

**2018 OPERABLE UNIT 2  
GROUNDWATER INVESTIGATION  
RE134D1, RE134D2, RE134D3, RE134D4 (VPB168)  
INSTALLATION REPORT**

**NAVAL WEAPONS INDUSTRIAL RESERVE PLANT  
SITE 1 OPERABLE UNIT 2  
BETHPAGE, NY**

**Prepared for:**



**Department of the Navy  
Naval Facilities Engineering Command, Atlantic  
9324 Virginia Avenue  
Building Z-140  
Norfolk, Virginia 23511**

**August 2020**

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9324 Virginia Avenue  
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Norfolk, Virginia 23511**

**Prepared by:**



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**Contract Number: N62470-11-D-8013  
CONTRACT TASK ORDER WE15**

**August 2020**

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**Brian Caldwell  
Contract Task Order Manager**

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## List of Acronyms and Abbreviations

AOC	Area of Concern
bgs	below ground surface
COR	Continuously Operating Reference
EPA	Environmental Protection Agency, United States
ft	feet
GOCO	Government-Owned Contractor-Operated
GPS	Global Positioning System
IDW	Investigation Derived Waste
IR	Installation Restoration
Katahdin	Katahdin Analytical Services
NAD	North American Datum
NAVD	North American Vertical Datum
NAVFAC	Naval Facilities Engineering Command
NG	Northrop Grumman
NTU	nephelometric turbidity units
NWIRP	Naval Weapons Industrial Reserve Plant
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene
POTW	Publicly Owned Treatment Works
PPE	Personal Protective Equipment
PVC	Polyvinylchloride
SAP	Sampling and Analysis Plan
SVOC	Semivolatile Organic Compounds
TCE	Trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TOC	Total Organic Carbon
UFP	United Federal Programs
US	United States

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VOC                      Volatile Organic Compounds  
VPB                      Vertical Profile Boring

## **1.0 PROJECT BACKGROUND**

Resolution Consultants has prepared this Data Summary Report for the Naval Facilities Engineering Command (NAVFAC), Mid-Atlantic under contract task order WE15 Contract N62470-11-D-8013. This report describes the installation of four monitoring wells in 2018 and one initial groundwater monitoring event in 2018 for the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Operable Unit (OU) 2 Site 1 off property plume. NWIRP Bethpage is located in east-central Nassau County, Long Island, New York, approximately 30 miles east of New York City (Figure 1). The location of wells RE134D1, RE134D2, RE134D3 and RE134D4 are shown in Figure 2.

### **1.1 Scope and Objectives**

This report provides information on the installation of monitoring wells RE134D1, RE134D2, RE134D3 and RE134D4 associated with Vertical Profile Boring (VPB) 168. The purpose of this investigation was to ascertain subsurface conditions and contaminant levels, and the western extent of the off property plume north of Hempstead Turnpike and west of Wantagh Avenue. The location of wells RE134D1, RE134D2, RE134D3 and RE134D4, all associated with VPB 168 as well as other VPBs and monitoring well locations, is shown in Figure 2.

The field investigation included completing four monitoring wells, well development, soil/groundwater analysis, groundwater samples, and surveying. Field tasks were conducted in 2018 in accordance with the *United Federal Programs Sampling and Analysis Plan (UFP SAP)*, Bethpage, New York (Resolution, 2013a). In addition, the work adhered to the following UFP SAP Addendums: *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol* (Resolution Consultants, 2013b) and *Installation of Vertical Profile Borings and Monitoring Wells* (Resolution Consultants, 2013c).

Documentation of these activities is included in Appendix A of this report.

### **1.2 Site History**

NWIRP Bethpage is in the Hamlet of Bethpage, Town of Oyster Bay, New York. Since its inception in 1941, the plant's primary mission was the research, prototyping, testing, design, engineering, fabrication, and primary assembly of military aircraft. The facilities at NWIRP included four plants used for assembly and prototype testing, a group of quality control laboratories, two warehouse complexes (north and south), a salvage storage area, water recharge basins, the Industrial Wastewater Treatment Plant, and several smaller support buildings.

The Navy's property originally totaled 109.5 acres and was formerly a Government-Owned Contractor-Operated (GOCO) facility that was operated by Northrop Grumman (NG) until September 1998. Prior to 2002, the NWIRP property was bordered on the north, west, and south by current or former NG facilities, and on the east by a residential neighborhood. By March 2008, approximately 100 acres of NWIRP property were transferred to Nassau County in three separate actions. The remaining 9 acres and access easements were retained by the Navy to continue remedial efforts at Installation Restoration (IR) Site 1 – Former Drum Marshalling Area and Site 4 – Former Underground Storage Tanks (Area of Concern [AOC] 22). A parcel of land connecting the two sites was also retained. Currently, the 9-acre parcel of NWIRP is bordered on the east by the residential neighborhood and on the north, south, and west by Steel Equities; however, a small portion is still owned by Nassau County. Access to the NWIRP is from South Oyster Bay Road.

### **1.3 Geology and Hydrogeology**

#### **1.3.1 Depositional Environment**

Previous sequence stratigraphic studies of the New Jersey and New York Coastal Plains have shown that facies successions in the region can largely be explained by global sea level oscillations and sediment supply. The Turonian age sea level changes resulted in several phases of seaward progradation and landward retrogradation that affected the deposition and preservation of lithologic sequences in the Magothy. Periods of elevated or low sea level have a distinct effect on shoreline position and the types of deltaic facies that are deposited on the coastal plain. During high sea level, marine to distal deltaic facies tend to form. In contrast, during periods of low relative sea level, marginal to nonmarine deltaic facies are deposited.

Changes in sediment supply resulting from the tectonic uplift and weathering of the ancestral Appalachians during the Albian stage (approximately 100 million years ago) also influenced depositional environments in the region. The large influx of coarse sediments is reflected in the rapid seaward progradation of the shoreline and extensive delta plain deposits (Magothy Formation) on the New Jersey Coastal Plain.

#### **1.3.2 Stratigraphy**

Overburden at the site consists of well over 1,000 feet (ft) of unconsolidated deposits overlying crystalline bedrock of the Hartland Formation. Overburden is divided into four geologic units in descending order: the upper Pleistocene deposits, the Magothy Formation, the clay member of the Raritan Formation ("Raritan Clay") and the Lloyd Sand member of the Raritan Formation ("Lloyd Sand") (Geraghty and Miller, 1994).



The upper Pleistocene consists of till and outwash deposits of medium to coarse sand and gravel with lenses of fine sand, silt and clay (Smolensky and Feldman, 1988); these deposits form the Upper Glacial Aquifer. The continental deposits are considerably thicker than previously thought, ranging from 50 – 300 ft. Directly underlying this unit is the Magothy Formation with a thickness of 650 to 900 ft that extends to a depth of 700 to 1,000 ft below ground surface (bgs), as observed at the former NWIRP and extending southeast to areas south of Southern State Parkway. Locally at VPB168, the bottom of the Magothy (top of the Raritan Clay) is encountered at approximately 878 feet bgs. The Magothy is characterized by fine to medium sands and silts interbedded with zones of clays, silty sands and sandy clays. Sand and gravel lenses are found in some areas between depths of 600 and 880 ft bgs. Based on public water supply screen intervals, these deposits form the main groundwater producing zones of the Magothy Aquifer.

Investigations performed by the Navy since 2012 indicate that the bottom of the Magothy (top of the Raritan Clay) can extend to depths of 700 to greater than 1,000 ft bgs. The top of the Raritan Clay deepens to the south-southeast, as evidenced by clay depths of 1,000 ft bgs (or more) in borings installed off property such as VPB169. The Raritan Clay Unit is of continental origin and consists of clay, silty clay, clayey silt, and fine silty sand. This member acts as a confining layer over the Lloyd Sand Unit. The Lloyd Sand Unit is also of continental origin, having been deposited in a large fresh water lacustrine environment. The material consists of fine to coarse-grained sands, gravel, interbedded clay, and silty sand. These deposits form the Lloyd Aquifer.

### **1.3.3 Hydrogeology**

The Upper Glacial Aquifer and the Magothy Aquifer comprise the aquifers of interest at the NWIRP. Regionally, these formations are generally considered to form a common, interconnected aquifer as the coarse nature of each unit near their contact and the lack of any regionally confining clay unit allows for the unrestricted flow of groundwater between the formations.

The Magothy Aquifer is the major source of public water in Nassau County. The most productive water bearing zones are the discontinuous lenses of sand and gravel that occur within the siltier matrix. The major water-bearing zones are coarse sand and gravel lenses located in the lower portion of the Magothy, below 600 ft bgs. Because of the presence of intermittent clay layers and the depths, the Magothy Aquifer is commonly regarded to function overall as an unconfined aquifer at shallow depths and a confined aquifer at greater depths. The drilling program at the NWIRP has revealed that clay zones beneath the facility are common but laterally discontinuous. No laterally persistent confining clay units have been encountered on property or off property.

Groundwater is encountered at an average depth of approximately 50 ft bgs at the facility. Depth to water in the vicinity of the RE134 series wells is approximately 23 - 26 feet bgs, as measured on December 18, 2018. The groundwater flow in the area is to the south-southeast.

Considerable heterogeneity exists in the subsurface due to alternating depositional environments that resulted from changes in sea level and sediment supply. Laterally continuous fluvial sands and distributary mouth bars are inferred to represent high permeability units and conduits for groundwater flow/contaminant transport, however the continuity of those units is variable. Fine grained muds deposited during maximum flooding appear to correlate to contamination data peaks, potentially acting as storage units by adsorption to fine-grained muds.

## 2.0 FIELD PROGRAM

Four monitoring wells were installed in the vicinity of VPB168 between April 2, 2018 and June 25, 2018. Field investigation activities consisted of drilling, well installation, well development, sampling, soil/groundwater analysis, and surveying. Drilling during this investigation was performed by Delta Well and Pump Company of Ronkonkoma, New York. A description of these tasks is provided below.

### 2.1 Drilling and Well Construction

Monitoring wells RE134D1, RE134D2, RE134D3 and RE134D4 were installed using mud rotary drilling techniques (Figure 2). The depth of monitoring wells RE134D1 through RE134D4 ranged from 350 to 690 ft. Well construction details are summarized in Table 1. The boring logs for RE134 series wells with lithologic descriptions of the well screen intervals are included in Appendix A. *2017 OU2 Groundwater Investigation Data Summary Report VPB168* (Resolution Consultants, 2018) documents the installation of VPB168 including detailed lithologic descriptions, continuous gamma plot and multiple volatile organic compounds (VOC) sample results over the entire boring length. The gamma and trichloroethene (TCE)/ tetrachloroethene (PCE) plot for VPB168, which also depicts the well screen interval at RE134 series wells, is included in Appendix A.

Prior to installing the monitoring wells, the screen intervals were determined based on intervals with the highest VOC concentrations as measured in the VPB168 hydropunch samples and coincident intervals with the highest apparent permeability based on the VPB168 gamma logs and geologist logs. During the monitoring well installation, split spoon samples were collected every 5 ft in the screen interval. One soil sample per monitoring well was analyzed for total organic carbon (TOC) via United States (US) Environmental Protection Agency (EPA) series SW-846 method 9060A by Katahdin Analytical Services (Katahdin). Data validation of TOC data was performed by Resolution Consultants. Data validation packages and analytical data tables are included in Appendix A.

Wells were constructed of 4-inch diameter, Schedule 80, National Sanitation Foundation-approved polyvinylchloride (PVC) riser pipe and 0.010-slot well screen. The wells were completed at the surface with a 12-inch diameter steel curb box. The well risers were set below grade and fit with lockable J plugs. Detailed monitoring well construction diagrams are included in Appendix A.

Well RE134D1 was initially installed on June 19, 2018 however it was determined on June 20, 2018 (prior to grouting) that the sand pack had bridged and the well needed to be removed and re-installed. The well was removed on June 20, 2018, the borehole was reamed and successfully installed on June 21, 2018, and grouting was completed on June 22, 2018 and June 25, 2018.

## **2.2 Well Development**

Following installation, wells were developed to evacuate silts and other fine-grained materials and to establish the filter pack to promote a hydraulic connection between the wells and the surrounding aquifer. Well development was not initiated until at least 24 hours after well installation.

The well screens were developed using a combination of air lifting, manual surging, and pumping with a submersible pump. Turbidity was monitored during development to determine stabilization. In compliance with New York State Department of Environmental Conservation (NYSDEC) policy, wells are developed until turbidity was less than 50 nephelometric turbidity units (NTUs), if possible. Table 2 summarizes total pumped volume from air and pump development and final turbidity.

## **2.3 Sampling**

Following development, the wells were allowed to stabilize for at least 2 weeks prior to groundwater sampling in accordance with low flow sampling procedures. The wells were purged using a bladder pump with a drop tube intake placed at the approximate midpoint of the screened interval. The following water quality parameters were continuously measured: water temperature, pH, conductivity, oxidation-reduction potential, dissolved oxygen and turbidity. Groundwater analytical samples were collected when water quality parameters stabilized. Samples were analyzed for VOCs via method 8260C and 1,4-dioxane via Method 8270D SIM by Katahdin. The flow rate for sample collection was 200 mL/minute. All development and purge water was managed as investigation derived waste (IDW). Groundwater sample logs and data validation packages are included in Appendix A.

Monitoring wells were sampled by Resolution Consultants on December 18, 2018. Analytical results and stabilized field parameters are summarized in Table 3 and 4, respectively. Data validation is documented in Appendix A. RE134 series monitoring wells will be included in quarterly sampling as part of the Navy's ongoing Environmental Restoration Program.

## **2.4 Decontamination and Investigation Derived Waste**

Resolution Consultants utilized dedicated and disposable sampling equipment when possible to avoid the potential for cross-contamination of samples. The sampling equipment included dedicated plastic scoops, disposable polyethylene tubing, disposable gloves, and laboratory supplied sample bottles. Hand held equipment and split spoons were decontaminated using Luminol and water wash, a potable water rinse, followed by a distilled water rinse. Water was collected in 5-gallon pails or 55-gallon drums. Non dedicated sampling equipment was decontaminated as outlined in the UFP SAP

Addendum - *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol* (Resolution Consultants, 2013b).

As part of the IDW management practices and in accordance with the SAP, the investigation waste (consisting of soil cuttings, drilling muds, IDW fluids, and personal protective equipment [PPE]) generated during the groundwater monitoring well installation and sampling was containerized and staged at NWIRP Bethpage.

IDW solids were containerized in roll offs. Representative samples from each roll off were submitted to Katahdin for analysis of:

- Target Compound List (TCL) VOCs
- TCL Semi-volatile Organic Compounds (SVOCs)
- Toxicity Characteristic Leaching Procedure (TCLP) Metals
- Polychlorinated Biphenyls (PCBs)
- Total petroleum hydrocarbons
- Corrosivity
- Ignitability
- Reactive Cyanide
- Reactive Sulfide
- Paint Filter

IDW fluid generated during well development and purging was containerized in frac tanks and stored at NWIRP Bethpage for characterization and ultimate disposal to the Publicly Owned Treatment Works (POTW), in accordance with the facilities existing discharge permit. A representative water sample was collected from each frac tank and submitted to Katahdin for analysis of VOCs via Method SW 624, pH via Method SW 9040B, PCBs via Method 8082 and Total Metals via Method SW 846. All analytical criteria of the discharge permit were met for disposal of water.

## **2.5 Surveying**

A survey of the monitoring well locations was conducted at the end of fieldwork by C. T. Male, Inc., of Latham, NY, under the direct supervision of Resolution Consultants. The locations were tied into the existing base map developed for this investigation. The survey elevation is referenced to the North American Vertical Datum (NAVD) 1988 and has a vertical accuracy of 0.01 foot. Vertical control

is based on observations of the Continuously Operating Reference (COR) Stations Queens and Central Islip. The horizontal location is referenced to the North American Datum (NAD) 1983 (2011) NY. Long Island Zone 3104 and has an accuracy of 0.1 foot. Local horizontal and vertical control is based on Global Positioning System (GPS) observations using the NYSNet Real Time Network.

A table of survey data (latitude/longitude, northing/easting, elevations of ground, rim and PVC) and a survey map is included in Appendix A.

### **3.0 REFERENCES**

Geraghty and Miller, Inc., 1994. *Remedial Investigation Report, Grumman Aerospace Corporation, Bethpage, New York*. Revised September 1994.

Resolution Consultants, 2013a. *United Federal Programs Sampling and Analysis Plan, Site OU-2 Offsite Trichloroethene (TCE) Groundwater Plume Investigation, Bethpage, New York*. April 2013.

Resolution Consultants, 2013b. UFP SAP Addendum, *Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol*. November 2013.

Resolution Consultants, 2013c. UFP SAP Addendum, *Installation of Vertical Profile Borings and Monitoring Wells*. December 2013.

Resolution Consultants, 2018. *2017 OU2 Groundwater Investigation Data Summary Report VPB168, Bethpage, NY*. December 2018.

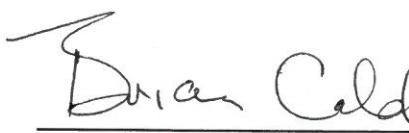
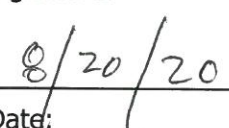
Smolensky, D., and Feldman, S., 1988. *Geohydrology of the Bethpage-Hicksville-Levittown Area, Long Island, New York, U.S. Geological Survey Water-Resourced Investigations Report 88-4135*, 25 pp.

NEW YORK PROFESSIONAL GEOLOGIST SEAL

As a New York-licensed Professional Geologist, I have reviewed and approve this Well Installation Data Summary Report for Monitoring Well RE134D1, RE134D2, RE134D3, and RE134D4 - Groundwater Investigation at Naval Industrial Reserve Plant Bethpage Operable Unit 2, Site 1, and seal it in accordance with Article 145 Section 7209 of the New York State Education Laws. In sealing this document, I certify it was prepared under my direction, the geological information contained in it is true to the best of my knowledge and the geological methods and procedures included herein are consistent with currently accepted geological practices.

It is a violation of this law for any person to alter the contained drawings or the report in any way, unless he or she is acting under the direction of a NY-licensed Professional Geologist.

Name: Brian E. Caldwell  
NY PG License Number: 000511  
State: New York

  
\_\_\_\_\_  
Signature:  
  
\_\_\_\_\_  
Date:





## Tables

RE134D1, RE134D2, RE134D3, RE134D4  
(VPB168) Installation Report  
NWIRP Bethpage, NY

**TABLE 1**  
**MONITORING WELL CONSTRUCTION SUMMARY**  
**2018 OU2 GROUNDWATER INVESTIGATION**  
**NWIRP BETHPAGE, NY**

MONITORING WELL	WELL COMPLETION DATE	GROUND ELEVATION (MSL)	PVC ELEVATION (INNER CASING) (MSL)	WELL DEPTH (ft bgs)	CASING DEPTH (ft bgs)	SCREEN INTERVAL (ft bgs)	SUMP DEPTH INTERVAL (ft bgs)	BORING DEPTH (ft bgs)
RE134D1	6/25/2018	90.32	89.88	350	52	325-345	345-350	363
RE134D2	6/4/2018	90.40	89.93	535	53	510-530	530-535	548
RE134D3	5/16/2018	90.40	89.97	625	53	600-620	620-625	638
RE134D4	4/27/2018	90.43	90.05	690	53	665-685	685-690	702

MSL - mean sea level

ft bgs - feet below ground surface

**TABLE 2**  
**MONITORING WELL DEVELOPMENT SUMMARY**  
**2018 OU2 GROUNDWATER INVESTIGATION**  
**NWIRP BETHPAGE, NY**

MONITORING WELL	AIR DEVELOPMENT		PUMP DEVELOPMENT			APPROX. TOTAL DEVELOPMENT VOLUME (GAL)	FINAL TURBIDITY (NTUs)
	DATE	APPROX. VOLUME (GAL)	DATE	FINAL PUMP DEPTH (FT BGS)	APPROX. VOLUME (GAL)		
RE134D1	7/6/2018	5,500	7/9/2018	325-345	4,000	9,500	2.38
RE134D2	7/5/2018	5,000	7/10/18, 7/11/18	510-530	5,500	10,500	10.89
RE134D3	7/2/18, 7/3/18	5,500	7/12/2018	600-620	6,000	11,500	1.08
RE134D4	7/2/2018	no water produced	9/4/2018	660-670	2,500	2,500	not measured

GAL - gallon

FT BGS - feet below ground surface

NTUs - Nephelometric Turbidity Units

**TABLE 3**  
**ANALYTICAL DATA SUMMARY**  
**[2018] OU2 GROUNDWATER INVESTIGATION**

Location		NYSDEC Groundwater Guidance or Standard Value (Note 1)	RE134D1	RE134D2	RE134D3	RE134D4
Sample Date			12/18/2018	12/18/2018	12/18/2018	12/18/2018
Sample ID			RE134D1-GW- 121818	RE134D2-GW- 121818	RE134D3-GW- 121818	RE134D4-GW- 121818
Sample type code			N	N	N	N
Units ug/L	Method					
1,1,1-TRICHLOROETHANE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8260 C	5	<0.5 U	<b>20</b>	<b>300</b>	<b>120</b>
1,1,2-TRICHLOROETHANE	8260 C	1	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	8260 C	5	<0.5 U	<b>0.24 J</b>	<b>0.34 J</b>	<0.5 U
1,1-DICHLOROETHENE	8260 C	5	<0.5 UJ	<b>0.75 J</b>	<b>4.6 J</b>	<0.5 UJ
1,2,4-TRICHLOROENZENE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	8260 C	0.04	<b>&lt;0.75 U</b>	<b>&lt;0.75 U</b>	<b>&lt;0.75 U</b>	<b>&lt;0.75 U</b>
1,2-DIBROMOETHANE	8260 C	NL	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROENZENE	8260 C	3	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROETHANE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROETHENE, TOTAL	8260 C	5	<1 U	<b>2.2</b>	<b>4.8</b>	<b>0.68 J</b>
1,2-DICHLOROPROPANE	8260 C	1	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROENZENE	8260 C	3	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,4-DICHLOROENZENE	8260 C	3	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,4-DIOXANE	8270D_SIM	NL	<b>1.2</b>	<b>16</b>	<b>19</b>	<b>2.5</b>
2-BUTANONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 U
2-HEXANONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 U
4-METHYL-2-PENTANONE	8260 C	NL	<2.5 U	<2.5 U	<2.5 U	<2.5 U
ACETONE	8260 C	50	<2.5 U	<2.5 U	<2.5 U	<2.5 U
BENZENE	8260 C	1	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMODICHLOROMETHANE	8260 C	50	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	8260 C	50	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOMETHANE	8260 C	5	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	8260 C	60	<0.5 U	<0.5 U	<1.1 U	<0.5 U
CARBON TETRACHLORIDE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROENZENE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROETHANE	8260 C	5	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	8260 C	7	<0.5 U	<0.5 U	<b>0.37 J</b>	<0.5 U
CHLOROMETHANE	8260 C	5	<1 UJ	<1 UJ	<1 UJ	<1 UJ
CIS-1,2-DICHLOROETHENE	8260 C	5	<0.5 U	<b>2.2</b>	<b>4.8</b>	<b>0.68 J</b>
CIS-1,3-DICHLOROPROPENE	8260 C	0.4	<b>&lt;0.5 U</b>	<b>&lt;0.5 U</b>	<b>&lt;0.5 U</b>	<b>&lt;0.5 U</b>
CYCLOHEXANE	8260 C	NL	<0.5 UJ	<0.5 UJ	<0.5 UJ	<0.5 UJ
DIBROMOCHLOROMETHANE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	8260 C	5	<1 U	<1 U	<b>0.36 J</b>	<1 U
ETHYLBENZENE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M- AND P-XYLENE	8260 C	NL	<1 U	<1 U	<1 U	<1 U
METHYL ACETATE	8260 C	NL	<0.75 U	<0.75 U	<0.75 U	<0.75 U
METHYL CYCLOHEXANE	8260 C	NL	<0.5 U	<0.5 U	<0.5 U	<0.5 U
METHYL TERT-BUTYL ETHER	8260 C	10	<0.5 UJ	<0.5 UJ	<0.5 UJ	<0.5 UJ
METHYLENE CHLORIDE	8260 C	5	<2.5 U	<2.5 U	<2.5 U	<2.5 U
O-XYLENE	8260 C	NL	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	8260 C	5	<b>0.7 J</b>	<b>9.2</b>	<b>42</b>	<b>3.7</b>
TOLUENE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	8260 C	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	8260 C	0.4	<b>&lt;0.5 U</b>	<b>&lt;0.5 U</b>	<b>&lt;0.5 U</b>	<b>&lt;0.5 U</b>
TRICHLOROETHENE	8260 C	5	<b>5.6</b>	<b>130</b>	<b>160</b>	<b>13</b>
TRICHLOROFLUOROMETHANE	8260 C	5	<1 U	<1 U	<1 U	<1 U
VINYL CHLORIDE	8260 C	2	<1 U	<1 U	<1 U	<1 U
XYLENES, TOTAL	8260 C	5	<1.5 U	<1.5 U	<1.5 U	<1.5 U

**TABLE 3**  
**ANALYTICAL DATA SUMMARY**  
**(2018) OU2 GROUNDWATER INVESTIGATION**

**Notes:**

1 New York State Department of Environmental Conservation Division of Water Technical and Operation Guidance series  
(6 NYCRR 700-706, Part 703.5 summarized in TOGS 1.1.1)

Ambient water quality standards and groundwater effluent limitations, class GA; NL = Not Listed

NA = not analyzed

**Bold** = Detected; ***Bold and Italics*** = Not detected exceeds NYS Groundwater Standards or guidance value

Yellow highlighted values exceed Groundwater Standards or guidance value

Sample type codes: N - normal environmental sample, FD - field duplicate

U = The analyte was not detected and was reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.

UJ = The analyte was not detected and was reported as less than the LOD or as defined by the customer. However, the associated numerical value is approximate.

J = The reported result was an estimated value with an unknown bias.

LOD = limit of detection.

**TABLE 4**  
**STABILIZED FIELD PARAMETERS**  
2018 OU2 GROUNDWATER INVESTIGATION  
NWIRP BETHPAGE, NY

Well	Date	Temperature (°C)	pH	Specific Conductance (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to water (ft bgs)	Purge Flow rate (ml/min)
RE134D1	12/18/2018	13.95	5.12	0.154	4.48	217.2	11.1	33.65	600
RE134D2	12/18/2018	12.73	5.08	0.083	5.23	307.2	13.0	36.81	600
RE134D3	12/18/2018	13.40	5.04	0.077	5.59	239.6	20.7	35.51	600
RE134D4	12/18/2018	12.55	5.17	0.048	2.58	202.0	455	36.21	600

°C - degrees Celsius

µS/cm - Microsiemens per Centimeter

mg/L - milligrams per liter

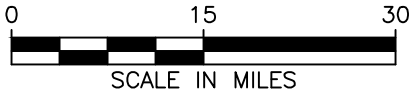
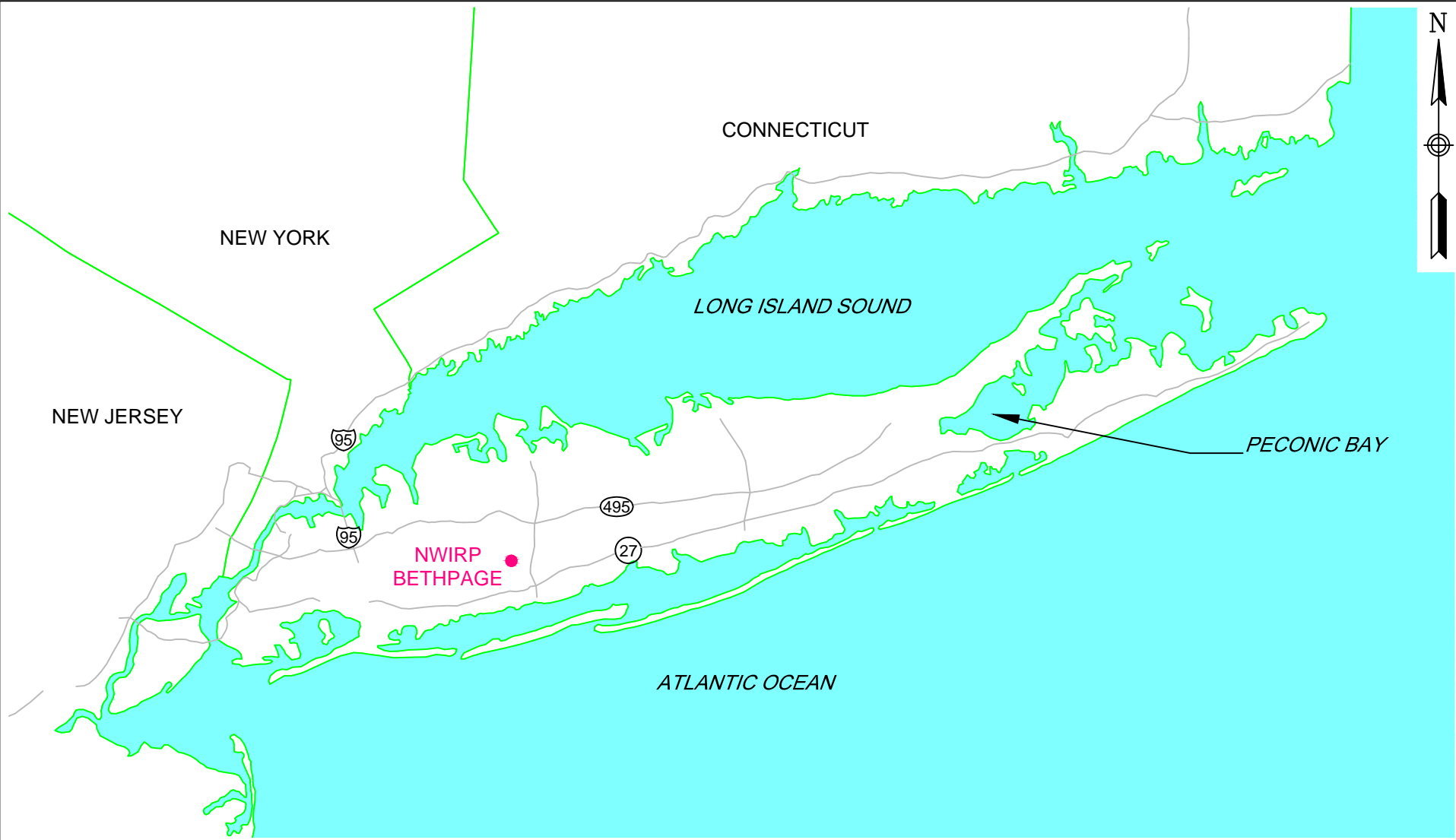
mV - Millivolts

NTU - Nephelometric Turbidity Unit

ft bgs - feet below ground surface

ml/min - milliliters per minute

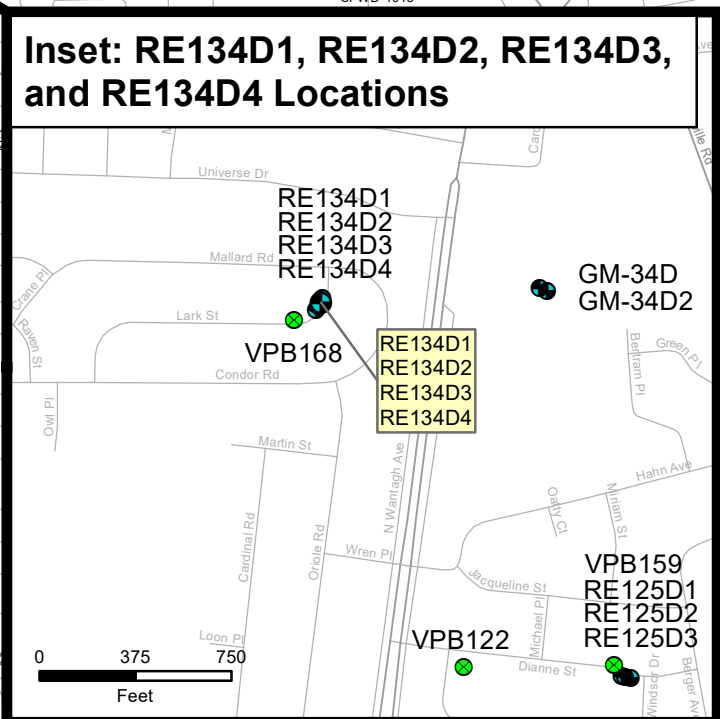
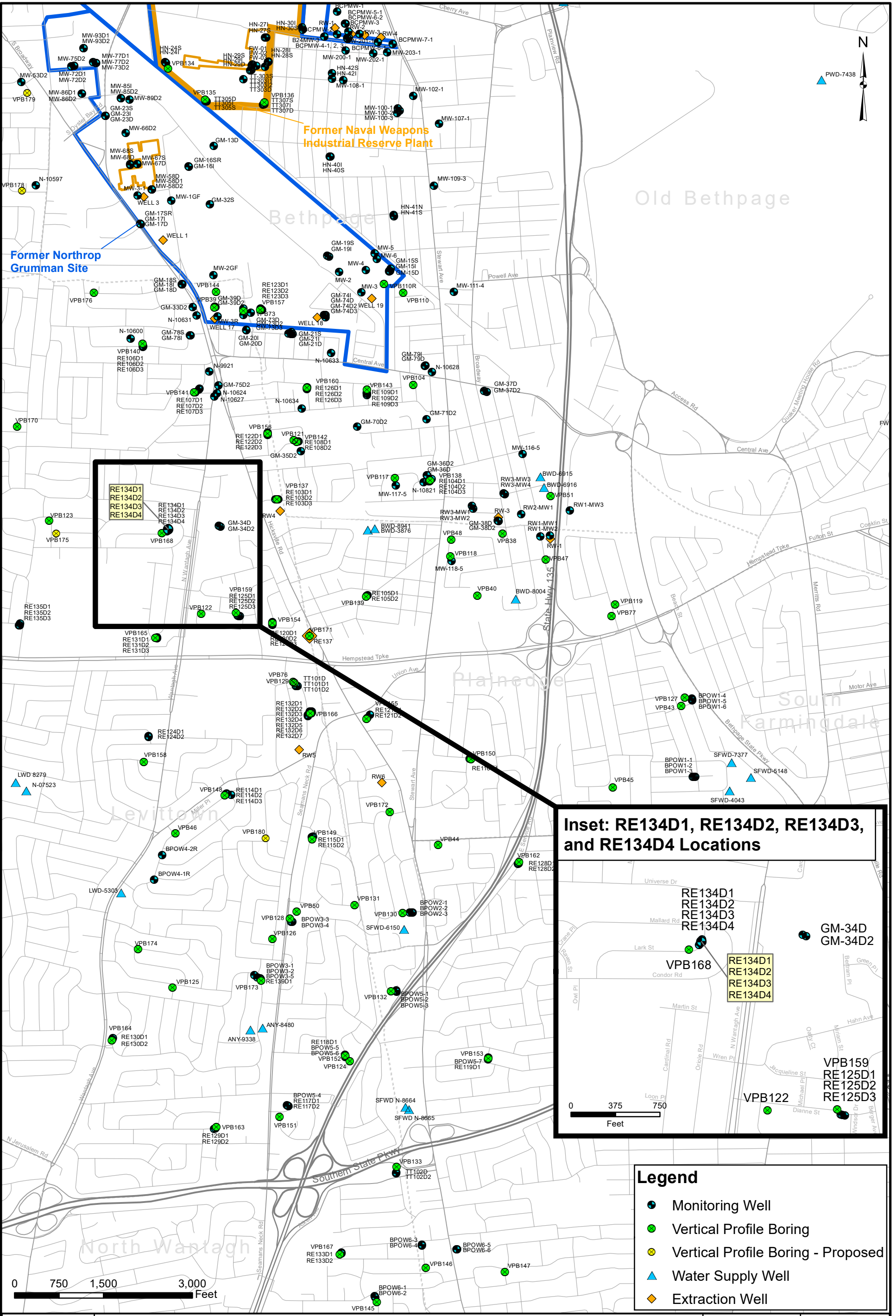
## Figures



GENERAL LOCATION MAP  
NWIRP BETHPAGE  
BETHPAGE, NEW YORK

CONTRACT NUMBER N62470-11-D-8013		CTO NUMBER WE15	
APPROVED BY ---		DATE ---	
APPROVED BY ---		DATE ---	
FIGURE NO. 1			REV 0





**Legend**

- Monitoring Well
- Vertical Profile Boring
- Vertical Profile Boring - Proposed
- ▲ Water Supply Well
- ◆ Extraction Well



RE 134D1 THROUGH RE 134D4 LOCATION MAP  
 NAVAL WEAPONS INDUSTRIAL RESERVE PLANT  
 BETHPAGE, NEW YORK

CONTRACT NUMBER N62470-11-D8013	CTO NUMBER WE15
APPROVED BY PS	DATE 5/30/2020
APPROVED BY	DATE
FIGURE NO. 2	REV 0

## **Appendices**

## **Appendix A**

**RE134D1, RE134D2, RE134D3, RE134D4**

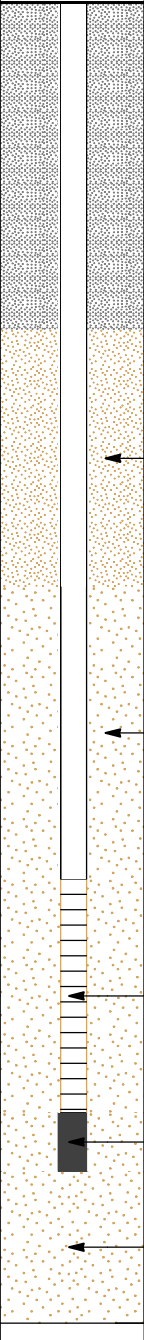




**Section 1**  
**Boring Logs**

<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		<b>Logged By:</b> V. Varricchio
<b>Location:</b> Lark St., Levittown, NY		<b>Drilling Company:</b> Delta Well & Pump
<b>Project #:</b> 60266526	<b>Ground Elevation (msl):</b> 90.32	<b>Well Screen Interval (ft):</b> 325-345
<b>Start Date:</b> 6/12/2018	<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)	<b>Water Level (ft):</b>
<b>Finish Date:</b> 6/25/2018	<b>Northing:</b> 206205.65 <b>Easting:</b> 1123308.13	<b>Total Depth (ft):</b> 363.0

Casing installed with auger rig 6/6/2018 - 6/7/2018.

DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction
0					0-328 ft bgs: See VPB168 for Descriptions		
50							10" Diameter Steel Casing
100							Bentonite Grout
150							
200							4" Diameter Schedule 80 PVC Riser
250							

<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		<b>Logged By:</b> V. Varricchio
<b>Location:</b> Lark St., Levittown, NY		<b>Drilling Company:</b> Delta Well & Pump
<b>Project #:</b> 60266526	<b>Ground Elevation (msl):</b> 90.32	<b>Well Screen Interval (ft):</b> 325-345
<b>Start Date:</b> 6/12/2018	<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)	<b>Water Level (ft):</b>
<b>Finish Date:</b> 6/25/2018	<b>Northing:</b> 206205.65 <b>Easting:</b> 1123308.13	<b>Total Depth (ft):</b> 363.0

DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction
250					0-328 ft bgs: See VPB168 for Descriptions <i>(continued)</i>		4" Diameter Schedule 80 PVC Riser <i>(continued)</i>
252							
254							
256							
258							
260							
262							
264							
266							
268							
270							
272							
274							
276							
278							
280							
282							
284							
286							
288							
290							
292							
294							
296							
298							
300							
302							
304							
306							
308							
310							
312							
314							
316							
318							
320							
322							
324							
326							
328	0		SP		Brown (10YR 5/3) poorly graded fine SAND, trace Silt and lignite		
330							
332							
334	0		SP		Light yellowish brown (10YR 6/4) poorly graded fine SAND		
336							
338	0		SP		Pale brown (10YR 6/3) poorly graded fine SAND		4" Diameter Schedule 80 PVC, 10 Slot Well Screen (325-345 ft bgs)
340							
342	0		CH		Black (10YR 2/1) fat CLAY, trace fine Sand		Sump
344							
346							
348							
350							
352							
354							
356							
358							
360							
362							
End of boring at 363.0 ft. bgs.							

<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		<b>Logged By:</b> V. Varricchio
<b>Location:</b> Lark St., Levittown, NY		<b>Drilling Company:</b> Delta Well & Pump
<b>Project #:</b> 60266526	<b>Ground Elevation (msl):</b> 90.40	<b>Well Screen Interval (ft):</b> 510-530
<b>Start Date:</b> 5/22/2018	<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)	<b>Water Level (ft):</b>
<b>Finish Date:</b> 6/4/2018	<b>Northing:</b> 206188.83 <b>Easting:</b> 1123301.98	<b>Total Depth (ft):</b> 548.0

Casing installed with auger rig 4/6/2018, 4/9/2018, 4/10/2018.

DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction
0					0-513 ft bgs: See VPB168 for Descriptions		
50							10" Diameter Steel Casing
100							
150							Bentonite Grout
200							
250							
300							
350							#00 Filter Sand
400							
450							

<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		<b>Logged By:</b> V. Varricchio
<b>Location:</b> Lark St., Levittown, NY		<b>Drilling Company:</b> Delta Well & Pump
<b>Project #:</b> 60266526	<b>Ground Elevation (msl):</b> 90.40	<b>Well Screen Interval (ft):</b> 510-530
<b>Start Date:</b> 5/22/2018	<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)	<b>Water Level (ft):</b>
<b>Finish Date:</b> 6/4/2018	<b>Northing:</b> 206188.83 <b>Easting:</b> 1123301.98	<b>Total Depth (ft):</b> 548.0

DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction	
450					0-513 ft bgs: See VPB168 for Descriptions <i>(continued)</i>		#00 Filter Sand <i>(continued)</i>	
452								
454								
456								
458								
460								
462								
464								
466								
468								
470								
472								
474								
476								
478								
480								
482								
484								
486								
488								
490								
492								
494								
496								
498								
500							#1 Filter Sand	
502								
504								
506								
508								
510								
512								
514	0		SP		Light gray (10YR 7/2) poorly graded medium to coarse subrounded SAND			
516								
518	0		SP		Brown (10YR 5/3) poorly graded fine SAND, trace Clay			
520								
522								
524	0		SP/CL		Gray (10YR 6/1) interbedded poorly graded fine SAND with lean Clay		4" Diameter Schedule 80 PVC, 10 Slot Well Screen (510-530 ft bgs)	
526								
528	0		SP		Gray (10YR 6/1) poorly graded fine SAND			
530								
532							Sump	
534								
536								
538								
540								
542								
544								
546							#1 Sand to Bottom	
548					End of boring at 548.0 ft. bgs.			



<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic			<b>Logged By:</b> P. Kareth		
<b>Location:</b> Lark St., Levittown, NY			<b>Drilling Company:</b> Delta Well & Pump		
<b>Project #:</b> 60266526		<b>Ground Elevation (msl):</b> 90.40		<b>Well Screen Interval (ft):</b> 600-620	
<b>Start Date:</b> 5/4/2018		<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)		<b>Water Level (ft):</b>	
<b>Finish Date:</b> 5/16/2018		<b>Northing:</b> 206172.76 <b>Easting:</b> 1123293.65		<b>Total Depth (ft):</b> 638.0	

Casing installed with auger rig 4/4/2018 - 4/6/2018.

DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction
0					0-603 ft bgs: See VPB168 for Descriptions		
50							10" Diameter Steel Casing
100							
150							
200							Bentonite Grout
250							
300							
350							
400							
450							#00 Filter Sand
500							

<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		<b>Logged By:</b> P. Kareth
<b>Location:</b> Lark St., Levittown, NY		<b>Drilling Company:</b> Delta Well & Pump
<b>Project #:</b> 60266526	<b>Ground Elevation (msl):</b> 90.40	<b>Well Screen Interval (ft):</b> 600-620
<b>Start Date:</b> 5/4/2018	<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)	<b>Water Level (ft):</b>
<b>Finish Date:</b> 5/16/2018	<b>Northing:</b> 206172.76 <b>Easting:</b> 1123293.65	<b>Total Depth (ft):</b> 638.0

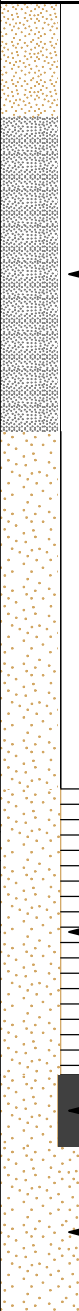
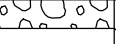
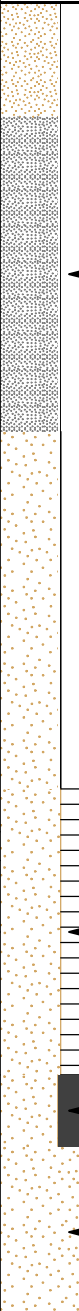
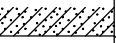

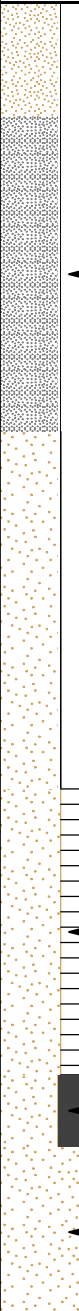

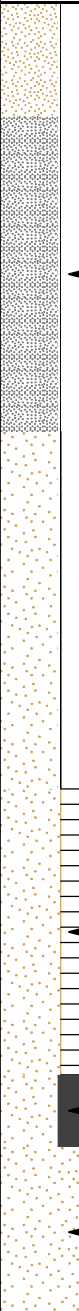
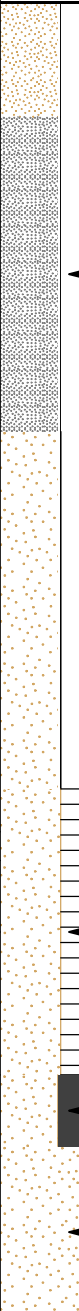
DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction
540					0-603 ft bgs: See VPB168 for Descriptions <i>(continued)</i>		#00 Filter Sand <i>(continued)</i>
542							
544							
546							
548							
550							
552							
554							
556							
558							
560							
562							
564							
566							
568							
570							
572							
574							
576							
578							
580							
582							
584							
586							
588							
590							
592							
594							
596							
598							
600							
602							
604	0		SM		Gray (10YR 6/1) Silty fine SAND		
606							
608	0		CL		Light gray (10YR 7/1) CLAY		
610							
612					No Recovery		4" Diameter Schedule 80 PVC, 10 Slot Well Screen (600-620 ft bgs)
614							
616							
618	0		SP		Gray (10YR 6/1) fine to medium SAND, little fine Gravel, trace silt		
620							
622							Sump
624							
626							
628							
630							
632							
634							
636							
638					End of boring at 638.0 ft. bgs.		#1 Sand to Bottom

<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		<b>Logged By:</b> V. Varricchio
<b>Location:</b> Lark St., Levittown, NY		<b>Drilling Company:</b> Delta Well & Pump
<b>Project #:</b> 60266526	<b>Ground Elevation (msl):</b> 90.43	<b>Well Screen Interval (ft):</b> 665-685
<b>Start Date:</b> 4/17/2018	<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)	<b>Water Level (ft):</b>
<b>Finish Date:</b> 4/27/2018	<b>Northing:</b> 206157.56 <b>Easting:</b> 1123282.69	<b>Total Depth (ft):</b> 702.0

Casing installed with auger rig 4/2/2018 - 4/4/2018.

DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction
0					0-668 ft bgs: See VPB168 for Descriptions		
50							10" Diameter Steel Casing
100							
150							
200							Bentonite Grout
250							
300							
350							
400							
450							
500							#00 Filter Sand
550							
600							

<b>Client:</b> Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic		<b>Logged By:</b> V. Varricchio
<b>Location:</b> Lark St., Levittown, NY		<b>Drilling Company:</b> Delta Well & Pump
<b>Project #:</b> 60266526	<b>Ground Elevation (msl):</b> 90.43	<b>Well Screen Interval (ft):</b> 665-685
<b>Start Date:</b> 4/17/2018	<b>Drilling Method:</b> Auger (0-50' bgs) Mud Rotary (>50' bgs)	<b>Water Level (ft):</b>
<b>Finish Date:</b> 4/27/2018	<b>Northing:</b> 206157.56 <b>Easting:</b> 1123282.69	<b>Total Depth (ft):</b> 702.0

DEPTH (ft)	PID (ppm)	Formation	USCS	GRAPHIC LOG	MATERIAL DESCRIPTION	Well Completion	Well Construction
610					0-668 ft bgs: See VPB168 for Descriptions <i>(continued)</i>		#00 Filter Sand <i>(continued)</i>
612							
614							
616							
618							
620							
622							
624							
626							
628							
630							
632							
634							
636							
638							
640							
642							
644							
646							
648							
650							
652							
654							
656							
658							
660							
662							
664							
666							
668	0		GP		Light Gray (10YR 7/2) poorly graded coarse rounded to angular GRAVEL		4" Diameter Schedule 80 PVC Riser
670							
672	0		SC		White (10YR 8/1) Clayey poorly graded fine SAND, trace coarse subrounded gravel		
674							
676	0		SP		White (10YR 8/1) poorly graded fine SAND		
678							
680	0						4" Diameter Schedule 80 PVC, 10 Slot Well Screen (665-685 ft bgs)
682							
684	0		GM		Pale brown (10YR 6/3) Silty fine to coarse subangular GRAVEL		
686							
688							
690							Sump
692							
694							
696							
698							
700							#1 Sand to Bottom
702					End of boring at 702.0 ft. bgs.		

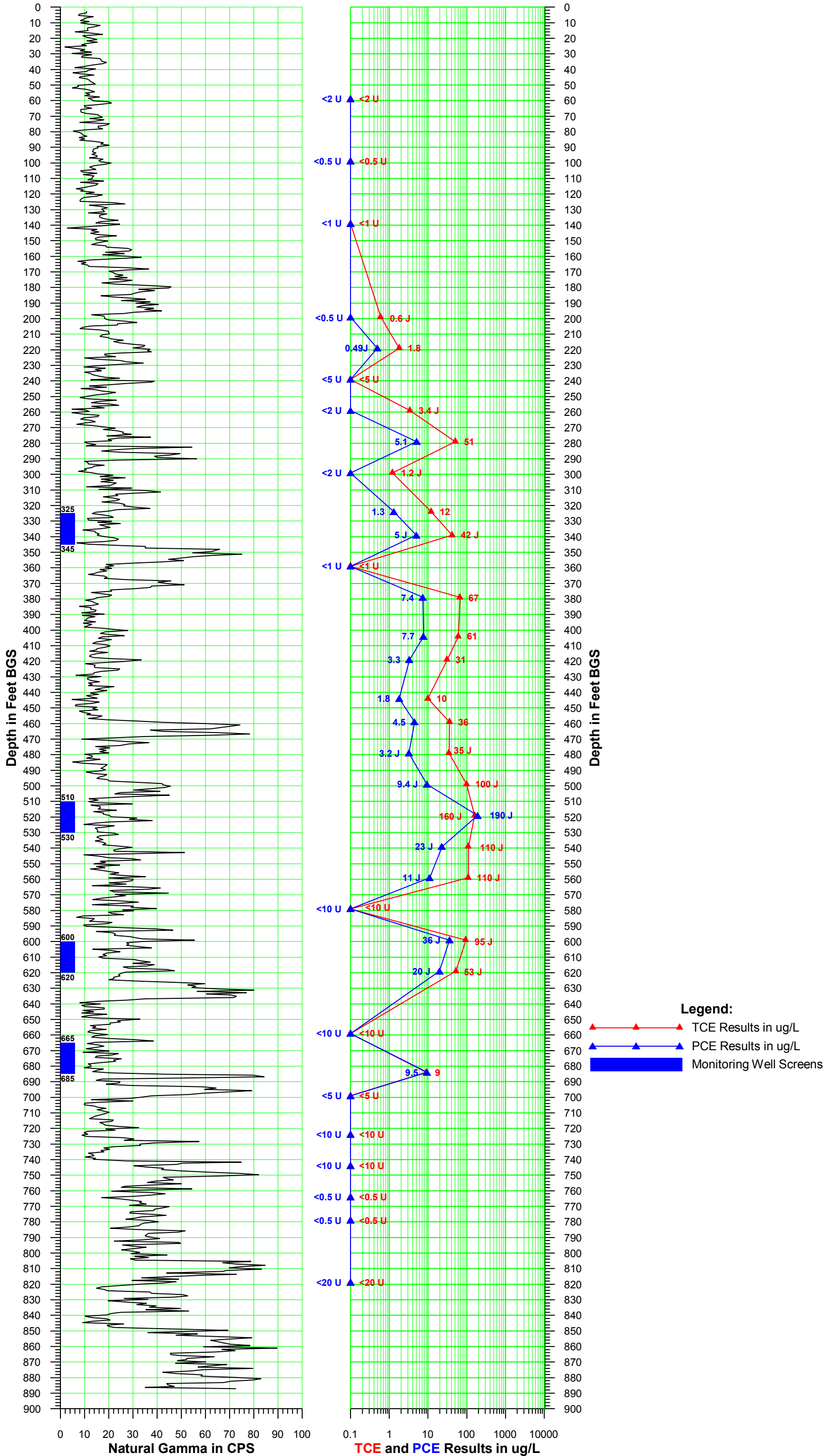
## **Section 2**

### **VPB168 Gamma and TCE/PCE Plot**

# Vertical Profile Boring VPB168

## Downward Run - November 20, 2017

### Validated Analytical Data



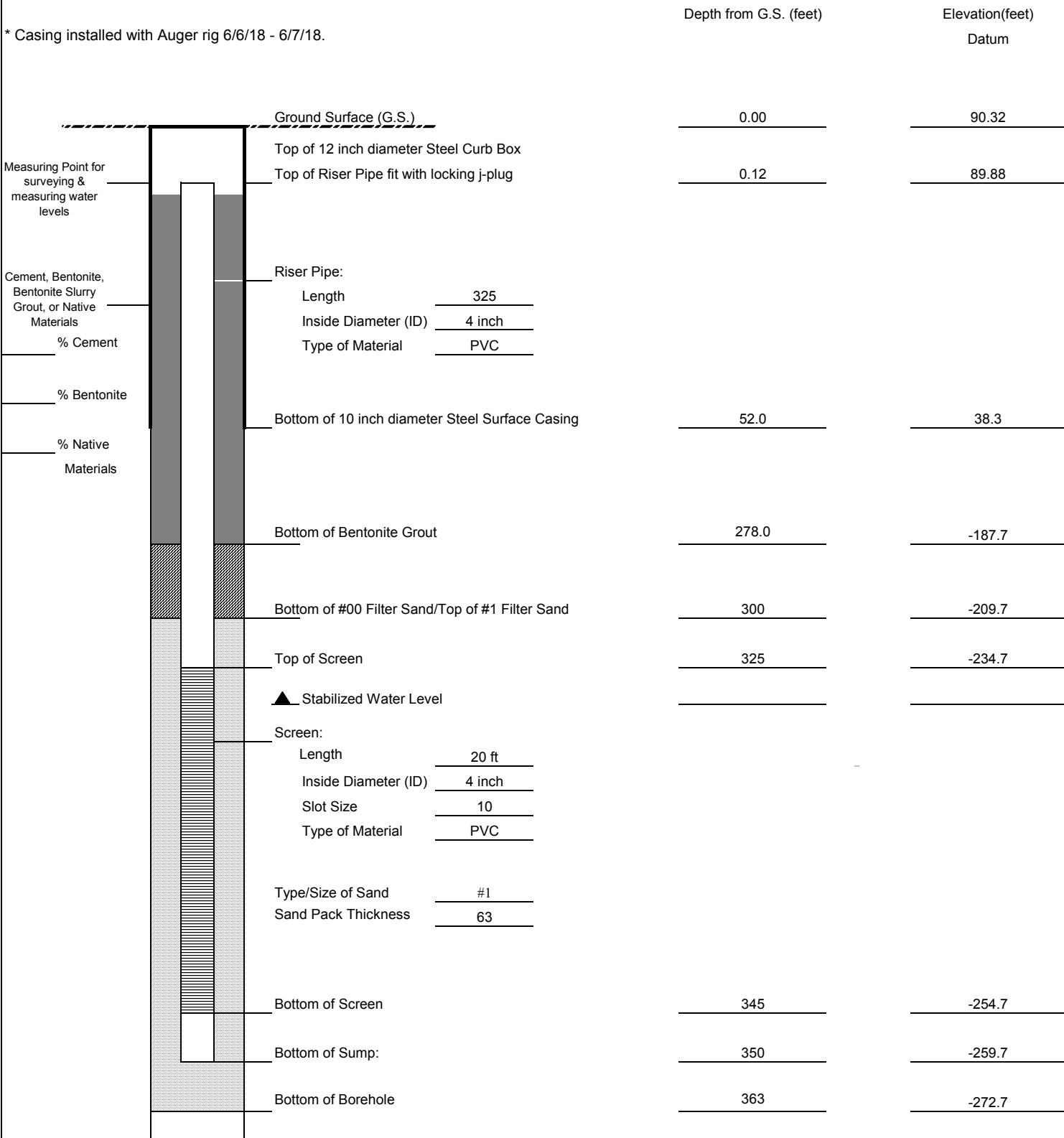
### **Section 3**

## **Monitoring Well Construction Logs**



Client: NAVFAC	Project Number: 60266526	<b>WELL ID: RE134D1</b>
Site Location: NWIRP BETHPAGE, NY		
Well Location: Lark St and Mallard Rd, Bethpage, NY		Date Installed: 6/25/2018
Method: MUD ROTARY		Inspector: V.Varricchio
Coords: Northing: 206205.65 Easting: 1123308.13		Contractor: DELTA WELL & PUMP

### MONITORING WELL CONSTRUCTION DETAIL



Borehole Diameter: 10 inch      Approved: \_\_\_\_\_

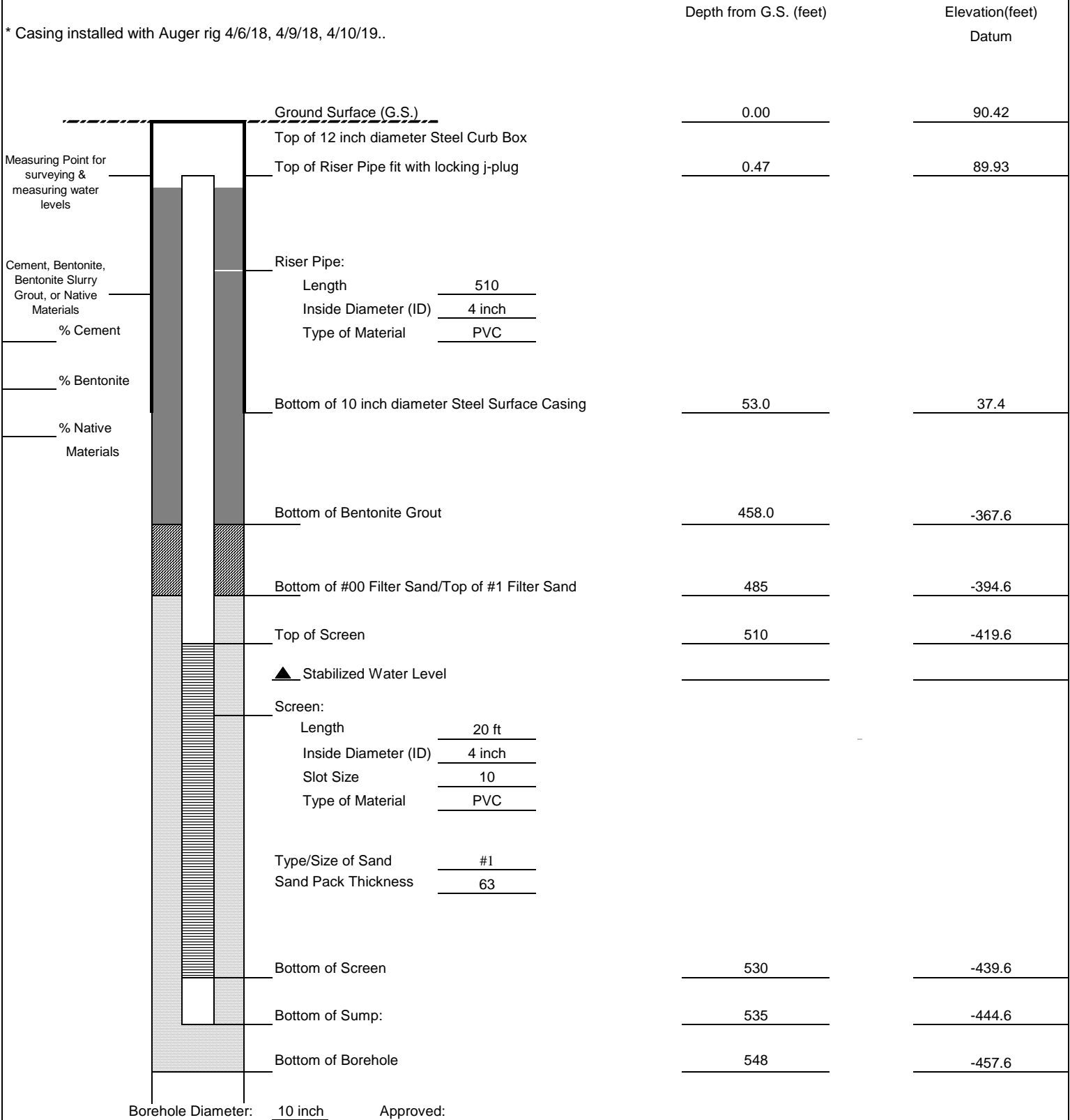
Describe Measuring Point: \_\_\_\_\_  
 Ground Surface \_\_\_\_\_      Signature \_\_\_\_\_      Date \_\_\_\_\_





Client: NAVFAC	Project Number: 60266526	<b>WELL ID: RE134D2</b>
Site Location: NWIRP BETHPAGE, NY		
Well Location: Lark St and Mallard Rd, Bethpage, NY		Date Installed: 6/4/2018
Method: MUD ROTARY		Inspector: V.Varricchio
Coords: Northing: 206188.83 Easting: 1123301.98		Contractor: DELTA WELL & PUMP

### MONITORING WELL CONSTRUCTION DETAIL



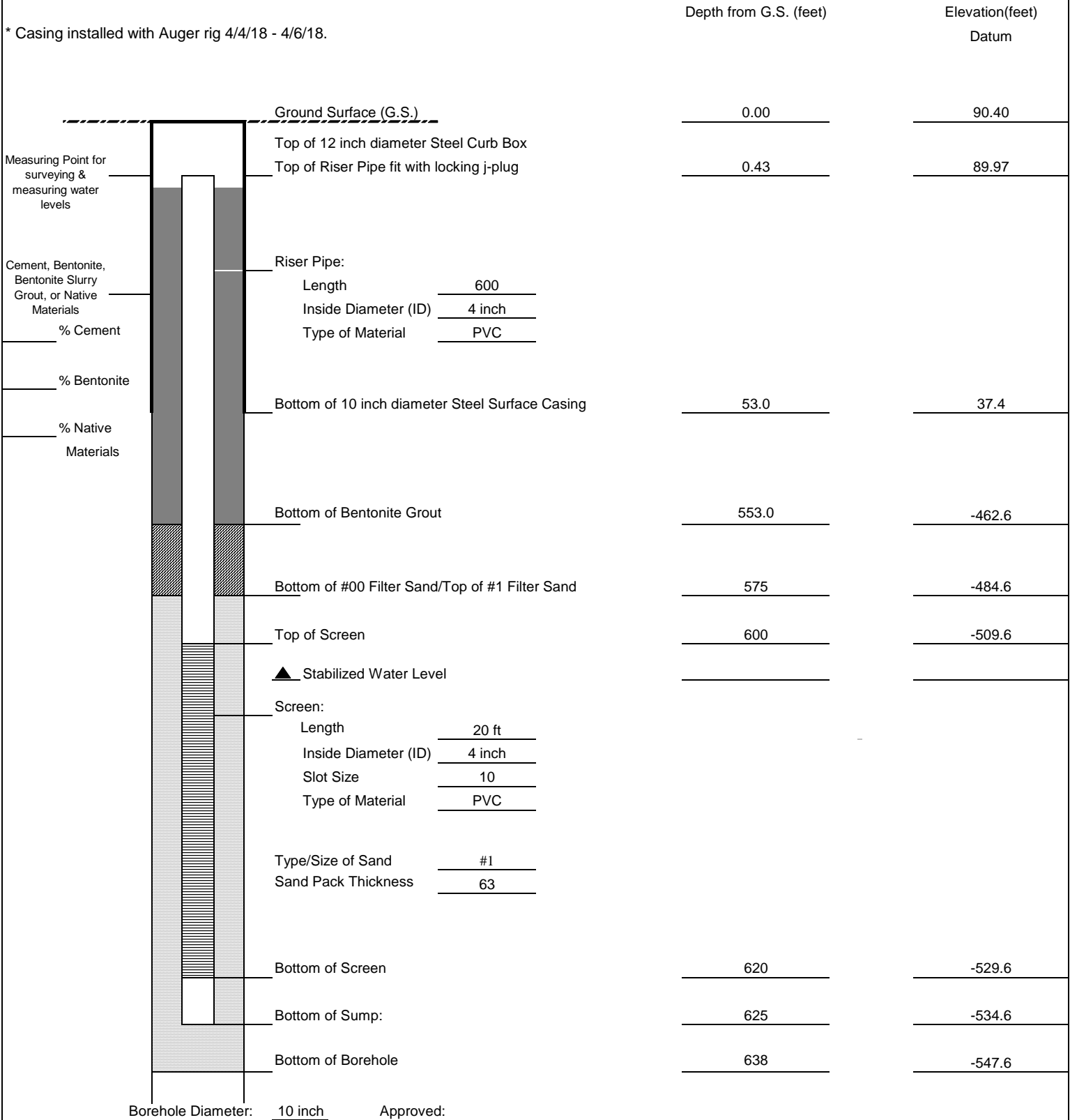
Describe Measuring Point: \_\_\_\_\_  
 Ground Surface \_\_\_\_\_

Approved: \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_



Client: NAVFAC	Project Number: 60266526	<b>WELL ID: RE134D3</b>
Site Location: NWIRP BETHPAGE, NY		
Well Location: Lark St and Mallard Rd, Bethpage, NY		Date Installed: 5/16/2018
Method: MUD ROTARY		Inspector: V.Varricchio
Coords: Northing: 206172.76 Easting: 1123293.65		Contractor: DELTA WELL & PUMP

### MONITORING WELL CONSTRUCTION DETAIL



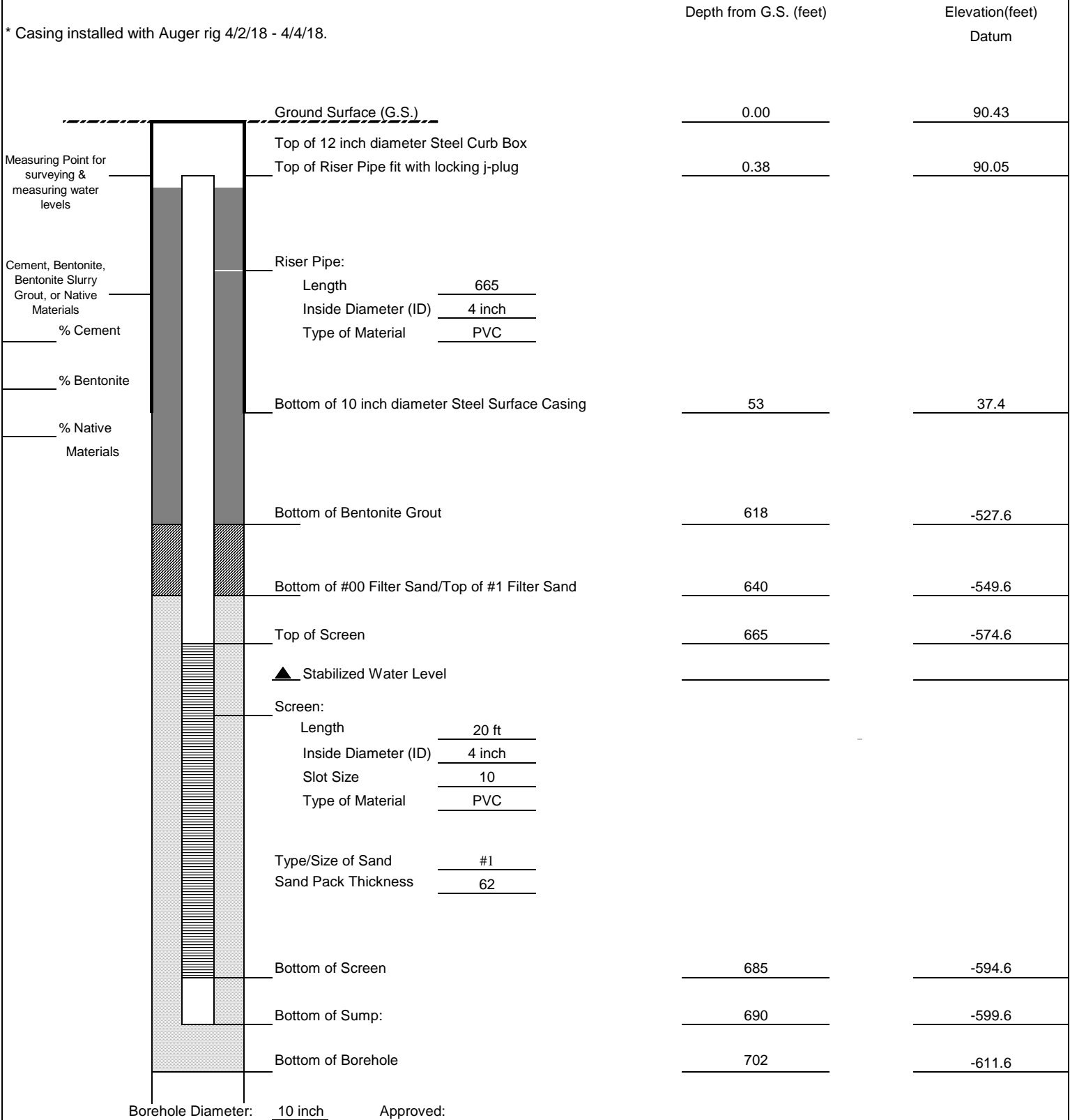
Describe Measuring Point: \_\_\_\_\_

Ground Surface
Signature \_\_\_\_\_
Date \_\_\_\_\_



Client: NAVFAC	Project Number: 60266526	<b>WELL ID: RE134D4</b>
Site Location: NWIRP BETHPAGE, NY		
Well Location: Lark St and Mallard Rd, Bethpage, NY		Date Installed: 4/27/2018
Method: MUD ROTARY		Inspector: V.Varricchio
Coords: Northing: 206157.56 Easting: 1123282.69		Contractor: DELTA WELL & PUMP

### MONITORING WELL CONSTRUCTION DETAIL



Describe Measuring Point: \_\_\_\_\_  
 Ground Surface \_\_\_\_\_

Approved: \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_

## **Section 4**

### **Groundwater Sample Log Sheets**



Well ID: RE134D1

# Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 12/18 / 18 Time: Start 0845 am/pm  
 Project No: 60266526 Finish 1015 am/pm  
 Site Location: Lark  
 Weather Conds: Sunny cold windy 35° Collector(s): S. WRIGHT

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 350 ft c. Length of Water Column \_\_\_\_\_ ft (a-b) Casing Diameter/Material 4-inch PVC  
 b. Water Table Depth 33.68 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

### 2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
  - pH ± 0.1 unit
  - Conductivity ± 3%
  - Turbidity ± 10%
  - ORP ± 10mV
  - Drawdown < 0.3'
  - D.O. ± 10% (values >0.5 mg/L)
- Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	15A102400
HACH	2100 Q	

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0900	-	12.38	0.124	13.95	7.37	126.7	-	600	33.65	CLEAR/NONE
0905		13.41	0.131	6.98	5.53	173.9	-	600	33.65	CLEAR/NONE
0910		13.56	0.136	6.63	5.47	180.1	286	600	33.65	CLOUDY/NONE
0915		13.73	0.215	1.65	6.73	121.7	-	600	33.65	CLOUDY/NONE
0920		13.87	0.163	2.44	6.40	125.3	-	600	33.65	CLOUDY/NONE
0925		13.61	0.140	3.37	5.96	140.7	185	600	33.65	CLOUDY/NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

### 3. SAMPLE COLLECTION:

Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
<u>RE134D1-60-121818</u>	<u>40-mL vials</u>	<u>3</u>	<u>HCl</u>	<u>VOCs</u>	<u>1015</u>
<u>RE134D1-60-121818</u>	<u>1-L amber</u>	<u>2</u>	<u>none</u>	<u>1,4-Dioxane</u>	

Comments

Signature

Date

12-18-18







Well ID: RE13402

# Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 12 / 18 / 18 Time: Start 0830 am/pm  
 Project No: 60266526 Finish \_\_\_\_\_ am/pm  
 Site Location: Carle  
 Weather Conds: sunny, cold, windy 35° Collector(s): \_\_\_\_\_

## 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 535 ft c. Length of Water Column \_\_\_\_\_ ft (a-b) Casing Diameter/Material 4-inch PVC  
 b. Water Table Depth 36.80 ft d. Calculated System Volume (see back) 131 gal. 20 screen length (ft)

## 2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

### b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
  - pH ± 0.1 unit
  - Conductivity ± 3%
  - Turbidity ± 10%
  - ORP ± 10mV
  - Drawdown < 0.3'
  - D.O. ± 10% (values >0.5 mg/L)
- Remove a minimum 1 screen volume

### c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	090100185
<u>HACH</u>	<u>2100Q</u>	

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
920	ON									
925		12.02	0.083	7.90	7.45	132.1		600	36.81	
930		12.29	0.082	6.18	5.80	199.6		600	36.80	
935		12.56	0.082	5.83	5.52	212.4			36.82	
940		12.45	0.082	5.65	5.27	239.6	24.9	600	36.80	
945	5 gal	12.81	0.083	5.62	5.20	263.4				

d. Acceptance criteria pass/fail

Has required volume been removed	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	(continued on back)
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

If no or N/A - Explain below.

## 3. SAMPLE COLLECTION:

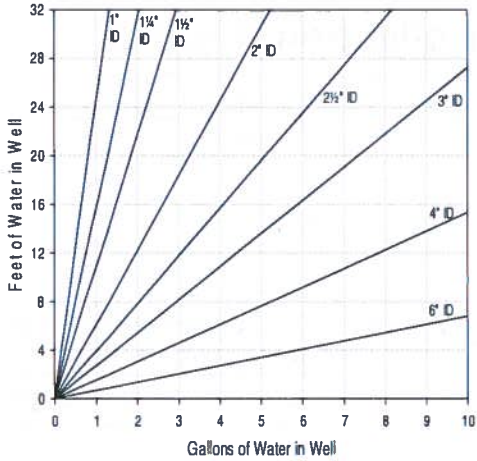
Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
<u>RE134 02-GW-121818</u>	40-mL vials	3	HCl	VOCs	<u>1040</u>
	1-L amber	2	none	1,4-Dioxane	

Comments: tubing hit bottom

Signature: Paul K... Date: 12/18/18

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume  
(4-inch well)

- 15 ft = 37.1 L / 9.8 G
- 20 ft = 49.4 L / 13.1 G
- 25 ft = 61.8 L / 16.3 G
- 30 ft = 74.3 L / 19.6 G
- 40 ft = 99.2 L / 26.1 G
- 50 ft = 123.6 L / 32.6 G

Well ID:

13402

(continued from front)										
Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
950		12.47	0.082	5.57	5.17	273.2	20.2	600	36.81	
955		12.63	0.082	5.52	5.17	279.9				
1000		12.81	0.083	5.47	5.16	285.7	21.7	600	36.82	
1005		12.57	0.083	5.40	5.13	293.1	18.9			
1010	10 gal	12.98	0.083	5.34	5.11	297.8	18.5	600	36.80	
1015		12.75	0.082	5.32	5.10	299.3				
1020		12.50	0.082	5.30	5.10	302.1	12.5	600	36.80	
1025		12.63	0.083	5.27	5.08	305.9	12.0			
1030	13 gal	12.73	0.083	5.23	5.08	307.2	13.0	600	36.81	
1040								200		sample





Well ID: RE13403

# Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 12/18/18 Time: Start 1145 am/pm  
 Project No: 60266526 Finish            am/pm  
 Site Location: Lake  
 Weather Conds: sunny, cold, windy 35° Collector(s): PK/CF

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 625 ft c. Length of Water Column            ft (a-b) Casing Diameter/Material 4-inch PVC  
 b. Water Table Depth 35.45 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

### 2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)

- Temperature ± 3%
- pH ± 0.1 unit
- Conductivity ± 3%
- Turbidity ± 10%
- ORP ± 10mV
- Drawdown < 0.3'
- D.O. ± 10% (values >0.5 mg/L)  
Remove a minimum 1 screen volume

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	115562-4 18A01
HACH	2100 Q	

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1150		13.07	0.075	8.77	5.44	210.3	-	600	35.51	
1155		13.59	0.075	6.53	5.31	235.7	216	600	35.50	Cloudy/none
1200		13.51	0.076	<del>6.65</del>	5.48	200.7	-	600	35.51	
1205		13.26	0.077	6.70	5.65	181.0	-	600	35.51	
1240		13.36	0.075	6.48	5.18	211.7	-	600	35.51	
1245	5gal	13.26	0.075	6.35	5.16	212.3	140	600	35.51	

d. Acceptance criteria pass/fail (continued on back)

Has required volume been removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

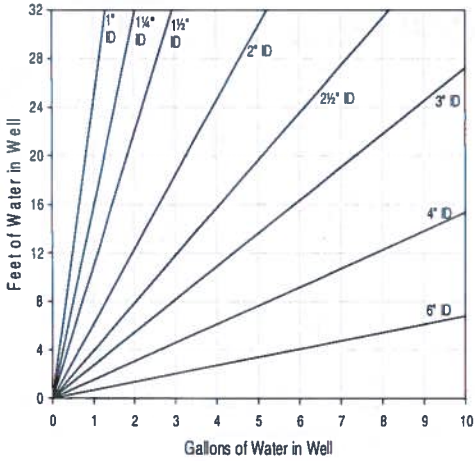
### 3. SAMPLE COLLECTION: Method: Geotech bladder pump with drop tube assembly

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
<u>RE13403-6W-121818</u>	<u>40-mL vials</u>	<u>3</u>	<u>HCl</u>	<u>VOCs</u>	<u>1310</u>
<u>RE13483-6W-121818</u>	<u>1-L amber</u>	<u>2</u>	<u>none</u>	<u>1,4-Dioxane</u>	<u>1310</u>

Comments: pump hit bottom

Signature: [Signature] Date: 12-18-18  
 LowFlow-GWa - Dec 2018.xlsx

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume (4-inch well)

15 ft = 37.1 L / 9.8 G  
 20 ft = 49.4 L / 13.1 G  
 25 ft = 61.8 L / 16.3 G  
 30 ft = 74.3 L / 19.6 G  
 40 ft = 99.2 L / 26.1 G  
 50 ft = 123.6 L / 32.6 G

Well ID: RE13103

(continued from front)										
Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
1220		13.36	0.075	6.20	5.11	219.3	—	600	35.51	
1225		12.97	0.075	6.04	5.07	228.7	—	600	35.51	
1230		12.95	0.075	6.04	5.06	229.9	74.0	600	35.51	
1235		13.18	0.076	5.97	5.05	231.9	40.4	600	35.51	
1240	10 gal	12.88	0.075	5.74	5.04	235.2	—	600	35.51	
1245		13.10	0.076	5.70	5.01	237.1	32.8	600	35.51	
1250		13.24	0.076	5.68	5.02	238.6	—	600	35.51	
1255		13.37	0.077	5.58	5.03	239.5	19.5	600	35.51	
1300		13.39	0.077	5.62	5.04	239.2	20.3	600	35.51	
1305	13.5 gal	13.40	0.077	5.59	5.04	239.6	20.7	600	35.51	
1310								200		sample



Well ID: RE13404

# Low Flow Ground Water Sample Collection Record

Client: Navy NWIRP Bethpage Date: 12/18 / 18 Time: Start 845 am/pm  
 Project No: 60266526 Finish 1025 am/pm  
 Site Location: Carle  
 Weather Conds: Sunny, windy, cold 35° Collector(s): C Foster

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 690 ft c. Length of Water Column \_\_\_\_\_ ft (a-b) Casing Diameter/Material 4-inch PVC  
 b. Water Table Depth 3581 ft d. Calculated System Volume (see back) 13.1 gal. 20 screen length (ft)

### 2. WELL PURGE DATA

a. Purge Method: Geotech bladder pump with drop tube assembly

b. Acceptance Criteria defined (see workplan)  
 - Temperature ± 3% - Turbidity ± 10% - D.O. ± 10% (values >0.5 mg/L)  
 - pH ± 0.1 unit - ORP ± 10mV Remove a minimum 1 screen volume  
 - Conductivity ± 3% - Drawdown < 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	115562-4M 18A01
HACH	2100 Q	

Time (24hr)	Volume Removed (gallons)	Temp. (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
0855		10.85	0.060	11.90	7.07	123.9	-	600	36.21	
0900		11.93	0.049	6.46	5.54	168.3	-	600	36.22	clear/noise
0905		11.71	0.048	7.07	5.53	170.2	-	600	36.22	
0910		12.06	0.048	5.29	5.41	162.3	over range	600	36.21	cloudy/noise
0915	sigal	12.15	0.048	<del>4.78</del>	5.34	155.4	-	600	36.21	
0920		12.17	0.048	3.17	5.29	165.8		600	36.22	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

### 3. SAMPLE COLLECTION:

Method: Geotech bladder pump with drop tube assembly

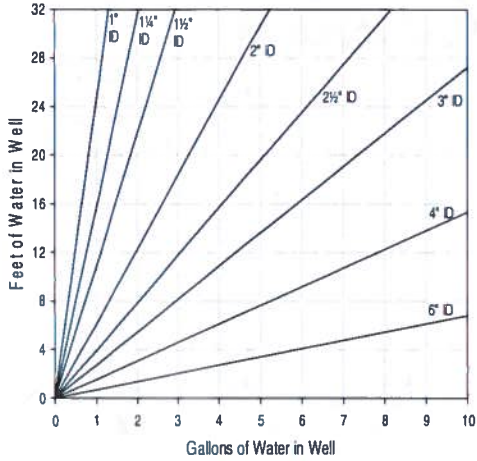
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
<u>RE13404-6W-121818</u>	<u>40-mL vials</u>	<u>3</u>	<u>HCl</u>	<u>VOCs</u>	<u>1015</u>
<u>RE13404-6W-121818</u>	<u>1-L amber</u>	<u>2</u>	<u>none</u>	<u>1,4-Dioxane</u>	<u>1015</u>

Comments: Hit BOTTOM WHEN PLACING TUBING

Signature: [Signature] Date: 12/18/18  
 LowFlow-GWa - Dec 2018.xlsx



Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

One screen volume  
(4-inch well)

15 ft = 37.1 L / 9.8 G  
 20 ft = 49.4 L / 13.1 G  
 25 ft = 61.8 L / 16.3 G  
 30 ft = 74.3 L / 19.6 G  
 40 ft = 99.2 L / 26.1 G  
 50 ft = 123.6 L / 32.6 G

Well ID: RE134D4

(continued from front)										
Time (24 hr)	Volume Removed (gallons)	Temp (°C)	Conduct. (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Depth to water (ft)	Color/Odor
9:25		12.14	0.048	3.10	5.24	172.4	48.3	600	36.21	cloudy / none
9:30		12.00	0.047	3.04	5.24	174.4	-	600	36.22	
9:35		12.11	0.048	2.96	5.22	182.7	-	600	36.22	
9:40		12.04	0.047	2.92	5.24	187.3	44.6	600	36.21	
9:45	logal	12.37	0.048	2.84	5.25	189.6	-	600	36.21	
9:50		12.40	0.048	2.74	5.18	193.1	45.3	600	36.21	
9:55		12.53	0.048	2.69	5.21	193.8	42.3	600	36.21	
10:00		12.73	0.049	2.65	5.21	195.6	40.6	600	36.21	
10:05		12.38	0.049	2.59	5.19	199.3	43.5	600	36.21	
10:10	13 Sept	12.55	0.048	2.58	5.17	202.0	45.5	600	36.21	
10:15	sample							200		sample

## **Section 5**

### **Analytical Data Validation**

The following soil samples were collected for total organic carbon analysis:

RE134D1 333-335 ft bgs on 6/18/2018

RE134D2 513-515 ft bgs on 5/29/2018

RE134D3 603-605 ft bgs on 5/10/2018

RE134D4 673-675 ft bgs on 4/24/2018

The following groundwater samples were collected:

RE134D1, RE134D2, RE134D3, and RE134D4 on 12/18/2018

**DATA VALIDATION REPORT**

Project:	Regional Groundwater Investigation — NWIRP Bethpage
Laboratory:	Katahdin Analytical
Sample Delivery Groups:	SL0822, SL5536, SL4876, SL3600, SL5535, SL4877, SL4289, SL9587, SL8003, and SL8886
Analyses/Method:	Total Organic Carbon (TOC) by U.S. EPA SW-846 Method 9060A
Validation Level:	2
Project Number:	0888812477.SA.DV
Prepared by:	Dana Miller/Resolution Consultants

**SUMMARY**

This report summarizes data review findings for samples listed below, collected by Resolution Consultants from the Regional Groundwater Investigation — NWIRP Bethpage site in accordance with the following Sampling and Analysis Plans:

- *Sampling and Analysis Plan, Bethpage, New York.* (Resolution Consultants April 2013).
- *UFP SAP Addendum, Installation of Vertical Profile Borings and Monitoring Wells, Operable Unit 2, NWIRP Bethpage, New York.* (Resolution Consultants November 2013).
- *UFP SAP Addendum, Inclusion of Additional Target Analytes for Volatile Organics Analyses, NWIRP Bethpage OU2, Bethpage, New York.* (Resolution Consultants August 2014).

Sample ID	Lab ID	Matrix/Sample Type	Analysis
RE132D1-SOIL-012618-233-235	SL0822	Soil	9060A
RE132D6-SOIL-032718-698-700	SL2630	Soil	9060A
RE134D4-SOIL-042418-673-675	SL3600	Soil	9060A
RE132D5-SOIL-042018-613-615	SL3600	Soil	9060A
RE134D3-SOIL-051018-603-605	SL4289	Soil	9060A
RE132D4-SOIL-052218-578-580	SL4876	Soil	9060A
RE134D2-SOIL-052918-513-515	SL4877	Soil	9060A
RE134D1-SOIL-061818-333-335	SL5535	Soil	9060A
RE132D3-SOIL-061518-513-515	SL5536	Soil	9060A
RE135D2-SOIL-082018-553-555	SL8003	Soil	9060A

Sample ID	Lab ID	Matrix/Sample Type	Analysis
RE135D3-SOIL-D-090718	SL8886	Soil	9060A
RE135D3-SOIL-090718-643-645	SL8886	Soil	9060A
RE135D1-SOIL-092718-413-415	SL9587	Soil	9060A

Data validation activities were conducted using the following guidance documents: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846, specifically Method 9060A, Total Organic Carbon* (U.S. EPA, 1996), *Method SM5310B, Total Organic Carbon by High-Temperature Combustion, U.S. Environmental Protection Agency (U.S. EPA) Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (NFG, January 2010, and Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

## REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

- ✓ Data completeness (chain-of-custody)/sample integrity
- ✓ Holding times and sample preservation
- NA Gas chromatography/Mass spectrometer performance checks
- NA Initial calibration/continuing calibration verification
- ✓ Laboratory blanks/equipment blanks/field blanks/trip blanks
- NA Surrogate spike recoveries
- ✓ Matrix spike and/or matrix spike duplicate results
- ✓ Laboratory control sample / laboratory control sample duplicate results
- ✓ Field duplicates
- NA Internal standards
- ✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. Acceptable data parameters for which all criteria were met and no qualification was performed, and non-conformance or other issues that were noted during validation, but did not result in qualification of data are not discussed further.

### **Qualifications Actions**

The data was reviewed independently from the laboratory to assess data quality. TOC was detected in the equipment blank but professional judgement was used not to qualify the associated sample as undetected. All analytes detected at concentrations less than the limit of quantitation but greater than the method detection limit were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation. No results were qualified during this review and are considered usable by the project for their intended purpose, according to U.S. Environmental Protection Agency and Department of Defense guidelines. Attachment A, Table A-1 provides final results after data review.

### **ATTACHMENTS**

Attachment A: Table A-1, Final Results after Data Review



**Attachment A**  
**Final Results after Data Review**

**Table A-1  
Final Results after Data Review  
Regional Groundwater Investigation NWIRP Bethpage**

				<b>Sample Location:</b> <b>Sample ID:</b> <b>Sample Date:</b> <b>Sample Type:</b> <b>Units</b>	RE132D1 RE132D1-SOIL-012618-233-235 01/26/2018 Soil	RE132D3 RE132D3-SOIL-061518-513-515 06/15/2018 Soil
<b>Method</b>	<b>CAS No.</b>	<b>Analyte</b>			<b>4000</b>	<b>960</b>
9060A	-28	TOTAL ORGANIC CARBON	UG_G			
				<b>Sample Location:</b> <b>Sample ID:</b> <b>Sample Date:</b> <b>Sample Type:</b> <b>Units</b>	RE132D4 RE132D4-SOIL-052218-578-580 05/22/2018 Soil	RE132D5 RE132D5-SOIL-042018-613-615 04/20/2018 Soil
<b>Method</b>	<b>CAS No.</b>	<b>Analyte</b>			<b>960</b>	<b>420 J</b>
9060A	-28	TOTAL ORGANIC CARBON	UG_G			
				<b>Sample Location:</b> <b>Sample ID:</b> <b>Sample Date:</b> <b>Sample Type:</b> <b>Units</b>	RE132D6 RE132D6-SOIL-032718-698-700 03/27/2018 Soil	RE134D1 RE134D1-SOIL-061818-333-335 06/18/2018 Soil
<b>Method</b>	<b>CAS No.</b>	<b>Analyte</b>			<b>940</b>	<b>480 J</b>
9060A	-28	TOTAL ORGANIC CARBON	UG_G			
				<b>Sample Location:</b> <b>Sample ID:</b> <b>Sample Date:</b> <b>Sample Type:</b> <b>Units</b>	RE134D2 RE134D2-SOIL-052918-513-515 05/29/2018 Soil	RE134D3 RE134D3-SOIL-051018-603-605 05/10/2018 Soil
<b>Method</b>	<b>CAS No.</b>	<b>Analyte</b>			<b>1000</b>	<b>440 J</b>
9060A	-28	TOTAL ORGANIC CARBON	UG_G			

**Table A-1  
Final Results after Data Review  
Regional Groundwater Investigation NWIRP Bethpage**

			<b>Sample Location:</b>	RE134D4	RE135D1
			<b>Sample ID:</b>	RE134D4-SOIL-042418-673-675	RE135D1-SOIL-092718-413-415
			<b>Sample Date:</b>	04/24/2018	09/27/2018
			<b>Sample Type:</b>	Soil	Soil
<b>Method</b>	<b>CAS No.</b>	<b>Analyte</b>	<b>Units</b>		
9060A	-28	TOTAL ORGANIC CARBON	UG_G	<b>230 J</b>	<b>620 J</b>

			<b>Sample Location:</b>	RE135D2	RE135D3
			<b>Sample ID:</b>	RE135D2-SOIL-082018-553-555	RE135D3-SOIL-090718-643-645
			<b>Sample Date:</b>	08/20/2018	09/07/2018
			<b>Sample Type:</b>	Soil	Soil
<b>Method</b>	<b>CAS No.</b>	<b>Analyte</b>	<b>Units</b>		
9060A	-28	TOTAL ORGANIC CARBON	UG_G	<b>1400</b>	<b>660 J</b>

			<b>Sample Location:</b>	RE135D3
			<b>Sample ID:</b>	RE135D3-SOIL-D-090718
			<b>Sample Date:</b>	09/07/2018
			<b>Sample Type:</b>	Field Duplicate
<b>Method</b>	<b>CAS No.</b>	<b>Analyte</b>	<b>Units</b>	
9060A	-28	TOTAL ORGANIC CARBON	UG_G	<b>580</b>

**Notes:**

- ID = Identification
- UG\_G = Micrograms per gram
- J = Estimated value – value was below the limit of quantitation.

## DATA VALIDATION REPORT

<b>Project:</b>	Regional Groundwater Investigation — Naval Weapons Industrial Reserve Plant Bethpage	
<b>Laboratory:</b>	Katahdin Analytical	
<b>Sample Delivery Groups:</b>	TL2424 and TL2604	
<b>Analyses/Method:</b>	Volatile Organic Compounds by United States Environmental Protection Agency (U.S. EPA) SW-846 Method 8260C, and 1,4-Dioxane by U.S. EPA SW-846 Method 8270D via Selective Ion Monitoring	
<b>Validation Level:</b>	Stage 3 Validation Electronic and Manual	
<b>Project Number:</b>	0888812477.SA.DV	
<b>Prepared by:</b>	Dana Miller/Resolution Consultants	Completed on: 03/07/2019

### SUMMARY

This report summarizes data review findings for the December 2018 groundwater sampling event (samples listed below) collected by Resolution Consultants from the Regional Groundwater Investigation — Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Site on 13, 17, and 18 December 2018 in accordance with the following Uniform Federal Policy (UFP) Sampling and Analysis Plans:

- *Sampling and Analysis Plan, Bethpage, New York.* (Resolution Consultants April 2013).
- *UFP SAP Addendum, Installation of Vertical Profile Borings and Monitoring Wells, Operable Unit 2, NWIRP Bethpage, New York.* (Resolution Consultants November 2013).
- *UFP SAP Addendum, Inclusion of Additional Target Analytes for Volatile Organics Analyses, NWIRP Bethpage OU2, Bethpage, New York.* (Resolution Consultants August 2014).

Sample Identification	Matrix/Sample Type	Analysis
TB01-WQ-121318	Trip blank	8260C
RE132D6-GW-121318	Groundwater	8260C/8270D_SIM
RE132D6-GW-121318	Groundwater	8260C/8270D_SIM
RE132D1-GW-121318	Groundwater	8260C/8270D_SIM
RE132D5-GW-121318	Groundwater	8260C/8270D_SIM
RE132D5-GW-121318	Groundwater	8260C/8270D_SIM
RE132D4-GW-121318	Groundwater	8260C/8270D_SIM
RE132D4-GW-121318	Groundwater	8260C/8270D_SIM
TB02-WQ-121818	Trip blank	8260C

<b>Sample Identification</b>	<b>Matrix/Sample Type</b>	<b>Analysis</b>
RE134D1-GW-121818	Groundwater	8260C/8270D_SIM
RE134D2-GW-121818	Groundwater	8260C/8270D_SIM
RE134D2-GW-121818	Groundwater	8260C/8270D_SIM
RE134D3-GW121818	Groundwater	8260C/8270D_SIM
RE134D3-GW121818	Groundwater	8260C/8270D_SIM
RE134D4-GW121818	Groundwater	8260C/8270D_SIM
RE132D2-GW-121718	Groundwater	8260C/8270D_SIM
RE132D3-GW-121718	Groundwater	8260C/8270D_SIM
RE132D7-GW-121718	Groundwater	8260C/8270D_SIM
RE132D7-GW-121718	Groundwater	8260C/8270D_SIM
RE135D1-GW-121718	Groundwater	8260C/8270D_SIM
RE135D1-GW-121718	Groundwater	8260C/8270D_SIM
RE135D2-GW-121718	Groundwater	8260C/8270D_SIM
RE135D3-GW-121718	Groundwater	8260C/8270D_SIM
DUP01-GW-121718	Duplicate of RE135D3-DW-121718	8260C/8270D_SIM
FB01-WQ-121818	Field blank	8260C/8270D_SIM

**Note:**

SIM = Selective Ion Monitoring

Data validation activities were conducted using the following guidance documents: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846, specifically Method 8260C, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry* (U.S. EPA 2006), *SW-846 Method 8270D, Semi volatile Organic Compounds by Gas Chromatograph/Mass Spectrometry* (U.S. EPA 2014), *National Functional Guidelines for Superfund Organic Methods Data Review* (U.S. EPA January 2017), *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (U.S. EPA January 2009), *Department of Defense (DoD) General Data Validation Guidelines (DoD February 2018)*, and *DoD Quality Systems Manual for Environmental Laboratories, Version 4.2* (DoD October 2010). In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements, and/or professional judgment were used as appropriate.

**REVIEW ELEMENTS**

The data were evaluated based on the following parameters (where applicable to the method):

- ✓ Data completeness (chain-of-custody)/sample integrity
- ✓ Holding times and sample preservation

- ✓ Gas chromatography/Mass spectrometer performance checks
- ✗ Initial calibration /initial calibration verification /continuing calibration verification
- ✗ Laboratory blanks/field blanks/trip blanks
- ✓ Surrogate spike recovery
- ✗ Matrix spike and/or matrix spike duplicate result
- ✓ Laboratory control sample /laboratory control sample duplicate result
- ✓ Field duplicate
- ✓ Internal standard
- ✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. Acceptable data parameters for which all criteria were met, no qualification was performed, and/or non-conformance or other issues that were noted during validation, but did not result in qualification of data are not discussed further. The symbol (✗) indicates that a QC non-conformance resulted in the qualification of data. Any QC non-conformance that resulted in the qualification of data is discussed below.

## RESULTS

### Initial Calibration/Initial Calibration Verification/Continuing Calibration Verification

The ICAL is evaluated to ensure that the instrument was capable of producing acceptable qualitative and quantitative data prior to the analysis of samples. The ICV is evaluated to assess the accuracy of ICAL standards. The CCV is evaluated to determine whether the instrument was within acceptable calibration throughout the period in which the samples were analyzed. Failure of the CCV indicates that the ICAL is no longer valid and should trigger recalibration and reanalysis of the associated samples in the analytical sequence. The ICAL and CCV calibration criteria were met. Data qualification to the analytes associated with the specific ICV was as follows:

### Initial Calibration Verification Recovery Non-Conformance:

Criteria	Actions	
	Detected Results	Non-Detected Results
Recovery >120%	J	UJ
Recovery < 80%	J	UJ

**Notes:**

J = Estimated value

UJ = Undetected and estimated

ICV non-conformances are summarized in Attachment A in Tables A-1.

### Laboratory Blanks/Field Blanks/Trip Blanks

Laboratory blanks, field blanks, and trip blanks were analyzed with samples to assess contamination imparted by sample preparation and/or analysis. All results associated with a particular blank were evaluated to determine whether there was an inherent variability in the data, or if a problem was an isolated occurrence that did not affect the data. Samples were flagged in accordance with *DoD General Data Validation Guidelines Module 1* (shown below) where detections were not believed to be site-related.

### Blank Non-Conformance Chart:

Blank Result	Sample Result	Validated Modified Result	Validated DL/LOD/LOQ Adjustment	Validation Qualifier(s)
Detect (none)	Non-Detect	No Change to Sample Result	None	None
Detect $\leq$ LOQ	Detect $\leq$ LOD	Report at LOD	Adjust DL to LOD	U
Detect $\leq$ LOQ	Detect $\leq$ LOQ and $>$ LOD	Report at LOQ	Adjust DL and LOD to LOQ	U
Detect $\leq$ LOQ	Detect $>$ LOQ but $\leq$ 5X blank	No Change to Sample Result	Adjust DL/LOD/LOQ to sample concentration	U
Detect $\leq$ LOQ	Detect $>$ LOQ and $>$ 5X blank	No Change to Sample Result	Adjust DL/LOD/LOQ to sample concentration	None
Detect $>$ LOQ	Detect $\leq$ the LOD	Report at LOD	Adjust DL to LOD	U
Detect $>$ LOQ	Detect $\leq$ the LOQ and $>$ LOD	Report at LOQ	Adjust DL and LOD to LOQ	U
Detect $>$ LOQ	Detect $>$ the LOQ and $\leq$ blank	Report at LOQ	Adjust DL/LOD/LOQ to blank concentration	U

<b>Blank Result</b>	<b>Sample Result</b>	<b>Validated Modified Result</b>	<b>Validated DL/LOD/LOQ Adjustment</b>	<b>Validation Qualifier(s)</b>
Detect > LOQ	Detect > the LOQ and $\leq 5X$ blank	No Change to Sample Result	Adjust DL/LOD/LOQ to sample concentration	U
Detect > LOQ	Detect > 5X blank	No Change to Sample Result	Adjust DL/LOD/LOQ to sample concentration	None

**Notes:**

LOD = Limit of detection  
 LOQ = Limit of quantitation  
 DL = Detection limit  
 U = Undetected

Blank non-conformance is summarized in Attachment A in Table A-2.

**Matrix Spike/Matrix Spike Duplicate Results**

MS/MSDs are generated to provide information about the effect of each sample matrix on the sample preparation and the measurement methodology. MS/MSD percent %Rs assess the effect of the sample matrix on the accuracy of the analytical results and %Rs above the laboratory control limit could indicate a potential high result bias while %Rs below QC limits could indicate a potential low result bias. The relative percent differences (RPDs) between the MS and MSD results are evaluated to assess sample precision. The MS/MSD %Rs and RPDs were reviewed for conformance with the QC acceptance criteria. Data qualification to the analytes associated with the specific MS/MSD non-conformances were as follows:

**Matrix Spike/Matrix Spike Duplicate Non-Conformances Chart:**

<b>Criteria</b>	<b>Action</b>	
	<b>Detected Compounds</b>	<b>Non-Detected Compounds</b>
%R or RPD > Upper Limit	J	No qualification
$20\% \leq \%R < \text{Lower Limit}$	J	UJ
%R < 20%	J	Rejected

**Notes:**

%R = Percent recovery  
 RPD = Relative percent difference  
 J = Estimated  
 UJ = Undetected and estimated

MS/MSD non-conformances are summarized in Attachment A in Table A-3.



### **Qualification Actions**

The data were reviewed independently from the laboratory to assess data quality. All compounds detected at concentrations less than the limit of quantitation but greater than the method detection limit were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation. Any sample that was analyzed at a dilution because of high concentrations of target or non-target analytes was checked to confirm that the results and/or sample-specific limit of quantitation and limit of detections were adjusted accordingly by the laboratory.

No results were rejected; therefore, analytical completeness was calculated to be 100 percent. Data not qualified during data review are considered usable by the project. The remaining results qualified as estimated may be high or low, but the data are usable for their intended purpose, according to U.S. EPA and Department of Defense guidelines. Attachment B provides a summary of all qualified results during this data review.

### **ATTACHMENTS**

Attachment A: Non-Conformance Summary Table

Attachment B: Qualified Results Summary after Data Review

Attachemnt C: Analytical Data Results

**Attachment A**  
**Non-Conformance Summary Table**

<b>Table A-1 Initial Calibration Verification Non-Conformance</b>							
<b>SDG</b>	<b>Method</b>	<b>Analyte</b>	<b>ICV ID</b>	<b>%R</b>	<b>%R Limit</b>	<b>Associated Samples</b>	<b>Qualifiers</b>
TL2424	8260C	Chloromethane	S0264A.D	<b>128.45</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ
TL2424	8260C	1,1-dichloroethene	S0264A.D	<b>122.54</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ
TL2424	8260C	Methyl tert-butyl ether	S0264A.D	<b>121.87</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ
TL2424	8260C	Cyclohexane	S0264A.D	<b>125.52</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ
TL2604	8260C	Chloromethane	S0264A.D	<b>128.45</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ
TL2604	8260C	1,1-dichloroethene	S0264A.D	<b>122.54</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ
TL2604	8260C	Methyl tert-butyl ether	S0264A.D	<b>121.87</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ
TL2604	8260C	Cyclohexane	S0264A.D	<b>125.52</b>	80-120	All associated samples with this SDG	Detects: J Non-detects: UJ

**Notes:**

SDG = Sample delivery group  
 ICV = Initial calibration verification  
 ID = Identification  
 %R = Percent recovery  
 J = Estimated value; calibration was outside control limits.  
 UJ = Undetected and estimated; calibration was outside control limits

Table A-2 Blank Non-Conformance					
SDG	Blank	Lab Sample ID	Analyte	Blank Results (UG_L)	Detected Associated Sample Qualified U
TL2424	TB01-WQ-121318	TL2424-1	1,2-Dichloroethane	0.27	RE132D1-GW-121318
TL2424	TB01-WQ-121318	TL2424-1	1,2-Dichloroethane	0.27	RE132D4-GW-121318
TL2424	TB01-WQ-121318	TL2424-1	1,2-Dichloroethane	0.27	RE132D5-GW-121318
TL2424	TB01-WQ-121318	TL2424-1	Chloroform	0.42	RE132D4-GW-121318
TL2424	WG243226-2	WG243226-2	1,2-Dichloroethane	0.3	RE132D1-GW-121318
TL2424	WG243226-2	WG243226-2	1,2-Dichloroethane	0.3	RE132D4-GW-121318
TL2424	WG243226-2	WG243226-2	1,2-Dichloroethane	0.3	RE132D5-GW-121318
TL2424	WG243226-2	WG243226-2	1,2-Dichloroethane	0.3	TB01-WQ-121318

**Notes:**

SDG = Sample delivery group  
 ID = Identification  
 UG\_L = Micrograms per liter  
 U = Associated samples qualified undetected "U" due to blank detections.

Table A-3 Matrix Spike/Matrix Spike Duplicate Percent Recovery Non-Conformance								
SDG	Method	Spiked Sample ID	Analyte	Sample Result (UG_L)	MS %R	MSD %R	%R Limit	Qualifier
TI2604	8260C	RE132D2-GW-121718	1,2-Dichloroethene, total	0.32	<b>124</b>	113	84-121	J
TI2604	8260C	RE132D2-GW-121718	Dichlorodifluoromethane	1.8	<b>198</b>	<b>184</b>	30-155	J
TI2604	8260C	RE132D2-GW-121718	Trichloroethene	3.5	<b>135</b>	116	70-125	J

**Notes:**

SDG = Sample delivery group  
 ID = Identification  
 UG\_L = Micrograms per liter  
 MS = Matrix spike  
 MSD = Matrix spike duplicate  
 %R = Percent recovery  
**Bold** = %R outside the 10-90% control limits  
 J = Analyte in associated sample qualified estimated "J" because %R is lower than the control limit and may be biased low.

**Attachment B**  
**Qualified Results Summary after Data Review**

**Table B-1**  
**Qualified Summary Results after Data Review**

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
TL2604	DUP01-GW-121718	TL2604-8	12/17/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	DUP01-GW-121718	TL2604-8	12/17/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	DUP01-GW-121718	TL2604-8	12/17/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2604	DUP01-GW-121718	TL2604-8	12/17/2018	1	1,1-DICHLOROETHENE	0.45	UG_L	J	J	J	c
TL2604	FB01-WQ-121818	TL2604-9	12/18/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	FB01-WQ-121818	TL2604-9	12/18/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	FB01-WQ-121818	TL2604-9	12/18/2018	1	CHLOROMETHANE	1	UG_L	U	J	UJ	c
TL2604	RE134D1-GW-121818	TL2604-10	12/18/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE134D1-GW-121818	TL2604-10	12/18/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE134D1-GW-121818	TL2604-10	12/18/2018	1	CHLOROMETHANE	1	UG_L	U	J	UJ	c
TL2604	RE134D1-GW-121818	TL2604-10	12/18/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
TL2604	RE134D2-GW-121818	TL2604-11	12/18/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE134D2-GW-121818	TL2604-11	12/18/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE134D2-GW-121818	TL2604-11	12/18/2018	1	CHLOROMETHANE	1	UG_L	U	J	UJ	c
TL2604	RE134D2-GW-121818	TL2604-11	12/18/2018	1	1,1-DICHLOROETHENE	0.75	UG_L	J	J	J	c
TL2604	FB01-WQ-121818	TL2604-9	12/18/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
TL2424	RE132D1-GW-121318	TL2424-3	12/13/2018	1	1,2-DICHLOROETHANE	0.5	UG_L	J	U	U	bt
TL2424	RE132D1-GW-121318	TL2424-3	12/13/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2424	RE132D1-GW-121318	TL2424-3	12/13/2018	1	METHYL TERT-BUTYL ETHER	1.9	UG_L		J	J	c
TL2424	RE132D1-GW-121318	TL2424-3	12/13/2018	1	CHLOROFORM	1.9	UG_L		U	U	bt
TL2424	RE132D1-GW-121318	TL2424-3	12/13/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2424	RE132D1-GW-121318	TL2424-3	12/13/2018	1	CARBON DISULFIDE	1.1	UG_L	B	U	U	bt,bl
TL2424	RE132D1-GW-121318	TL2424-3	12/13/2018	1	1,1-DICHLOROETHENE	1.7	UG_L		J	J	c
TL2604	RE132D2-GW-121718	TL2604-2	12/17/2018	1	CYCLOHEXANE	0.5	UG_L	UM	J	UJ	c
TL2604	RE132D2-GW-121718	TL2604-2	12/17/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	UM	J	UJ	c
TL2604	RE132D2-GW-121718	TL2604-2	12/17/2018	1	1,2-DICHLOROETHENE, TOTAL	0.32	UG_L	JM	J	J	m
TL2604	RE134D3-GW121818	TL2604-12	12/18/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE134D3-GW121818	TL2604-12	12/18/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE134D3-GW121818	TL2604-12	12/18/2018	1	CHLOROMETHANE	1	UG_L	U	J	UJ	c
TL2604	RE134D3-GW121818	TL2604-12	12/18/2018	1	CARBON DISULFIDE	1.1	UG_L	B	U	U	bl
TL2604	RE134D3-GW121818	TL2604-12	12/18/2018	1	1,1-DICHLOROETHENE	4.6	UG_L		J	J	c
TL2604	RE134D3-GW121818	TL2604-12	12/18/2018	1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	490	UG_L	E	J	J	e
TL2604	RE134D3-GW121818	TL2604-12	12/18/2018	1	TRICHLOROETHENE	200	UG_L	E	J	J	e
TL2604	RE134D3-GW121818	TL2604-12DL	12/18/2018	2	CYCLOHEXANE	1	UG_L	U	J	UJ	c
TL2604	RE134D3-GW121818	TL2604-12DL	12/18/2018	2	METHYL TERT-BUTYL ETHER	1	UG_L	U	J	UJ	c
TL2604	RE134D3-GW121818	TL2604-12DL	12/18/2018	2	CHLOROMETHANE	2	UG_L	UL	J	UJ	c
TL2604	RE132D2-GW-121718	TL2604-2	12/17/2018	1	CHLOROMETHANE	1	UG_L	UMM	J	UJ	c
TL2604	RE132D2-GW-121718	TL2604-2	12/17/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	UM	J	UJ	c
TL2604	RE132D2-GW-121718	TL2604-2	12/17/2018	1	DICHLORODIFLUOROMETHANE	1.8	UG_L	JMM	J	J	m
TL2604	RE132D2-GW-121718	TL2604-2	12/17/2018	1	TRICHLOROETHENE	3.5	UG_L	M	J	J	m
TL2604	RE132D3-GW-121718	TL2604-3	12/17/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE132D3-GW-121718	TL2604-3	12/17/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c

**Table B-1**  
**Qualified Summary Results after Data Review**

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
TL2604	RE132D3-GW-121718	TL2604-3	12/17/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2604	RE132D3-GW-121718	TL2604-3	12/17/2018	1	1,1-DICHLOROETHENE	0.71	UG_L	J	J	J	c
TL2604	RE134D3-GW121818	TL2604-12DL	12/18/2018	2	1,1-DICHLOROETHENE	3.2	UG_L		J	J	c
TL2604	RE134D4-GW121818	TL2604-13	12/18/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE134D4-GW121818	TL2604-13	12/18/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE134D4-GW121818	TL2604-13	12/18/2018	1	CHLOROMETHANE	1	UG_L	U	J	UJ	c
TL2604	RE134D4-GW121818	TL2604-13	12/18/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
TL2604	RE135D1-GW-121718	TL2604-5RA	12/17/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2424	RE132D4-GW-121318	TL2424-5	12/13/2018	1	1,2-DICHLOROETHANE	0.5	UG_L	J	U	U	bt
TL2424	RE132D4-GW-121318	TL2424-5	12/13/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2424	RE132D4-GW-121318	TL2424-5	12/13/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2424	RE132D4-GW-121318	TL2424-5	12/13/2018	1	CHLOROFORM	1	UG_L	J	U	U	bt
TL2424	RE132D4-GW-121318	TL2424-5	12/13/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2424	RE132D4-GW-121318	TL2424-5	12/13/2018	1	CARBON DISULFIDE	1	UG_L	B	U	U	bt,bl
TL2424	RE132D4-GW-121318	TL2424-5	12/13/2018	1	1,1-DICHLOROETHENE	1.9	UG_L		J	J	c
TL2424	RE132D5-GW-121318	TL2424-4	12/13/2018	1	1,2-DICHLOROETHANE	0.5	UG_L	J	U	U	bt
TL2424	RE132D5-GW-121318	TL2424-4	12/13/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2424	RE132D5-GW-121318	TL2424-4	12/13/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2424	RE132D5-GW-121318	TL2424-4	12/13/2018	1	CHLOROFORM	1.1	UG_L		U	U	bt
TL2424	RE132D5-GW-121318	TL2424-4	12/13/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2424	RE132D5-GW-121318	TL2424-4	12/13/2018	1	CARBON DISULFIDE	1.1	UG_L	B	U	U	bt,bl
TL2424	RE132D5-GW-121318	TL2424-4	12/13/2018	1	1,1-DICHLOROETHENE	3.6	UG_L		J	J	c
TL2604	RE135D1-GW-121718	TL2604-5RA	12/17/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE135D1-GW-121718	TL2604-5RA	12/17/2018	1	CHLOROMETHANE	1	UG_L	U	J	UJ	c
TL2604	RE135D1-GW-121718	TL2604-5RA	12/17/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
TL2604	RE135D2-GW-121718	TL2604-6	12/17/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE135D2-GW-121718	TL2604-6	12/17/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE135D2-GW-121718	TL2604-6	12/17/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2604	RE135D2-GW-121718	TL2604-6	12/17/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
TL2424	RE132D6-GW-121318	TL2424-2	12/13/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2424	RE132D6-GW-121318	TL2424-2	12/13/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2424	RE132D6-GW-121318	TL2424-2	12/13/2018	1	CHLOROFORM	1.4	UG_L		U	U	bt
TL2424	RE132D6-GW-121318	TL2424-2	12/13/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2424	RE132D6-GW-121318	TL2424-2	12/13/2018	1	CARBON DISULFIDE	1.1	UG_L	B	U	U	bt,bl
TL2424	RE132D6-GW-121318	TL2424-2	12/13/2018	1	1,1-DICHLOROETHENE	12	UG_L		J	J	c
TL2604	RE132D7-GW-121718	TL2604-4	12/17/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE132D7-GW-121718	TL2604-4	12/17/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE135D3-GW-121718	TL2604-7	12/17/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	RE135D3-GW-121718	TL2604-7	12/17/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	RE135D3-GW-121718	TL2604-7	12/17/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2604	RE135D3-GW-121718	TL2604-7	12/17/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
TL2424	TB01-WQ-121318	TL2424-1	12/13/2018	1	1,2-DICHLOROETHANE	0.5	UG_L	J	U	U	bl

**Table B-1**  
**Qualified Summary Results after Data Review**

SDG	Sample ID	Lab ID	Sample Date	DF	Analyte	Result	Units	Lab Qualifier	Validator Qualifier	Final Qualifier	RC
TL2424	TB01-WQ-121318	TL2424-1	12/13/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2424	TB01-WQ-121318	TL2424-1	12/13/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2424	TB01-WQ-121318	TL2424-1	12/13/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2424	TB01-WQ-121318	TL2424-1	12/13/2018	1	CARBON DISULFIDE	1.2	UG_L	B	U	U	bl
TL2604	RE132D7-GW-121718	TL2604-4	12/17/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2604	RE132D7-GW-121718	TL2604-4	12/17/2018	1	1,1-DICHLOROETHENE	2.4	UG_L		J	J	c
TL2604	RE132D7-GW-121718	TL2604-4	12/17/2018	1	TRICHLOROETHENE	550	UG_L	E	J	J	e
TL2604	RE132D7-GW-121718	TL2604-4DL	12/17/2018	10	CYCLOHEXANE	5	UG_L	U	J	UJ	c
TL2604	RE132D7-GW-121718	TL2604-4DL	12/17/2018	10	METHYL TERT-BUTYL ETHER	5	UG_L	U	J	UJ	c
TL2604	RE132D7-GW-121718	TL2604-4DL	12/17/2018	10	CHLOROMETHANE	10	UG_L	U	J	UJ	c
TL2604	RE132D7-GW-121718	TL2604-4DL	12/17/2018	10	1,1-DICHLOROETHENE	5	UG_L	U	J	UJ	c
TL2424	TB01-WQ-121318	TL2424-1	12/13/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c
TL2604	TB02-WQ-121818	TL2604-1	12/18/2018	1	CYCLOHEXANE	0.5	UG_L	U	J	UJ	c
TL2604	TB02-WQ-121818	TL2604-1	12/18/2018	1	METHYL TERT-BUTYL ETHER	0.5	UG_L	U	J	UJ	c
TL2604	TB02-WQ-121818	TL2604-1	12/18/2018	1	CHLOROMETHANE	1	UG_L	UL	J	UJ	c
TL2604	TB02-WQ-121818	TL2604-1	12/18/2018	1	1,1-DICHLOROETHENE	0.5	UG_L	U	J	UJ	c

**Notes:**

SDG = Sample delivery group

ID = Identification

DF = Dilution factor

RC = Reason code

UG\_L = Micrograms per liter

U = **Undetected** — The analyte was analyzed but undetected at the listed limit of quantitation or was qualified as undetected during data review due to blank artifacts.

J = **Estimated Value** — One or more quality control parameters were outside control limits or the analyte concentration was less than the limit of quantitation.

UJ = **Undetected and estimated** — The analyte was analyzed but undetected at the listed limit of quantitation; one or more quality control parameters were outside control limits.

**Qualification Reason Code:**

bl = Lab blank contamination

bt = Trip blank contamination

c = Initial calibration verification outside control limits

m = Matrix spike recovery



**Attachment C**  
**Analytical Data Results**

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2424 TL2424-1 TB01-WQ-121318 12/13/2018 Trip Blank		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	bl
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	1.2	U	bl
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.42	J	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	1.4	J	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L			

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2424 TL2424-2 RE132D6-GW-121318 12/13/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.71	J	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	27		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	1.2		
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	2.2		
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	12	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	4.5		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	1.1	U	bt,bl
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	1.4		
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	1.4	U	bt
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	4.5		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	1.9		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	1200		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	12		

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2424 TL2424-3 RE132D1-GW-121318 12/13/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	7		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	1.1		
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	1.7	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	bt
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.4		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	1.1	U	bt,bl
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	1.9	U	bt
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	2.4		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.9	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	1.9	J	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	3.4		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	130		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	4.5		

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2424 TL2424-4 RE132D5-GW-121318 12/13/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.49	J	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	11		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.46	J	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.85	J	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	3.6	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	bt
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.4		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	1.1	U	bt,bl
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.89	J	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	1.1	U	bt
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	2.4		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1.6	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	120		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	8.8		

**Notes:**

UG\_L = Micrograms per liter  
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**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2424 TL2424-5 RE132D4-GW-121318 12/13/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	7.4		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.52	J	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	1.9	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	bt
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	3.5		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	1	U	bt,bl
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.36	J	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	1	U	bt
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	3.5		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.91	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	3.3		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	220		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	14		

**Notes:**

UG\_L = Micrograms per liter  
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**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-1 TB02-WQ-121818 12/18/2018 Trip Blank		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	1.5	J	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L			

**Notes:**

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NA = Not applicable  
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RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-10 RE134D1-GW-121818 12/18/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.7	J	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	5.6		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	1.2		

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**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-11 RE134D2-GW-121818 12/18/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	20		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.24	J	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.75	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.2		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	2.2		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	9.2		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	130		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	16		

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-12 RE134D3-GW121818 12/18/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	300		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.34	J	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	4.6	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	4.8		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	1.1	U	bl
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.37	J	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	4.8		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	0.36	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	42		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	160		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	19		

**Notes:**

UG\_L = Micrograms per liter  
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**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-13 RE134D4-GW121818 12/18/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	120		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	0.68	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.68	J	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	3.7		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	13		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	2.5		

**Notes:**

UG\_L = Micrograms per liter  
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 Qual = Final qualifiers (See Attachment A)  
 RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-2 RE132D2-GW-121718 12/17/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	2.7		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	0.32	J	m
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.32	J	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1.8	J	m
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	3.5	J	m
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	10		

**Notes:**

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**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-3 RE132D3-GW-121718 12/17/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	4.1		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.71	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1.7	J	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	1.7		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1.2	J	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	59		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	11		

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**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-4 RE132D7-GW-121718 12/17/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.22	J	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	8.7		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.52	J	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.76	J	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	2.4	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.1		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.95	J	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	1.2		
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	2.1		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	440		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	2.8		

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-5RA RE135D1-GW-121718 12/17/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	1.1		
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	0.44		

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-6 RE135D2-GW-121718 12/17/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.56	J	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	2.1		
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	0.35		

**Notes:**

UG\_L = Micrograms per liter  
 NA = Not applicable  
 Qual = Final qualifiers (See Attachment A)  
 RC = Reason codes (See Attachment B)



**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-7 RE135D3-GW-121718 12/17/2018 Groundwater		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	3		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.4		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	2.4		
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	2.4		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	6.4		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	7.4		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	0.28		

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-8 DUP01-GW-121718 12/17/2018 Field Duplicate		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	2.7		
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.45	J	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	2.3		
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	2.1		
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	2.3		
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	6		
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	6.8		
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	0.28		

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**December 2018**  
**Final Results after Data Review**  
**NWIRP Bethpage OU 2 Regional Groundwater Investigation**

Sample Delivery Group Lab Identification Sample Identification Sample Date Matrix				TL2604 TL2604-9 FB01-WQ-121818 12/18/2018 Field Blank		
Method	Analyte	CAS No	Units	Result	Qual	RC
8260C	1,1,1-TRICHLOROETHANE	71-55-6	UG L	0.5	U	
8260C	1,1,2,2-TETRACHLOROETHANE	79-34-5	UG L	0.5	U	
8260C	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	76-13-1	UG L	0.5	U	
8260C	1,1,2-TRICHLOROETHANE	79-00-5	UG L	0.5	U	
8260C	1,1-DICHLOROETHANE	75-34-3	UG L	0.5	U	
8260C	1,1-DICHLOROETHENE	75-35-4	UG L	0.5	UJ	c
8260C	1,2,4-TRICHLOROBENZENE	120-82-1	UG L	0.5	U	
8260C	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	UG L	0.75	U	
8260C	1,2-DIBROMOETHANE	106-93-4	UG L	0.5	U	
8260C	1,2-DICHLOROBENZENE	95-50-1	UG L	0.5	U	
8260C	1,2-DICHLOROETHANE	107-06-2	UG L	0.5	U	
8260C	1,2-DICHLOROETHENE, TOTAL	540-59-0	UG L	1	U	
8260C	1,2-DICHLOROPROPANE	78-87-5	UG L	0.5	U	
8260C	1,3-DICHLOROBENZENE	541-73-1	UG L	0.5	U	
8260C	1,4-DICHLOROBENZENE	106-46-7	UG L	0.5	U	
8260C	2-BUTANONE	78-93-3	UG L	2.5	U	
8260C	2-HEXANONE	591-78-6	UG L	2.5	U	
8260C	4-METHYL-2-PENTANONE	108-10-1	UG L	2.5	U	
8260C	ACETONE	67-64-1	UG L	2.5	U	
8260C	BENZENE	71-43-2	UG L	0.5	U	
8260C	BROMODICHLOROMETHANE	75-27-4	UG L	0.5	U	
8260C	BROMOFORM	75-25-2	UG L	0.5	U	
8260C	BROMOMETHANE	74-83-9	UG L	1	U	
8260C	CARBON DISULFIDE	75-15-0	UG L	0.5	U	
8260C	CARBON TETRACHLORIDE	56-23-5	UG L	0.5	U	
8260C	CHLOROBENZENE	108-90-7	UG L	0.5	U	
8260C	CHLOROETHANE	75-00-3	UG L	1	U	
8260C	CHLOROFORM	67-66-3	UG L	0.5	U	
8260C	CHLOROMETHANE	74-87-3	UG L	1	UJ	c
8260C	CIS-1,2-DICHLOROETHENE	156-59-2	UG L	0.5	U	
8260C	CIS-1,3-DICHLOROPROPENE	10061-01-5	UG L	0.5	U	
8260C	CYCLOHEXANE	110-82-7	UG L	0.5	UJ	c
8260C	DIBROMOCHLOROMETHANE	124-48-1	UG L	0.5	U	
8260C	DICHLORODIFLUOROMETHANE	75-71-8	UG L	1	U	
8260C	ETHYLBENZENE	100-41-4	UG L	0.5	U	
8260C	ISOPROPYLBENZENE	98-82-8	UG L	0.5	U	
8260C	M- AND P-XYLENE	108-38-3/106-42	UG L	1	U	
8260C	METHYL ACETATE	79-20-9	UG L	0.75	U	
8260C	METHYL CYCLOHEXANE	108-87-2	UG L	0.5	U	
8260C	METHYL TERT-BUTYL ETHER	1634-04-4	UG L	0.5	UJ	c
8260C	METHYLENE CHLORIDE	75-09-2	UG L	2.5	U	
8260C	O-XYLENE	95-47-6	UG L	0.5	U	
8260C	STYRENE	100-42-5	UG L	0.5	U	
8260C	TETRACHLOROETHENE	127-18-4	UG L	0.5	U	
8260C	TOLUENE	108-88-3	UG L	0.5	U	
8260C	TRANS-1,2-DICHLOROETHENE	156-60-5	UG L	0.5	U	
8260C	TRANS-1,3-DICHLOROPROPENE	10061-02-6	UG L	0.5	U	
8260C	TRICHLOROETHENE	79-01-6	UG L	0.5	U	
8260C	TRICHLOROFLUOROMETHANE	75-69-4	UG L	1	U	
8260C	VINYL CHLORIDE	75-01-4	UG L	1	U	
8260C	XYLENES, TOTAL	1330-20-7	UG L	1.5	U	
8270D_SIM	1,4-DIOXANE	123-91-1	UG L	0.18	U	

**Notes:**

UG\_L = Micrograms per liter  
NA = Not applicable  
Qual = Final qualifiers (See Attachment A)  
RC = Reason codes (See Attachment B)

**Attachment A**  
**Final Qualifier Codes and Explanations**

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual quantitation limit necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

**Attachment B**  
**Reason Codes and Explanations**

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
bm	Missing Blank Information
bt	Trip blank contamination
c	Calibration issue
cr	Chromatographic resolution
d	Reporting limit raised due to chromatographic interference
dt	Dissolved result > total over limit
e	Ether interference
ej	Above calibration range; result estimated.
f	Presumed contamination from FB or ER.
fd	Field duplicate RPDs
h	Holding times
hs	Headspace greater than 6mm in all sample vials
i	Internal standard areas
ii	Injection internal standard area or retention time exceedance
it	Instrument Tune
k	Estimated Maximum Possible Concentrations (EMPC)
l	LCS recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs (matrix duplicate, MSD, LCSD)
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
mc	Deviation from the method
md	MS/MSD precision
nb	Negative laboratory blank contamination
p	Chemical preservation issue
p-h	Uncertainty near detection limit (< Reporting Limit), historical reason code applied.
pe	Post Extraction Spike
q	Quantitation issue
r	Dual column RPD
rt	SIM ions not within + 2 seconds
s	Surrogate recovery
sp	Sample preparation issue
su	Evidence of ion suppression
t	Temperature Preservation Issue
x	Low % solids
y	Serial dilution results
z	ICS results

## **Section 6**

### **Survey**

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

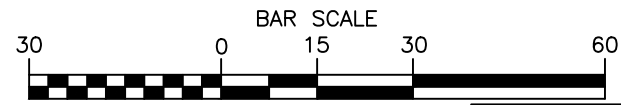
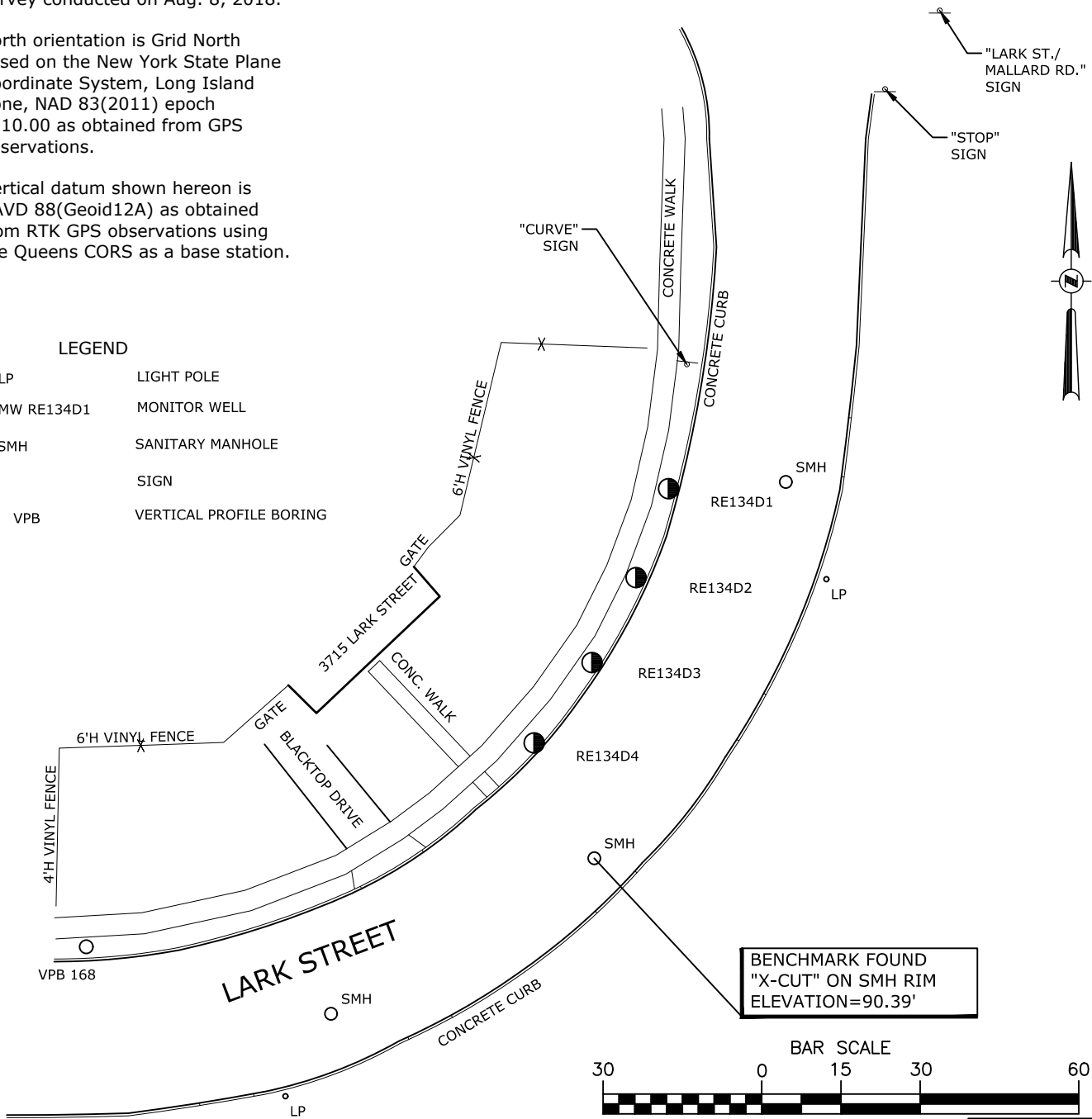
Description	Northing	Easting	Latitude	Longitude	Ground	Top of Casing	Top of PVC
RE134D1	206205.65	1123308.13	N40-43-53.65	W73-29-53.71	90.32	90.44	89.88
RE134D2	206188.83	1123301.98	N40-43-53.49	W73-29-53.79	90.40	90.51	89.93
RE134D3	206172.76	1123293.65	N40-43-53.33	W73-29-53.90	90.40	90.50	89.97
RE134D4	206157.56	1123282.69	N40-43-53.18	W73-29-54.05	90.43	N/A	90.05
VPB168	206118.97	1123197.99	N40-43-52.80	W73-29-55.15	90.74	N/A	N/A

Map Notes

- Information shown hereon was compiled from an actual field survey conducted on Aug. 8, 2018.
- North orientation is Grid North based on the New York State Plane Coordinate System, Long Island Zone, NAD 83(2011) epoch 2010.00 as obtained from GPS observations.
- Vertical datum shown hereon is NAVD 88(Geoid12A) as obtained from RTK GPS observations using the Queens CORS as a base station.

**LEGEND**

○ LP	LIGHT POLE
● MW RE134D1	MONITOR WELL
○ SMH	SANITARY MANHOLE
⊥	SIGN
○ VPB	VERTICAL PROFILE BORING



DWG NO. 18-395

Date	RECORD OF WORK	Appr.
8/17/18	ADD VPB DESIGNATION	
Drafter: MDD	Checker:	
Appr. by: WJN	Proj. No. 14.4121	

**MONITOR WELL SURVEY LOCATION**  
 RE134D1, RE143D2, RE134D3 AND RE134D4  
 AND VERTICAL PROFILE BORING 168  
 3715 LARK STREET

TOWN OF LEVITTOWN      NASSAU COUNTY, NEW YORK

**C.T. MALE ASSOCIATES**  
 Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.

50 CENTURY HILL DRIVE, LATHAM, NY 12110  
 518.786.7400 \* FAX 518.786.7299

SCALE: 1"=30'      DATE: AUGUST 8, 2018