12/6/2018	SB-15 (0.5-1.0') 12/6/2018	SB-16 (0.5-1.0') 12/7/2018	SB-17 (0.8-1.2') 12/7/2018	SB-18 (0.6-1.1') 12/7/2018	SB-19 (1.0-1.5') 12/7/2018
Arsenic	13	1 J	2.4	1.7 J	3.8	3.3	1.3 J	1.2 J	1.4 J	1.2 J
Barium	350	9.6	31	26	24	21	8.4	14	13	11
Cadmium	2.5	0.11 J	0.15 J	0.23	0.21	0.2	0.13 J	ND	0.11 J	0.14 J
Chromium	30	4.7	6.9	7.5	9.2	14	3.4	5.1	6.4	5.3
Iron	NS	3300	3800	5500	7800	5600	4,200	3400	5500	3400
Lead	63	6.4	10	20	9.7	11	14	4.3	4.8	9.6
Manganese	1600	47	54	93	92	100	42	64	57	84
Mercury	0.18	0.011 J	0.019 J	0.075	0.014 J	0.024 J	0.0088 J	0.0047 J	0.0068 J	0.072
Selenium	3.9	ND <3.5	ND <3.7	ND <3.6	ND <3.8	ND <3.6	ND <3.6	ND <3.4	ND <3.6	ND <3.6
Silver	2.0	ND <0.35	ND <0.37	ND <0.36	ND <0.38	ND <0.36	ND <0.36	ND <0.34	ND <0.36	ND <0.36

Notes:

1. All soil results are reported in milligrams per kilogram (mg/kg), approximately parts per million (ppm)
2. 6NYCRR Part 375.6 Unrestricted Use Soil Cleanup Objective (SCO) or NYSDEC Commissioner's Policy CP-51 Supplemental Soil Cleanup Objective (SSCO)
3. NS = No SCO or SSCO established
4. ND = Not Detected at reporting limit indicated
5. J = Detected but below the reporting limit; therefore, result is estimated.

TABLE 5

PFAS Soil Analytical Results - Wainscott Commercial Center
Town of East Hampton, Suffolk County, New York

Analyte	SB-1 (0-6") 12/7/2018	SB-2 (0-6") 12/7/2018	SB-2 (0-6") 12/7/2018
Perfluorohexanoic acid (PFHxA)	ND <2.0	ND <2.0	ND <2.0
N-ethyl perfluorooctanesulfonamidoacetic acidNE (NEtFOSAA)	ND <2.0	ND <2.0	ND <2.0
Perfluorododecanoic acid (PFDoA)	ND <2.0	ND <2.0	ND <2.0
Perfluorotridecanoic acid (PFTrDA)	3.8	2.3	ND <2.0
Perfluorotetradecanoic acid (PFTA)	ND <2.0	ND <2.0	ND <2.0
Perfluoroheptanoic acid (PFHpA)	ND <2.0	ND <2.0	ND <2.0
Perfluorobutanoic acid (PFBA)	ND <2.0	ND <2.0	ND <2.0
Perfluorodecanesulfonic acid (PFDS)	ND <2.0	ND <2.0	ND <2.0
Perfluoroheptanesulfonic acid (PFHpS)	ND <2.0	ND <2.0	ND <2.0
Perfluorooctanesulfonamide (FOSA)	ND <2.0	ND <2.0	ND <2.0
Perfluoropentanoic acid (PFPeA)	ND <2.0	ND <2.0	ND <2.0
6:2 Fluorotelomersulfonate (6:2 FTS)	ND <2.0	ND <2.0	ND <2.0
8:2 Fluorotelomersulfonate (8:2 FTS)	ND <2.0	ND <2.0	ND <2.0
Perfluorohexanesulfonic acid (PFHxS)	ND <2.0	ND <2.0	ND <2.0
Perfluorooctanoic acid (PFOA)	ND <2.0	ND <2.0	ND <2.0
Perfluorobutanesulfonic acid (PFBS)	ND <2.0	ND <2.0	ND <2.0
Perfluorooctanesulfonic acid (PFOS)	ND <2.0	ND <2.0	ND <2.0
Perfluorononanoic acid (PFNA)	ND <2.0	ND <2.0	ND <2.0
Perfluorodecanoic acid (PFDA)	ND <2.0	ND <2.0	ND <2.0
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND <2.0	ND <2.0	ND <2.0
Perfluoroundecanoic acid (PFUnA)	8.1	2.0	1.9J

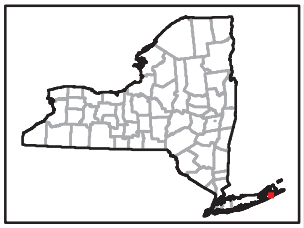
Notes
1. All soil results are reported in micrograms per kilogram (µg/kg), which is equivalent to parts per billion (ppb)
2. ND = Not Detected at reporting limit indicated
3. NS = No Standard available
4. J = Detected but below the reporting limit; therefore, result is estimated by the laboratory
5. The USEPA has established a lifetime Health Advisory Level (HAL) of 70 nanograms per liter (approximately ppt) in drinking water for PFOA and PFOS, either individually or combined. In 2017, the NYSDEC added PFOS and PFOA to the 6NYCRR Part 597 List of Hazardous Substances, but has not established soil screening or cleanup criteria, or ground water quality standards the two compounds. Neither the NYSDEC nor the USEPA has established a criteria or advisory level, in soil or ground water, for the remaining 19 unregulated PFAS listed above.

FIGURES

LEGEND

Site Boundary (approx.)

Source:
-Basemap: 2016 Suffolk County 6-inch resolution natural color orthoimagery, NYS Office of Information Technology Services (ITS). Image date: March 2016.



ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 1
Site Location Map

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Site_Location_Map_new.mxd
Date Saved: 1/7/2019 4:11:36 PM

LEGEND

- Location of Fire Training Exercise in June 2000
- Ready Mix Plant
- Diesel Engine Repair and Former Furniture Repair
- Landscaping Business
- Site Boundary (approx.)

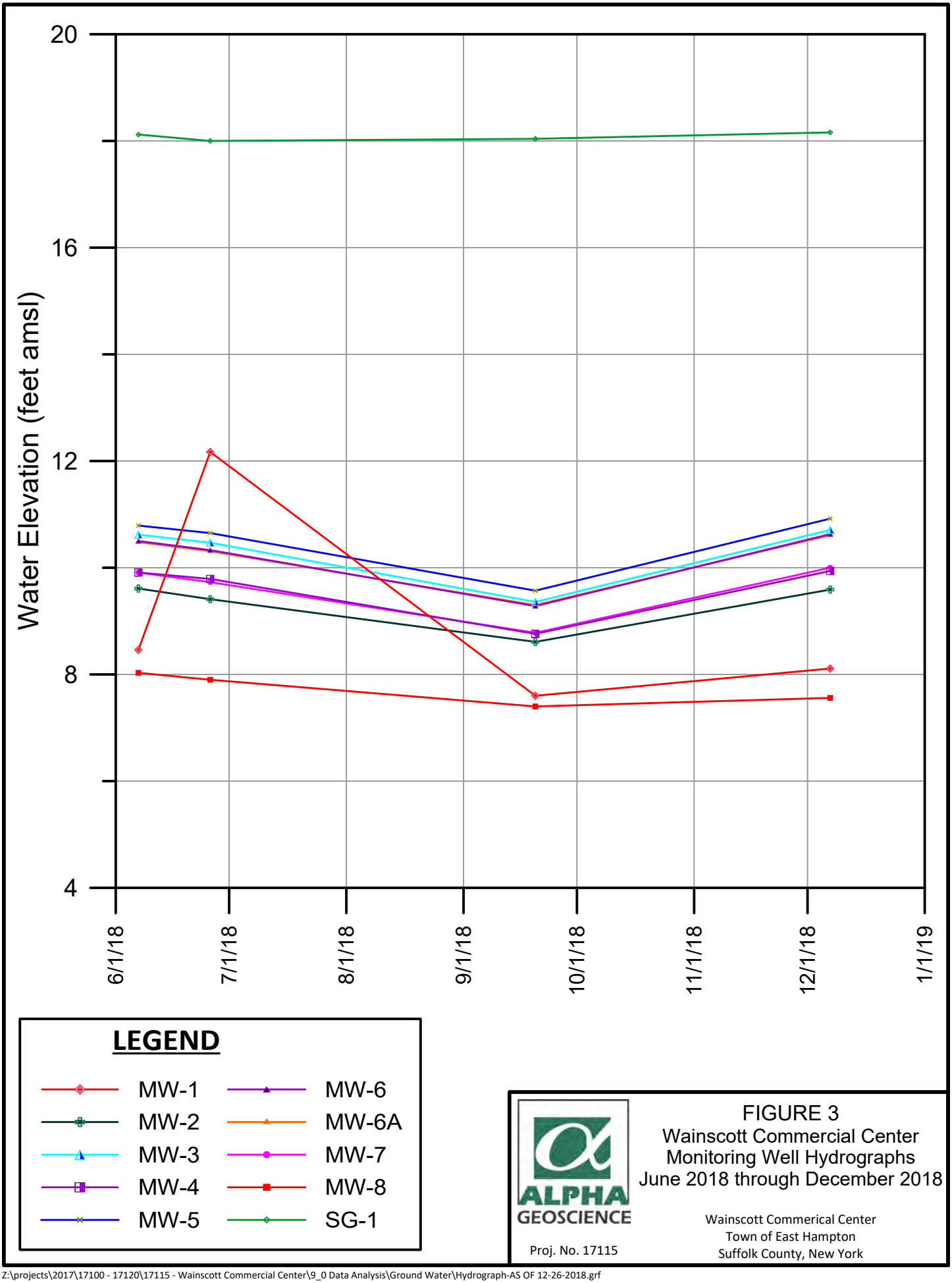
Source:
-Basemap: 2016 Suffolk County 6-inch resolution natural color orthoimagery, NYS Office of Information Technology Services (ITS). Image date: March 2016.

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 2
Areas Of Environmental Interest

Wainscott Commerical Center
Town of East Hampton
Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Environmental Assessment Report\Figure_2_Area_of Environmental_Interest.mxd
Date Saved: 1/11/2019 4:50:44 PM



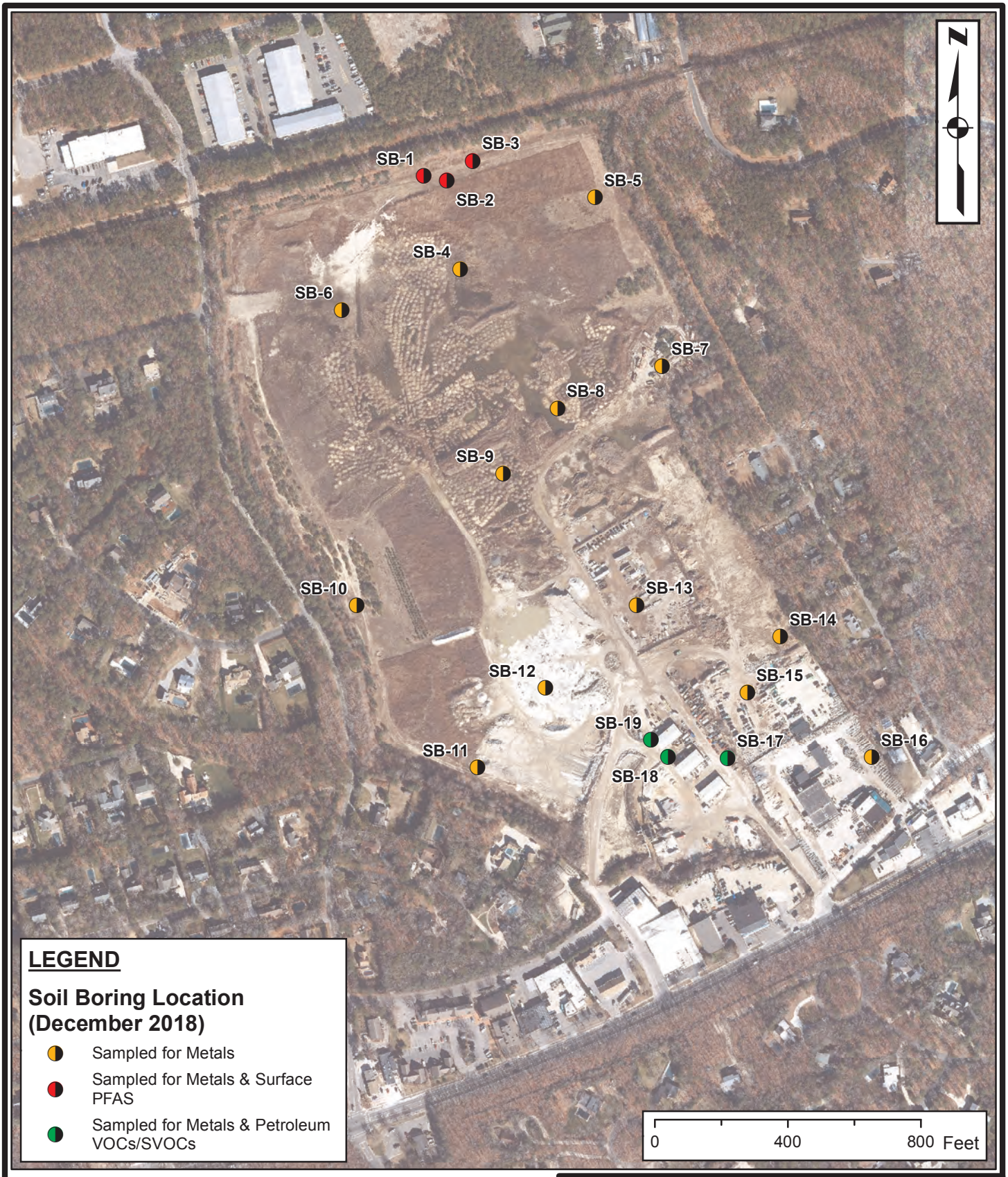
ALPHA GEOSCIENCE

Proj. No. 17115

FIGURE 3
Wainscott Commercial Center
Monitoring Well Hydrographs
June 2018 through December 2018

Wainscott Commerical Center
Town of East Hampton
Suffolk County, New York

Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\9_0 Data Analysis\Ground Water\Hydrograph-AS OF 12-26-2018.grf
1/7/2019



Notes:
-Basemap: 2016 Suffolk County 6-inch resolution natural color orthoimagery, NYS Office of Information Technology Services (ITS). Image date: March 2016.
-Monitoring well (MW) and staff gauge (SG) are located by Fox Land Surveying on September 14, 2018
-Old Monitoring wells (OMW) located approximately using map by Fox Land Surveying, September 24, 2001

ALPHA GEOSCIENCE
Proj. No. 17115

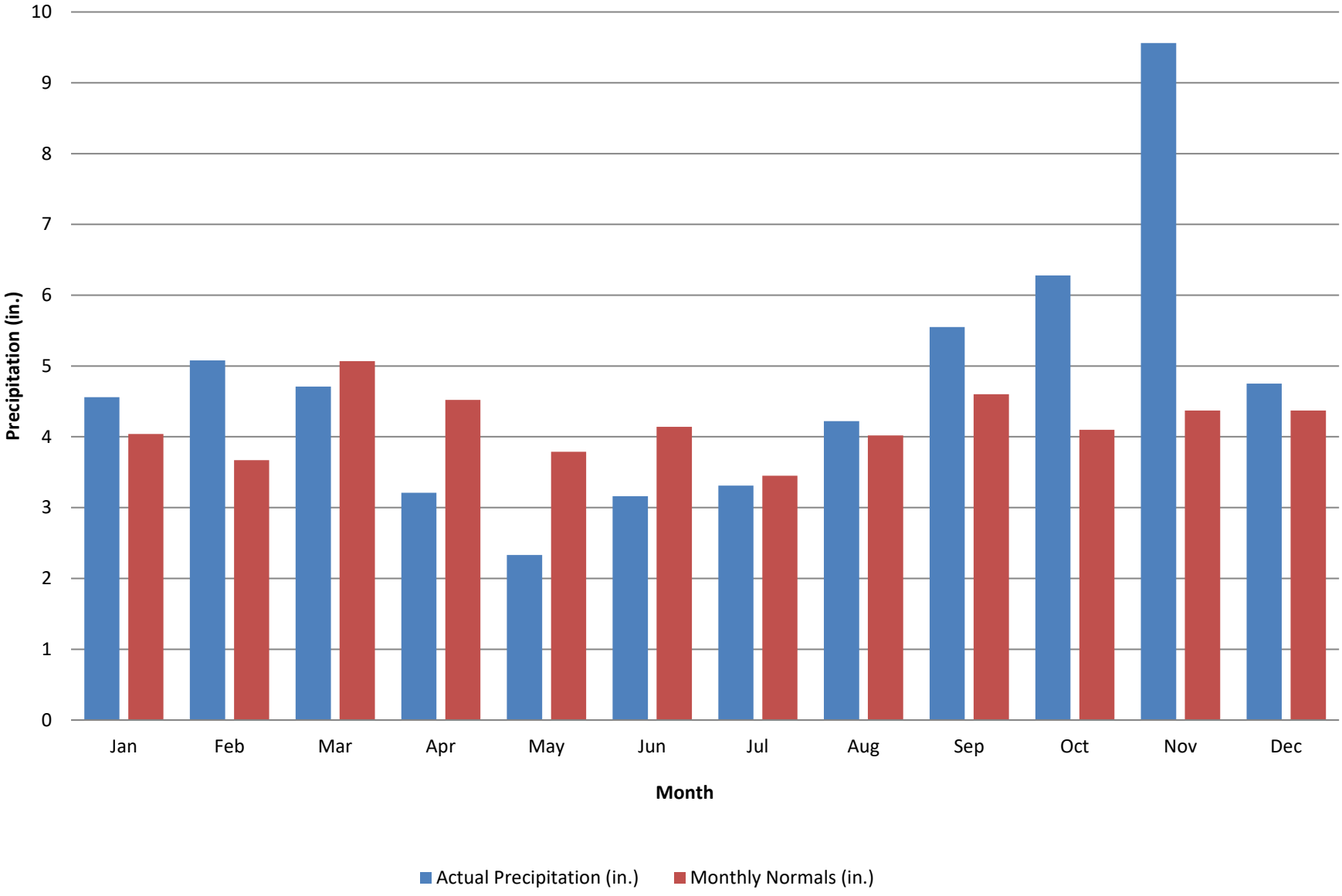
FIGURE 4

Soil Boring Locations
December 2018

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Soil_borings_2018-12.mxd
Date Saved: 1/7/2019 4:01:01 PM

Figure 5
Monthly Precipitation
2018 Actual and Normals at Bridgehampton, NY Station



East Hampton Airport

MW-6A 9.30
MW-5 9.57
MW-6 9.28
MW-7 8.78
MW-3 9.36
MW-2 8.61
MW-4 8.96
MW-8 7.40
MW-1 7.60

10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0

Georgica Pond
Water Elevation 5.75 ft

0 1,000 2,000 Feet

N

Legend

- Monitoring Well with Water Table Elevation in feet
- Ground Water Elevation Contour (dashed where inferred)
- Ground Water Flow Direction
- Boundary of Upgradient Recharge Zone
- Boundary of Down Gradient Area

Notes:
-Basemap: 2016 Suffolk County 6-inch resolution natural color orthoimagery, NYS Office of Information Technology Services (ITS). Image date: March 2016.
-Monitoring well and staff gauge were located by Fox Land Surveying on September 14, 2018
-Ground water elevation based on water level measurements by Alpha on September 20, 2018.
-Surface Water Elevation of Georgica Pond measured by USGS September 20, 2018

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 6
Regional Water Table Map
ShowingUpgradient Recharge Zone and Down Gradient Area for WCC
Wainscott Commercial Center
Town of East Hampton
Suffolk County, New York

File: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Regional_Map_Showing Downgradient_Properties.mxd
Date Saved: 1/7/2019 4:45:56 PM

AOC-1
AOC-2
AOC-3
AOC-4
East Hampton Airport
MW-6A 9.30
MW-5 9.57
MW-6 9.28
MW-7 8.78
MW-3 9.36
SG-1 18.04
MW-2 8.61
MW-4 8.96
MW-8 7.40
MW-1 7.60
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Georgica Pond
Water Elevation 5.75 ft
0 1,000 2,000 Feet

Legend

- Monitoring Well with Water Table Elevation in feet
- Ground Water Elevation Contour (dashed where inferred)
- Ground Water Flow Direction
- Boundary of Upgradient Recharge Zone
- Boundary of Down Gradient Area
- Area of Concern for PFOA & PFOS (AECOM, 2018)

Notes:
-Basemap: 2016 Suffolk County 6-inch resolution natural color orthoimagery, NYS Office of Information Technology Services (ITS). Image date: March 2016.
-Areas of concern for PFOA & PFOS are based on the areas identified on Figure 8 of "Site Characterization Report: East Hampton Airport, Wainscott, Suffolk County, New York (AECOM, 2018).
-Monitoring well and staff gauge were located by Fox Land Surveying on September 14, 2018
-Ground water elevation based on water level measurements by Alpha on September 20, 2018.
-Surface Water Elevation of Georgica Pond measured by USGS September 20, 2018

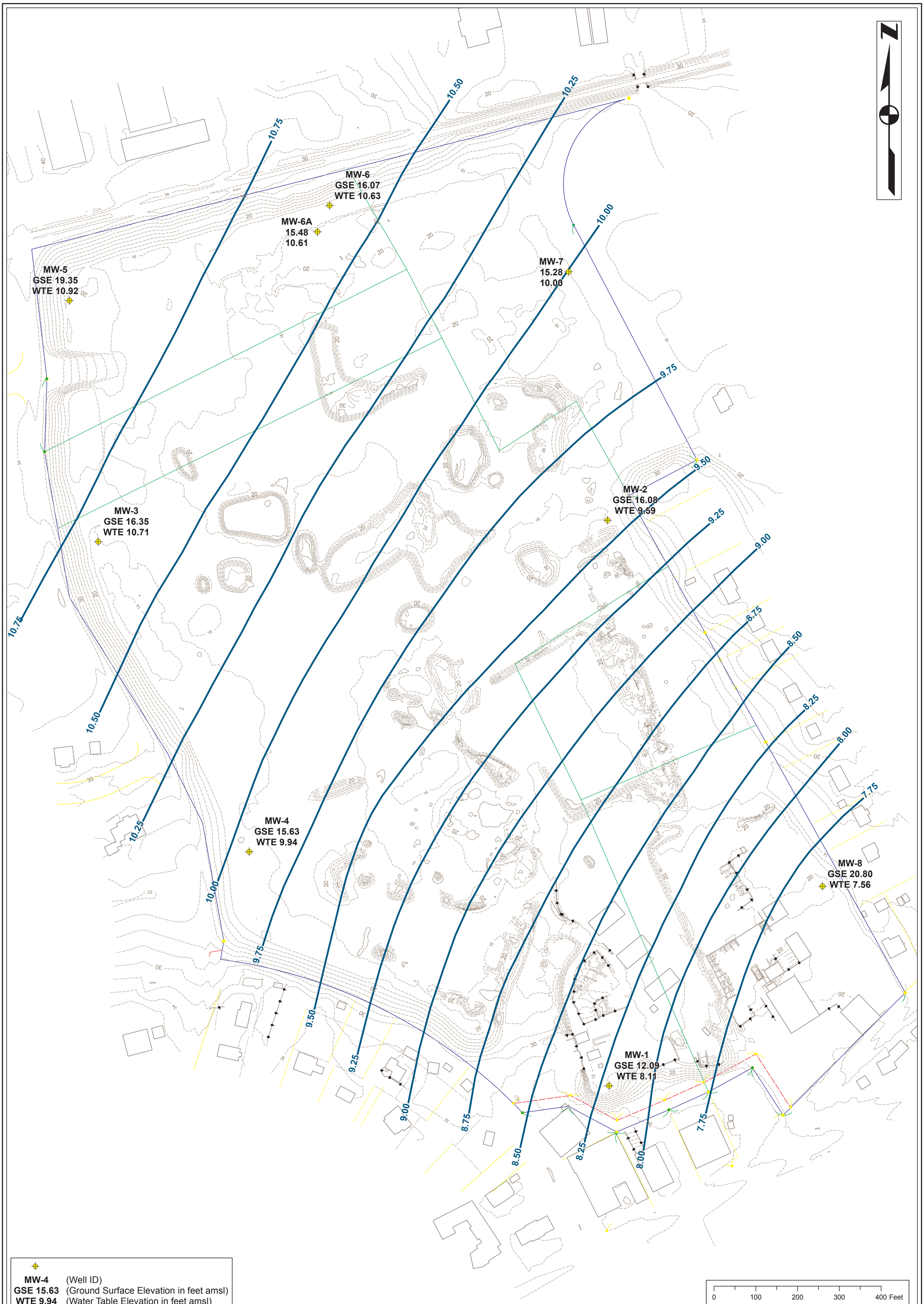
ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 7
Regional Water Table Map with Areas of Concern for PFOA and PFOS

Wainscott Commercial Center
Town of East Hampton
Suffolk County, New York

File: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Regional_Map_AOCs.mxd
Date Saved: 1/10/2019 11:03:13 AM

PLATES



MW-4 (Well ID)
GSE 15.63 (Ground Surface Elevation in feet amsl)
WTE 9.94 (Water Table Elevation in feet amsl)

Legend

- Monitoring Well Location with Ground Surface Elevation (GSE) and Water Table Elevation (WTE)
- Ground Water Elevation Contours in Feet Above Sea Level, with Contor Interval of 0.25 Feet

Notes:
- Topographic basemap provided by Fox Land Surveying of Westhampton Beach, NY from data collected on October 5, 2017.
- Ground surface elevations are shown in feet above mean sea level (feet amsl).
- Contour interval is 2 feet.
- Well locations and elevations surveyed by Fox Land Surveying on September 14, 2018.

ALPHA GEOSCIENCE

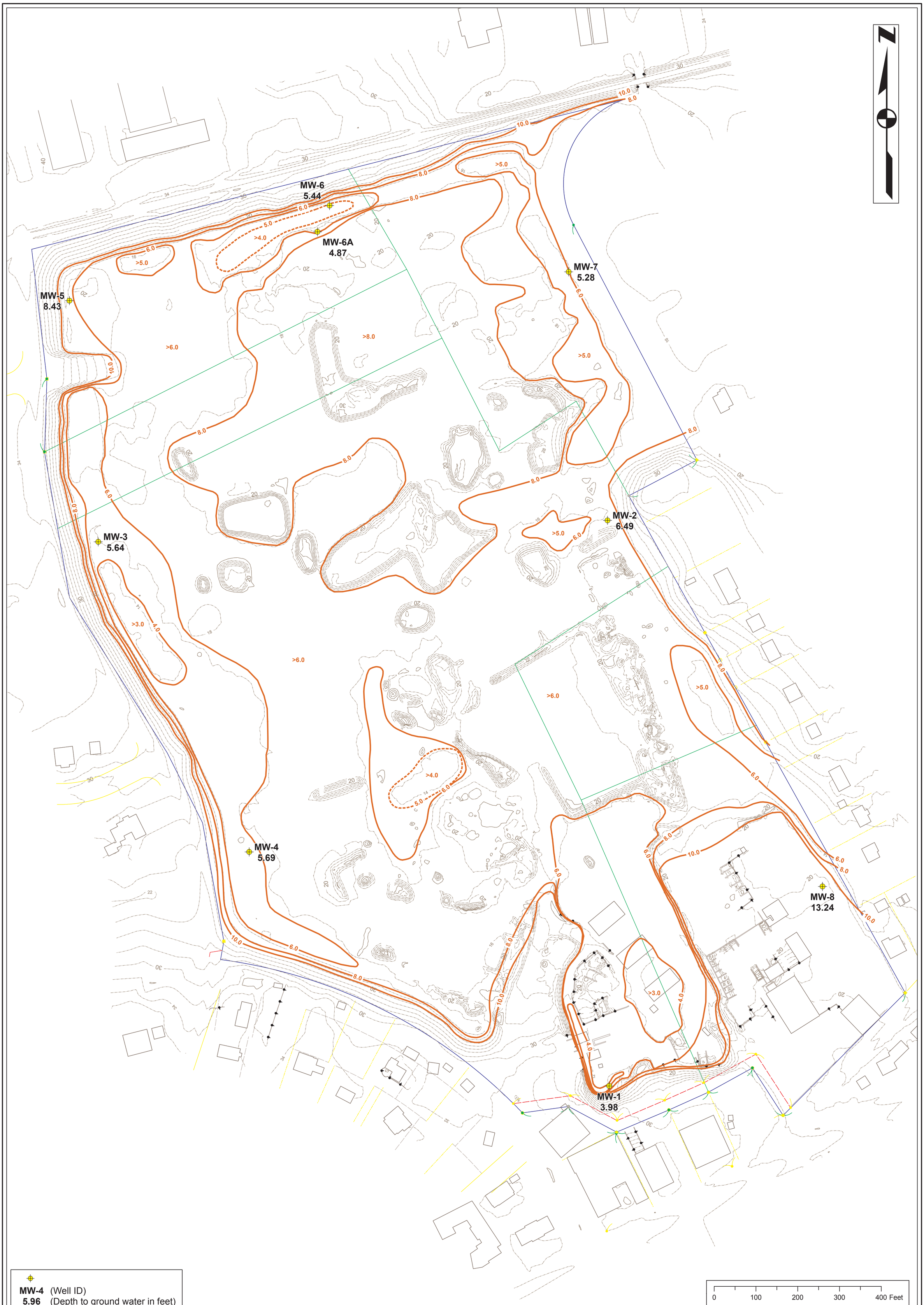
Proj. No. 17115

PLATE 1

Water Table Contour Map
12/7/2018 Data

Wainscott Commerical Center
Town of East Hampton
Suffolk County, New York

File: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Environmental Assessment Report\Plate_1_topo_and_GWC.mxd
Date Saved: 1/7/2019 2:12:50 PM



MW-4 (Well ID)
5.96 (Depth to ground water in feet)

Legend

Monitoring Well Location with Depth to Ground Water (DGW) in Feet

Depth to Ground Water Below the Ground Surface, in Feet
Contour interval is 2 feet. Supplemental 1 foot contours are dashed.

Notes:
- Topographic basemap provided by Fox Land Surveying of Westhampton Beach, NY from data collected on October 5, 2017.
- Ground surface elevations are shown in feet above mean sea level (feet amsl).
- Contour interval is 2 feet.
- Well locations and elevations surveyed by Fox Land Surveying on September 14, 2018.

ALPHA GEOSCIENCE

Proj. No. 17115

PLATE 2

Depth to Ground Water Below the Land Surface
(Unsaturated Thickness)
12/7/2018 Data

Wainscott Commerical Center
Town of East Hampton
Suffolk County, New York

File: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Environmental Assessment Report\Plate_2_topo_and_UnsatThickness.mxd
Date Saved: 1/7/2019 2:39:47 PM

APPENDICES

APPENDIX A

List of Uses and Tenants at Wainscott Commercial Center

List of Uses and Tenants at Wainscott Commercial Center

Current Uses and Tenants

Suffolk Cement - Pre-zoning to present - Ready-Mix Plant (no cement manufacturing), office, cement truck storage

Southampton Masonry - Pre-zoning to present **–** includes cement block manufacturing plant, an office and retail /wholesale store with indoor and outdoor storage

Emergency Mechanical Services - 2001- to present - currently housed in metal buildings "to be removed" per proposed subdivision - diesel truck repair

Landscaping Details – 2012 to present (currently winding down at site after move to Town owned property on Industrial Road) - outdoor storage of trucks, equipment, plant material and supplies

DJ Whelan Corporation - 2006 to present - Dock Builder- outdoor storage of trucks and equipment

Prior Uses and Tenants

Sand Mining and Reclamation - Pre-zoning to 1998 (NYSDEC approved final reclamation of the site and released financial reclamation surety bond in July, 1998).

Grimes Contracting - 1986 to 2006 – located in one of three service commercial buildings – included office, equipment storage (indoor and outdoor)

Bobby Jones Furniture Repair –1988 to 2000- located in one of three service commercial buildings- office- furniture repair

Sandpebble Builders - 1988 to 2000- located in one of three service commercial buildings- contractor- equipment and materials storage

Gunite Unlimited - 1996 to 2000 - located in one of three service commercial buildings - pool contractor- office, equipment storage

Summerhill Landscaping - 2013 to 2015 - outdoor storage of trucks, equipment, plant material and supplies

Emil Norsic & Son Inc. - 2010 to 2014 - limited to outdoor storage of empty dumpster's toilets (no cleaning or handling of waste on site)

APPENDIX B

Hydrogeologic Assessment of the Wainscott Commercial Center, East Hampton, New York November 2018

HYDROGEOLOGIC ASSESSMENT OF THE WAINSCOTT COMMERCIAL CENTER EAST HAMPTON, NEW YORK

Prepared for

Wainscott Commercial Center, LLC
P.O. Box 1259
Wainscott, New York 11975

November 2018

ALPHA GEOSCIENCE

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

HYDROGEOLOGIC ASSESSMENT OF THE WAINSCOTT COMMERCIAL CENTER EAST HAMPTON, NEW YORK

Prepared for

Wainscott Commercial Center, LLC
P.O. Box 1259
Wainscott, New York 11975

Prepared by

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

November 2018

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION

This report presents the results of a hydrogeologic investigation of the Wainscott Commercial Center proposed by Wainscott Commercial Center, LLC in East Hampton, New York. The site was previously a sand mine that now occupies approximately 70 acres on the north side of New York Route 27 (Figure 1). The site is bordered by Wainscott Northwest Road on the west, Hedges Lane on the east, and the Long Island Rail Road on the north.

This investigation was conducted by Alpha Geological Services, D.P.C. (Alpha Geoscience, d.b.a.) (Alpha) at the request of Wainscott Commercial Center, LLC to establish current (predevelopment) conditions and to address potential environmental impacts from the proposed development of the site for multi-use commercial and industrial tenants. The two primary hydrogeologic features of local concern are the underlying water table aquifer, which is the source of potable water for the local community, most of whom are on private water supply wells[1], and the recreational surface water feature known as Georgica Pond (Figure 1).

The primary concerns for drinking water within the East Hampton community are for the contaminants: perfluorooctane sulfonate (PFOS); perfluorooctanic acid (PFOA); hexavalent chromium; and 1,4-dioxane. These contaminants are of concern due to their potential health effects if consumed.

Iron and manganese that occur above average Suffolk County ground water concentrations have also been detected in ground water in the County and have been identified as being indicative parameters related to a vegetative waste processing facility. There is no vegetative waste processing facility on the site. Iron and manganese also are not regulated as a hazardous waste; consequently, they are not as great a concern as the other mentioned contaminants.

The primary concern for Georgica Pond is the effects on this surface water feature by nitrogen, phosphorus, and bacteria from septic discharge to the water table and also from stormwater

[1] The town recently created the Wainscott Water District that incorporates the site and its surrounding community. The Suffolk County Water Authority (SCWA) is in the process of installing water mains throughout the newly created district, which will provide all home owners with the opportunity to connect to public water supplied by the SCWA that is treated for excess iron and manganese.

runoff (Lombardo Associates, Inc.; 2015). The nitrogen and phosphorus compounds can result in algal blooms and related degradation that impair the aesthetic quality of the water, create a contact recreation hazard, and damage the aquatic habitat.

The primary objectives of this investigation were to evaluate the elevation and flow direction of the water table beneath the site, assess ground water quality, estimate the rate of horizontal ground water flow across the site, and determine how the site water table relates to the area around the site and Georgica Pond. Secondary objectives are to provide data about the soil material at the site and the depth to water across the site to aid in site development. The methods to address the objective are provided herein.

2.0 METHODS

The investigation objectives were met by:

- Drilling seven borings, on June 6 – 7, 2018, around the perimeter of the site (MW-1 through MW-7) using a hollow-stem auger and driving a two-foot long split barrel sampler at five-foot intervals. The auger cuttings and split spoon samples were logged in the field by a geologist. The geologic logs are provided in Appendix A, and the hole locations are shown on Figure 2 along with ten pre-existing monitoring wells (OMW series wells).
- Installing monitoring wells in each of the seven soil borings drilled in 2018. The well installations were observed and documented by the field geologist, and those logs are provided in Appendix B. Each well was constructed by installing a two-inch diameter, 0.01-slot, 10-foot-long well screen to a sufficient depth so that the well screen straddled the water table. The wells were backfilled with sand around the screen and sealed above the screen with 0.5 to 1.0 feet of bentonite, followed by auger cuttings and the placement of a lockable steel cap.
- Surveying location, elevation of the ground surface and elevation of the top of the PVC casing for each well by Fox Land Surveying of West Hampton Beach, New York (Fox). The elevation data are provided on Table 1.

- Developing each new well using a Waterra pump and dedicated tubing. Development was conducted to remove fine sediment and establish an effective connection to the aquifer.
- Measuring water levels after each new well was installed and, again, on June 26, 2018 and September 20, 2018. These water levels are provided on Table 2 along with a conversion of each depth-to-water measurement to a water table elevation based on the Fox survey data. All water level measurements were made from the top of the PVC casings. Water levels were also measured in two pre-existing wells (MW-6A and MW-8). The construction details of these wells are unknown; however, the depth of MW-8 was measured at 31.13 feet from the top of the casing. Consequently, this well is considered representative of the water table.
- Measuring of the water surface elevation of Georgica Pond by the U.S. Geological Survey (USGS) on a continuous basis. The daily water level data measured for the past four months are provided in Appendix C and on Table 2. Alpha personnel also installed a staff gauge (SG-1) in a pool of water in the middle of the site in order to obtain the elevation of that water. The location of SG-1 is provided on Figure 2. The ground surface elevation at SG-1 was estimated from site topography provided by Fox. The Fox survey map is provided in Appendix D.
- Collecting ground water samples from wells MW-1 through MW-8 by Alpha on June 26 and 27, 2018. The samples were taken after purging three well volumes of water from each well. The purging and sampling were conducted using a new, clean bailer for each well. The samples were placed in sample jars supplied by Pace Analytical Services, LLC, placed in a cooler with ice, and transported by Alpha to the Pace Laboratory in Melville, New York.
- Having the ground water samples analyzed, by Pace Analytical Services, LLC of Melville, New York, for dissolved metals, hardness, fluoride, sulfate, chloride, alkalinity, nitrogen, nitrate, nitrite, total dissolved solids, and hexavalent chromium. Pace subcontracted analyses for per- and polyfluoroalkyl substances (PFAs) and 1,4-dioxane through Test America. The analytical results are provided on Table 3.

- Analyzing the ground water elevation and quality data to assess the direction and rate of ground water flow across the site, the relationship of site ground water to Georgica Pond and the community as a whole, and potential sources of some parameters identified in the ground water.
- Researching and reviewing published literature and other unpublished reports for the area and Suffolk County as a whole, as needed, to help in the understanding of the site hydrogeological conditions.
- Reviewing pre-existing ground water elevation and ground water quality data from an investigation of the site in 1999 through 2000. Those water level elevation data are provided on Table 4. The pre-existing water quality data are provided on Table 5.

3.0 RESULTS

3.1 Site Geology

The soils encountered at the site consist of fill composed of coarse to fine sand with some medium to fine gravel and pockets of silt near the surface at some locations. These sandy and gravelly fill materials sit on top of fine to coarse sands of the water table aquifer, which is identified as the "Upper Glacial Aquifer" (Smolensky et al.; 1989).

3.2 Site Hydrogeology

The water level elevation data collected from the OMW series wells in 1999 (Table 4) show that the ground water elevations were highest along the northwest edge of the site and lowest to the southeast. Ground water flows from higher elevations to lower elevations; consequently, the data show that the flow was from the northwest across the site to the southeast. This flow is illustrated on the ground water contour maps for measurements that were made on 12/16/1999 (Figure 3) and again on March 22, 2000 (Figure 4).

The water level measurements were made in the new site monitoring wells, and pre-existing well OMW-1/MW-8, by Alpha on June 26 and September 20, 2018. The water level measurements were converted to water table elevations and used to construct site water table contour maps representing conditions on those respective days (Figures 5 and 6). Both maps confirm the

previous interpretation that the water table slopes across the site from the northwest to the southeast. The only exception to the northwest to the southeast slope was at MW-1 on June 26 (Figure 5) when that water table elevation was higher at that well in the southwest corner than at any other site well. That high level in MW-1 on that date was due to localized aquifer recharge associated with ponded water at the land surface. The water level in MW-1 had returned to an elevation that was consistent with the overall slope of the water table of northwest to southeast as of the September measurements (Figure 6).

Figure 7 provides an expanded view showing the regional ground water flow pattern for the site and surrounding area that is based on the September 20, 2018 site water level measurements along with a USGS measurement of the Georgica Pond water surface elevation. This regional map shows that ground water flows from upgradient areas, such as the East Hampton Airport, and beyond, toward the southeast where the ground water discharges into Georgica Pond and, ultimately, the Atlantic Ocean. The solid lines on Figure 7 are based on actual data, and the dashed lines are inferred or projected based on the expected patterns of ground water flow. This pattern of flow across the site and toward the natural discharge area at Georgica Pond is consistent with a water table map for the area that was prepared by the USGS (Monti et al.; 2013).

3.3 Horizontal Ground Water Flow Velocity

Knowledge of the horizontal velocity of ground water flow is helpful in assessing changes in the distribution of contaminants through time. Although various metals and chemical contaminants in ground water may not move across the site at the same rate as the linear velocity of the ground water, knowledge of the ground water flow is an aid in assessing relative changes in the distribution of detected analytes when comparing water quality results spanning nearly two decades.

The basic equation for estimating horizontal ground water velocity in a sand aquifer like that at the site is:

$$v = -Ki/n$$

where: v = average velocity of ground water flow

K = hydraulic conductivity of the aquifer
i = hydraulic gradient
n = porosity of the aquifer

The hydraulic conductivity of the outwash sand portion of the upper glacial aquifer was determined by McClymonds and Franke (1972) to range from 2,000 to 3,000 gallons per day per foot squared (gpd/ft^2). Alpha selected the midpoint of the range and used 2,500 gpd/ft^2 or 334.8 ft/year in the flow equation.

The water gradient across the site was determined from the September 20, 2018 ground water contour map (Figure 6). The water table had a measured drop of 2.0 feet over a horizontal distance of approximately 2,075 feet. This yields a gradient of -9.6 x 10^{-4} ft/ft.

The porosity is assumed to be approximately 0.35. This is based on the assumption that the outwash sand is moderately sorted fine to coarse sand. Applying this value and the other values for K and i into the equation yields an estimated linear velocity of 335 feet per year across the site.

3.4 Ground Water Quality

The analytical results from the ground water samples obtained by Alpha from the site monitoring wells and the ground water sampling results from the earlier investigation are provided on Tables 3 and 5, respectively. These results are provided on the tables along with the various United States Environmental Protection Agency (USEPA) and New York State Standards. These standards include the Maximum Contaminant Levels enforced by the USEPA (MCL EPA), the Secondary Maximum Contaminant Levels suggested by the EPA (SMCL EPA), the New York State Department of Health enforced Part 5 drinking water standards (NYSDOH DWS), and the New York State fresh ground water standards (NY GA GW).

The historical results from 1999 and 2000 (Table 5) show that iron and manganese were above standards at all of the old well locations, except for OMW-6. Other critical elements and compounds; such as lead, nitrate, and ammonia; were either not detected or at levels that were within standards when tested in 1999/2000 (Table 5). The volatile organic compounds (VOCs) related to hydrocarbons, such as gasoline or oil; herbicides; and pesticides were not detected in

any of the OMW wells. Testing for these substances was not included in water quality analyses for samples collected in the new wells in 2018.

The 2018 water quality analyses (Table 3) were focused on selected metals, which included iron and manganese, along with hexavalent chromium (CR6), 1,4-dioxane, and PFAS. The overall results for the tested parameters show that the water quality is good and meets standards except for PFAS, iron, manganese, aluminum, and sodium. Per- and polyfluoroalkyl substances (PFAS) were detected in all of the sampled monitoring wells. The relative concentrations appear to be similar on both the upgradient and downgradient sides of the site. Iron and manganese were not detectable or were at low concentrations in most of the wells except for the three downgradient wells (MW-2, MW-7, and MW-8). The sodium and aluminum concentrations were slightly above the recommended levels, which are not enforced standards.

4.0 DISCUSSION OF RESULTS

4.1 Hydrogeology

The soil borings at the site (see geologic logs in Appendix A) indicate that the aquifer at the site is an unconfined sand aquifer. The significance of this aquifer being unconfined is that it receives recharge from direct precipitation to the land surface. The ground water contours show that this recharge both originates from precipitation at the site as well as from precipitation to the land surface upgradient (northwest) of the site. This aquifer recharge from direct precipitation moves by ground water flow from the northwest across the site to the southeast (Figures 3 through 7). The water level contours showing the high water table at MW-1 (southwest corner of the site in June 2018) are a good example of concentrated recharge related to water pooling at the land surface at that location (Figure 5). The regional water table contour map (Figure 7) shows that The East Hampton Airport is directly up the ground water flow gradient from the site; consequently, some of the recharge for the ground water crossing the site is coming from the airport area and further to the northwest of the airport.

Ground water flow from the site is directly toward Georgica Pond; consequently, Georgica Pond is the natural zone of discharge from ground water that both originates at and passes through the

site. Ground water flow beneath the site also passes beneath properties along Hedges Lane, the northern end of Stone Road, Fenwood Road, the eastern end of Merriwood Drive, and a short segment of NY-27 (Montauk Highway), where water supply wells likely exist within the water table aquifer.

Periodic pooling of surface water in the northern half of the site is due to low permeability fill at the surface. These isolated surface water pools are not representative of the water table. This is evidenced by the disparity in elevation between the water at SG-1 and the ground water elevation at that location (Figures 5 and 6).

4.2 Ground Water Quality

The ground water quality is very important to the health of Georgica Pond and also to the people who rely on the ground water as their potable water supply. The concerns for Georgica Pond are focused primarily on nutrient loading from fertilizers and septic systems. The concerns for human health derived from the use of water supply wells go beyond nutrient loading and include contaminants such as PFOA, PFOS, 1,4-dioxane and hexavalent chromium. These chemicals are toxic and linked to severe illnesses, such as cancer. There is also a concern for high iron and manganese, but these concerns are mostly due to aesthetic qualities such as poor taste and staining of household fixtures and clothing, if the water is not treated and filtered. These various analytes are discussed further, herein.

4.2.1 Per- and Polyfluoroalkyl Substances (PFAS)

The PFAS were detected in all eight of the monitoring wells sampled in 2018 (Table 5 and Figure 8). These detected PFAS included the following nine compounds that are listed on Table 3:

PFBS
PFBA
PFpS
PFpA
PFHxS
PFHxA
PFNA
PFOS
PFOA

All nine of these compounds were detected at each of the sampled wells. The three highest concentrations of all the compounds were PFHxS at 430 ppt and PFNA at 220 ppt, at MW-5, and also PFHpS at 440 ppt at MW-6. Both of these wells are on the upgradient side of the site (Figure 8). This supports an interpreted offsite source for these compounds.

Some of the concentrations of the PFAS (PFOA and PFOS) exceeded the EPA secondary contaminant level of 70 parts per trillion (ppt). The wells with concentrations of PFOS greater than 70 ppt occurred on both the upgradient and downgradient sides of the site relative to the direction of ground water flow. These results further indicate that PFAS are originating offsite to the northwest and traveling through the site toward the southeast within ground water.

The New York State Department of Environmental Conservation (NYSDEC) is investigating PFAS in the Town of East Hampton (Town) in the vicinity of the East Hampton Airport (see documents in Appendix E). It is Alpha's understanding from anecdotal reports in a local newspaper (The East Hampton Star) that private wells are being tested by the Suffolk County Department of Health Services (SCDHS) within the Town in the area south of the airport. The WCC site lies within that SCDHS investigation area. Alpha did not have access to the SCDHS testing results with the exception of a well at 65 Main Street in Wainscott (Appendix E). That well contained 190 nanograms per liter (ng/L) of PFOA and 2 ng/L of PFOS. One ng/L is approximately equivalent to one part per one trillion parts (ppt). The 65 Main Street location is southwest of the WCC site; consequently, the PFAS detected at the well would not have passed through the site to reach that location.

There is also an anecdotal report in a Southampton Press article dated March 22, 2018 that a fire training exercise was conducted at the site in June 2000. That training exercise may have involved the use of a fire suppressant foam. The soil at that location, which is near MW-6 and MW-6A, will be sampled during a proposed soil investigation.

4.2.2 1,4-dioxane

The chemical 1,4-dioxane is used as a processing chemical in a variety of manufacturing applications that include, but are not limited to, pharmaceuticals, plastics, rubber, pesticides,

deodorants, cement, and adhesives. It is also used as a solvent in some manufacturing processes (USEPA, 2017). It will dissolve in water and enter the water table where it will move in the direction of ground water flow. The chemical was detected at trace levels in all the site monitoring wells; however, it is far below the New York State drinking water standard of 50 µg/L and appears to be a constituent of the regional water table that is passing through the site.

4.2.3 Hexavalent Chromium (CR6)

Hexavalent chromium (CR6) is another potential contaminant of interest that was selected for analysis. It is a potential contaminant that both occurs in the natural environment and is generated during the manufacturing of cement, but not the mixing of cement for concrete and other cement-based products. Hexavalent chromium was not detected in any of the ground water samples.

4.2.4 Iron and Manganese

The New York State drinking water standard of 0.3 mg/L was exceeded at five locations for iron and four locations for manganese when sampled in 1999 (Figure 10). The values for these metals were highest on the upgradient edges and in the middle of the site. This distribution indicates that at least some of the elevated levels are coming from offsite sources.

The 2018 results (Figure 11) revealed that both iron and manganese were detected at levels exceeding their respective New York State drinking water standards in two of the downgradient wells (MW-2 and MW-7) for iron and three of the downgradient wells (MW-2, MW-7, and MW-8) for manganese. This distribution is much different from that indicated in the 1999 data represented on Figure 10. For example, well MW-5; which was installed in 2018 very close to the OMW-5 location, had no detected iron and 0.016 mg/L of manganese in 2018 as compared to 0.52 mg/L and 1.0 mg/L of iron and manganese, respectively, in 1999. The overall pattern also shifted from the relatively high iron and manganese on the upgradient side to the higher values all being along the downgradient side by 2018. This change may be a function of the rapid horizontal flow of ground water across the site. The estimated ground water flow rate of 335 ft/yr would enable ground water entering the northwest corner of the site to exit the southeast corner in approximately twelve years. Although the dissolved iron and manganese may not

move as quickly as ground water, it is not surprising to see significant differences in metal concentrations at particular locations through time.

It is also not unusual to encounter high dissolved iron and manganese in ground water on Long Island. The SCDHS presented a table (Table 13 in SCDHS, 2016) of the average, maximum, and range of iron and manganese in private wells in Suffolk County (see Table 13 from the SCDHS report in Appendix F). The data on SCDHS Table 13 shows the maximum iron concentration at 33 ppm with an average of 0.9 ppm in those wells where detections occurred. The site detections for iron exhibited a maximum of 5.38 mg/L (5.38 ppm) (1.0 mg/L is approximately equal to 1.0 ppm) and an average of 1.9 mg/L (1.9 ppm). These site detections are similar to the SCDHS findings for the County as a whole.

The SCDHS results for manganese (see Table 13 in Appendix F) exhibited a maximum of 7,000 ppb (1.0 ppb is approximately equal to 1.0 µg/L) and an average of 112 ppb for those wells with detections. The site wells exhibited a maximum of 9,790 µg/L (9,790 ppb) and an average of 1,467 µg/L (1,467 ppb) for the detections in the combined 1999 and 2018 data. These values are higher than the average and maximum concentrations detected in wells across the County.

Iron and manganese are not as great a concern as the other previously discussed chemicals. Iron and manganese are regulated as nuisance chemicals in drinking water due to the staining of household fixtures and the metallic taste in drinking water (Lemley et al., 2005); however, there may be some health effects at long-term higher concentrations in drinking water (USEPA, 2004). The concentrations of these metals can be reduced using chlorine followed by filtration, as is done by the Suffolk County Water Authority in water supplied from its public wells.

4.2.5 Nitrogen

Nitrogen is an important chemical for the Wainscott area due to its potential effects on Georgica Pond (Lombardo Associates, Inc.; 2015). Nitrogen compounds are derived from fertilizers and septic discharge to the water table. Nitrate and Nitrogen as Nitrite were well below the drinking water standards of 10 mg/L in all of the ground water samples collected from the site wells. These results indicate that the site is not contributing to the degradation of Georgica Pond by nutrient loading of the water table.

4.2.6 Validation of Water Quality Data

The water quality analyses for the samples collected in 2018 were validated by Alpha's chemist to assess the data usability. The results of that review are provided in Appendix G. All of the laboratory analytical results were found to be usable, with some of the data being noted to have a higher degree of uncertainty. These are explained in the Data Usability Summary Report (Appendix G).

5.0 CONCLUSIONS

A hydrogeologic investigation of the proposed Wainscott Commercial Center was conducted by Alpha for Wainscott Commercial Center, LLC. The objectives were to describe the soil material at the site, determine the depth to the water beneath the site, assess the relationship of the water table beneath the site to Georgica Pond and to the surrounding community that relies on ground water as a potable water supply, to evaluate the quality of the ground water, and to assess the significance of the water quality as it relates to the site and surrounding area. The investigation was conducted by reviewing data collected from seven wells installed for an investigation in 1999/2000, installing seven new monitoring wells in 2018, measuring water levels in these seven new wells and two existing wells, reviewing water quality data collected from seven old wells in 1999, collecting and analyzing ground water samples from seven new wells and one of the old wells in 2018, and analyzing the data. The following are the key conclusions from this investigation:

- The aquifer at the site is an unconfined water table aquifer consisting of fine to coarse sand fill over fine to coarse sand of the "Upper Glacial Aquifer."
- The water table elevation slopes across the site from northwest to southeast.
- Ground water flow is from the higher ground water elevation in the northwest toward the lower ground water elevation in the southeast.
- The horizontal ground water flow rate is approximately 335 ft/yr across the site.
- The unconfined water table at the site is recharged by direct precipitation and also by ground water flow from recharge areas that are located to the northwest of the site.

- Georgica Pond is the natural discharge area for the water table that is flowing beneath the site.
- The ground water quality at the site is generally good; however, elevated levels of PFOA, PFOS, iron and manganese were detected in some of the ground water samples.
- The PFOA and PFOS concentrations exceed EPA Guideline values of 70 ppt at both upgradient and downgradient locations; consequently, it is interpreted that the elevated PFOA and PFOS values are coming from upgradient sources and passing beneath the site.
- Elevated levels of iron and manganese were detected throughout the site with the highest values on the upgradient side and in the center of the site in 1999.
- The elevated levels of iron and manganese occurred in the downgradient wells in 2018.
- The elevated levels for iron are similar to high background levels of Fe identified in private wells elsewhere in the County by the Suffolk County Department of Health Services (SCDHS); but the manganese appears to be higher than the average manganese concentrations found by the SCDHS.
- The distribution of high iron and manganese in 1999 indicates that offsite sources are likely.
- The high concentration of iron and manganese on the downgradient side in 2018 could be a function of the high horizontal flow rates in the water table.
- Other chemicals, such as nitrates, 1,4-dioxane, and hexavalent chromium, are well within EPA and New York State standards.
- There is no indication of the presence of petroleum related VOC contamination in ground water at the site based on the 1999 data.
- All of the analytical water quality data from the 2018 sampling were determined to be usable.
- The ground water flowing beneath the site and discharging to Georgica Pond will not have a detrimental impact to the nutrient loading in the pond.

- The ground water quality data generated from this investigation provide a database of current background conditions that can be used to assess any unexpected changes in the measured parameters after the site is developed.
- There is no indication that there is a source of ground water contamination at the site that is impacting local, downgradient water supply wells now, or will in the future, if this site is further developed.

6.0 REFERENCES

Lemley, A. T., Schwartz, J. J., Wagenet, L. P., 2005; Iron and Manganese in Household Drinking Water, in Water Treatment Notes, Cornell Cooperative Extension, College of Human Ecology, Cornell University, Fact Sheet 6, 5 pp.

Lombardo Associates, Inc.; 2015; East Hampton Town Wide Wastewater Management Plan; Report to the Town of East Hampton by Lombardo Associates, Inc., FPM Group and Woods Hole Group; June 8, 2015; 552 pp.

USEPA; 2004; Drinking Water Health Advisory for Manganese, EPA Office of Water (4304T), EPA Document No. EPA-822-R-04-003, January 2004, 55 pp.

McClymonds, N.E. and Franke, O.L.; 1972, Water-Transmitting Properties of Aquifers on Long Island, New York, Hydrology and Some Effects of Urbanization on Long Island, New York; United States Department of the Interior, Geological Survey; Geological Survey Professional Paper 627-E, 24 pp.

Monti, J. Jr., Como, M., Bussiolano, M.; 2013; Water-Table and Potentiometric Surface Altitudes in the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, April – May 2010; Scientific Investigations Map 3270, Water Table – Sheet 1 of 4, U.S. Department of the Interior, U.S. Geological Survey.

Smolensky, D. A., Buxton, H. T., Shernoff, P. K.; 1989; Hydrogeologic Framework of Long Island, New York; Hydrogeologic Investigations Atlas HA-709 (Sheet 1 of 3); Department of the Interior, U.S. Geological Survey.

USEPA; 2004; Drinking Water Health Advisory for Manganese, EPA Office of Water (4304T), EPA Document No. EPA-822-R-04-003, January 2004, 55 pp.

USEPA; 2016; Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA); US Environmental Protection Agency, Office of Water (4304T), Health and Ecological Criteria Division, EPA Document No. EPA-822-R-16-005, 103 pp.

USEPA; 2017; Scope of the Risk Evaluation for 1,4-dioxane, EPA Document No. EPA-740-R1-7003, 58 pp.

TABLES

Table 1
Survey Elevations - September 14, 2018
Wainscott Commercial Center
Suffolk County, New York

Well	Elevations (ft rmsl)	
	TOC	Ground Surface
MW-1	14.48	12.09
MW-2	18.94	16.08
MW-3	19.16	16.35
MW-4	18.65	15.63
MW-5	22.36	19.35
MW-6	18.98	16.07
MW-6A	18.06	15.48
MW-7	18.49	15.28
MW-8	23.27	20.80

Notes: Survey was performed by Fox Land Surveying
of Westhampton Beach, NY
Elevations referenced to NAV Datum (MSL 1988).
TOC = Top of PVC Casing (Measuring Point) Elevation

Table 2
Ground Water Elevation Measurements - 2018
Wainscott Commercial Center
Suffolk County, New York

Well	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-6A		MW-7		MW-8		SG-1*		Georgica Pond USGS Monitoring Station
TOC Elevation (ft rmsl)	14.48		18.94		19.16		18.65		22.36		18.98		18.06		18.49		23.27		20.31		
DATE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	WTE	DTW	SWE	WTE
6/7 - 8/2018	6.02	8.46	9.33	9.61	8.54	10.62	8.74	9.91	11.57	10.79	8.48	10.50	7.58	10.48	8.58	9.91	15.24	8.03	2.19	18.12	5.88 / 5.85
6/26/2018	2.31	12.17	9.53	9.41	8.69	10.47	8.86	9.79	11.71	10.65	8.65	10.33	7.75	10.31	8.76	9.73	15.37	7.90	2.31	18.00	5.81
9/20/2018	6.88	7.60	10.33	8.61	9.80	9.36	9.89	8.76	12.79	9.57	9.70	9.28	8.76	9.30	9.71	8.78	15.87	7.40	2.27	18.04	5.75

Notes: Survey was performed by Fox Land Surveying of Westhampton Beach, NY

Elevations referenced to NAV Datum (MSL 1988).

TOC = Top of PVC Casing (Measuring Point) Elevation

DTW = Depth to Ground Water from TOC (feet)

WTE = Water Table Elevation (ft rmsl)

SWE = Surface Water Elevation (ft rmsl)

* Staff Gauge , measurements are from top of wooden stake; stake was broken as of 9/20/18, taped back together.
Elevation of the top of the Staff Gauge is estimated from the Topographic Survey Map

Table 3
2018 Laboratory Results
Wainscott Commercial Center
Suffolk County, NY

Well					MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8
Collection Date					6/27/2018	6/27/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018
Analyte/ Parameter	MCL EPA	SMCL EPA	NY DoH DWS*	NY GA GW								
Dissolved Metals	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Aluminum	NS	0.05 to 0.2	NS	NS	0.354	ND	ND	ND	ND	ND	ND	ND
Arsenic	0.01		0.01	0.025	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2.0		2.0	1.0	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	NS	NS	NS	NS	63	20.1	16.9	12.6	16.8	6.43	9.66	80.2
Chromium	0.1 (total)		0.1	0.05	0.0292	ND	ND	ND	ND	ND	ND	ND
Hexavalent Chromium				0.05	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1.3	1.0	NS	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Iron	NS	0.3	0.3	0.5 (total)	ND	2.22	0.0661	ND	ND	ND	5.38	ND
Manganese	NS	0.05	0.3		ND	1.54	0.0196	0.0226	0.0163	0.0337	0.496	9.79
Magnesium	NS	NS	NS	NS	3.63	4.69	4.54	3.00	4.55	2.04	2.40	11.4
Molybdenum	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	NS	NS	NS	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	NS	NS	NS	NS	22.1	ND	ND	ND	ND	ND	ND	12.6
Sodium	NS	NS	No limit	20	18	6.87	19.4	26.8	54.2	10.5	ND	19.5
Strontium	NS	NS	NS	NS	0.703	0.0724	0.0550	0.0541	0.0691	ND	ND	0.467
Titanium	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	NS	5	5	NS	ND	ND	ND	ND	ND	ND	ND	ND
Non Metals	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Sulfate	NS	250	250	250	41.2	22	11.1	11.9	14.4	10.5	ND	26.7
Nitrate as N	10		10	10	4.6	0.66	3.9	0.68	3.7	1.4	0.13	1
Nitrate-Nitrite (as N)	NS	NS	10	10	4.7	0.66	3.9	0.68	3.7	1.4	0.13	1
Nitrite as N	1		1	0	ND	ND	ND	ND	ND	ND	ND	ND
Chloride	NS	250	250	250	20.6	7.4	38.7	55.6	86.2	16.4	4.1	35.6

Table 3
2018 Laboratory Results
Wainscott Commercial Center
Suffolk County, NY

Well					MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8
Collection Date					6/27/2018	6/27/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018
Analyte/ Parameter	**MCL EPA**	**SMCL EPA**	**NY DoH DWS***	**NY GA GW**								
Other												
Total Dissolved Solids (mg/L)	NS	NS	NS	NS	208	100	70	78	206	58	ND	314
Apparent Color/pH (units)	NS	NS	NS	NS	250/7.0	62.5/6.0	1000/6.0	250/6.0	250/6.5	250/6.0	250/6.0	167/7.0
Corrosivity (pH/Temp (°C))	NS	NS	NS	NS	8.6/25.9	6.1/25.9	5.9/25.7	5.9/25.6	5.8/25.8	5.6/25.8	5.8/25.8	6.3/25.8
Perfluoros /organics *												
1,4-dioxane (µg/L)	NS	NS	<50	NS	0.20	0.21	1.0	0.21	1.0	0.20	0.22	0.21
PFBS (ng/L)	NS	NS	<50000	NS	11	5.7	1.9	17	11	4.9	14	4.6
PFBA (ng/L)	NS	NS	<50000	NS	4	21	0.96	1.3	3.8	23	9.1	91
PFHpS (ng/L)	NS	NS	<50000	NS	2.3	NT	2.4	4.9	19	440	6.6	NT
PFHpA (ng/L)	NS	NS	<50000	NS	3.8	37	0.61	0.92	4.8	88	7.5	46
PFHxS (ng/L)	NS	NS	<50000	NS	86	17	26	120	430	23	170	55
PFHxA (ng/L)	NS	NS	<50000	NS	12	39	2.3	2.7	23	52	14	73
PFNA (ng/L)	NS	NS	<50000	NS	2.3	73	0.4	1.4	220	140	3	18
PFOS (ng/L)	NS	70	<50000	NS	72	69	140	120	23	14	170	150
PFOA (ng/L)	NS	70	<50000	NS	11	48	4.4	4.4	1.5	32	21	110
PFOS +PFOA (ng/L)	NS	<70	<50000	NS	83	117	144.4	124.4	24.5	46	191	260

Notes:

* NYSDOH set generic MCL of 50,000 ppt for any chemical classified as an unspecified organic contaminant under NYCRR Title 10, Part 5, Subpart 5-1

mg/L = milligram per liter, ≈ parts per million (ppm)

ng/L = nanogram per liter ≈ parts per trillion (ppt)

MCL EPA = maximum contaminant levels (MCL) **enforced** by the United States Environmental Protection Agency

SMCL EPA = secondary maximum contaminant levels, **suggested** by the United States Environmental Protection Agency

NY DOH DWS = New York State MCL standards from the Department of Health, Part 5 (**enforced**)

NY GA GW = New York State fresh groundwater standards (GA) (6 NYCRR Part 703, under revision)

NS = No Standard ND = Not Detected NT = Not Tested

Red contaminant above the enforced MCL from the EPA or NYS DoH

Yellow contaminant above the recommended SMCL from the EPA or the fresh groundwater standards from NYS

Table 4
Ground Water Elevation Measurements - 1999-2001
Wainscott Commercial Center
Suffolk County, New York

Well *	Water Table Elevations (ft rmsl)						
	OMW1 / MW-8	OMW2	OMW4 / MW-6A	OMW5	OMW6	OMW7	OMW8
7/7/1999	6.76	7.19	9.80	10.32	8.82	8.18	8.93
9/15/1999	7.11	8.17	9.54	10.00	8.75	8.28	8.88
12/16/1999	8.33	8.17	9.52	9.94	8.86	8.45	8.85
2/23/2000	7.71	9.05	9.62	10.00	9.08	8.70	9.10
3/8/2000	7.56	9.02	8.90	9.98	9.09	8.69	9.08
3/22/2000	7.05	9.12	9.84	10.17	9.14	8.57	9.19
4/5/2000	6.98	-	10.01	10.25	9.20	8.47	9.03
6/2/2000	7.21	-	9.97	10.30	9.12	8.58	9.13
7/10/2000	7.26	-	9.87	10.60	9.27	8.68	9.29
8/20/2000	8.51	-	9.99	10.60	9.22	8.78	9.43
10/20/2000	-	-	9.70	10.32	9.14	8.54	9.13
12/9/2000	-	-	-	9.55	8.52	8.48	8.58
1/12/2001	-	-	-	9.50	8.72	7.98	8.83

* OMW = Old Monitoring Well installed in 1999. Most of the wells installed in 1999 have been lost with only OMW1/MW-8 and OMW4/MW-6A still accessible and renamed.

Table 5
1999 & 2000 Laboratory Results
Wainscott Commercial Center
Suffolk County, NY

Well						OMW1	OMW2	OMW4	OMW5	OMW6	OMW7		OMW8
Collection Date						12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	1/17/2000	12/21/1999
Analyte/ Parameter	MCL EPA	SMCL EPA	SCDHS Limits	NY DoH DWS*	NY GA GW								
Dissolved Metals	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Copper	1.3	1.0	1.0	NS	0.2	0.01	ND	0.01	ND	ND	ND	-	ND
Iron	NS	0.3	0.30 each;	0.3	0.5 (total)	0.34	0.16	0.45	0.52	0.15	7.41	-	2.84
Manganese	NS	0.05	0.50 total	0.3		0.03	0.39	0.19	1.00	0.13	4.79	-	2.09
Lead	<0.015	NS	0.0	0.0	0.0	ND	ND	0.004	0.001	ND	0.008	-	ND
Zinc	NS	5	5.0	5.0	NS	ND	ND	ND	ND	ND	0.01	-	ND
Non Metals	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Ammonia	NS	NS	NS		20.0	ND	ND	ND	ND	ND	0.51	-	1.12
Nitrate as N	10.0	NS	10.0	10.0	10.0	3.98	1.63	2.37	2.31	1.01	0.17	-	0.76
Surfactant (MBAS)	NS	0.5	0.5		0.1	ND	ND	ND	ND	ND	ND	-	ND
Chloride	NS	250	250.0	250.0	250.0	9.99	4.65	9.20	38.4	12.7	6.57	-	6.54
Other													
pH	NS	6.5-8.5	NS	NS	NS	6.1	6.5	5.3	5.2	5.7	6.4	-	6.8
Specific Conductance (µmhos/cm	NS	NS	NS	NS	NS	528	83.4	172	253	226	860	-	391
Total Petroleum Hydrocarbons	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	2.25	-	ND
Total Coliform (mpn/100ml)	less than 5%	NS	<1.1	NS	NS	<2	<2	300	2	2	27	-	23
E. coli (mpn/100ml)	less than 5%	NS	<1.1	NS	NS	<2	<2	<2	<2	<2	<2	-	<2
Volatile Organics (µg/L)													
Benzene	5.0	NS	5.0	5.0	1.0	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.0	NS	50.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	0.0	NS	50.0	NS (Report as group)	NS	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	NS	NS	50.0	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70.0	NS	50.0	NS (Report as group)	7.0	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	NS	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND

Table 5
1999 & 2000 Laboratory Results
Wainscott Commercial Center
Suffolk County, NY

Well						OMW1	OMW2	OMW4	OMW5	OMW6	OMW7		OMW8
Collection Date						12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	1/17/2000	12/21/1999
Analyte/ Parameter	MCL EPA	SMCL EPA	SCDHS Limits	NY DoH DWS*	NY GA GW								
4-Chlorotoluene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	NS	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	NS	NS	5.0	5.0	3.0	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	NS	NS	5.0	5.0	3.0	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	NS	NS	5.0	5.0	3.0	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5.0	NS	5.0	5.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	70.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5.0	NS	5.0	5.0	1.0	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	NS	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	NS	NS	5.0	5.0	0.0	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	NS	NS	5.0	5.0	0.0	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	50.0	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
p-Isoproyltoluene	NS	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether	NS	NS	50.0	10.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100.0	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Total Trihalomethanes	80.0	NS	100.0		NS	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	70.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5.0	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NS	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND

Table 5
1999 & 2000 Laboratory Results
Wainscott Commercial Center
Suffolk County, NY

Well						OMW1	OMW2	OMW4	OMW5	OMW6	OMW7		OMW8
Collection Date						12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	1/17/2000	12/21/1999
Analyte/ Parameter	MCL EPA	SMCL EPA	SCDHS Limits	NY DoH DWS*	NY GA GW								
1,2,3-Trichloropropane	NS	NS	5.0	5.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	NS	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	NS	NS	5.0	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	NS	NS	2.0	2.0	2.0	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	total: 10	NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
m-Xylene		NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
p-Xylene		NS	5.0	5.0	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organics (µg/L)													
Acenaphthene	NS	NS	NS	NS	20.0	-	-	-	-	-	-	ND	-
Acenaphthylene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Anthracene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Benzidene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Benzo(a)anthracene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Benzo(b)fluoranthene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Benzo(k)fluoranthene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Benzo(a)pyrene	0.2	NS	NS	0.2	ND	-	-	-	-	-	-	ND	-
Benzo(g,h,i)perylene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Butylbenzylphthalate	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Bis(2-chloroethyl)ether	NS	NS	NS	NS	1.0	-	-	-	-	-	-	ND	-
Bis(2-chloroethoxy)methane	NS	NS	NS	NS	5.0	-	-	-	-	-	-	ND	-
Bis(2-ethylhexyl)phthalate	NS	NS	NS	NS	0.6	-	-	-	-	-	-	ND	-
Bis(2-chloroisopropyl)ether	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
4-Bromophenyl phenyl ether	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
4-Chloro-3-methyl phenol	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-
2-Chloronaphthalene	NS	NS	NS	NS	10.0	-	-	-	-	-	-	ND	-
2-Chlorophenol	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-
4-Chlorophenyl phenyl ether	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Chrysene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Dibenzo(a,h)anthracene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Di-n-butylphthalate	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
1,3-Dichlorobenzene	NS	NS	NS	5.0	3.0	-	-	-	-	-	-	ND	-
1,2-Dichlorobenzene	NS	NS	NS	5.0	3.0	-	-	-	-	-	-	ND	-
1,4-Dichlorobenzene	NS	NS	NS	5.0	3.0	-	-	-	-	-	-	ND	-
3,3'-Dichlorobenzidine	NS	NS	NS	NS	5.0	-	-	-	-	-	-	ND	-
2,4-Dichlorophenol	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-

Table 5
1999 & 2000 Laboratory Results
Wainscott Commercial Center
Suffolk County, NY

Well						OMW1	OMW2	OMW4	OMW5	OMW6	OMW7		OMW8
Collection Date						12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	1/17/2000	12/21/1999
Analyte/ Parameter	MCL EPA	SMCL EPA	SCDHS Limits	NY DoH DWS*	NY GA GW								
Diethylphthalate	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
2,4-Dimethylphenol	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-
Dimethylphthalate	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
2,4-Dinitrophenol	NS	NS	NS	5.0	Sum all phenols <1	-	-	-	-	-	-	ND	-
2,4-Dinitrotoluene	NS	NS	NS	5.0	5.0	-	-	-	-	-	-	ND	-
2,6-Dinitrotoluene	NS	NS	NS	5.0	5.0	-	-	-	-	-	-	ND	-
Di-n-octylphthalate	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Fluoranthene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Fluorene	NS	NS	NS	2200.0	NS	-	-	-	-	-	-	ND	-
Hexachlorobenzene	1	NS	NS	1.0	0.0	-	-	-	-	-	-	ND	-
Hexachlorobutadiene	NS	NS	NS	5.0	0.1	-	-	-	-	-	-	ND	-
Hexachlorocyclopentadiene	50	NS	NS	NS	5.0	-	-	-	-	-	-	ND	-
Hexachloroethane	NS	NS	NS	NS	5.0	-	-	-	-	-	-	ND	-
Indeno(1,2,3-cd)pyrene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Isophorone	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
2-Methyl-4,6-dinitrophenol	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Naphthalene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Nitrobenzene	NS	NS	NS	NS	0.4	-	-	-	-	-	-	ND	-
2-Nitrophenol	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
4-Nitrophenol	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
n-Nitrosodimethylamine	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
n-Nitrosodiphenylamine	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
n-Nitrosodi-N-propylamine	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Pentachlorophenol	1	NS	NS	1.0	Sum all phenols <1	-	-	-	-	-	-	ND	-
Phenanthrene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
Phenol	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-
Pyrene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
2,3,4,6-Tetrachlorophenol	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-
1,2,4-Trichlorobenzene	70	NS	NS	5.0	NS	-	-	-	-	-	-	ND	-
2,4,6-Trichlorophenol	NS	NS	NS	NS	5.0	-	-	-	-	-	-	ND	-
2,4,5-TrichlorophenolPyridine	NS	NS	NS	NS	5.0	-	-	-	-	-	-	ND	-
Benzyl alcohol	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
2-Methylphenol (o-cresol)	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-
4-Methylphenol (p-cresol)	NS	NS	NS	NS	Sum all phenols <1	-	-	-	-	-	-	ND	-
Benzoic acid	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-
2-Methylnaphthalene	NS	NS	NS	NS	NS	-	-	-	-	-	-	ND	-

Table 5
1999 & 2000 Laboratory Results
Wainscott Commercial Center
Suffolk County, NY

Well						OMW1	OMW2	OMW4	OMW5	OMW6	OMW7		OMW8
Collection Date						12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	12/21/1999	1/17/2000	12/21/1999
Analyte/ Parameter	MCL EPA	SMCL EPA	SCDHS Limits	NY DoH DWS*	NY GA GW								
Chlorinated Herbicides (µg/L)													
2,4-D	70	NS	NS	50.0	NS	-	-	ND	-	-	-	-	-
Dalapon	200	NS	NS	NS	50.0	-	-	ND	-	-	-	-	-
2,4-DB	NS	NS	NS	NS	NS	-	-	ND	-	-	-	-	-
Dicamba	NS	NS	NS	NS	0.4	-	-	ND	-	-	-	-	-
Dichlorprop	NS	NS	NS	NS	NS	-	-	ND	-	-	-	-	-
Dinoseb	7	NS	NS	7.0	NS	-	-	ND	-	-	-	-	-
MCPA	NS	NS	NS	NS	NS	-	-	ND	-	-	-	-	-
MCPP	NS	NS	NS	NS	NS	-	-	ND	-	-	-	-	-
2,4,5-T	NS	NS	NS	NS	NS	-	-	ND	-	-	-	-	-
2,4,5-TP (Silvex)	50	NS	NS	10.0	NS	-	-	ND	-	-	-	-	-
Organophosphorus Pesticides (µg/L)													
Azinophos methyl	NS	NS	NS	NS	NS	-	-	ND	-	-	-	-	-
Demeton	NS	NS	NS	NS	NA	-	-	ND	-	-	-	-	-
Diazinon	NS	NS	NS	NS	0.7	-	-	ND	-	-	-	-	-
Disulfoton	NS	NS	NS	NS	ND	-	-	ND	-	-	-	-	-
Malathion	NS	NS	NS	NS	7.0	-	-	ND	-	-	-	-	-
Parathion methyl	NS	NS	NS	NS	Sum <1.5	-	-	ND	-	-	-	-	-

Note: * NYSDOH set generic MCL of 50,000 ppt for any chemical classified as an unspecified organic contaminant under NYCRR Title 10, Part 5, Subpart 5-1

mg/L = milligram per liter, ≈ parts per million (ppm) ng/L = nanogram per liter ≈ parts per trillion (ppt) mpn/100ml = most probable number per 100 milliliters

MCL EPA = maximum contaminant levels (MCL) **enforced** by the United States Environmental Protection Agency

SMCL EPA = secondary maximum contaminant levels, **suggested** by the United States Environmental Protection Agency

NY DOH DWS = New York State MCL standards from the Department of Health, Part 5 (**enforced**)

NY GA GW = New York State fresh groundwater standards (GA) (6 NYCRR Part 703, under revision)

NS = No Standard ND = Not Detected - = Not Analyzed / No Information

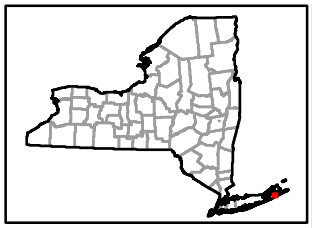
Red contaminant above the enforced MCL from the EPA or NYS DoH

FIGURES

LEGEND

Site Boundary (approx.)

Source:
-Basemap: Google Earth Imagery, October 1, 2017, accessed September 25, 2018

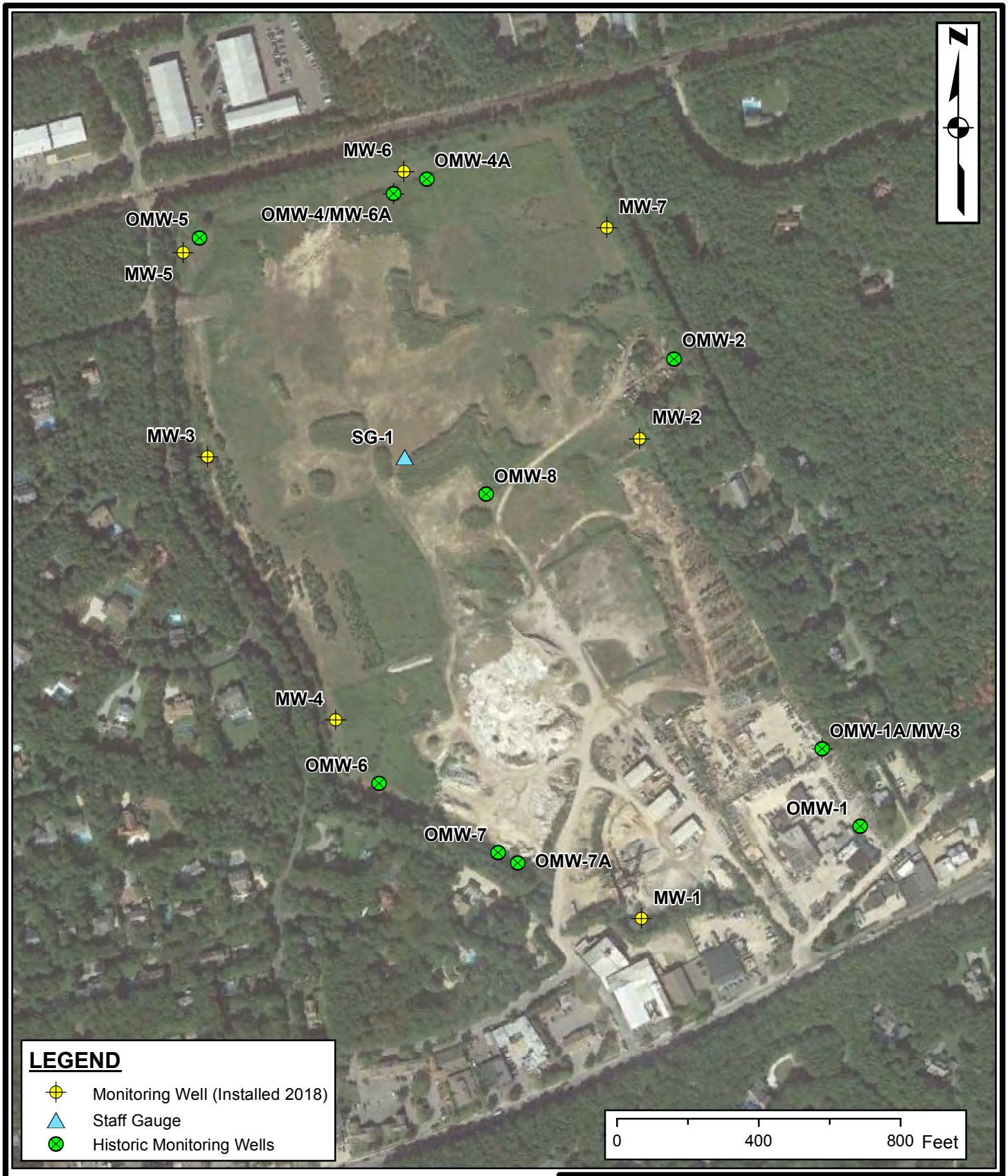


ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 1
Site Location Map

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Site_Location_Map_new.mxd
Date Saved: 11/9/2018 11:55:58 AM



Notes:
-Basemap: Google Earth Imagery October 1, 2017, accessed September 25, 2018
-Monitoring wells (OMW and MW) located approximately using map byFox Land Surveying, September 24, 2001

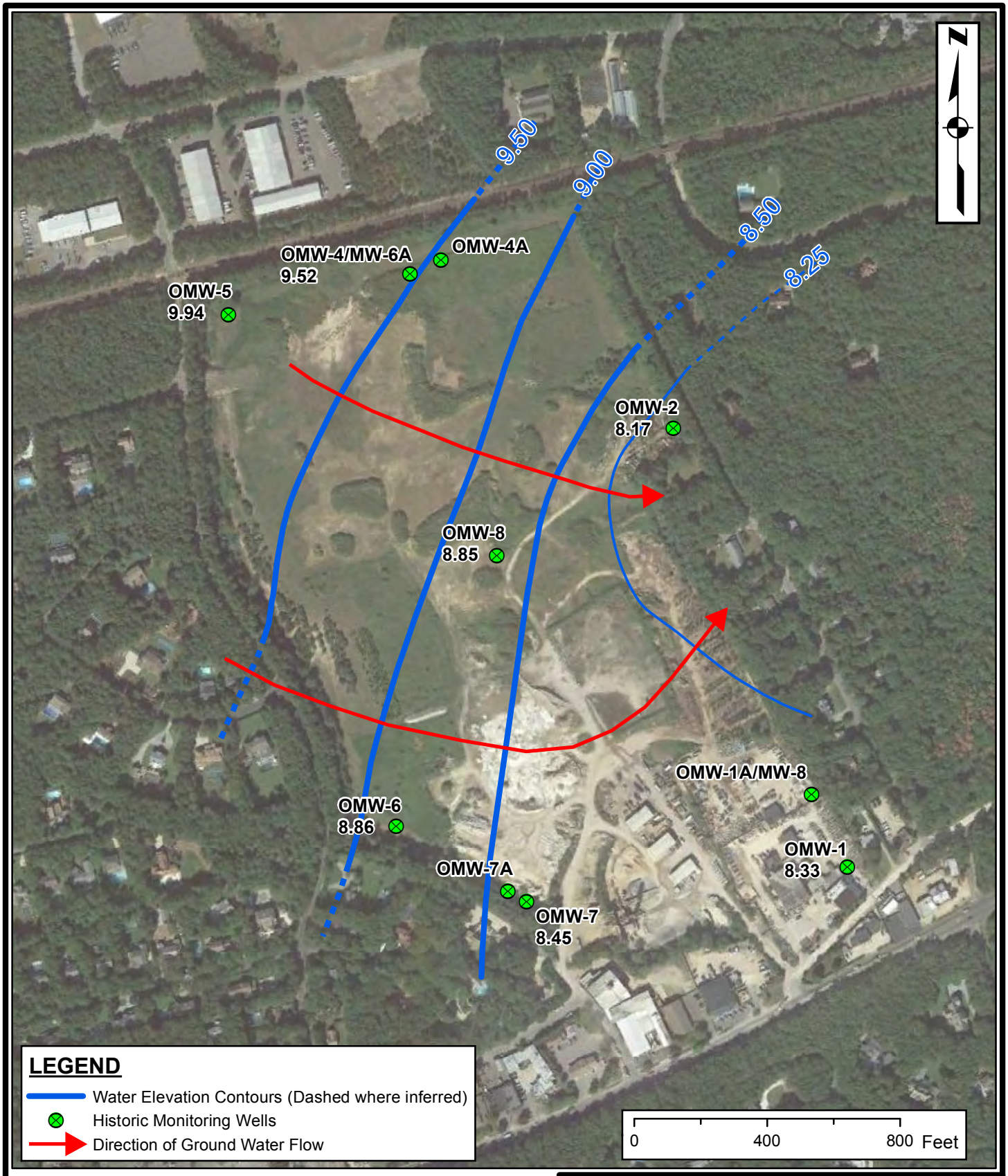
ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 2

Combined WCC Monitoring Wells from 1999 and 2018 Investigations

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Fig2_combined_WCC_MW_1999-2000.mxd
Date Saved: 11/9/2018 11:59:35 AM

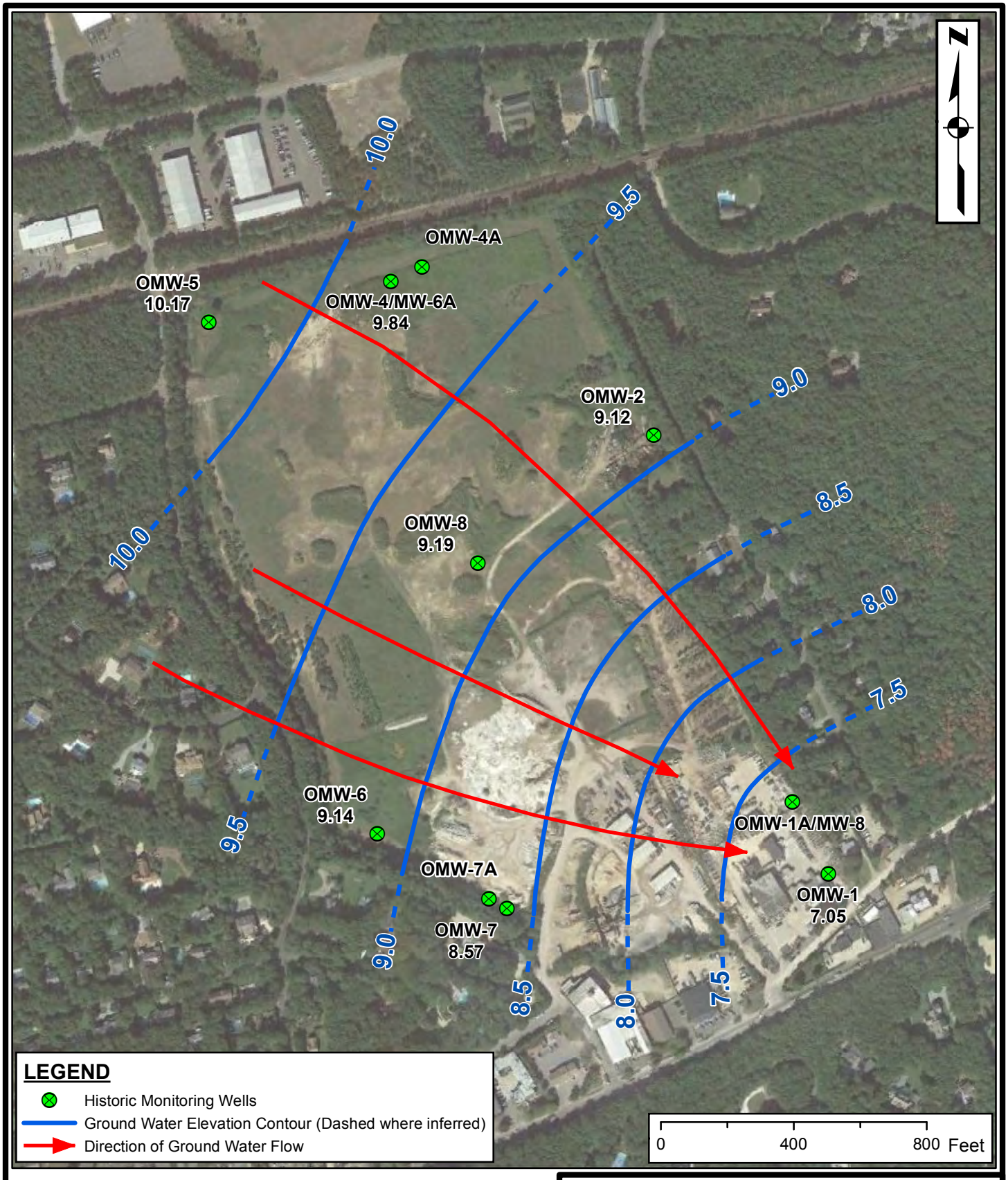


Notes:
-Basemap: Google Earth Imagery October 1, 2017, accessed September 25, 2018
-Old Monitoring wells (OMW) located approximately using map by Fox Land Surveying, September 24, 2001
-Water Table Measurements taken 12/16/1999

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 3
Historic Wells
With Water Table Elevation
Contour Map
from 12/16/1999
Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\GWC_WTE_historic_wells_12_16_1999.mxd
Date Saved: 11/9/2018 12:02:14 PM

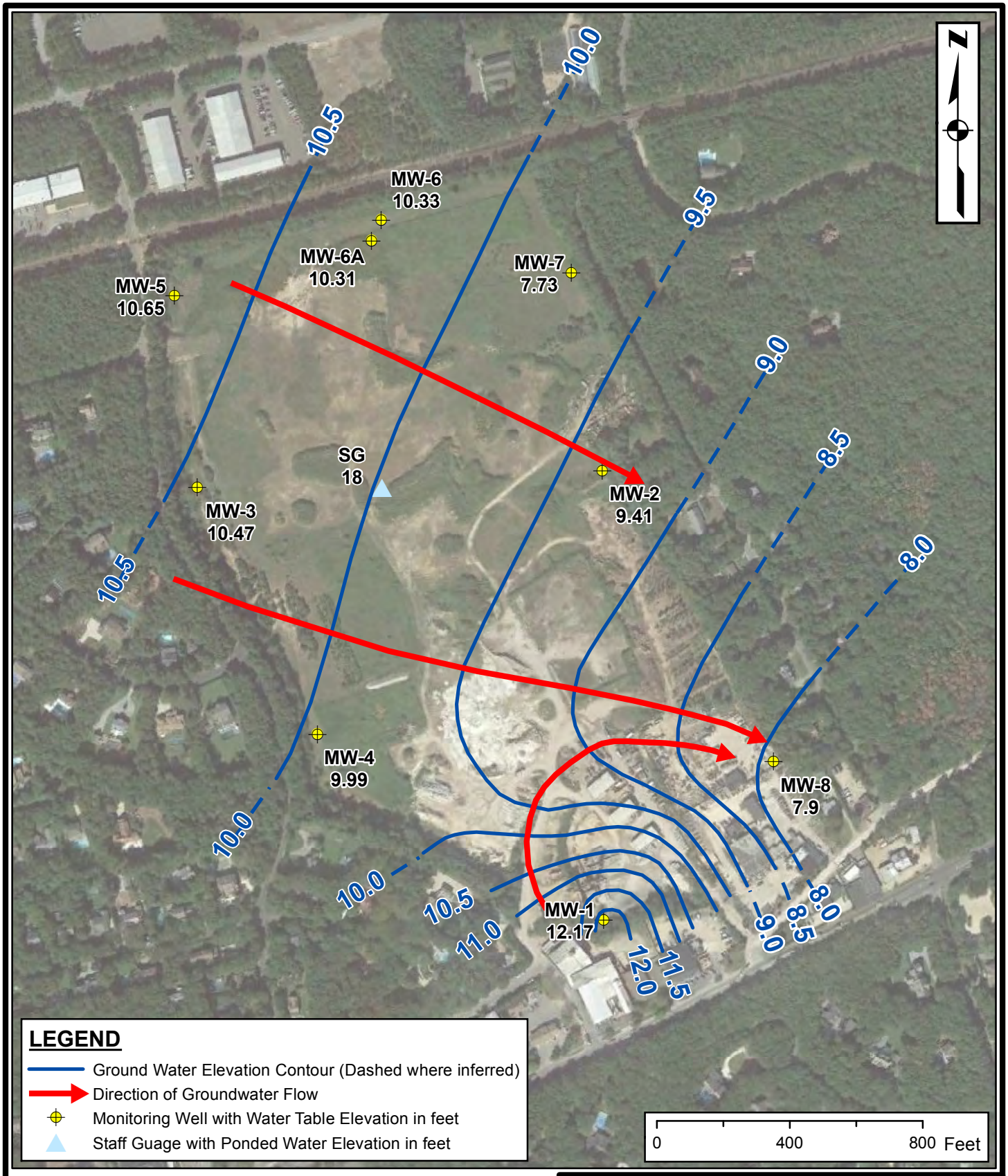


Notes:
-Basemap: Google Earth Imagery October 1, 2017, accessed September 25, 2018
-Old Monitoring wells (OMW) located approximately using map by Fox Land Surveying, September 24, 2001
-Water Table Measurements taken 3/22/2000

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 4
Historic Wells
With Water Table Elevation
Contour Map
from 3/22/2000
Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\GWC_WTE_historic_wells3_22_2000.mxd
Date Saved: 11/9/2018 12:04:11 PM



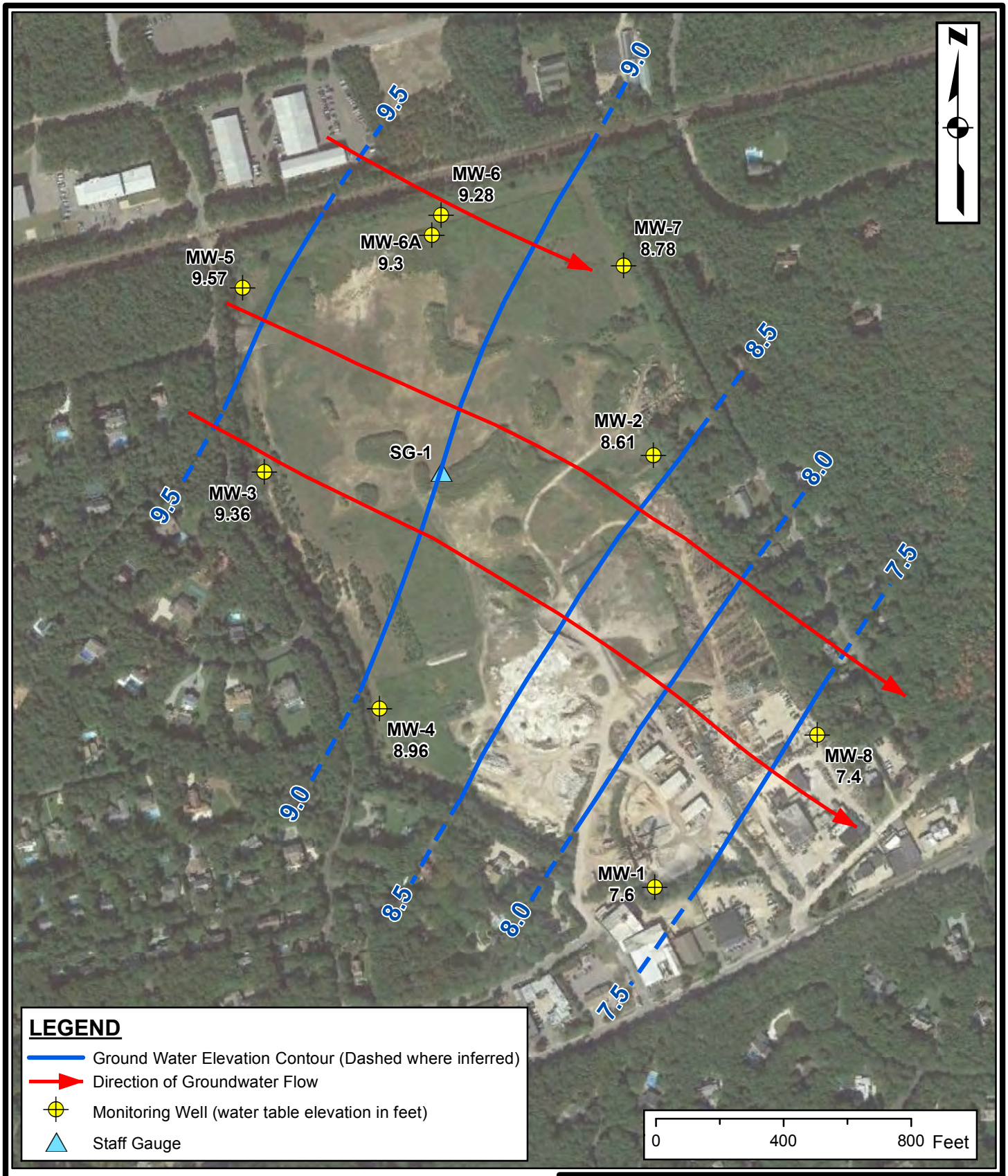
Notes:
-Basemap: Google Earth Imagery, October 1, 2017, accessed September 25, 2018
-Monitoring well and staff gauge are located by Fox Land Surveying on September 4, 2018
-Groundwater elevations measured June 26,2018

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 5
Water Table Contour Map 6/26/2018 Data

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\GW_contour_2018_06_26.mxd
Date Saved: 11/9/2018 12:07:26 PM



Notes:
-Basemap: Google Earth Imagery October 1, 2017, accessed September 25, 2018
-Monitoring well and staff gauge are located by Fox Land Surveying on September 14, 2018
-Groundwater elevations measured September 20,2018

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 6
Water Table Contour Map
9/20/2018 Data

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Maps used in the Hydrogeologic Report\GW_contour_2018_09_20.mxd
Date Saved: 11/9/2018 12:08:54 PM

East Hampton Airport

MW-6
9.28

MW-5
9.57

MW-6A
9.3

MW-7
8.78

MW-3
9.36

MW-2
8.61

MW-4
8.96

MW-8
7.4

MW-1
7.6

10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0

Georgica Pond
Water Elevation 5.75ft

0 0.125 0.25 0.5 Miles

N

Legend

- Monitoring Well with Water Table Elevation in feet
- Groundwater Elevation Contour (dashed where inferred)
- Direction of Groundwater Flow

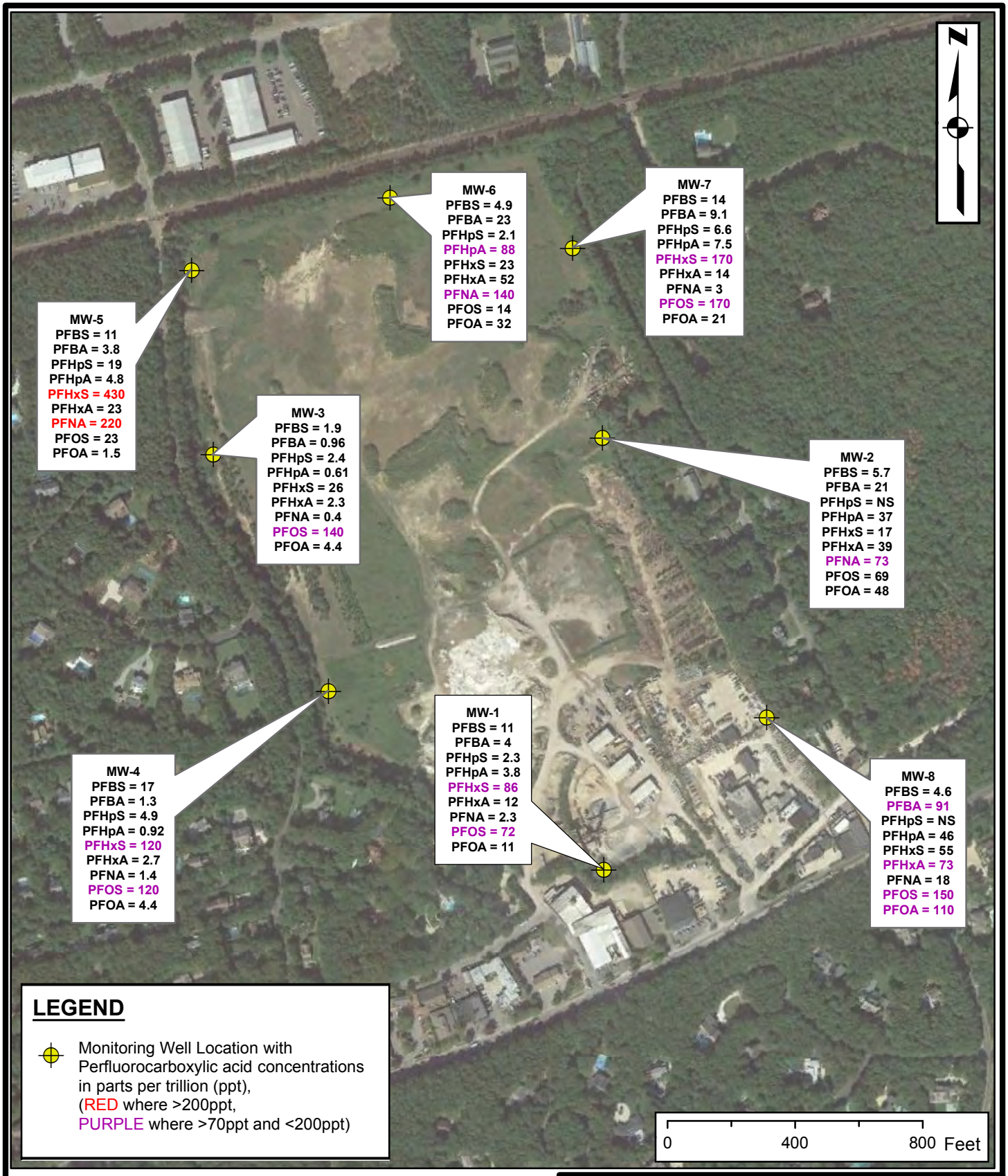
Notes:
--Basemap: Google Earth Imagery October 1, 2017, accessed September 25, 2018
-Monitoring well and staff gauge were located by Fox Land Surveying on September 14, 2018
-Groundwater elevation measured 9/20/2018
-Surface Water Elevation of Georgica Pond measured by USGS September 20, 2018

ALPHA GEOSCIENCE
Proj. No. 15109

FIGURE 7
Regional Water Table Map

Wainscott Commercial Center
Regional Map
Suffolk County, New York

Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Regional_Map.mxd



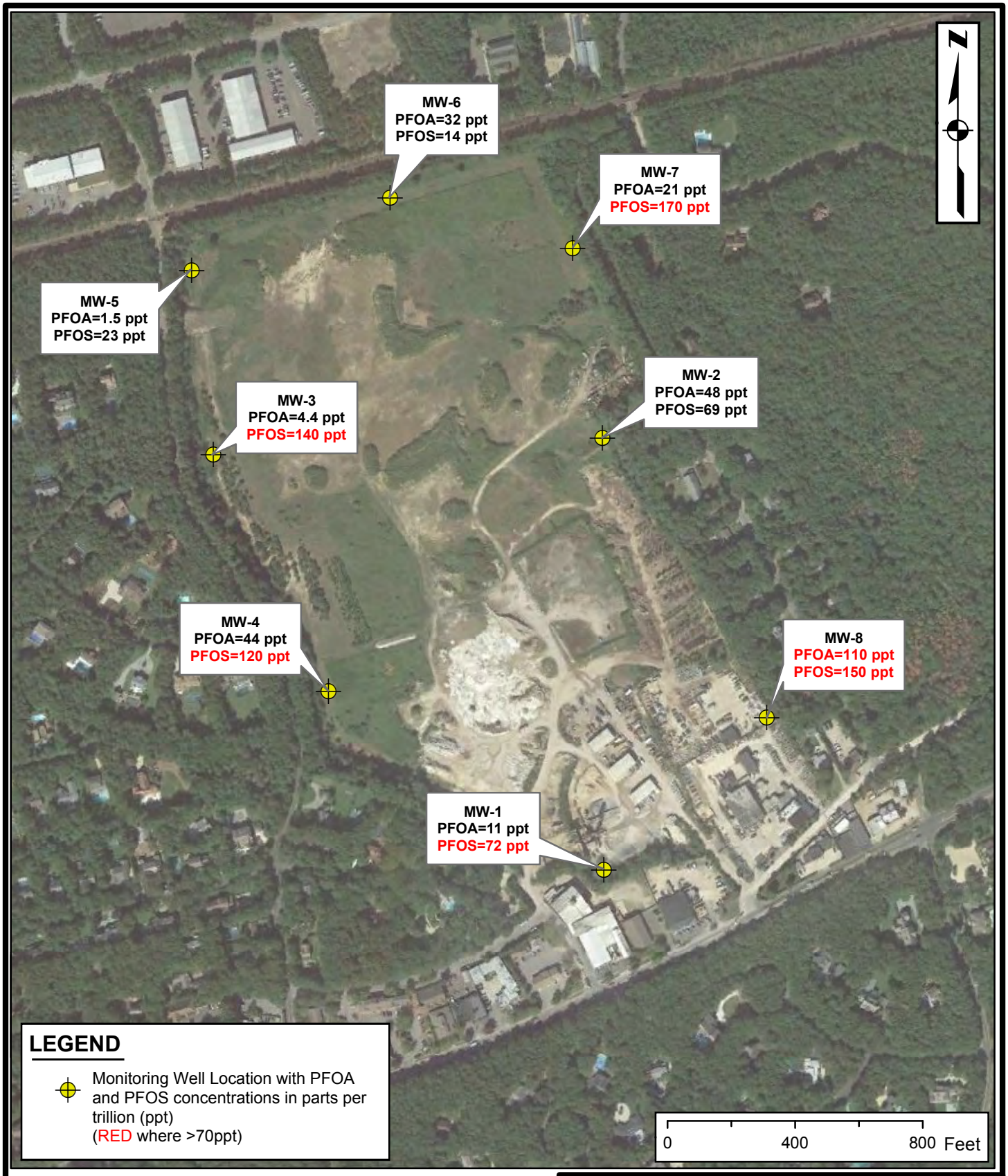
Notes:
-Basemap: Google Earth Imagery, October 1, 2017, accessed September 25, 2018
-Monitoring well and staff gauge are located by Fox Land Surveying (September 4, 2018)

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 8
PFAS Concentrations 6/26/2018

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Maps used in the Hydrogeologic Report\GW_Fluoro_compounds_Quality_2018_06_26.mxd
Date Saved: 10/23/2018 3:43:22 PM



Notes:
-Basemap: Google Earth Imagery, October 1, 2017, accessed September 25, 2018
-Monitoring well and staff gauge are located by Fox Land Surveying (September 4, 2018)

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 9
PFOA and PFOS Concentrations 6/26/2018

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Maps used in the Hydrogeologic Report\GW_PFOA_Quality_2018_06_26.mxd
Date Saved: 10/23/2018 3:45:52 PM

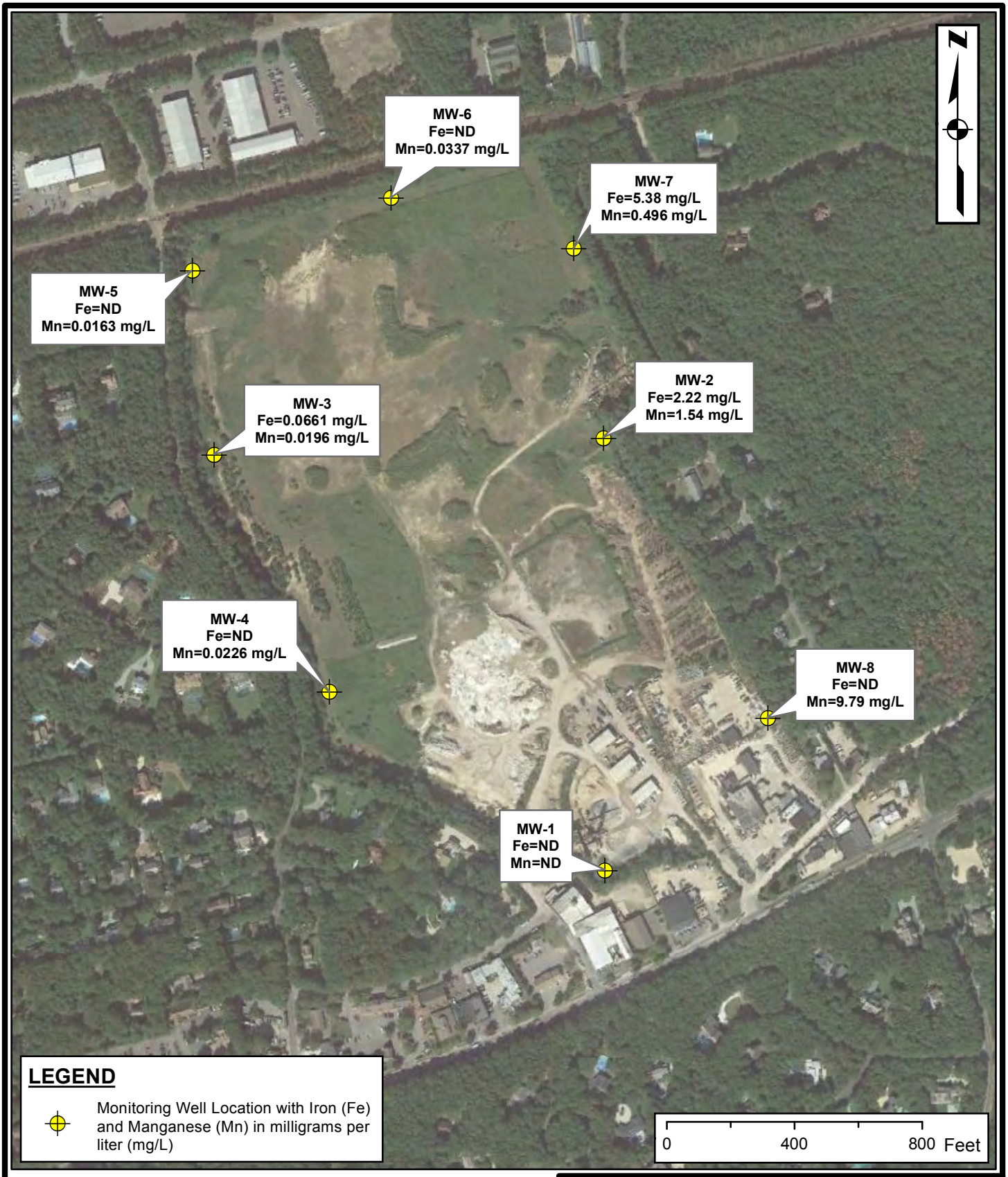
Notes:
-Basemap: Google Earth Imagery October 1, 2017, accessed September 25, 2018
-Old Monitoring wells (OMW) located approximately using map by Fox Land Surveying, September 24, 2001
-Samples taken 12/21/1999

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 10
Historic Wells
With Iron and Manganese
Concentrations on 12/21/1999

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\GWC_historic_wellsFEMN_ANNO1999.mxd
Date Saved: 10/22/2018 2:43:50 PM



Notes:
-Basemap: Google Earth Imagery, October 1, 2017, accessed September 25, 2018
-Monitoring well and staff gauge are located by Fox Land Surveying (September 4, 2018)
-ND = Non Detect

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE 11

Iron and Manganese Concentrations 6/26/2018

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Maps used in the Hydrogeologic Report\GW_FE_MN_Quality_2018_06_26.mxd
Date Saved: 10/22/2018 2:46:40 PM

APPENDICES

APPENDIX A

Geologic Logs
MW-1 through MW-7

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: MW-1

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, NY

Drilling Contractor/Personnel: Clearwater Drilling / Bruce, Edgar, and Augusto

Geologist/Hydrogeologist: Steve Trader Start/ Finish Date: 6/7/2018

Drilling Equip/Method: CME 75 / Hollow Stem Auger Size/Type of Bit:6.25" OD, hollow stem auger

Sampling Method: split spoon Well Installed? Yes

Elevation/Ground Surface: 12.09 (ft rmsl)

Depth to Ground Water from Ground Surface (Date): 3.63 (ft rmsl) (6/7/2018)

REMARKS:

Depth (Ft)	Sample No.	Blows Per 6 In.	Recovery (ft)	DESCRIPTION	REMARKS
2					Hollow Stem Auger to 5' with no sampling
4					At ~3', very moist to wet cuttings
6	SS1	8 / 6 / 9 / 8	0.2	Light brown fine to coarse sand; wet, loose	Depth to water in augers after collecting split spoon SS1 is ~4' from grade
8					
10	SS2	9 / 13 / 12 / 16	0.8	Light brown fine to coarse sand; little (+) fine to coarse gravel; gravel is rounded, and of different lithologies and colors 12'	Pounded through quartz cobble in SS2
12				End of Boring	Well constructed with PVC screen 12' - 2'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
ALPHA GEOSCIENCE Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: MW-2

Page 1 of 1

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, NY

Drilling Contractor/Personnel: Clearwater Drilling / Bruce, Edgar, and Augusto

Geologist/Hydrogeologist: Steve Trader Start/ Finish Date: 6/7/2018

Drilling Equip/Method: CME 75 / Hollow Stem Auger Size/Type of Bit: 6.25" OD, hollow stem auger

Sampling Method: split spoon Well Installed? Yes

Elevation/Ground Surface: 16.08 (ft rmsl)

Depth to Ground Water from Ground Surface (Date): 6.47 (ft rmsl) (6/7/2018)

REMARKS:

Depth (Ft)	Sample No.	Blows Per 6 In.	Recovery (ft)	DESCRIPTION	REMARKS
2				Brown silt; dry; trace fine sand; (from auger flights) trace fine gravel	Hollow stem auger to 5' with no sampling
4				Change to light orange brown fine to coarse sand at ~4'	
6	SS1	4 / 8 / 10 / 12	1.4	brown orange brown Light orange brown, fine (+) to coarse (-) sand, little fine to medium gravel; dry; loose; gravel is subrounded and varying lithologies, but mostly quartz; becoming wet ~7.8'	
8					
10	SS2	12 / 15 / 18 / 25	2.0		Depth to water 7' from grade with augers to 10' and after spoon to 12'
12				Change to coarse (+) to fine (-) sand; trace fine gravel; loose; saturated	
14				15'	
				End of Boring	Well constructed with PVC screen 15' - 5'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: MW-3

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, NY

Drilling Contractor/Personnel: Clearwater Drilling / Bruce, Edgar, and Augusto

Geologist/Hydrogeologist: Steve Trader Start/ Finish Date: 6/7/2018

Drilling Equip/Method: CME 75 / Hollow Stem Auger Size/Type of Bit: 6.25" OD, hollow stem auger

Sampling Method: split spoon Well Installed? Yes

Elevation/Ground Surface: 16.35 (ft rsml)

Depth to Ground Water from Ground Surface (Date): 5.73 (ft rsml) (6/7/2018)

REMARKS:

Depth (Ft)	Sample No.	Blows Per 6 In.	Recovery (ft)	DESCRIPTION	REMARKS
2				Brown silt, little fine sand; dry (cuttings)	Hollow stem auger to 5' with no sampling
4					
				5.2'	
6	SS1	6 / 9 / 11 / 8	1.4	Light orange brown, fine (+) to coarse (-) sand; loose; moist; possibly getting wet at 7'	SS1 dry to moist
8					
					SS2 wet
10	SS2	12 / 15 / 18 / 25	2.0	Similar to SS1, but more coarse sand; little fine to medium gravel; rounded; loose; saturated	Depth to water = 4.2' from grade, with 10' of augers in hole and after SS2
				12'	
12				End of Boring	Well constructed with PVC screen 12' - 2'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: MW-4

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, NY

Drilling Contractor/Personnel: Clearwater Drilling / Bruce, Edgar, and Augusto

Geologist/Hydrogeologist: Steve Trader Start/ Finish Date: 6/7/2018

Drilling Equip/Method: CME 75 / Hollow Stem Auger Size/Type of Bit: 6.25" OD, hollow stem auger

Sampling Method: split spoon Well Installed? Yes

Elevation/Ground Surface: 15.63 (ft rmsl)

Depth to Ground Water from Ground Surface (Date): 5.72 (ft rsml) (6/7/2018)

REMARKS:

Depth (Ft)	Sample No.	Blows Per 6 In.	Recovery (ft)	DESCRIPTION	REMARKS
2					Hollow stem auger to 5' with no sampling
4					
6	SS1	4 4 3 6	1.6	Light orange brown, fine (+) to coarse (-) sand; moist; loose	
8					
10	SS2	4 5 8 9	2.0	Light brown fine to coarse sand, loose, saturated; coarser toward base with trace fine to medium gravel	Depth to water = 6' from grade, with augers at 10' TD after SS2
12					
14				14' End of Boring	Well constructed with PVC screen 14' - 4'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: MW-5

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, NY

Drilling Contractor/Personnel: Clearwater Drilling / Bruce, Edgar, and Augusto

Geologist/Hydrogeologist: Steve Trader Start/ Finish Date: 6/8/2018

Drilling Equip/Method: CME 75 / Hollow Stem Auger Size/Type of Bit: 6.25" OD, hollow stem auger

Sampling Method: split spoon Well Installed? Yes

Elevation/Ground Surface: 19.35 (ft rmsl)

Depth to Ground Water from Ground Surface (Date): 8.56 (ft rmsl) (6/8/2018)

REMARKS:

Depth (Ft)	Sample No.	Blows Per 6 In.	Recovery (ft)	DESCRIPTION	REMARKS
2				Brown fine (+) to coarse sand, trace (+) subrounded to rounded fine gravel; moist; loose; becoming light orange brown ~ 5-6'	Hollow stem auger to 5' with no sampling
4					
6	SS1	6 / 8 / 12 / 15	1.5		SS1 Moist
8					
10	SS2	NM / NM / NM / NM	1.3		SS2 Moist Checked Depth to water with meter and wet sand at ~9' bgs
12					
14					* Drillers had to add water to keep material out of augers while drilling 10 - 15'
16	SS3	6 / 8 / 10 / 6	1.8	Light brown fine to coarse (+) sand, little fine gravel, wet*, loose 17'	
18				End of Boring	Well constructed with PVC screen 17' - 7'.

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: MW-6

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, NY

Drilling Contractor/Personnel: Clearwater Drilling / Bruce, Edgar, and Augusto

Geologist/Hydrogeologist: Steve Trader Start/ Finish Date: 6/8/2018

Drilling Equip/Method: CME 75 / Hollow Stem Auger Size/Type of Bit: 6.25" OD, hollow stem auger

Sampling Method: split spoon Well Installed? Yes

Elevation/Ground Surface: 16.07 (ft rmsl)

Depth to Ground Water from Ground Surface (Date): 5.57 (ft rmsl) (6/8/2018)

REMARKS:

Depth (Ft)	Sample No.	Blows Per 6 In.	Recovery (ft)	DESCRIPTION	REMARKS
2				Orange brown fine (+) to coarse sand (cuttings)	Hollow stem auger to 5' with no sampling
4					
6	SS1	6 / 8 / 11 / 11	1.2	Light orange brown fine to coarse sand, moist, loose	
8					
10	SS2	3 / 6 / 8 / 10	1.8	Light orange brown fine to coarse (+) sand, saturated, loose	Depth to water = 6.8' from grade within augers after SS2 (nearby old well Depth to water = 5' bgs)
12					
14				14'	
				End of Boring	Well constructed with PVC screen 14' - 4'.
16					
18					

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: MW-7

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, NY

Drilling Contractor/Personnel: Clearwater Drilling / Bruce, Edgar, and Augusto

Geologist/Hydrogeologist: Steve Trader Start/ Finish Date: 6/8/2018

Drilling Equip/Method: CME 75 / Hollow Stem Auger Size/Type of Bit: 6.25" OD, hollow stem auger

Sampling Method: split spoon Well Installed? Yes

Elevation/Ground Surface: 15.28 (ft rmsl)

Depth to Ground Water from Ground Surface (Date): 5.37 (ft rmsl) (6/8/2018)

REMARKS:

Depth (Ft)	Sample No.	Blows Per 6 In.	Recovery (ft)	DESCRIPTION	REMARKS
2					Hollow stem auger to 5' with no sampling
4					Water at ~ 4.5 to 5'
6	SS1	6 / 8 / 10 / 12	1.7	Light brown to light orange brown fine (+) to coarse sand, trace fine gravel; moist, to wet at tip of spoon; loose	
8					
10	SS2	7 / 8 / 9 / 9	1.0		Depth to water = 6' in augers after SS2
12				Fine to coarse (+) sand; little (+) fine medium gravel, rounded; loose, saturated	
14				14' End of Boring	Well constructed with PVC screen 14' - 4'.
16					
18					

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

APPENDIX B

Monitoring Well Completion Logs
MW-1 through MW-7

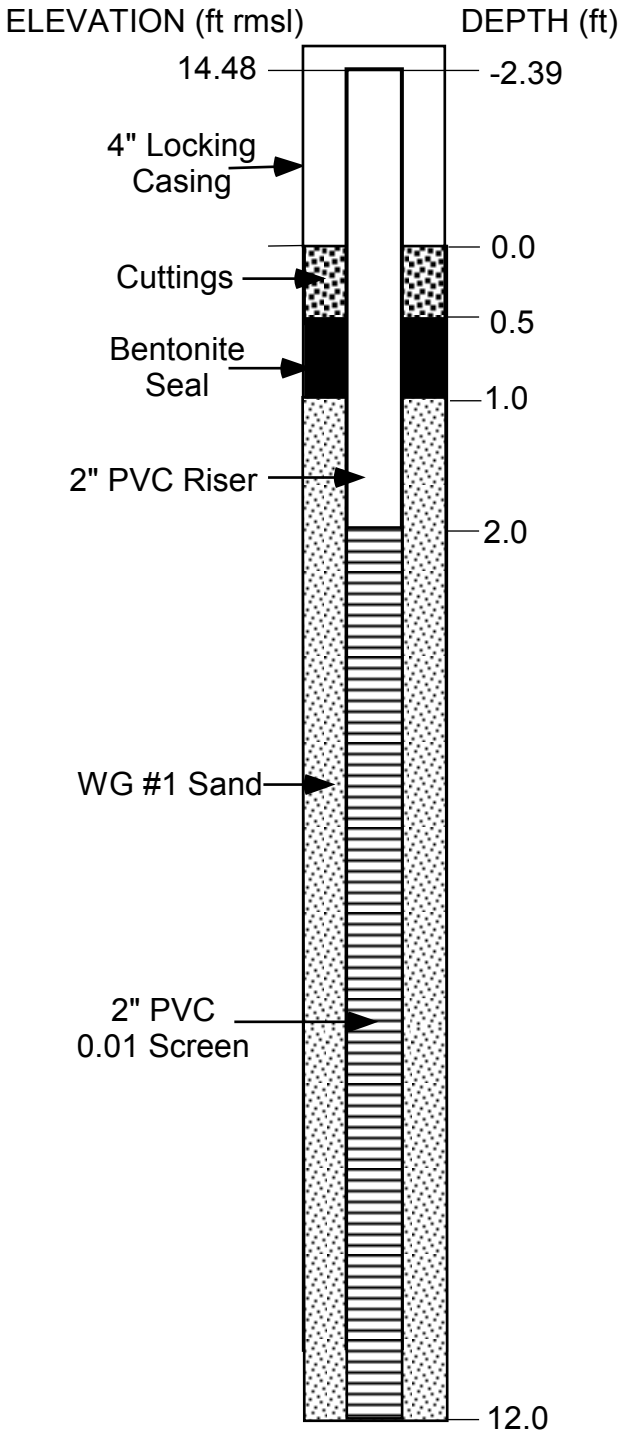
MONITORING WELL COMPLETION LOG

679 Plank Road
Clifton Park, New York
(518) 348-6995

www.alphageoscience.com

Well	MW-1
Project	Wainscott Commercial Center
Project No.	17115
Date Drilled	6/7/2018
Developed	6/7/2018

WELL CONSTRUCTION DETAILS



NOT TO SCALE

INSPECTION NOTES

Geologist Steve Trader
Drilling Contractor Clearwater Drilling
Type of Well Monitoring Well
Static Water Level 6.02' Date 6/7/2018
Measuring Point Top of PVC
Total Well Depth 12' below grade

Riser Pipe
Material PVC Diameter 2"
Length 2' + 2.39' stickup Joint Type flush threaded

Screen
Material PVC Diameter 2"
Slot Size 0.01 Length 10'
Stratigraphic Unit Screened sand and gravel

Packing
Sand x Gravel Natural
Amount 3.5 50-lb bags Interval 12' - 1.0'

Seal
Type bentonite tablets Interval 1.0' - 0.5'

Locking Casing Yes
Diameter 4"

Notes:

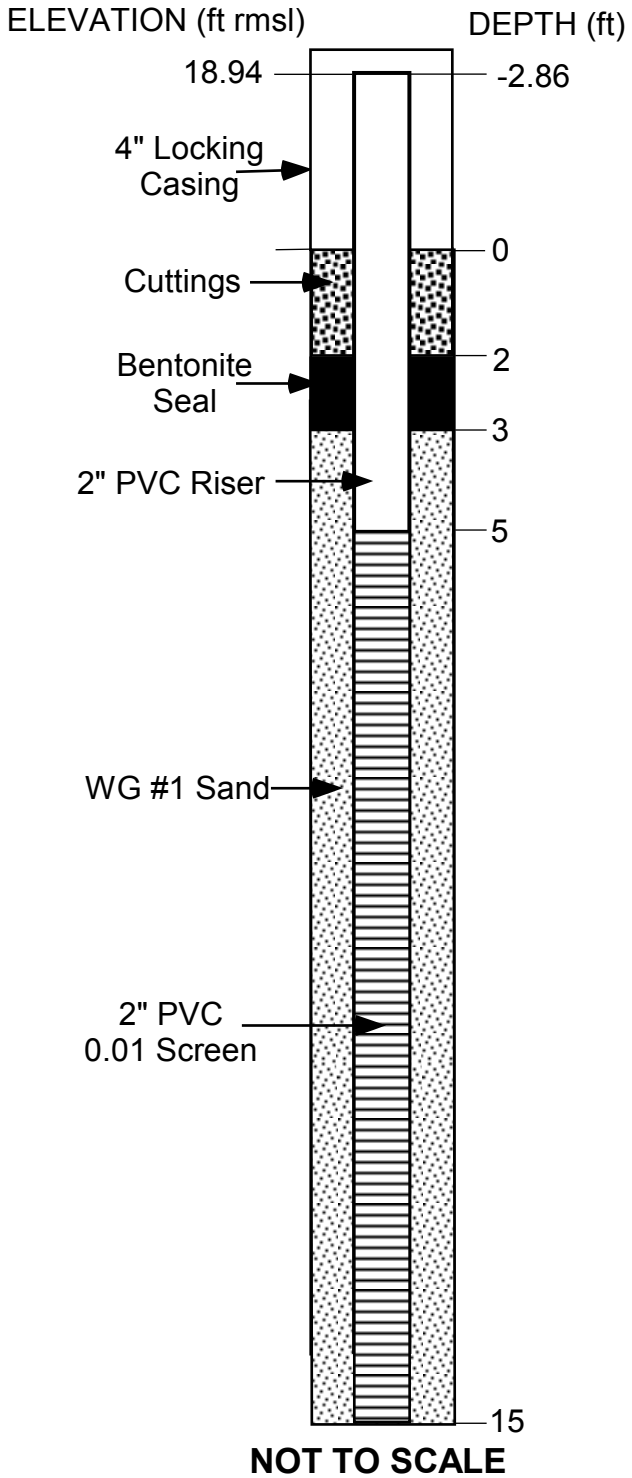
MONITORING WELL COMPLETION LOG

679 Plank Road
Clifton Park, New York
(518) 348-6995

www.alphageoscience.com

Well MW-2
Project Wainscott Commercial Center
Project No. 17115
Date Drilled 6/7/2018
Developed 6/7/2018

WELL CONSTRUCTION DETAILS



NOT TO SCALE

INSPECTION NOTES

Geologist Steve Trader
Drilling Contractor Clearwater Drilling
Type of Well Monitoring Well
Static Water Level 9.33' Date 6/7/2018
Measuring Point Top of PVC
Total Well Depth 15' below grade

Riser Pipe
Material PVC Diameter 2"
Length 5' + 2.86' stickup Joint Type flush threaded

Screen
Material PVC Diameter 2"
Slot Size 0.01 Length 10'
Stratigraphic Unit Screened sand and gravel

Packing
Sand x Gravel Natural
Amount 4 50-lb bags Interval 15' - 3'

Seal
Type bentonite tablets Interval 3' - 2'

Locking Casing Yes
Diameter 4"

Notes:

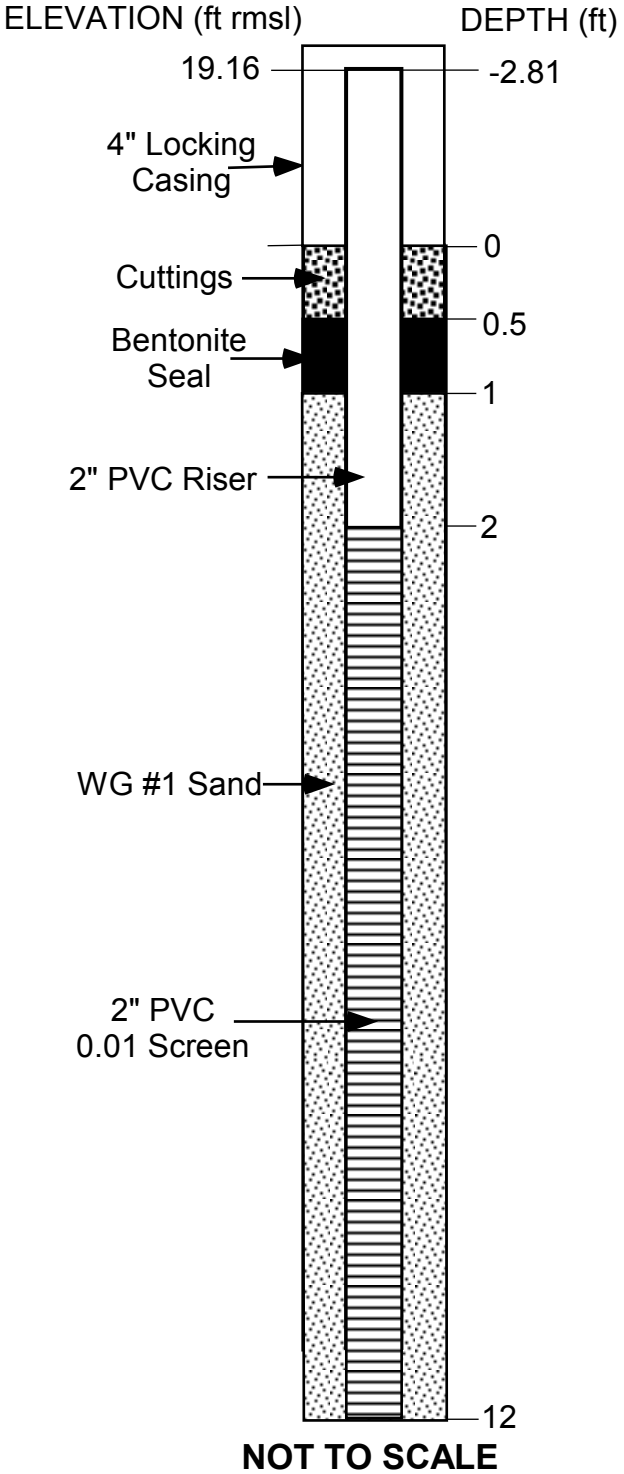
MONITORING WELL COMPLETION LOG

679 Plank Road
Clifton Park, New York
(518) 348-6995

www.alphageoscience.com

Well	MW-3
Project	Wainscott Commercial Center
Project No.	17115
Date Drilled	6/7/2018
Developed	6/7/2018

WELL CONSTRUCTION DETAILS



NOT TO SCALE

INSPECTION NOTES

Geologist Steve Trader
Drilling Contractor Clearwater Drilling
Type of Well Monitoring Well
Static Water Level 8.54' Date 6/7/2018
Measuring Point Top of PVC
Total Well Depth 12' below grade

Riser Pipe
Material PVC Diameter 2"
Length 2' + 2.81' stickup Joint Type flush threaded

Screen
Material PVC Diameter 2"
Slot Size 0.01 Length 10'
Stratigraphic Unit Screened sand and gravel

Packing
Sand x Gravel Natural
Amount 4 50-lb bags Interval 12' - 1'

Seal
Type bentonite tablets Interval 1.0' - 0.5'

Locking Casing Yes
Diameter 4"

Notes:

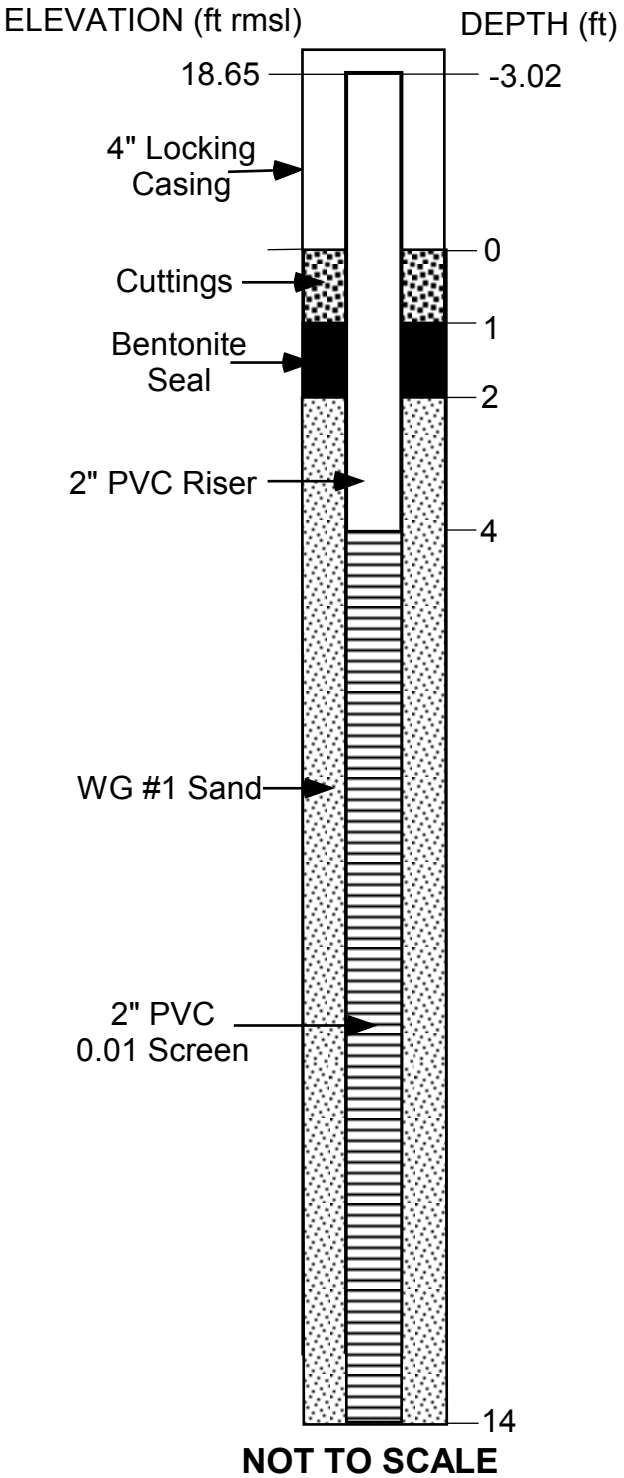
MONITORING WELL COMPLETION LOG

679 Plank Road
Clifton Park, New York
(518) 348-6995

www.alphageoscience.com

Well MW-4
Project Wainscott Commercial Center
Project No. 17115
Date Drilled 6/7/2018
Developed 6/7/2018

WELL CONSTRUCTION DETAILS



NOT TO SCALE

INSPECTION NOTES

Geologist Steve Trader
Drilling Contractor Clearwater Drilling
Type of Well Monitoring Well
Static Water Level 8.74' Date 6/7/2018
Measuring Point Top of PVC
Total Well Depth 14' below grade

Riser Pipe
Material PVC Diameter 2"
Length 2' + 3.02' stickup Joint Type flush threaded

Screen
Material PVC Diameter 2"
Slot Size 0.01 Length 10'
Stratigraphic Unit Screened sand and gravel

Packing
Sand x Gravel Natural
Amount 6 50-lb bags Interval 14' - 2'

Seal
Type bentonite tablets Interval 2' - 1'

Locking Casing Yes
Diameter 4"

Notes: Stickup not measured. (surveyed at a later date)

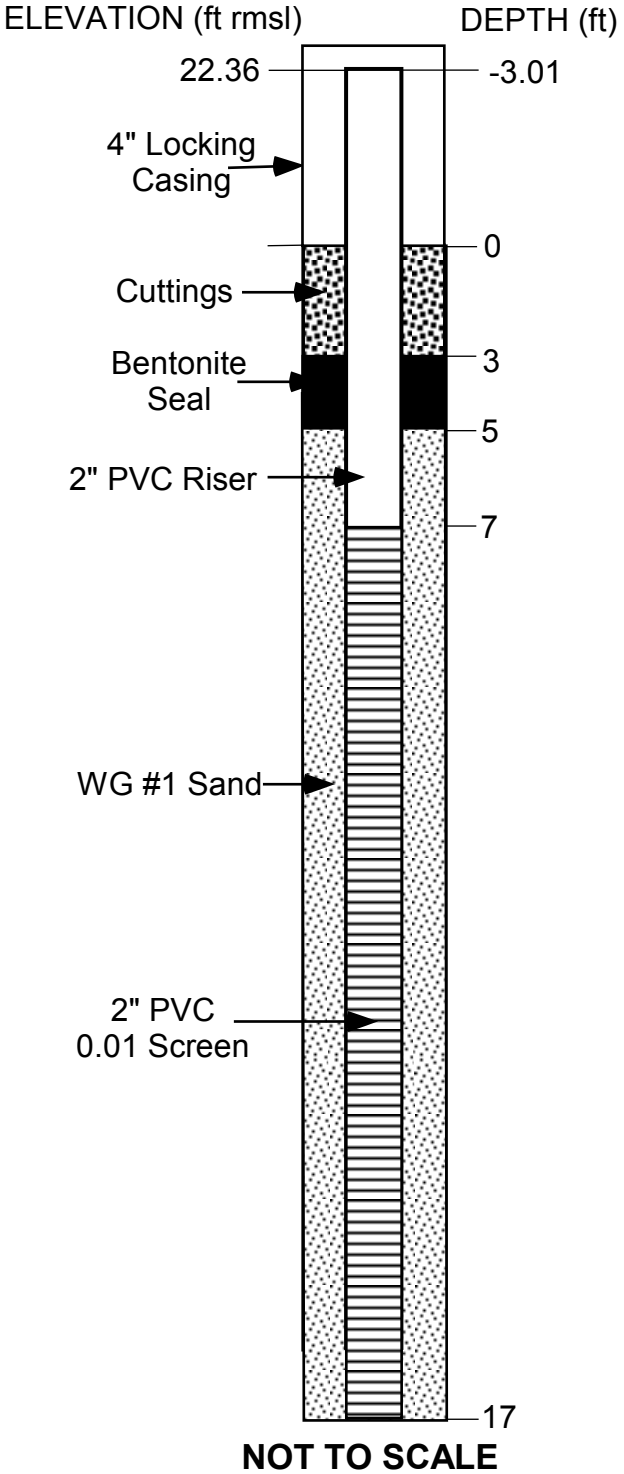
MONITORING WELL COMPLETION LOG

679 Plank Road
Clifton Park, New York
(518) 348-6995

www.alphageoscience.com

Well	MW-5
Project	Wainscott Commercial Center
Project No.	17115
Date Drilled	6/8/2018
Developed	6/8/2018

WELL CONSTRUCTION DETAILS



NOT TO SCALE

INSPECTION NOTES

Geologist Steve Trader
Drilling Contractor Clearwater Drilling
Type of Well Monitoring Well
Static Water Level 11.57' Date 6/8/2018
Measuring Point Top of PVC
Total Well Depth 17' below grade

Riser Pipe
Material PVC Diameter 2"
Length 7' + 3.01' stickup Joint Type flush threaded

Screen
Material PVC Diameter 2"
Slot Size 0.01 Length 10'
Stratigraphic Unit Screened sand and gravel

Packing
Sand x Gravel _____ Natural _____
Amount 6 50-lb bags Interval 17' - 5'

Seal
Type bentonite tablets Interval 5' - 3'

Locking Casing Yes
Diameter 4"

Notes:

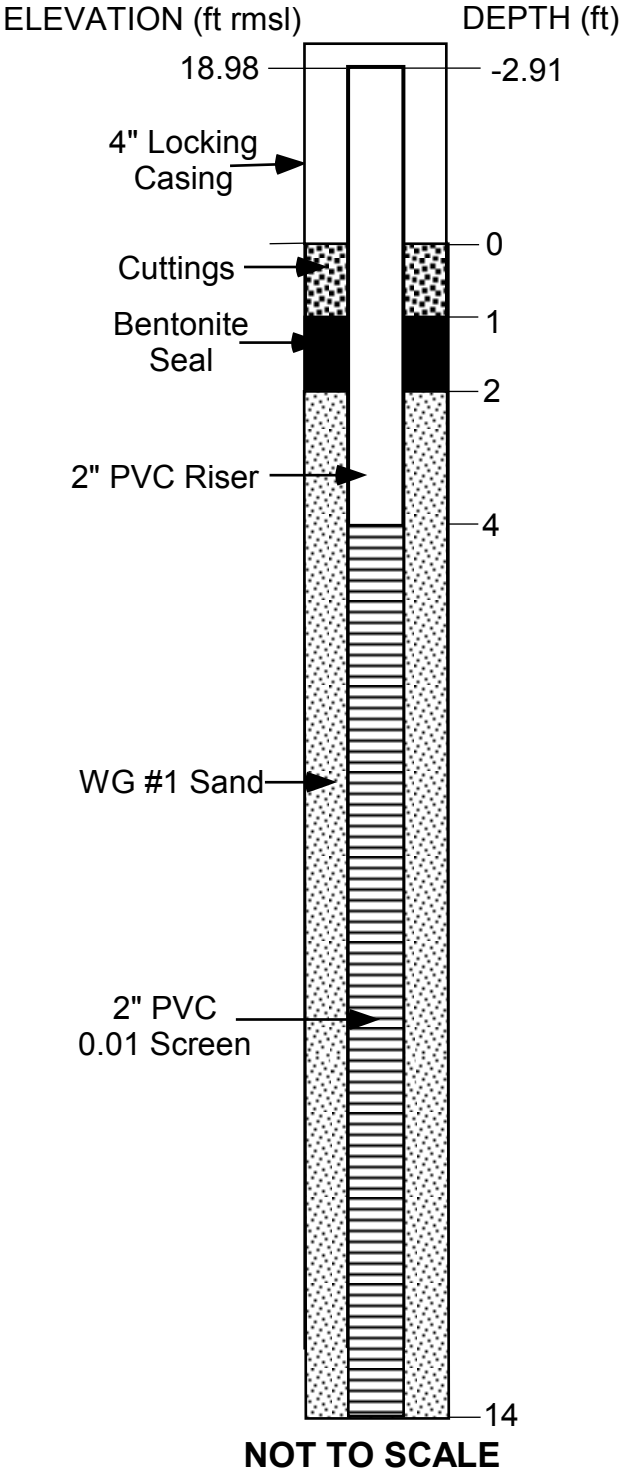
MONITORING WELL COMPLETION LOG

679 Plank Road
Clifton Park, New York
(518) 348-6995

www.alphageoscience.com

Well	MW-6
Project	Wainscott Commercial Center
Project No.	17115
Date Drilled	6/8/2018
Developed	6/8/2018

WELL CONSTRUCTION DETAILS



NOT TO SCALE

INSPECTION NOTES

Geologist Steve Trader
Drilling Contractor Clearwater Drilling
Type of Well Monitoring Well
Static Water Level 8.48' Date 6/8/2018
Measuring Point Top of PVC
Total Well Depth 14' below grade

Riser Pipe
Material PVC Diameter 2"
Length 4' + 2.91' stickup Joint Type flush threaded

Screen
Material PVC Diameter 2"
Slot Size 0.01 Length 10'
Stratigraphic Unit Screened sand and gravel

Packing
Sand x Gravel Natural
Amount 5 50-lb bags Interval 14' - 2'

Seal
Type bentonite tablets Interval 2' - 1'

Locking Casing Yes
Diameter 4"

Notes:

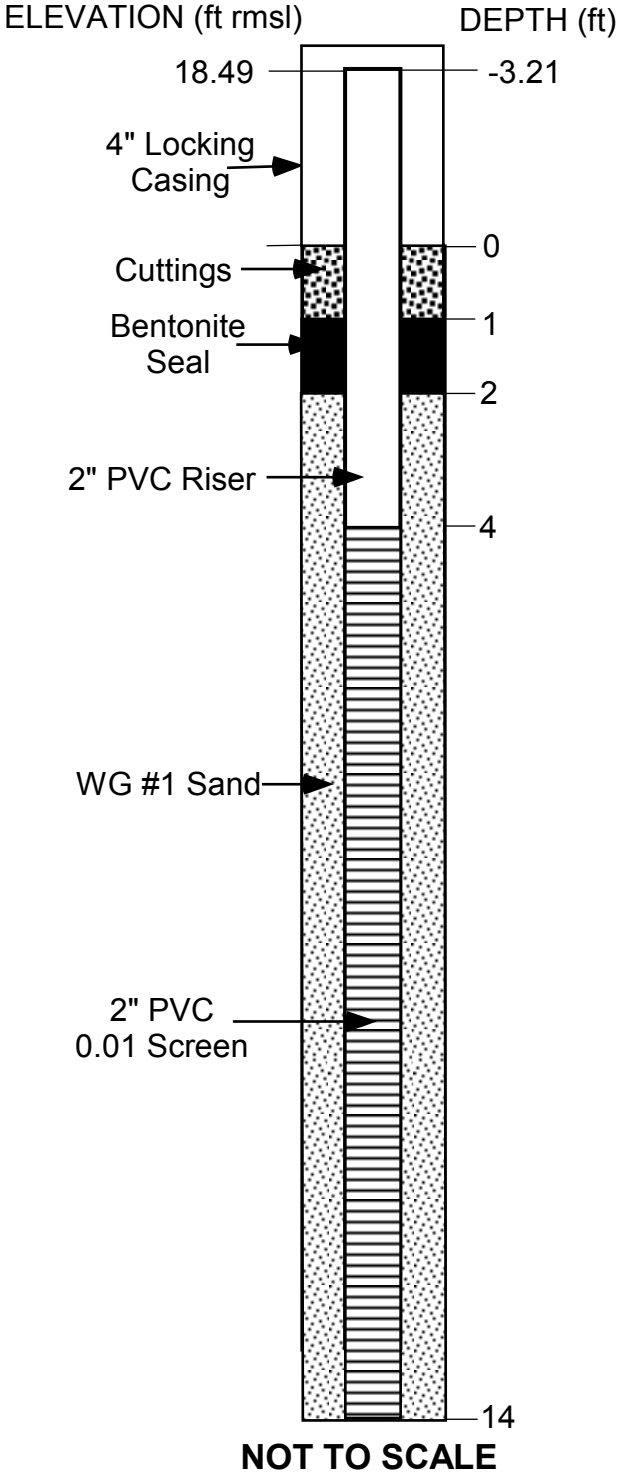
MONITORING WELL COMPLETION LOG

679 Plank Road
Clifton Park, New York
(518) 348-6995

www.alphageoscience.com

Well	MW-7
Project	Wainscott Commercial Center
Project No.	17115
Date Drilled	6/8/2018
Developed	6/8/2018

WELL CONSTRUCTION DETAILS



NOT TO SCALE

INSPECTION NOTES

Geologist Steve Trader
Drilling Contractor Clearwater Drilling
Type of Well Monitoring Well
Static Water Level 8.58' Date 6/8/2018
Measuring Point Top of PVC
Total Well Depth 14' below grade

Riser Pipe
Material PVC Diameter 2"
Length 4' + 3.21' stickup Joint Type flush threaded

Screen
Material PVC Diameter 2"
Slot Size 0.01 Length 10'
Stratigraphic Unit Screened sand and gravel

Packing
Sand x Gravel Natural
Amount 5 50-lb bags Interval 14' - 2'

Seal
Type bentonite tablets Interval 2' - 1'

Locking Casing Yes
Diameter 4"

Notes:

APPENDIX C

USGS Water Elevation Data for Georgica Pond

National Water Information System: Web Interface

USGS Water Resources

Data Category: Surface Water ▼ Geographic Area: New York ▼ GO

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Click to hide state-specific text
ALL DATA ARE EASTERN STANDARD TIME

USGS 01304705 GEORGICA POND NEAR APAQUOQUE NY

PROVISIONAL DATA SUBJECT TO REVISION

Available data for this site Time-series: Daily data ▼ GO

Click to hidestation-specific text

Funding for this site is provided by:

Suffolk County Water Authority

Village of East Hampton

Friends of Georgica Pond Foundation

USGS - Cooperative Matching Funds

LOCATION.-- Lat 40°56'00", long 72°13'30" referenced to North American Datum of 1927, Suffolk County, NY, Hydrologic Unit 02030202, on southeastern shore at Village of East Hampton preserve on West End Road, near Apaquogue.
PERIOD OF RECORD.-- June 2003 to October 2008, July 2009 to current year.
GAGE.-- Water-stage recorder. Datum of gage is NGVD of 1929.
REMARKS.-- Records good. During spring and fall, pond is opened to Atlantic Ocean to regulate stage for fisheries management, flood control, and sanitary improvement. Satellite elevation telemeter at station.
EXTREMES FOR PERIOD OF RECORD.-- Maximum elevation, 8.32 ft, Mar. 31, 2010; minimum elevation, 1.89 ft, May 20, 2004.

Peak Flow and Stage Information

Station image

This station managed by the NY Water Science Center Coram.

Available Parameters	Period of Record
All 1 Available Parameters for this site	
62614 Elevation, lake/res,(Mean)	2003-06-04 2018-09-24

Output format

- ○ Graph
- ○ Graph w/ stats
- ○ Graph w/ (up to 3) parms
- ◉ Table
- ○ Tab-separated

Days (115) Summary of all available data for this site

Instantaneous-data availability statement

GO

-- or --

Begin date
2018-06-01

End date
2018-09-24

Daily Mean Lake or reservoir water surface elevation above NGVD 1929, feet

DATE	Jun 2018	Jul 2018	Aug 2018	Sep 2018
1	5.53P	5.82P	5.63P	5.51P
2	5.65P	5.79P	5.64P	5.50P
3	5.74P	5.76P	5.63P	5.49P
4	5.88P	5.73P	5.69P	5.49P
5	5.88P	5.71P	5.70P	5.49P
6	5.88P	5.72P	5.67P	5.50P
7	5.88P	5.68P	5.64P	5.51P
8	5.85P	5.64P	5.62P	5.52P
9	5.80P	5.62P	5.61P	5.56P
10	5.77P	5.61P	5.60P	5.72P
11	5.73P	5.62P	5.78P	5.84P

12	5.70[P]	5.70[P]	5.75[P]	5.81[P]
13	5.74[P]	5.77[P]	5.78[P]	5.81[P]
14	5.77[P]	5.75[P]	5.82[P]	5.91[P]
15	5.77[P]	5.72[P]	5.75[P]	5.91[P]
16	5.75[P]	5.69[P]	5.70[P]	5.82[P]
17	5.72[P]	5.71[P]	5.65[P]	5.78[P]
18	5.70[P]	5.74[P]	5.81[P]	5.81[P]
19	5.71[P]	5.67[P]	5.92[P]	5.83[P]
20	5.67[P]	5.63[P]	5.80[P]	5.75[P]
21	5.74[P]	5.59[P]	5.75[P]	5.71[P]
22	5.70[P]	5.79[P]	5.76[P]	5.68[P]
23	5.79[P]	5.74[P]	5.76[P]	5.65[P]
24	5.79[P]	5.72[P]	5.73[P]	5.63[P]
25	5.86[P]	5.71[P]	5.68[P]	
26	5.81[P]	5.88[P]	5.65[P]	
27	5.78[P]	5.80[P]	5.64[P]	
28	5.78[P]	5.76[P]	5.62[P]	
29	5.81[P]	5.73[P]	5.60[P]	
30	5.84[P]	5.70[P]	5.57[P]	
31		5.66[P]	5.54[P]	
COUNT	30	31	31	24
MAX	5.88	5.88	5.92	5.91
MIN	5.53	5.59	5.54	5.49

Explanation

P	Provisional data subject to revision.

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: USGS Surface-Water Daily Data for New York
URL: https://waterdata.usgs.gov/ny/nwis/dv?

Page Contact Information: New York Water Data Support Team
Page Last Modified: 2018-09-25 10:56:10 EDT
0.96 0.88 caww01

APPENDIX D

Topographic and Well Survey Map of
Wainscott Commercial Center
by Fox Land Surveying
September 14, 2018

LONG ISLAND RAIL ROAD

N75°46'11"E 782.00'

312.67'

N06°43'48"W

BROADWOOD COURT

174.49'

N01°47'11"E

354.18'

186.00'

N09°48'07"W

NORTHWEST ROAD

N32°12'41"W 438.89'

SANDOWN COURT

N26°51'27"W 187.70'

288.14'

WAINSCOTT

N10°12'27"W

N10°17'52"E 44.56'

GEORGICA DRIVE L=826.17'

R=1221.29'

S82°00'50"W 137.99'

S82°00'50"W 111.38'

N61°58'10"W 130.46'

now or formerly Home Sweet Home Moving & Storage

now or formerly Di Gate Ready-mix Corporation

now or formerly Stanley L. Redug

now or formerly Patrick D. Brown & Susan L. Brown

now or formerly Ronald Stinson & Cynthia Stinson

Subdivision Map "Midhampton" Suff. County File No. 1625 Map Section "I"

DRIVE

MONTAUK HIGHWAY

N62°34'50"E

now or formerly Home Sweet Home Moving & Storage

now or formerly Bruce H. Bromberg

now or formerly John G. Hill

now or formerly Di Gate Ready-mix Corporation

S82°00'50"W 135.98'

S66°54'21"W 104.00'

S65°48'50"W 120.00'

S61°08'50"W

N32°55'02"W 135.00'

N32°55'02"W 152.88'

FENCE LIES

S44°52'30"W 414.09'

OLD MONTAUK HIGHWAY

N61°58'10"W 128.43'

MW#1 TOP EL=14.48 GROUND=12.09

S66°54'21"W 123.78'

25' WIDE EASEMENT

S65°48'50"W 102.74'

S61°08'50"W 142.27'

762.94'

337.88'

N44°52'30"E 172.48'

MW#5 TOP EL=22.36 GROUND=19.35

MW#6 TOP EL=18.98 GROUND=16.07

OLD WELL TOP EL=18.06 GROUND=15.48

N30°17'16"W 277.59'

970.93'

S63°13'16"W

1026.22'

S63°37'04"W

MW#3 TOP EL=19.16 GROUND=16.35

MW#4 TOP EL=18.65 GROUND=15.63

S27°04'24"E 185.00'

303.00'

488.00'

N57°01'38"E 219.00'

259.00'

635.14'

S62°16'40"W 184.23'

193.51'

435.00'

S29°06'45"E

435.00'

S57°24'06"W

S26°02'53"E

361.65'

S23°35'16"E

N66°51'22"E 456.00'

733.00'

1361.51'

MW#2 TOP EL=18.94 GROUND=16.08

MW#7 TOP EL=18.49 GROUND=15.28

OLD WELL TOP EL=23.27 GROUND=20.80

1464.44'

682.44'

L=369.72'

R=212.76'

S27°43'20"E

PRIVATE ROAD (HEDGES LANE)

HOLE ROAD

DANIELS

now or formerly Sand Land Corporation

now or formerly Sand Land Corporation

now or formerly John T. Renos & Deirdre L. Renos

now or formerly Sand Land Corporation

now or formerly Michael McGrath

now or formerly Sand Land Corporation

now or formerly Edward C. Kominski Charlot Kominski

now or formerly Deborah Quincy Egginton

now or formerly William T. Cullum

now or formerly Sand Land Corporation

now or formerly Pitt Ford Mercury Inc.

Survey for:

SAND LAND CORPORATION

"CI Zone"

At

Wainscott

Town of

East Hampton

Suffolk County, New York

S.C.T.M.: 0300–192.00–02.00–006.002, 006.003, 006.004, 006.005, 006.006, 006.007

100 0 100

SCALE: 1"=100'

NOTES:

1. TOTAL AREA = 70.5119 ACRES
2. ■ = MONUMENT FOUND, O = IRON ROD FOUND.
3. REFERENCE DEED; L 11812 CP 735
4. STRUCTURES NOT SHOWN HEREON.
5. TOPOGRAPHY SHOWN HEREON IS FROM PHOTOGRAPHIC METHODS PROVIDED BY GEOMAPS INTERNATIONAL INC. IN AUG. 2017.
6. ELEVATIONS SHOWN HEREON ARE REFERENCED TO N.A.V. DATUM 1988.

SEPT 14, 2018 LOCATE WELLS
OCT. 05, 2017 IND. TOPO
AUG. 09, 2007 IND. LOT LINES
MAY 21, 2003 LOCATED BUILDINGS & TRAILORS
SEPT. 24, 2001 FINAL SURVEY
MAR. 21, 2000 INDICATED PROP BLOCK PLANT
JULY 07, 1999 INDICATED WELLS

DATE: JUNE 21, 1999

JOB NO: 99–0071

CERTIFIED TO:
SAND LAND CORPORATION

DAVID H. FOX N.Y.S.L.S. #50234
FOX LAND SURVEYING
64 SUNSET AVENUE
WESTHAMPTON BEACH, N.Y. 11978
(631) 288–0022

DWG: 990071

APPENDIX E

NYSDEC and SCDHS Letters Regarding PFC Investigation in East Hampton

E.1.6.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau A
625 Broadway, 12th Floor, Albany, NY 12233-7015
P: (518) 402-9625 I F: (518) 402-9627

November 10, 2017

Mr. Larry Cantwell, Supervisor
Town of East Hampton
159 Pantiago Road
East Hampton, NY 11937

Re: Potential Hazardous Waste Disposal Site

Dear Mr. Cantwell:

As required by subdivision 27-1305(2)(a) of the Environmental Conservation Law (ECL, quoted below), the New York State Department of Environmental Conservation (DEC) must investigate all suspected or known inactive hazardous waste disposal sites. We have received information that certain perfluorinated compounds (PFCs) have been detected in nearby water supply wells, which may be attributable to current or past operations on your property. These compounds are known components of firefighting foams, and are listed as hazardous substances in New York State (6 NYCRR Part 597). This information leads us to suspect that hazardous waste may have been disposed of at the following location:

Site Name: East Hampton Airport
Site Address: 200 Daniels Hole Road, Wainscott, NY 11975
DEC Site No.: 152250
Tax Map Identifier(s): 18100-200-6000, 18000-100-8013, 18100-200-1000, 18100-200-3000, 19100-300-1001, 18100-300-1001, 18100-300-3000, 18100-300-2000, 18100-200-4000, 18100-200-2000, 19200-300-50000, 18100-200-5000, 19200-300-42001, 18100-500-1001

Therefore, this letter constitutes DEC's notification to you as the identified property owner that this property is considered a potential inactive hazardous waste disposal site. If DEC determines that hazardous waste has been disposed of on the property and that the hazardous waste poses a significant threat to public health or the environment, the property will be listed on the Registry of Inactive Hazardous Waste Disposal Sites (Registry).

If you have any information that may be relevant to our investigation and pending determination, please forward it to DEC as soon as possible. Such information includes the locations of firefighting foam storage, use, and training activities; and the brand names of all aqueous film forming foam (AFFF) handled at the site.

This letter also serves as DEC's notification to you of the need to carry out an investigation in accordance with DEC's technical requirements for a site characterization. In addition to carrying out the investigation (which will include installing and sampling on-site wells), there is a need to install point of entry treatment systems (POETs) or other alternate water supply (i.e., waterline extension) to address the contaminated water supply wells mentioned above. Also, bottled water must be provided until such time as that system or alternate supply is in place. We understand that, presently, the Town of East Hampton is providing bottled water to the affected residences.

Please contact me within 10 business days to discuss the necessary scope of the investigation and the installation of the POET systems or alternate water supply. Also, please have your attorney contact the DEC Project Attorney, Caryn Bower, to discuss entering into a legal agreement with DEC to carry out the necessary investigation.

Should you be unwilling or unable to conduct the needed study, if the site is determined to be an inactive hazardous waste disposal site and DEC incurs costs to investigate or remediate the site, DEC will seek to recover all such costs from any responsible person.

A brief summary of the information currently available about the site is enclosed for your reference. This information is also available on DEC's environmental remediation database, by using our "Environmental Site Remediation Database Search" tool at: http://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3

If you have any questions, please feel free to contact me at 518-402-9625 or eric.obrecht@dec.ny.gov. To discuss the legal agreement required for the investigation of the site, contact Caryn Bower at 518-402-9186.

Sincerely,

Eric K. Obrecht

Eric Obrecht, P.E.
Director, Remedial Bureau A
Division of Environmental Remediation

Enclosure

Ec w/o Enc.: S. Edwards
J. Moras
C. Bower

Environmental Conservation Law

Section 27-1305(2)(a)

"The department shall conduct investigations of the sites listed in the registry and shall investigate areas or sites which it has reason to believe should be included in the registry. The purpose of these investigations shall be to develop the information required by subdivision one of this section to be included in the registry."

COUNTY OF SUFFOLK

STEVEN BELLONE
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF HEALTH SERVICES

JAMES L. TOMARKEN, MD, MPH, MBA, MSW
COMMISSIONER

September 13, 2018

Barbara Deandra
PO Box 273
Wainscott NY 11975

Re: Private Request Number: PR18-0707
Site Location: 65 Wainscott Main Street, Wainscott

Date Sampled: 8/24/18
Survey #: SV0317

Dear Ms. Deandra:

The purpose of this letter is to provide you with analytical results from samples collected at the above site location. As of the date of this letter, we have received the analytical results for a group of parameters called perfluorinated compounds including perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). This analysis of your water supply indicates that, at the time of sampling, the PFOA concentration in the sample was 190.0 parts per trillion (ppt) and PFOS was not detected. These concentrations of PFOS and PFOA exceed the current health advisory level of 70.0 ppt established by the United States Environmental Protection Agency (EPA). Please see the enclosed EPA Fact Sheet and the Suffolk County Department of Health Services Frequently Asked Questions (FAQs) for more information on the health advisory.

Based on your results, we recommend taking action to limit exposure by using an alternative source of water for drinking, preparation of infant formula and food preparation. The Town of East Hampton has offered to provide bottled water to property owners in the Wainscott private well survey area until further notice. Please call (631) 324-4183 to make arrangements to receive bottled water.

More information on PFOS and PFOA can be found at Suffolk County website at www.suffolkcountyny.gov/health/pfcwaterinfo. If you have health related questions related to PFOA and PFOS, please call the New York State Department of Health at (518) 402-7860.

Should you have any general questions concerning your drinking water, feel free to contact Anthony Condos of this office at (631) 852-5810. Please have your Private Request Number available when making inquiries to this office concerning this water sample.

Sincerely,

Douglas J. Feldman, P.E.
Principal Public Health Engineer
Chief, Office of Water Resources

Enclosures
cc: Walter Parish, NYSDEC
Charlotte Bethoney, NYSDOH
Andrew Rapiejko, SCDHS
Jason R. Hime, P.E., SCDHS

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES - WATER ANALYSIS

Requestor Name: BARBARA DEANDRA
Location: 65 WAINSCOTT MAIN STREET, WAINSCOTT
Sample Location: HAND WELL
Treatment: NONE

Request No.: PR18-0707
Sample Date: 08/24/2018
Sanitarian: KRAKOWSKI
Field No.: 010-847-18-08-24

Survey #: SV0317

Notes: '<' symbol means "less than" indicating no detection. mg/L = milligrams per liter; ug/L = micrograms per liter. Alkalinity is reported as mg/L as CaCO3. '*' symbol means level found exceeds the maximum contaminant level (MCL), or action level for lead and copper. Moderately restricted sodium diet should not exceed 270 mg/L. Severely restricted should not exceed 20 mg/L. The MCL for nickel is a proposed limit. Any MCL's not shown below have not been established.

		Result	MCL				Result	MCL	
===== Results for Sample Group: PERFLUORINATED COMPOUNDS analyzed by Test America Sacramento =====									
PFBS (Perfluorobutanesulfonic Acid).....	<	2.	50000	ng/L	PFOA (Perfluorooctanoic Acid).....	=	190.	50000	ng/L
PFHxs (Perfluorohexanesulfonic Acid)...	<	2.	50000	ng/L	PFOS (Perfluorooctanesulfonic Acid)...	<	2.	50000	ng/L
PFHpA (Perfluoroheptanoic Acid).....	=	41.	50000	ng/L	PFNA (Perfluorononanoic Acid).....	=	19.	50000	ng/L

Wainscott Chapel

APPENDIX F

Table 13 from SCDHS Report
dated January 22, 2016

Table 13 – Compost Study Metals Data Comparison to Metals in Suffolk County Private

Parameter	Investigation	# Samples Analyzed	# of Samples with Detection	% Samples with Detection	Maximum Concentration Detected	Overall Mean Concentration[#]	Mean Concentration of Detected^
Aluminum (ppb)	11 Study Sites*	230	208	90%	25,301	433	478
	Suffolk Shallow Private Wells**	1,196	655	55%	2,580	39	69
Antimony (ppb)	11 Study Sites	233	13	6%	2.1	0.22	0.66
	Suffolk Shallow Private Wells	1,196	1,183	1%	1.1	0.18	0.62
Arsenic (ppb)	11 Study Sites	233	37	16%	64	1.8	8.5
	Suffolk Shallow Private Wells	1,196	35	3%	7	0.55	2.1
Barium (ppb)	11 Study Sites	232	232	100%	872	92	92
	Suffolk Shallow Private Wells	1,196	1,166	97%	243	36	37
Beryllium (ppb)	11 Study Sites	233	26	11%	2.4	0.23	0.72
	Suffolk Shallow Private Wells	1,196	26	2%	1	0.15	0.5
Cadmium (ppb)	11 Study Sites	232	2	0.9%	3	0.52	2.5
	Suffolk Shallow Private Wells	1,196	9	0.8%	6	0.51	1.9
Calcium (ppm)	11 Study Sites	232	232	100%	140	17	17
	Suffolk Shallow Private Wells	1,197	1,187	99%	127	14	14
Chromium (ppb)	11 Study Sites	232	145	63%	38	2.2	3.2
	Suffolk Shallow Private Wells	1,196	216	18%	10	0.7	1.5
Cobalt (ppb)	11 Study Sites	232	100	43%	81	3.5	7.5
	Suffolk Shallow Private Wells	1,196	39	3%	25	0.62	4.1
Copper (ppb)	11 Study Sites	232	84	36%	46	2.3	5.3
	Suffolk Shallow Private Wells	1,196	1,160	97%	2,727	127	132
Germanium (ppb)	11 Study Sites	230	33	14%	3	0.6	1.4
	Suffolk Shallow Private Wells	1,195	8	0.67%	2	0.4	1.0
Iron (ppm)	10 VOWM Sites	232	88	38%	81	3.3	8.5
	Suffolk Shallow Private Wells	1,197	383	32%	33	0.3	0.9
Lead (ppb)	11 Study Sites	233	21	9%	46	1.3	9.4
	Suffolk Shallow Private Wells	1,196	620	52%	488	5.2	9.6
Magnesium (ppm)	11 Study Sites	232	231	100%	461	6.7	6.7
	Suffolk Shallow Private Wells	1,197	1,175	98%	212	5.0	5.1
Manganese (ppb)	11 Study Sites	232	221	95%	49,300	1,618	1,698
	Suffolk Shallow Private Wells	1,196	1,093	91%	7,000	102	112
Molybdenum (ppb)	11 Study Sites	233	29	12%	10	0.83	3.1
	Suffolk Shallow Private Wells	1,196	8	0.67%	17	0.5	3.3
Nickel (ppb)	11 Study Sites	232	210	91%	26	3.1	3.4
	Suffolk Shallow Private Wells	1,196	853	71%	57	1.4	1.9
Potassium (ppm)	11 Study Sites	232	232	100%	97	9.2	9.2
	Suffolk Shallow Private Wells	1,197	1,190	99%	53	2.6	2.6
Sodium (ppm)	11 Study Sites	232	229	99%	236	20	20
	Suffolk Shallow Private Wells	1,197	1,196	100%	1,360	22	22
Strontium (ppb)	11 Study Sites	232	231	100%	635	79	79
	Suffolk Shallow Private Wells	1,196	1,174	98%	1,030	68	69
Thallium (ppb)	11 Study Sites	232	38	16%	2.9	0.26	0.79
	Suffolk Shallow Private Wells	1,196	13	1%	0.62	0.1	0.4
Titanium (ppb)	11 Study Sites	230	108	47%	708	14	30
	Suffolk Shallow Private Wells	1,196	28	2%	20	0.6	3
Vanadium (ppb)	11 Study Sites	233	32	14%	65	1.7	9.3
	Suffolk Shallow Private Wells	1,196	27	2%	10	0.6	2.9
Zinc (ppb)	11 Study Sites	230	26	11%	1,320	34	108
	Suffolk Shallow Private Wells	1,195	560	47%	5,400	114	217

* Note that these statistics include data from all wells and profile levels included in the study, even those exhibiting little or no water quality degradation.

** Untreated water quality data from private wells collected by the SCDHS from January 2010 – June 2014.

One half the detection limit was used in the calculation of the mean for samples that had concentrations reported as not detected.

^ This is the mean concentration of only the samples that had concentrations above their respective detection limits.

APPENDIX G

Data Validation Summary

ALPHA GEOSCIENCE

Geology

Hydrology

Remediation

Water Supply

Data Usability Summary Report for
Pace Analytical Services, Inc.-New York
SDG No.: 7056430

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

The data packages contain the documentation required by NYSDEC ASP. The proper chain of custody procedures were followed by the samplers. All information appears legible and complete. The data pack contains the results for 8 ground water samples analyzed for perfluorinated alkyl substances (PFAS) method 537 (modified), 1,4-dioxane, metals, hardness, fluoride, sulfate, color, chloride, alkalinity, hexavalent chromium, nitrate as N, nitrate-nitrite as N, nitrite as N, and total dissolved solids (TDS).

The overall performances of the analyses are acceptable. Pace Analytical Services, Inc.- New York and Pittsburg, TestAmerica Buffalo (subcontracted 1,4-dioxane data), and TestAmerica Sacramento (subcontracted PFAS data) did fulfill the requirements of the analytical methods.

The data are mostly acceptable with some issues that are identified in the accompanying data validation reviews. The following data were qualified:

- The positive TDS results were qualified as "estimated" (J) for all 8 ground water samples because the samples were analyzed beyond the NYSDEC ASP holding time.

- The positive alkalinity results were qualified as "estimated, biased low" (J-) for all 8 ground water samples because 2 of 2 percent recoveries for total alkalinity were below QC limits, but not below 30% in the associated aqueous batch MS/MSD sample.

- The positive PFAS result for PFUnA was qualified as "estimated, biased high" (J+) for sample MW-6 DL because the internal standard was below control limits.

- The positive PFAS results for PFBS, PFBA, and PFPeA were qualified as "estimated, biased high" (J+) for sample MW-8 because the percent recoveries for the surrogate associated with these PFAS were below QC limits, but not below 10% for sample MW-8.

- The “not detected” PFAS results for FOSA and PFTeA were qualified as “estimated” (UJ) for sample MW-8 because the percent recoveries for the surrogate associated with these PFAS were below QC limits, but not below 10% for sample MW-8.

All data are considered usable with estimated (J+, J, or UJ) data associated with a higher level of quantitative uncertainty. Detailed information on data quality is included in the data validation reviews.

ALPHA GEOSCIENCE

Geology

Hydrology

Remediation

Water Supply

QA/QC Review of Dissolved Metals and Hardness
Data for Pace Analytical Services, Inc.-New York
SDG No.: 7056430

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

Holding Times: Samples were analyzed within NYSDEC ASP holding times.

Initial and Continuing Calibration Verification: The percent recoveries for target metals were within control limits (90-110% for all metals).

CRDL Standard for AA and ICP: The percent recoveries for target metals were within laboratory QC limits (70-130%) for CRDL check standards..

Blanks: The analyses for the method blanks reported target metals as not detected.

Interference Check Sample: The percent recoveries for applicable metals were within control limits (80-120%) for the interference check samples.

Spike Sample Recovery: The percent recoveries for target metals were within control limits (75-125%) for aqueous batch spike samples 7056428001 and 7056677001.

Duplicates: The realtive percent differences for applicable metals and hardness were below the allowable maximum (20%) in aqueous batch duplicate samples 336983DUP and 338599DUP, as required

Laboratory Control Sample: The percent recoveries for target metals were within control limits (85-115%) for aqueous samples 336982LCS and 338597LCS.

Serial Dilution: The %Ds for applicable metals were below the allowable maximum (10%) for aqueous batch serial dilution samples 336987SD and 338598SD, as required.

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

QA/QC Review of Method 537 (Modified) PFAS Data
for Pace Analytical Services, Inc.-New York
SDG No.: 7056430
(Subcontrated toTestAmerica Sacramento, Job No: 480-138255-1)

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

Holding Times: Samples were analyzed within USEPA holding times.

Initial Calibration: The %RSDs for applicable PFASs were below the method maximums, as required.

Continuing Calibration: The %Ds for applicable PFASs were below the allowable maximums, as required

Blanks: Method blank MB 320-232920/1-A contained a trace of PFHxS (0.277 ng/L). Positive results for these compounds that are less than five times the highest blank level should be reported as not detected (U) in associated samples

Internal Standard Area Summary: The internal standard area retention times were within control limits.

The internal standard area for sample MW-6 DL was below QC limits. Positive results for sample MW-6 DL should be estimated, biased high (J+) and "not detected" results estimated (UJ).

Surrogate Recovery: Five of eighteen surrogate recoveries for sample MW-8 were below QC limits, but not below 10%. Positive results for compounds associated with these surrogates should be considered estimated, biased high (J+) and "not detected" results estimated (UJ) in sample MW-8.

One of eighteen surrogate recoveries for sample MW-1 was above QC limits. Positive results for compounds associated with this surrogate should be considered estimated, biased low (J-) in sample MW-1.

Laboratory Control Sample: The relative percent differences were below the allowable maximum and the percent recoveries for spiked compounds were within QC limits for aqueous samples LCS 320-232920/2-A and LCSD 320-232920/3-A.

Compound ID: Checked compounds and surrogates were within LC quantitation limits.

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

QA/QC Review of Method 8270D SIM 1,4-Dioxane
Data for Pace Analytical Services, Inc.-New York
SDG No.: 7056430
(Subcontrated to TestAmerica Buffalo, Job No: 480-138255-1)

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

Holding Times: Samples were analyzed within NYSDEC ASP holding times.

GC/MS Tuning and Mass Calibration: The DFTPP tuning criteria were within control limits.

Initial Calibration: The average RRFs for 1,4-dioxane were above the allowable minimum (0.010) and r squared was above the allowable minimum (0.9900), as required.

Continuing Calibration: The RRFs for 1,4-dioxane were above the allowable minimum (0.010) and the %Ds were below the allowable maximum (25%), as required.

Blanks: The analysis of the method blank reported 1,4-dioxane as not detected.

Internal Standard Area Summary: The internal standard areas and retention times were within control limits.

Surrogate Recovery: The surrogate recoveries were within control limits for the ground water samples.

Laboratory Control Sample: The relative percent difference for 1,4-dioxane was below the allowable maximum and the percent recoveries for 1,4-dioxane were within QC limits for aqueous samples LCS 480-422634/2-A and LCSD 480-422634/3-A.

Compound ID: Checked surrogates were within GC quantitation limits. The mass spectra for detected compounds contained the primary and secondary ions, as outlined in the method.

ALPHA GEOSCIENCE

Geology

Hydrology

Remediation

Water Supply

QA/QC Review of General Chemistries Data*
for Pace Analytical Services, Inc.-New York
SDG No.: 7056430

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

Holding Times: Samples were analyzed were within NYSDEC ASP holding times.

Initial and Continuing Calibration Verification: The percent recoveries for target analytes were within QC limits (90-110%).

CRDL Standard for AA and ICP: The applicable percent recoveries for target analyes were within laboratory QC limits (70-130% for all except chloride, 50-150% for chloride) for CRDL check standards.

Blanks: The analyses for the method blanks reported target analytes as not detected.

Spike Sample Recovery: The applicable percent recoveries for target analytes were within QC limits (75-125%) for aqueous spike samples MW-3 and MW-4, and aqueous batch spike samples 7056367001, 7056400001, 7056475001, and 7054599021.

Duplicates: The relative percent differences for applicable analytes were below the allowable maximum (20%) in aqueous duplicate sample MW-3, and aqueous batch duplicate samples 336352DUP 336354DUP, 337315DUP, and 336422DUP, as required

Laboratory Control Sample: The percent recoveries for target analytes were QC limits (90-110%) for aqueous samples 336280LCS, 336350LCS, 336410LCS, 336441LCS, 337313LCS, and 337319LCS.

* General chemistries target analytes include color, chloride, hexavalent chromium, nitrate as N, nitrate-nitrite as N, and nitrite as N.

ALPHA GEOSCIENCE

Geology

Hydrology

Remediation

Water Supply

QA/QC Review of Fluoride and Sulfate Data by Ion Chromatography for Pace Analytical Services, Inc.-New York
SDG No.: 7056430

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

Holding Times: Samples were analyzed within the NYSDEC ASP holding times.

Initial and Continuing Calibration Verification: The percent recoveries for fluoride and sulfate were within QC limits (90-110%).

CRDL Standard for AA and ICP: The percent recoveries for fluoride and sulfate were within laboratory QC limits (70-130%) for CRDL check standards.

Blanks: The analyses for the method blanks reported fluoride and sulfate as not detected.

Spike Sample Recovery: The percent recoveries for fluoride and sulfate were within QC limits (75-125%) for aqueous spike sample MW-2.

Duplicates: The relative percent differences for sulfate was below the allowable maximum (20%) in aqueous duplicate sample MW-2, as required

Laboratory Control Sample: The percent recoveries for fluoride and sulfate were QC limits (85-115%) for aqueous sample 338675LCS.

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

QA/QC Review of Total Alkalinity Data
for Pace Analytical Services, Inc.-New York
SDG No.: 7056430
(Subcontrated to Pace-Pittsburg, SDG: 30258047)

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

Holding Times: Samples were analyzed within the NYSDEC ASP holding time.

Initial and Continuing Calibration Verification: The percent recoveries for total alkalinity were within QC limits (98.5-101.4%).

Blanks: The analysis for the method blank reported total alkalinity as not detected.

Spike Sample Recovery: The percent recoveries for total alkalinity were below QC limits (85-115%), but not below 30% for aqueous batch MS/MSD sample 7056132015. Positive results for total alkalinity should be considered estimated, biased low (J-) and "not detected" results estimated (UJ) in associated aqueous samples.

Duplicates: The relative percent difference for total alkalinity was below the allowable maximum (20%) in aqueous batch MS/MSD sample 7056132015, as required

Laboratory Control Sample: The percent recovery for total alkalinity was within QC limits (85-115%) for aqueous sample 1490851LCS.

ALPHA GEOSCIENCE

Geology

Hydrology

Remediation

Water Supply

QA/QC Review of Total Dissolved Solids (TDS)
Data for Pace Analytical Services, Inc.-New York
SDG No.: 7056430

8 Ground Water Samples
Collected June 26 and 27, 2018

Prepared by: Donald Anné
October 26, 2018

Holding Times: All 8 samples were analyzed beyond the NYSDEC ASP holding time. Positive results for TDS should be considered estimated (J) in all 8 samples.

Blanks: The analyses for the method blanks reported TDS as not detected.

Spike Sample Recovery: The percent recovery for TDS was within QC limits (75-125%) for aqueous spike sample MW-5.

Duplicates: The relative percent difference for TDS was below the allowable maximum (20%) in aqueous duplicate sample MW-5, as required

Laboratory Control Sample: The percent recoveries for TDS were QC limits (85-115%) for aqueous samples 338426LCS and 338432LCS.

Data Validation Acronyms

AA	Atomic absorption, flame technique
BHC	Hexachlorocyclohexane
BFB	Bromofluorobenzene
CCB	Continuing calibration blank
CCC	Calibration check compound
CCV	Continuing calibration verification
CN	Cyanide
CRDL	Contract required detection limit
CRQL	Contract required quantitation limit
CVAA	Atomic adsorption, cold vapor technique
DCAA	2,4-Dichlophenylacetic acid
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenyl phosphine
ECD	Electron capture detector
FAA	Atomic absorption, furnace technique
FID	Flame ionization detector
FNP	1-Fluoronaphthalene
GC	Gas chromatography
GC/MS	Gas chromatography/mass spectrometry
GPC	Gel permeation chromatography
ICB	Initial calibration blank
ICP	Inductively coupled plasma-atomic emission spectrometer
ICV	Initial calibration verification
IDL	Instrument detection limit
IS	Internal standard
LCS	Laboratory control sample
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate
MSA	Method of standard additions
MS/MSD	Matrix spike/matrix spike duplicate
PID	Photo ionization detector
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
QA	Quality assurance
QC	Quality control
RF	Response factor
RPD	Relative percent difference
RRF	Relative response factor
RRF(number)	Relative response factor at concentration of the number following
RT	Retention time
RRT	Relative retention time
SDG	Sample delivery group
SPCC	System performance check compound

TCX	Tetrachloro-m-xylene
%D	Percent difference
%R	Percent recovery
%RSD	Percent relative standard deviation

Polyfluorinated Alkyl Substances (PFAS) Acronyms

PFBA	Perfluorobutanoic acid
PFPeA	Perfluoropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeA	Perfluorotetradecanoic acid
PFBS	Perfluorobutanesulfonic acid
PFPeS	Perfluoropentanesulfonic acid
PFHxS	Perfluorohexanesulfonic acid
PFHpS	Perfluoroheptanesulfonic acid
PFOS	Perfluorooctanesulfonic acid
PFNS	Perfluorononanesulfonic acid
PFDS	Perfluorodecanesulfonic acid
FOSA	Perfluorooctane Sulfonamide
NMeFOSAA	N-methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-ethyl perfluorooctane sulfonamidoacetic acid
4:2 FTS or 4:2	1H, 1H, 2H, 2H-perfluorohexanesulfonic acid
6:2 FTS or 6:2	1H, 1H, 2H, 2H-perfluorooctanesulfonic acid
8:2 FTS or 8:2	1H, 1H, 2H, 2H-perfluorodecanesulfonic acid

Data Validation Qualifiers Used in the QA/QC Reviews for USEPA Region II

U = Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank.

R = Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample. Supporting data or information is necessary to confirm the result.

N = Tentative identification. Analyte is considered present. Special methods may be needed to confirm its presence or absence during future sampling efforts.

J = Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.

J- = Analyte is present. Reported value may be biased low and associated with a higher level of uncertainty than is normally expected with the analytical method.

J+ = Analyte is present. Reported value may be biased high andassociated with a higher level of uncertainty than is normally expected with the analytical method.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

Note: These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.

APPENDIX C

Letter from Dr. James L. Tomarken of Suffolk County Department of Health Services

COUNTY OF SUFFOLK

STEVEN BELLONE
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF HEALTH SERVICES

JAMES L. TOMARKEN, MD, MPH, MBA, MSW
Commissioner

January 5, 2017

Michael Sendlenski, Town Attorney
Town of East Hampton
159 Pantigo Road
East Hampton, New York 11937

Re: Chromium in Groundwater

Dear Mr. Sendlenski:

I am in receipt of your letter of October 31, 2016 regarding concerns about hexavalent chromium in public and private water supply and surface waters in Wainscott expressed to you by a resident of Wainscott, Mr. Simon Kinsella. Enclosed with your letter was correspondence you had received from Mr. Kinsella (10/24/16) which identified a cement plant as a possible source of chromium contamination.

We have reached out to the New York State Department of Environmental Conservation (NYSDEC) for information about this facility. They identified a concrete mix, as opposed to cement, facility in Wainscott, located off Montauk Highway that is operated by Suffolk Cement. Concrete mix facilities are not regulated by the NYSDEC. However, this facility is inspected by our department periodically due to the presence of registered tanks. These inspections specifically look for compliance with Suffolk County code as it relates to the proper operation and maintenance of storage tanks. If evidence of a release that may impact groundwater is observed, the NYSDEC is notified. No such evidence was observed during the most recent inspection in December of 2015.

Mr. Kinsella's letter referenced an East Hampton Star article (9/27/16) which identified concentrations of hexavalent chromium ranging from 0.033 ppb to 0.54 ppb in public wells serving East Hampton. Suffolk County Department of Health Services (SCDHS) regulates and oversees the public water supplies in Suffolk County to ensure compliance with the federal Safe Drinking Water Act and the New York State and Suffolk County Sanitary Code drinking water standards. Although New York State public water suppliers are not required to continue to monitor for hexavalent chromium and there is currently no specific standard for hexavalent chromium under federal and state regulation, SCDHS has required the major public water suppliers in Suffolk County to continue to collect at least one sample annually from any well that previously had a detection.

In addition to reviewing public water suppliers' self-monitoring analytical results, the SCDHS also regularly collects surveillance samples to ensure compliance with applicable standards. The hexavalent chromium concentrations referenced in the East Hampton Star article are similar to results of SCDHS surveillance sampling of drinking water supplies elsewhere in Suffolk County, indicating the potential for a natural source as chromium is a naturally occurring metal in soil. SCDHS sampling of drinking water supplies in Suffolk County has detected hexavalent chromium in approximately 74% of drinking water samples and detectable concentrations ranged between 0.03 ppb and 12.24 ppb, with a median of 0.25 ppb based on data collected between April 2013 and June 2016. SCDHS sampling of a Suffolk County Water Authority public water

supply well field in Wainscott on August 11, 2015 detected hexavalent chromium at concentrations ranging from <0.03 ppb to 0.65 ppb.

Further, SCDHS has collected samples from private wells in the area. A review of the total chromium results for homes sampled on Cowhill Road and Hedges Lane between 1999 and 2012 were all found to be less than 1 ppb, except one result which was just above the detection level at 1.78 ppb. Please note that SCDHS also inspects and collects samples annually from a business with its own public water supply well which is located between the concrete mix facility and Georgica Pond. The last time this location was sampled by SCDHS was on August 30, 2016 and the total chromium result was less than 1 ppb and the hexavalent chromium result was less than 0.03 ppb in this sample. As noted in Mr. Kinsella's letter, these levels found in Wainscott are well below the California drinking water standard of 10 ppb as well as the federal and New York State drinking water standard for total chromium of 100 ppb.

SCDHS sampling specifically for hexavalent chromium in private water supply wells across Suffolk County has found that approximately 77% had detections of hexavalent chromium with detectable concentrations ranging between 0.03 ppb and 1.87 ppb, with a median of 0.16 ppb based on data collected between April 2013 and June 2016. These concentrations are also well below the California drinking water standard for hexavalent chromium of 10 ppb as well as the federal and New York State drinking water standard for total chromium of 100 ppb.

With regard to the concern about chromium impacting nearby surface waters, SCDHS staff collected a surface water sample from the west branch of Georgica Pond on November 3rd of this year. The results of the total chromium analysis are pending.

Given that the concentrations of hexavalent chromium that have been detected in Wainscott are consistent with concentrations that have been detected in other locations in Suffolk County and are lower than both the federal and state drinking water standard for total chromium, as well as the California drinking water standard for hexavalent chromium, we do not consider a groundwater investigation in the vicinity of the concrete mix facility to be warranted at this time. This conclusion may be revisited if new information becomes available.

The SCDHS will continue to work with the NYSDEC and the Suffolk County Water Authority to address groundwater contamination in Suffolk County and take appropriate actions necessary to protect county residents. Although not currently required by the federal or state government, the SCDHS plans to also continue our regular monitoring of public and private water supply wells in Suffolk County for hexavalent chromium.

Thank you for your letter and for bringing Mr. Kinsella's concerns to our attention.

Sincerely,

James L. Tomarken

James L. Tomarken, MD, MPH, MBA, MSW
Commissioner, Suffolk County Department of Health Services

JLT/wg

cc: Carrie Meek Gallagher, Director Region 1, NYSDEC
James Gaughran, Chairman, Suffolk County Water Authority
Christina Capobianco, CPA, Deputy Commissioner, SCDHS
Walter Dawydiak, Jr., PE, JD, Director, Division of Environmental Quality, SCDHS
Simon Kinsella, Wainscott Resident

APPENDIX D

SCDHS October 2017 Initial Private Well Survey and May 2018 Expanded Well Survey

SUFFOLK COUNTY GOVERNMENT

Select Language ▼

Text Only Version

I want to:

cache:http://www.suffolkcountyny.gov/Home/tabid/59/ctl/details/itemid/6979/m ✕

Suffolk County Government Homepage

Article Details

Water Quality Advisory for Private-Well Owners in Area of Wainscott

Categories: Health Services | Author: gkelly-mcgovern | Posted: 10/11/2017 | Views: 3689

The US Environmental Protection Agency (US EPA) has identified two chemicals known as PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid) as emerging contaminants. These chemicals are part of a class of chemicals known as perfluorinated compounds (PFCs), which are currently unregulated by the federal government. PFCs have been used in a number of industrial and commercial products such firefighting foam, as well as coatings that repel water, oil, stains and grease. Thus, people may be exposed to PFOS and PFOA through air, water, or soil from industrial sources and from consumer products.

Due to the potential for PFCs to cause environmental contamination, the New York State Department of Environmental Conservation conducted a survey of facilities across the state that may have used products containing PFOS and PFOA. Since the East Hampton Airport indicated that it had used or stored products that may have contained PFOS and PFOA, the state requested that the Suffolk County Department of Health Services (SCDHS) sample drinking water supplies near the airport.

To assess the drinking water quality of properties served with private wells, SCDHS has begun a private well survey in the vicinity of the airport property. PFOS and PFOA have been detected in some of the private wells that have been tested so far. One private well had PFOS and PFOA detected above the USEPA lifetime health

advisory level of 0.07 ppb. EPA's health advisory levels are established to protect even the most sensitive populations, including fetuses during pregnancy and breastfed babies, against potential adverse health effects. See EPA fact sheet on perfluorinated compounds for more information https://www.epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfos_updated_5.31.16.pdf.

The SCDHS would like to sample all private wells in this area at no charge to homeowners. The NYSDOH Laboratory will conduct the laboratory analysis of PFCs. If your property is served by a private well, and your residence is located in the area bounded on the north by the East Hampton Airport, on the west by Town Line Road, on the south by Montauk Highway extending toward Merriwood Drive and on the east by Daniel's Hole Road, please contact the SCDHS Office of Water Resources at (631) 852-5810 so that your well can be tested free of charge (see attached map).

As a precaution, the Town of East Hampton has offered to provide bottled water to property owners in the private well survey area described above. If you use a private well for your drinking water and live in the survey area you may contact the Town of East Hampton Purchasing Department at 631-324-4183 or email jcarroza@ehamptonny.gov to receive bottled water.

If your home is connected to a public water supply, you do not need to have your water tested, as these supplies are routinely tested. Currently, the public drinking water supply in the area is below the US EPA lifetime health advisory level of 0.07 ppb.

Residents with general questions about health effects of perfluorinated compounds (PFCs) are advised to call the New York State Water Quality Hotline: 800-801-8092 (Monday - Friday: 9 a.m. - 8 p.m.).

Residents who are unsure if they are served by public water may call the Suffolk County Water Authority at 631-698-9500.

Residents with private wells who have questions about private well water in Suffolk County or who wish to have their wells tested may contact the SCDHS Office of Water Resources at 631-852-5810.

For additional information about PFCs, please visit the SCDHS website at: www.suffolkcountyny.gov/health/pfcwaterinfo

Follow us:

suffolkcountyny.gov
Facebook.com/SuffolkCountyHealth

Twitter.com/SuffolkCoHealth

Return to previous page

Addresses:

H. Lee Dennison Bldg
100 Veterans Memorial Hwy
P.O. Box 6100
Hauppauge, NY 11788

Riverhead County Center
County Road 51
Riverhead, NY 11901

TOWN OF EAST HAMPTON

159 Pantigo Road
East Hampton, New York 11937

PETER VAN SCOYOC **(631) 324-4140**
Supervisor **pvanscoyoc@ehamptonny.gov**

FOR IMMEDIATE RELEASE:
May 25, 2018

Contact: Grace Kelly-McGovern
Suffolk County Department of Health
631-854-0095, 631-219-9492

Suffolk County Announces Further Expansion of Private Well Survey in Wainscott

The Suffolk County Department of Health Services announced today the further expansion of its private well survey in the vicinity of the East Hampton Airport following the detection of perfluorinated compounds in a private well in the current survey area.

The compounds, known as perfluoroalkyl and polyfluoroalkyl substances or PFAS, are currently unregulated by the USEPA, however, the agency has identified two of these substances, PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid) as contaminants of emerging concern. The agency has issued a lifetime health advisory level of 0.07 parts per billion in order to protect the most sensitive populations, including fetuses during pregnancy and breastfed babies, against potential adverse health effects.

PFAS have been used in a number of industrial and commercial products such firefighting foam, as well as coatings that repel water, oil, stains and grease. Thus, people may be exposed to PFOS and PFOA through air, water, or soil from industrial sources and from consumer products.

Residents whose property is served by a private well in the area bounded by Merchants Path to the north, Wainscott Harbor Road continuing on to Wainscott Hollow Road on the west, down to the ocean on the south and extending to Georgica Pond to the east (see attached map) are advised to contact the Suffolk County Department of Health Services Office of Water Resources at 631-852-5810 to have their wells tested free of charge.

As a precaution, the Town of East Hampton has offered to provide bottled water to all properties on a private well in the survey area, including this new expanded area described above. Residents who use a private well for drinking water and live in the survey area may contact the Town of East Hampton Purchasing Department at 631-324-4183 or email jcarroza@ehamponny.gov to receive bottled water.

Homes connected to a public water supply do not need to have their water tested as these supplies are routinely tested. PFOS and PFOA have not been detected in the public drinking water supply wells serving this area.

Residents with general questions about health effects of perfluorinated compounds are advised to call the New York State Water Quality Hotline: 1-800-801-8092, Monday through Friday: 8 a.m. - 4 p.m.

Residents who are unsure if they are served by public water may call the Suffolk County Water Authority at 631-698-9500.

Residents with private wells who have questions about private well water in Suffolk County or who wish to have their wells tested may contact the Suffolk County Department of Health Services Office of Water Resources at 631-852-5810.

For additional information about PFCs, please visit the Suffolk County Department of Health Services website.

For more information on perfluorinated compounds, see USEPA Fact Sheet: PFOA & PFOS Drinking Water Health Advisories.

Suffolk County
Department of Health Services
Private Well Survey Area
Wainscott - PFASs
May 24, 2018

Merchants Path
Wainscott Harbor Rd
Dawnwood Ln
Forest Xing
Industrial Rd
Daniels Hole Rd
Broad Wood Ct
Wainscott Northwest Rd
Hedges Ln
Georgica Woods Ln
Debras Way
Sandown Ct
Sachems Path
The Crossway
Gate Rd
Osterbrook Rd
Old Montauk Hwy
Exeter Ln
W Gate Rd
Cow Hill Ln
Glenwood Ln
Town Line Rd
Scott Lane Dr
Clyden Rd
Bathgate Rd
Montauk Hwy
Fernwood Dr
Merriwood Dr
Oakwood Ct
Ardsley Rd
Wainscott Stone Rd
Elishas Path
Lee Path
Sayres Path
Westwood Rd
Rod Hwy
Windsor Ln
Whitney Ln
Foxcroft Ln
Roxbury Ln
Glen Oak Ct
Wainscott Hollow Rd
Wainscott Main St
Beach Ln

Legend
Expanded Survey Area
May 23, 2018

N
W
E
S
0
1,000
US Survey feet

APPENDIX E

Ground-Based Photographs of Fire Training Exercises by Michael Wright (2018) and Google Air Photograph of Location

Photograph E-1: June 2000 from Michael Wright, *Homeowner Sues Over Well Contamination,* Southampton Press, March 22, 2018

Photograph E-2: June 2000 from Michael Wright, *Homeowner Sues Over Well Contamination,* Southampton Press, March 22, 2018

Photograph E-3: June 2000 from Michael Wright, *Homeowner Sues Over Well Contamination,* Southampton Press, March 22, 2018

Photograph E-4: March 31, 2001 from Google Earth

APPENDIX F

Geologic Logs for SB-01 through SB-19, December 6-7, 2018

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-1

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0	3.9	2" topsoil Dark brown fine to medium silty SAND; moist; no odor 1.0 Light brown to orange brown fine to coarse SAND, trace gravel; moist to wet; no odor	Sample 0.5 - 1.0 (metals)
		0.0			
4					
6	MC-2	0.0	3.0		Wet ~ 5'
		0.0			
8				8.0 End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience 679 Plank Road ALPHA GEOSCIENCE Clifton Park, New York 12065	**GEOLOGIC LOG**	**Boring ID: SB-2** Page 1 of 1

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0 0.0	3.4	2" topsoil Light brown to orange brown fine to coarse SAND, trace gravel (up to 3/4"); moist to wet; no odor	0.8': dark streaks (no odor) 0.6 - 1.1' Sample (metals)
4					
6	MC-2	0.0 0.0	3.8		Wet ~ 5'
8				8.0 End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-3

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0	3.0	2" topsoil	dark streaks (dark brown) ~1.0'
		0.0			0.7 - 1.1' Sample (metals)
		NR		Light brown to orange brown fine to coarse SAND, trace gravel; moist; no odor	
4					
	MC-2	0.0	3.5		Wet ~ 5'
6		0.0			
				8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-4

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018; 11:00 am

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS: Moved from proposed location, but still in wet area.

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.0		Dark brown fine to medium silty SAND, trace organics/peat; wet; no odor 0.8	0.6 - 1.1 Sample (metals)
2	MC-1	0.0	3.0	Brown to dark brown fine to medium silty SAND, trace gravel; moist; no odor	
		NR		4.0	
4					
		0.0		Brown to orange brown fine to coarse SAND; moist to wet; no odor	Wet ~ 5'
6	MC-2		4.0		
		0.0		8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-5

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.0		Dark red brown fine to medium silty SAND, trace gravel; moist to wet; no odor	0.5 - 1.0 Sample SB-5 (metals)
				1.4	
2	MC-1	0.0	2.9	Light brown to orange brown fine to coarse SAND, trace fine gravel; moist; no odor	
		NR			
4					
		0.0			Wet ~ 5'
6	MC-2		3.9		
		0.0			
				8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-6

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0 0.0 NR	2.7	<1" Topsoil Light brown to light grey fine to medium SAND, trace gravel; moist to wet; no odor 3.0 Brown fine to medium silty SAND, trace gravel; wet; no odor 5.0	0.8 - 1.2 Sample SB-6 (metals) Wet from ~1' Brown to grey at 1.2'
4 6	MC-2	0.0 0.0	4.0	Light brown to orange brown fine to coarse SAND, trace gravel 8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-7

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018, 14:15

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS: In old equipment storage area.

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.0		Brown to orange brown fine to medium silty SAND; moist; no odor	
				2.0	1.0 - 1.5 Sample SB-7 (metals)
2	MC-1	0.0	2.7	Brown to orange brown fine to coarse SAND, trace gravel; moist to wet; no odor	
		NR			
4					
		0.0			
6	MC-2		3.5		Wet ~ 6'
		0.0			
				8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-8

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0	3.6	Brown orange to brown fine to coarse SAND, trace gravel; moist; no odor	1.0 - 1.5' Sample SB-8 (metals)
		0.1		2.0 Dark brown fine to medium silty SAND, trace gravel; moist; no odor	
4					
6	MC-2	0.0	4.0	5.4	Wet ~ 6'
		0.0			
8				8.0 End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-9

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0	3.4	Light brown fine to medium SAND; wet	1.5 - 2.0': Sample SB-9 (metals)
		0.0		1.6	1.6 - 2.1': Pieces of fill material; brick & concrete
		0.0		Dark brown fine to coarse silty SAND, some gravel (FILL); moist; no odor 2.4	
4				Light brown fine to coarse SAND, trace gravel; moist to wet; no odor	
6	MC-2	0.0	4.0		Wet ~ 5'
		0.0			
		0.0			7.0 - 7.5': Dark black asphalt (?) or charcoal layer; no odor
8				8.0	
				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-10

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0	3.4	<2" Topsoil Light brown to orange brown fine to coarse SAND, trace to little gravel; moist to wet; no odor; coarsening downward	0.5 - 1.0 Sample (metals)
		0.0			
4		NR			
6	MC-2	0.0	3.0		Wet @ 5.5', coarsening downward
		0.0			
8		NR		8.0	
				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-11

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.0		Dark brown fine to medium SAND, trace gravel; moist; no odor	1st Attempt had no recovery (large gravel piece stuck in end); moved over ~5'
				1.2	
2	MC-1	0.0	2.6	Light brown to orange brown fine to medium SAND, trace gravel; moist to wet; no odor	0.8 - 1.2 Sample (metals)
		NR			
4					
		0.0			
6	MC-2		4.0		
		0.0			
				8.0	Bottom inch had little to some organics/peat
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-12

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
				Sand with cement 0.7	
		0.0		Grey brown fine to coarse SAND, trace gravel; no odor	0.7 - 1.3 Sample (metals)
2	MC-1		3.4	2.5	
		0.0		Silty fine Sand layer 3.0	
		NR			
4				Grey to brown fine to coarse SAND, trace gravel; wet; no odor	
		0.0			Wet ~ 5'
6	MC-2		4.0		
		0.0		8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-13

Page 1 of 1

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0 0.0	3.0	FILL: Fine to coarse SAND and Gravel, some silt, some brick and concrete; moist to wet; no odor 3.0	Probe refusal at 3'. Moved north ~20'; refusal @1'. Moved east 50'; refusal @ <1'. 1.0 - 1.5 Sample (mostly sand) (metals)
4				End of Boring	
6					
8					

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-14

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.2	2.9	Dark brown fine to medium SAND; with wood chips and organic matter; moist; no odor	0.8 - 1.2 Sample (metals)
		0.0			
		NR		3.0 Light orange brown fine to coarse SAND, trace gravel; moist to wet; no odor	Wet @ 3'
4	MC-2	0.0	3.8		
6		0.0			
8				8.0 End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-15

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/6/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.1		FILL: Brown fine to coarse silty SAND; trace gravel; pieces of cement; moist; no odor 1.2	0.5 - 1.0 Sample (metals)
2	MC-1	0.0	3.5	Light orange brown fine to coarse SAND, trace gravel; moist to wet; no odor	
		NR			Wet ~ 6'
4					
		0.0			
6	MC-2		3.6		
		0.0			
				8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-16

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/7/2018; 08:25

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.0		Grey brown fine to medium silty SAND, trace gravel; pieces of cement and stone; moist; no odor 1.0	0.5 - 1.0' Sample (metals)
2	MC-1	0.0	3.0	Light brown fine to medium SAND, trace gravel; moist; no odor	
		NR			
4					
		0.0		Brown to orange brown fine to medium SAND, trace gravel; moist to wet; no odor	5.0': ~3" layer of organic rich soil; pieces of coal? or charcoal
6	MC-2		2.0		
		NR		8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-17

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/7/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.0		Brown fine to coarse silty SAND, trace gravel; moist; no odor 0.8	Sample SB-17 (0.8 - 1.2') (metals)
2	MC-1	0.0	3.4	Light brown fine to medium SAND, trace gravel; moist to wet; no odor	
		0.0			
4		NR			Wet ~ 4.5'
		0.0			Sample SB-17 (4 - 6') (for CP-51 (petroleum) VOCs & SVOCs)
6	MC-2		3.5		
		0.0			
8				8.0 End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-18

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/7/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS:

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
		0.0		Brown fine to coarse silty SAND, trace gravel; wet; no odor 1.0	SB-18(0.6 - 1.1) metals
2	MC-1	0.0	3.8	Light brown to orange brown fine to coarse SAND, trace gravel; moist to wet; no odor	
4		0.0			
6	MC-2	0.0	3.7		5.8': SIlty layer (2") Dark grey layer (2") below SB-18(6) petroleum VOCs SB-18(6-7') petroleum SVOCs
		0.0		8.0	
8				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

GEOLOGIC LOG

Boring ID: SB-19

Project Number/Name: 17115 / Wainscott Commercial Center Location: Wainscott, Suffolk County, NY

Drilling Contractor/Personnel: East Coast Geoservices

Geologist/Hydrogeologist: Scott Hulseapple Start/ Finish Date: 12/7/2018

Drilling Equip/Method: Power Probe 9100 / Direct Push Size/Type of Bit:

Sampling Method: Well Installed? No

Elevation/Ground Surface: Not Surveyed

Depth to Ground Water from Ground Surface (Date):

REMARKS: northwest corner of north building at former AST location

Depth (Ft)	Sample No.	PID (ppm)	Recovery (ft)	DESCRIPTION	REMARKS
2	MC-1	0.0	3.0	Light brown to dark brown fine to coarse SAND, trace gravel; moist to wet; no odor; coarsening downward	SB-19 (1 - 1.5') metals
		0.0			
4		NR			
	MC-2	0.0	3.4		Wet @ ~6'
6		0.0			SB-19 (6') VOCs
		0.7			SB-19 (6-8')SVOCs
8				8.0	
				End of Boring	

Proportions Used: Trace=0-10% Little=10-20% Some=20-35% And-35-50%

APPENDIX G

Volatile Organics Screening Logs from December 6-7, 2018

ALPHA GEOSCIENCE
679 Plank Road
Clifton Park, NY 12065

ORGANIC VAPOR SCREENING LOG

PROJECT: Wainscott Commercial Center **PAGE:** 1 of 3
CLIENT: Wainscott Commercial Center, LLC
LOCATION: Wainscott, NY **DATE COLLECTED:** 12/6/18
INSTRUMENT USED: MiniRae 300 **LAMP:** 10.2 eV **DATE ANALYZED:** 12/6/18
DATE INSTRUMENT CALIBRATED: 12/6/18 **By:** SMH **ANALYST:** Scott Hulseapple
TEMPERATURE OF SOIL: Room temperature (70°F) Reading as isobutylene

Location ID	Sample Number	Depth (ft)	Sample Type	Background Reading (ppm)	Sample Reading (ppm)	Remarks
SB-1		0-2	grab	0.0	0.0	SPAN Reading 100 ppm
		2-4	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-7	grab	0.0	0.0	
SB-2		0-2	grab	0.0	0.0	
		2-4	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-3		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-4		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-5		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-6		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		4-5	grab	0.0	0.0	
		5-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-7		0-1	grab	0.0	0.0	
		1-2	grab	0.0	0.0	
		2-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	

ALPHA GEOSCIENCE
679 Plank Road
Clifton Park, NY 12065

ORGANIC VAPOR SCREENING LOG

PROJECT: Wainscott Commercial Center **PAGE:** 2 of 3
CLIENT: Wainscott Commercial Center, LLC
LOCATION: Wainscott, NY **DATE COLLECTED:** 12/6/18
INSTRUMENT USED: MiniRae 300 **LAMP:** 10.2 eV **DATE ANALYZED:** 12/6/18
DATE INSTRUMENT CALIBRATED: 12/6/18 **By:** SMH **ANALYST:** Scott Hulseapple
TEMPERATURE OF SOIL: Room temperature (70°F) Reading as isobutylene

Location ID	Sample Number	Depth (ft)	Sample Type	Background Reading (ppm)	Sample Reading (ppm)	Remarks
SB-8		0-2	grab	0.0	0.0	
		2-4	grab	0.0	0.1	
		4-5	grab	0.0	0.0	
		5-8	grab	0.0	0.0	
SB-9		0-1	grab	0.0	0.0	
		1-2	grab	0.0	0.0	
		2-4	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-7	grab	0.0	0.0	
		7-8	grab	0.0	0.0	
SB-10		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-7	grab	0.0	0.0	
SB-11		0-1	grab	0.0	0.0	
		1-2.5	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-12		0-2	grab	0.0	0.0	
		2-3.4	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-13		0-1.5	grab	0.0	0.0	
		1.5-3	grab	0.0	0.0	
SB-14		0-1	grab	0.0	0.2	
		1-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-15		0-1.2	grab	0.0	0.1	
		1.2-3.5	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	

ALPHA GEOSCIENCE
679 Plank Road
Clifton Park, NY 12065

ORGANIC VAPOR SCREENING LOG

PROJECT: Wainscott Commercial Center **PAGE:** 3 of 3
CLIENT: Wainscott Commercial Center, LLC
LOCATION: Wainscott, NY **DATE COLLECTED:** 12/7/18
INSTRUMENT USED: MiniRae 300 **LAMP:** 10.2 eV **DATE ANALYZED:** 12/7/18
DATE INSTRUMENT CALIBRATED: 12/6/18 **By:** SMH **ANALYST:** Scott Hulseapple
TEMPERATURE OF SOIL: Room temperature (70°F) Reading as isobutylene

Location ID	Sample Number	Depth (ft)	Sample Type	Background Reading (ppm)	Sample Reading (ppm)	Remarks
SB-16		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
SB-17		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		3-4	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-18		0-1	grab	0.0	0.0	
		1-4	grab	0.0	0.0	
		4-5.8	grab	0.0	0.0	
		5.8-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	
SB-19		0-1	grab	0.0	0.0	
		1-3	grab	0.0	0.0	
		4-6	grab	0.0	0.0	
		6-8	grab	0.0	0.0	

APPENDIX H

Soil Data Validation Report
December 6 and 7, 2018 Soil Sampling

ALPHA
GEOSCIENCE
Geology
Hydrology
Remediation
Water Supply

Data Usability Summary Report for
Con-Test Analytical Laboratory
Work Order Number: 18L0362

3 Soil Samples, 1 Field Blank,
and 1 Wash Water
Collected December 7, 2018

Prepared by: Donald Anné
January 3, 2019

The data package contains the documentation required by NYSDEC ASP. The proper chain of custody procedures were followed by the samplers. All information appears legible and complete. The data pack contains the results for 3 soil samples, 1 field blank, and 1 wash water analyzed for polyfluorinated alkyl substances (PFAS) method 537 (modified).

The overall performances of the analyses are acceptable. Con-Test Analytical Laboratory did fulfill the requirements of the analytical methods.

The data are mostly acceptable with some issues that are identified in the accompanying data validation reviews. The following data were qualified:

- The positive PFAS results for PFUnA are qualified as "estimated" (J) for samples SB-1 (0-6"), SB-2 (0-6"), and SB-3 (0-6") because the %D for PFUnA is above the allowable maximum for the associated continuing calibration.

- The positive PFAS result for PFTrDA is qualified as "estimated" (J) for sample SB-2 (0-6") because the %D for PFTrDA is above the allowable maximum for the associated continuing calibration.

- The positive PFAS result for PFTrDA is qualified as "estimated, biased high" (J+) for sample SB-1 (0-6") because 1 of 2 percent recoveries for PFTrDA is above QC limits in the soil MS/MSD sample.

All data are considered usable with estimated (J+ or J) data associated with a higher level of quantitative uncertainty. Detailed information on data quality is included in the data validation review.

679 Plank Road • Clifton Park, New York 12065 • (518) 348-6995 • Fax (518) 348-6966
www.alphageoscience.com

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

QA/QC Review of Method 537 (Modified) PFAS
Data for Con-Test Analytical Laboratory
Work Order Number: 18L0362

3 Soil Samples, 1 Field Blank,
and 1 Wash Water
Collected December 7, 2018

Prepared by: Donald Anné
January 3, 2019

Holding Times: The samples were analyzed within USEPA holding times.

Initial Calibration (External Standard): The %RSDs for applicable PFAS were below the method maximum (30%), as required.

Continuing Calibration: The %Ds for PFDS, 8:2 FTS, PFNA, PFDA, PFUnA, NetFOSAA, PFTrDA, and PFTA were above the allowable maximum (25%) on 12-12-18 (S030237-CCV1). The %Ds for PFBS, PFDS, PFHpS, PFHxS, and PFOS were above the allowable maximum (25%) on 12-17-18 (S030396-CCV1). Positive results for these compounds should be considered estimated (J) in associated samples.

Blanks: The analysis of the method blank reported target compounds as not detected.

Internal Standard Area Summary: The internal standard areas and retention times were within control limits.

Surrogate Recovery: The surrogate recoveries were within QC limits for the soil samples, field blank, and wash water.

Matrix Spike/Matrix Spike Duplicate: The relative percent difference for 6:2 FTS and PFOS were above the allowable maximum and 1 of 2 percent recoveries for PFDS, PFHpS, 6:2 FTS, and PFTrDA were above QC limits for soil MS/MSD sample SB-1 (0-6"). The positive result for PFTrDA should be considered estimated, biased low (J+) in sample SB-1 (0-6").

Laboratory Control Sample: The percent recoveries (%R) for target PFAS were within QC limit for soil sample B218961-BS.

679 Plank Road • Clifton Park, New York 12065 • (518) 348-6995 • Fax (518) 348-6966
www.alphageoscience.com

The %R for 8:2 FTS was above QC limits for aqueous sample B219152-BS1. Positive results for 8:2 FTS should be considered estimated, biased high (J+) in associated aqueous samples.

Compound ID: Checked compounds and surrogates were within LC quantitation limits.

3 - FORM III

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SB-1 (0-6")

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0362
Client:	Alpha Geological Services, Inc.	Project:	17115 - Wainscott Commercial Center
Matrix:	Soil	Analysis:	SOP-465 PFAS
Batch:	B218961	Preparation:	EPA 537
% Solids:		Laboratory ID:	B218961-MS1
Initial/Final:	2.05 g / 10 mL	Sample Lab ID:	18L0362-01 SB-1 (0-6")
Column:			

ANALYTE	SPIKE ADDED (µg/kg)	SAMPLE CONCENTRATION (µg/kg)	MS CONCENTRATION (µg/kg)	MS % REC.		QC LIMITS REC.
Perfluorobutanesulfonic acid (PFBS)	2.16	ND	2.16	100		50 - 150
Perfluorohexanoic acid (PFHxA)	2.44	ND	2.49	102		50 - 150
Perfluoroheptanoic acid (PFHpA)	2.44	ND	2.26	92.6		50 - 150
Perfluorobutanoic acid (PFBA)	2.44	ND	2.55	105		50 - 150
Perfluorodecanesulfonic acid (PFDS)	2.35	ND	3.98	169	*	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.32	ND	3.51	152	*	50 - 150
Perfluorooctanesulfonamide (FOSA)	2.44	ND	2.43	99.5		50 - 150
Perfluoropentanoic acid (PFPeA)	2.44	ND	2.31	94.9		50 - 150
6:2 Fluorotelomersulfonate (6:2 FTS)	2.32	ND	2.06	88.8		50 - 150
8:2 Fluorotelomersulfonate (8:2 FTS)	2.34	ND	2.77	118		50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.22	ND	2.62	118		50 - 150
Perfluorooctanoic acid (PFOA)	2.44	ND	2.92	120		50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.26	ND	3.35	148		50 - 150
Perfluorononanoic acid (PFNA)	2.44	ND	2.71	111		50 - 150
Perfluorodecanoic acid (PFDA)	2.44	ND	3.09	127		50 - 150
NMeFOSAA	2.44	ND	3.00	123		50 - 150
Perfluoroundecanoic acid (PFUnA)	2.44	8.09	11.6	142		50 - 150
NEtFOSAA	2.44	ND	2.82	116		50 - 150
Perfluorododecanoic acid (PFDoA)	2.44	ND	2.80	115		50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.44	3.84	7.06	132		50 - 150
Perfluorotetradecanoic acid (PFTA)	2.44	ND	2.17	88.8		50 - 150

3 - FORM III

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SB-1 (0-6")

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0362
Client:	Alpha Geological Services, Inc.	Project:	17115 - Wainscott Commercial Center
Matrix:	Soil	Analysis:	SOP-465 PFAS
Batch:	B218961	Preparation:	EPA 537
% Solids:		Laboratory ID:	B218961-MS1
Initial/Final:	2.05 g / 10 mL	Sample Lab ID:	18L0362-01 SB-1 (0-6")
Column:			

ANALYTE	SPIKE ADDED (µg/kg)	MSD CONCENTRATION (µg/kg)	MSD % REC. #		% RPD		QC LIMITS RPD	QC LIMITS REC.
Perfluorobutanesulfonic acid (PFBS)	2.15	2.39	111		10.1		30	50 - 150
Perfluorohexanoic acid (PFHxA)	2.43	2.34	96.3		6.33		30	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.43	2.22	91.6		1.62		30	50 - 150
Perfluorobutanoic acid (PFBA)	2.43	2.47	102		3.31		30	50 - 150
Perfluorodecanesulfonic acid (PFDS)	2.34	3.40	145		15.7		30	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.31	3.29	143		6.40		30	50 - 150
Perfluorooctanesulfonamide (FOSA)	2.43	2.65	109		8.76		30	50 - 150
Perfluoropentanoic acid (PFPeA)	2.43	2.40	98.9		3.60		30	50 - 150
6:2 Fluorotelomersulfonate (6:2 FTS)	2.31	3.56	154	*	53.5	*	30	50 - 150
8:2 Fluorotelomersulfonate (8:2 FTS)	2.33	2.75	118		0.596		30	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.21	2.32	105		12.3		30	50 - 150
Perfluorooctanoic acid (PFOA)	2.43	2.33	96.1		22.3		30	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.25	2.33	104		35.8	*	30	50 - 150
Perfluorononanoic acid (PFNA)	2.43	3.12	128		14.0		30	50 - 150
Perfluorodecanoic acid (PFDA)	2.43	3.14	129		1.42		30	50 - 150
NMeFOSAA	2.43	2.53	104		16.8		30	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.43	11.5	142		0.0213		30	50 - 150
NEtFOSAA	2.43	3.19	132		12.4		30	50 - 150
Perfluorododecanoic acid (PFDoA)	2.43	3.00	124		7.00		30	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.43	8.02	172	*	12.6		30	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.43	2.64	109		19.9		30	50 - 150

3 - FORM III

LCS / LCS DUPLICATE RECOVERY

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0362
Client:	Alpha Geological Services, Inc.	Project:	17115 - Wainscott Commercial Center
Matrix:	Water	Preparation:	EPA 537
Batch:	B219152	Laboratory ID:	B219152-BS1
Column:		Initial/Final:	250 mL / 1 mL

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
Perfluorobutanesulfonic acid (PFBS)	17.7	21.6	122	70 - 130
Perfluorohexanoic acid (PFHxA)	20.0	23.2	116	70 - 130
Perfluoroheptanoic acid (PFHpA)	20.0	22.3	112	70 - 130
Perfluorobutanoic acid (PFBA)	20.0	8.30	41.5	30 - 110
Perfluorodecanesulfonic acid (PFDS)	19.3	24.1	125	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	19.0	20.4	108	70 - 130
Perfluorooctanesulfonamide (FOSA)	20.0	9.33	46.7	30 - 110
Perfluoropentanoic acid (PFPeA)	20.0	22.6	113	70 - 130
6:2 Fluorotelomersulfonate (6:2 FTS)	19.0	24.4	128	70 - 130
8:2 Fluorotelomersulfonate (8:2 FTS)	19.2	30.7	160 *	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	18.2	21.1	116	70 - 130
Perfluorooctanoic acid (PFOA)	20.0	23.8	119	70 - 130
Perfluorooctanesulfonic acid (PFOS)	18.5	20.9	113	70 - 130
Perfluorononanoic acid (PFNA)	20.0	22.0	110	70 - 130
Perfluorodecanoic acid (PFDA)	20.0	25.0	125	70 - 130
NMeFOSAA	20.0	21.4	107	70 - 130
Perfluoroundecanoic acid (PFUnA)	20.0	25.1	125	70 - 130
NEtFOSAA	20.0	23.0	115	70 - 130
Perfluorododecanoic acid (PFDoA)	20.0	25.0	125	70 - 130
Perfluorotridecanoic acid (PFTrDA)	20.0	25.9	130	70 - 130
Perfluorotetradecanoic acid (PFTA)	20.0	25.8	129	70 - 130

7 - FORM VII

CONTINUING CALIBRATION VERIFICATION

SOP-465 PFAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0362
Client:	Alpha Geological Services, Inc.	Project:	17115 - Wainscott Commercial Center
Instrument ID:	HPLC1	Calibration:	1800365
Lab File ID:	lims export files full-001	Calibration Date:	11/13/18 19:28
Sequence:	S030237	Injection Date:	12/12/18
Lab Sample ID:	S030237-CCV1	Injection Time:	11:01

		CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	442	470	1.054546	1.099466		6.4	
Perfluorohexanoic acid (PFHxA)	A	500	580	1.20937	1.425098		16.0	
Perfluoroheptanoic acid (PFHpA)	A	500	511	1.446977	1.504004		2.1	
Perfluorobutanoic acid (PFBA)	A	500	525	0.6530979	0.7002268		5.1	
Perfluorodecanesulfonic acid (PFDS)	A	482	633	0.7748239	0.9991925		31.2	
Perfluoroheptanesulfonic acid (PFHpS)	A	475	469	0.8517729	0.7710179		-1.4	
Perfluorooctanesulfonamide (FOSA)	A	500	599	2.178791	2.712514		19.8	
Perfluoropentanoic acid (PFPeA)	A	500	444	0.9217361	0.7811186		-11.2	
6:2 Fluorotelomersulfonate (6:2 FTS)	A	475	578	0.4853469	0.5252831		21.6	
8:2 Fluorotelomersulfonate (8:2 FTS)	A	480	706	0.3945746	0.5374209		47.1	
Perfluorohexanesulfonic acid (PFHxS)	A	455	396	1.029258	0.8987941		-12.9	
Perfluorooctanoic acid (PFOA)	A	500	587	1.340488	1.553069		17.3	
Perfluorooctanesulfonic acid (PFOS)	A	462	498	1.492318	1.535734		7.8	
Perfluorononanoic acid (PFNA)	A	500	738	0.7117868	1.005357		47.6	
Perfluorodecanoic acid (PFDA)	A	500	743	1.129793	1.697262		48.6	
NMeFOSAA	A	500	443	1.313244	1.116097		-11.4	
Perfluoroundecanoic acid (PFUnA)	A	500	714	1.146598	1.558458		42.7	
NEtFOSAA	A	500	647	1.04506	1.271402		29.5	
Perfluorododecanoic acid (PFDoA)	A	500	560	1.362425	1.578404		11.9	
Perfluorotridecanoic acid (PFTrDA)	A	500	708	1.526311	2.129468		41.6	
Perfluorotetradecanoic acid (PFTA)	A	500	738	1.195437	1.746038		47.7	

7 - FORM VII

CONTINUING CALIBRATION VERIFICATION

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0362
Client:	Alpha Geological Services, Inc.	Project:	17115 - Wainscott Commercial Center
Instrument ID:	HPLC1	Calibration:	1800365
Lab File ID:	lims export files full-001	Calibration Date:	11/13/18 19:28
Sequence:	S030396	Injection Date:	12/17/18
Lab Sample ID:	S030396-CCV1	Injection Time:	14:48

		CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	442	593	1.054546	1.386313		34.1	
Perfluorohexanoic acid (PFHxA)	A	500	491	1.20937	1.206525		-1.8	
Perfluoroheptanoic acid (PFHpA)	A	500	501	1.446977	1.47715		0.3	
Perfluorobutanoic acid (PFBA)	A	500	444	0.6530979	0.5923194		-11.1	
Perfluorodecanesulfonic acid (PFDS)	A	482	703	0.7748239	1.110128		45.8	
Perfluoroheptanesulfonic acid (PFHpS)	A	475	701	0.8517729	1.15323		47.5	
Perfluorooctanesulfonamide (FOSA)	A	500	565	2.178791	2.558004		13.0	
Perfluoropentanoic acid (PFPeA)	A	500	510	0.9217361	0.8964515		1.9	
6:2 Fluorotelomersulfonate (6:2 FTS)	A	475	428	0.4853469	0.3894926		-9.8	
8:2 Fluorotelomersulfonate (8:2 FTS)	A	480	464	0.3945746	0.3533376		-3.3	
Perfluorohexanesulfonic acid (PFHxS)	A	455	632	1.029258	1.43396		38.9	
Perfluorooctanoic acid (PFOA)	A	500	533	1.340488	1.411344		6.6	
Perfluorooctanesulfonic acid (PFOS)	A	462	675	1.492318	2.08009		46.1	
Perfluorononanoic acid (PFNA)	A	500	498	0.7117868	0.6783434		-0.4	
Perfluorodecanoic acid (PFDA)	A	500	484	1.129793	1.106259		-3.2	
NMeFOSAA	A	500	584	1.313244	1.473132		16.9	
Perfluoroundecanoic acid (PFUnA)	A	500	588	1.146598	1.283992		17.6	
NEtFOSAA	A	500	533	1.04506	1.04691		6.6	
Perfluorododecanoic acid (PFDoA)	A	500	535	1.362425	1.508241		6.9	
Perfluorotridecanoic acid (PFTrDA)	A	500	565	1.526311	1.698281		12.9	
Perfluorotetradecanoic acid (PFTA)	A	500	564	1.195437	1.33313		12.7	

Polyfluorinated Alkyl Substances (PFAS) Acronyms

PFBA	Perfluorobutanoic acid
PFPeA	Perfluoropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA or PFTrDA	Perfluorotridecanoic acid
PFTeA or PFTA	Perfluorotetradecanoic acid
PFBS	Perfluorobutanesulfonic acid
PFPeS	Perfluoropentanesulfonic acid
PFHxS	Perfluorohexanesulfonic acid
PFHpS	Perfluoroheptanesulfonic acid
PFOS	Perfluorooctanesulfonic acid
PFNS	Perfluorononanesulfonic acid
PFDS	Perfluorodecanesulfonic acid
FOSA	Perfluorooctane Sulfonamide
NMeFOSAA	N-methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-ethyl perfluorooctane sulfonamidoacetic acid
4:2 FTS or 4:2	1H, 1H, 2H, 2H-perfluorohexanesulfonic acid
6:2 FTS or 6:2	1H, 1H, 2H, 2H-perfluorooctanesulfonic acid
8:2 FTS or 8:2	1H, 1H, 2H, 2H-perfluorodecanesulfonic acid

con-test®
ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wainscott, NY
Sample Description:
Work Order: 18L0362

Date Received: 12/7/2018

Field Sample #: SB-1 (0-6")
Sampled: 12/7/2018 11:25

Sample ID: 18L0362-01

Sample Matrix: Soil

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorononanoic acid (PFNA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
NMeFOSAA	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluoroundecanoic acid (PFUnA)	8.1	2.0		µg/kg	1	J	SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
NEtFOSAA	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorotridecanoic acid (PFTrDA)	3.8	2.0		µg/kg	1	J+	SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 13:55	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	85.2	70-130		12/12/18 13:55
13C-PFDA	88.2	70-130		12/12/18 13:55
d5-NEtFOSAA	97.6	70-130		12/12/18 13:55

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wainscott, NY | Sample Description: | Work Order: 18L0362

Date Received: 12/7/2018

Field Sample #: SB-2 (0-6") | Sampled: 12/7/2018 11:40

Sample ID: 18L0362-02

Sample Matrix: Soil

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorononanoic acid (PFNA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
NMeFOSAA	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluoroundecanoic acid (PFUnA)	2.0	2.0		µg/kg	1	J	SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
NEtFOSAA	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorotridecanoic acid (PFTrDA)	2.3	2.0		µg/kg	1	J	SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:07	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	80.1	70-130		12/12/18 14:07
13C-PFDA	83.0	70-130		12/12/18 14:07
d5-NEtFOSAA	95.3	70-130		12/12/18 14:07

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wainscott, NY | Sample Description: | Work Order: 18L0362

Date Received: 12/7/2018

Field Sample #: SB-3 (0-6") | Sampled: 12/7/2018 11:25

Sample ID: 18L0362-03

Sample Matrix: Soil

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorononanoic acid (PFNA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
NMeFOSAA	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluoroundecanoic acid (PFUnA)	1.9	2.0		µg/kg	1	J	SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
NEtFOSAA	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0		µg/kg	1		SOP-465 PFAS	12/11/18	12/12/18 14:20	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	88.7	70-130		12/12/18 14:20
13C-PFDA	96.7	70-130		12/12/18 14:20
d5-NEtFOSAA	109	70-130		12/12/18 14:20

con-test®
ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wainscott, NY
Sample Description:
Work Order: 18L0362

Date Received: 12/7/2018

Field Sample #: Field Blank
Sampled: 12/7/2018 11:28

Sample ID: 18L0362-04

Sample Matrix: Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
NMeFOSAA	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
NEtFOSAA	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 15:59	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	101	70-130		12/17/18 15:59
13C-PFDA	90.7	70-130		12/17/18 15:59
d5-NEtFOSAA	90.7	70-130		12/17/18 15:59

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Wainscott, NY
Sample Description:
Work Order: 18L0362

Date Received: 12/7/2018

Field Sample #: Wash Water
Sampled: 12/7/2018 11:30

Sample ID: 18L0362-05

Sample Matrix: Water

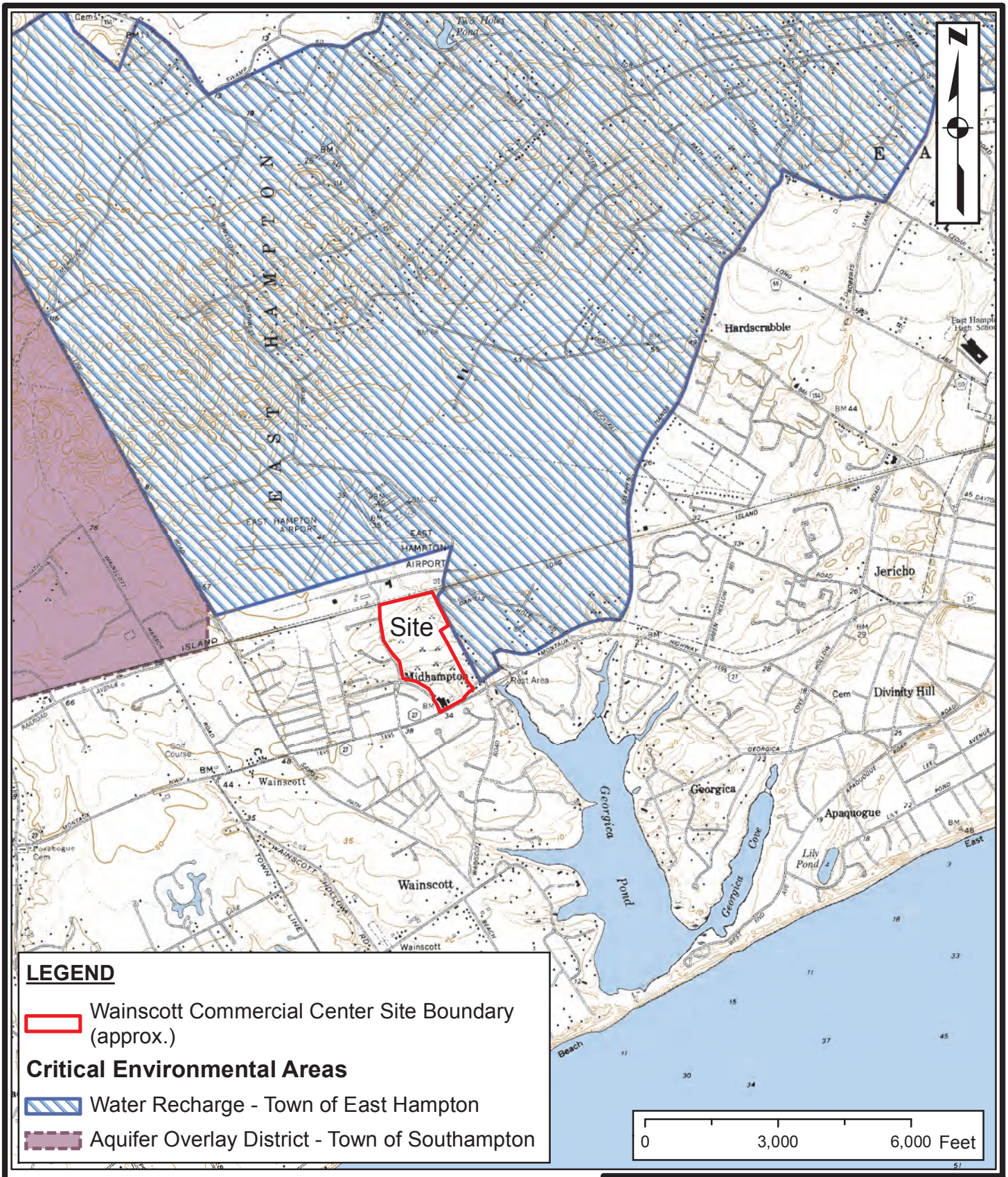
Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
NMeFOSAA	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
NEtFOSAA	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	2.0	ng/L	1		SOP 434-PFAAS	12/13/18	12/17/18 16:12	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	98.4	70-130		12/17/18 16:12
13C-PFDA	90.8	70-130		12/17/18 16:12
d5-NEtFOSAA	95.7	70-130		12/17/18 16:12

APPENDIX I

Town and County Critical Environmental Areas



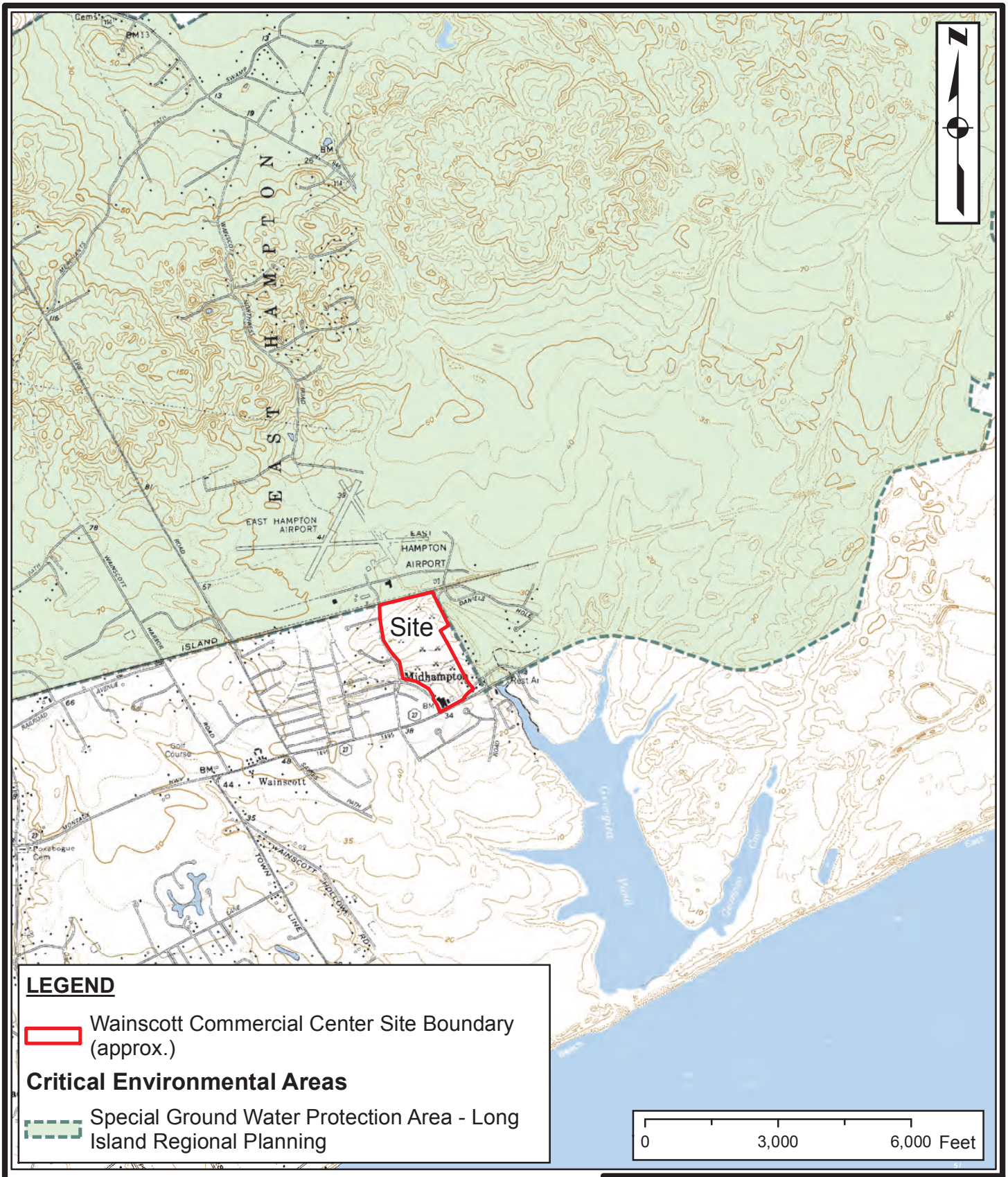
Source:
-Critical Environmental Areas from NYSDEC, accessed via NYS GIS Clearinghouse. Publication date: 7/8/2016.
-NYSDOT 7.5-minute topographic map (Sag Harbor and East Hampton Quadrangles)

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE I-1
Critical Environmental Areas
Water Recharge Area and
Aquifer Overlay District

Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Critical Env Areas.mxd
Date Saved: 1/10/2019 3:24:04 PM



Source:
-Critical Environmental Areas from NYSDEC, accessed via NYS GIS Clearinghouse. Publication date: 7/8/2016.
-NYSDOT 7.5-minute topographic map (Sag Harbor and East Hampton Quadrangles)

ALPHA GEOSCIENCE
Proj. No. 17115

FIGURE I-2
Critical Environmental Areas
Special Ground Water Protection Area

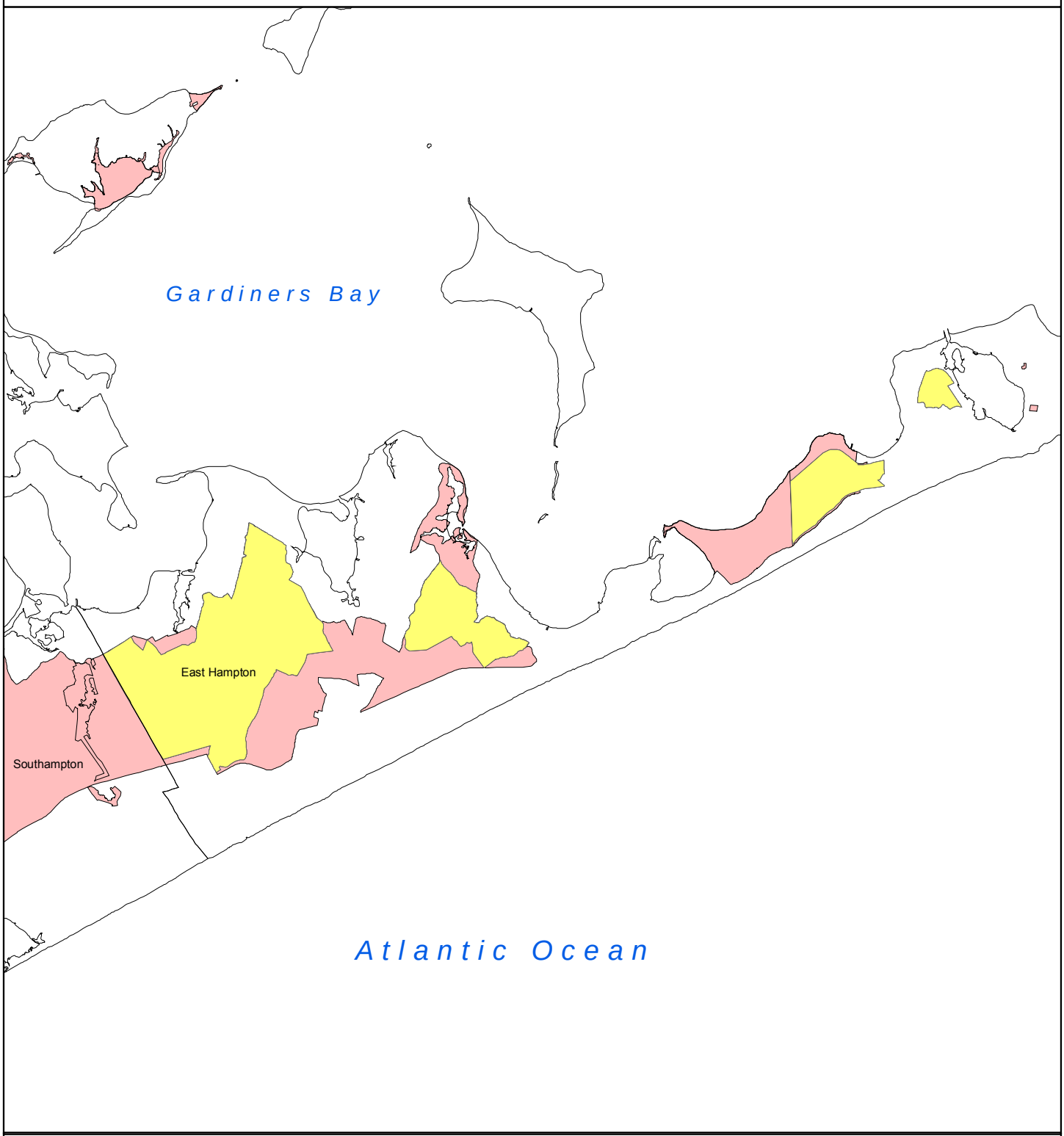
Wainscott Commerical Center
East Hampton, Suffolk County, New York

Path: Z:\projects\2017\17100 - 17120\17115 - Wainscott Commercial Center\15_0 GIS\Critical Env Areas-LIRP.mxd
Date Saved: 1/10/2019 3:24:23 PM

Water Recharge Overlay District Critical Environmental Area (CEA)

Effective Date of Designation: 2-12-88

Designating Agency: Town of Easthampton



Legend

Water Recharge Overlay District

Adjacent CEAs

0 6 12 Miles

1 inch equals 3 miles

For Adjacent CEAs see maps: Hallocks Bay, Accabonac Harbor, SGPA Map #6, and SGPA Map #5 CEA

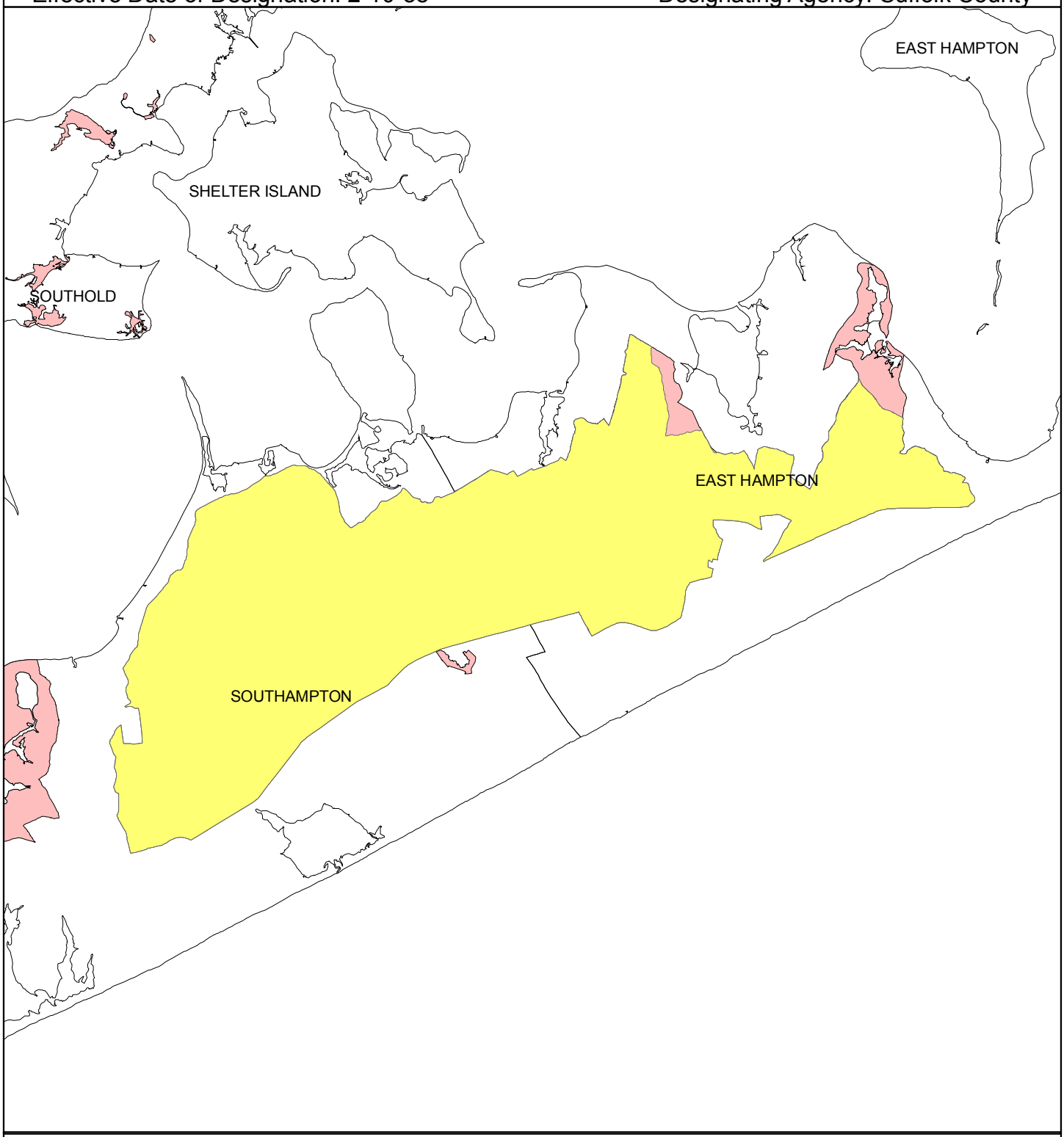
Base Map: Town or City Boundary for New York State

Disclaimer: This map was prepared by the New York State Department of Environmental Conservation using the most current data available. It is deemed accurate but is not guaranteed. NYS DEC is not responsible for any inaccuracies in the data. Please contact the designating authority for additional information regarding legal boundary descriptions. SGPA Maps 1 through 9 represent a portion of the SGPA designated as a Critical Environmental Area.

Special Groundwater Protection Area (South Fork) Critical Environmental Area (CEA) Map #6

Effective Date of Designation: 2-10-88

Designating Agency: Suffolk County



Legend

Special Groundwater Protection Area CEA Map #6

Adjacent CEAs

0 2 4 8 Miles

1 inch equals 2.5 miles

For Adjacent CEAs see maps: Accabonac Harbor, Corey Creek, Cedar Beach, Goose Creek, Mill Creek, Scallop Pondand, and Water Recharge

Base Map: Town or City Boundary for NYS

Disclaimer: This map was prepared by the New York State Department of Environmental Conservation using the most current data available. It is deemed accurate but is not guaranteed. NYS DEC is not responsible for any inaccuracies in the data. Please contact the designating authority for additional information regarding legal boundary descriptions. SGPA Maps 1 through 9 represent a portion of the SGPA designated as a Critical Environmental Area.

APPENDIX J

Photographs of the use of Fire Suppressant from AECOM (2018) Report (Appendix A)

AECOM

East Hampton Airport
200 Daniels Hole Rd
Wainscott, NY 11975
Phone: (518)925-4951
Fax:

Photo Log

Written By: Alexandra Golden, Geologist	
DATE:	unknown
PROJECT MANAGER: John Santacroce	
PROJECT NO.: 60566160	

Photo of mass casualty training exercise performed by the local fire department, near well EH-16

Photo of mass casualty training exercise performed by the local fire department, near well EH-16

APPENDIX K

Affidavit of James J. McCaffrey, Jr.
December 27, 2018

AFFIDAVIT

STATE OF NEW YORK)
) ss.:
COUNTY OF SUFFOLK)

JAMES J. McCAFFREY, Jr., being duly sworn, deposes and says:

1. I am 59 years old and I reside at 170 Main Street, Wainscott, New York.

2. I make this Affiviavit based upon my personal knowledge of and participation in a fire training drill simulating a plane crash held on the northern portion of the reclaimed sand pit located between Old Montauk Highway and the Long Island Railroad right-of-way in Wainscott, New York which occurred in June, 2000 (the "Drill) as depicted in the three photographs posted on The Southampton Press's website (http://www.27east.com/news/article.cfm/Wainscott/551173/Wainscott-Homeowner-Sues-Over-Well-Contamination) on March 22, 2018 (the "Pictures of the Drill"). A copy of the Pictures of the Drill are attached hereto.

3. I have been a member of the Bridgehampton Fire Department since 19 8 .7I am currently a member of the Board of Commissioners of the Bridgehampton Fire District. I was the Chief of the Bridgehampton Fire Department at the time the Drill occurred in June, 2000.

4. I was present at and participated in the Drill in my capacity as Chief of the Bridgehampton Fire Department. The reclaimed sand pit where the Drill was conducted is located in the Bridgehampton Fire District. The blue flatbed Chevy truck depicted in the Pictures of the Drill was my truck used in my family-owned landscaping business.

5. Contrary to the claim contained in the caption for the Pictures of the Drill, a "fire suppression foam" (or aqueous film-forming foam) was not used in the Drill. Rather, a wetting agent was added to the water used in the Drill to create what is known as "wet water". A wetting agent is commonly used by our Fire Department in fire training and firefighting to increase the penetration rate of water being applied to a fire.

JAMES J. McCAFFREY, JR.

Sworn to before me this
27 day of December 2018

Notary Public

KRISTINE E. GAUDY
NOTARY PUBLIC, STATE OF NEW YORK
No. 01GA6076473
Qualified in Suffolk County
Commission Expires June 24, 2022

Photograph A-3: June 2000 from Michael Wright, *Homeowner Sues Over Well Contamination,* Southampton Press, March 22, 2018

Photograph A-2: June 2000 from Michael Wright, *Homeowner Sues Over Well Contamination,* Southampton Press, March 22, 2018

Photograph A-1: June 2000 from Michael Wright, *Homeowner Sues Over Well Contamination,* Southampton Press, March 22, 2018

APPENDIX L

Bridgehampton and East Hampton Fire District
Responses to Information Requests

Bridgehampton Fire District
PO Box 958 – 64 School St.
Bridgehampton NY 11932
631-537-1909

December 19th 2018

Wainscott Commercial Center LLC
PO Box 1259
Wainscott NY 11975

Re: Department Drill

Attention: David E. Eagan

This is to inform you that the drill you are requesting are requesting information on was in June of the year 2000. The Bridgehampton Fire Department & District have no records of this drill.

Sincerely,

Bruce Dombkowski – Chairman
Bridgehampton Board of Commissioners

sgowan@alphageoscience.com

From: David Eagan <davideagan46@optimum.net>
Sent: Wednesday, December 5, 2018 10:12 AM
To: jbtintle@hotmail.com; sgowan@alphageoscience.com
Subject: FW: EHFD Records

Please see below.

From: East Hampton Chiefs [mailto:ehfdchiefs@gmail.com]
Sent: Wednesday, December 05, 2018 10:10 AM
To: davideagan46@optimum.net
Cc: Ken Collum
Subject: EHFD Records

Good morning David. I've checked our records and they are only retained dating back to 2003 (15 years). We have nothing on file regarding the training session that took place at the Wainscott Sand Pit.

Gerard Turza Jr.
Chief, EHFD