



December 10, 2019

Mr. Jason Pelton
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Division of Environmental Remediation
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Reference: CLEAN Contract No. N6247016D9008
Contract Task Order WE13

Subject: 2018 Annual Groundwater Sampling Data Report
OU2 Volatile Organic Compound (VOC) and 1,4-Dioxane Investigation
Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, New York

Dear Mr. Pelton:

On behalf of the Department of the Navy, Tetra Tech is submitting the subject document to the New York State Department of Environmental Conservation (NYSDEC) for information. This report presents validated analytical results from the OU2 groundwater monitoring program, 2018 quarterly groundwater sampling events.

If you have any questions please contact Mr. Brian Murray, NAVFAC MIDLANT, at brian.s.murray@navy.mil or (757) 341-0491.

Sincerely

A handwritten signature in black ink, appearing to read 'Ernie Wu'.

Ernie Wu for DDB

David D. Brayack, P.E.
Project Manager

Enclosures: 2018 Annual Groundwater Sampling Data Report
OU2 VOC and 1,4-Dioxane Investigation
NWIRP Bethpage, New York

Distribution:
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Project File



Naval Facilities Engineering Command Atlantic
Norfolk, Virginia

**2018 Annual Groundwater Sampling Data Report
OU2 VOC and 1,4-Dioxane Investigation**

Naval Weapons Industrial Reserve Plant
Bethpage, New York

December 2019



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**2018 ANNUAL GROUNDWATER SAMPLING DATA REPORT
OU2 VOC AND 1,4-DIOXANE INVESTIGATION**

**NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

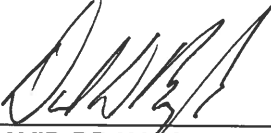
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**CONTRACT NUMBER N62470D9008
CONTRACT TASK ORDER WE13**


December 2019

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Acronyms and Abbreviations

CLEAN	Comprehensive Long-Term Environmental Action Navy
IDW	Investigative-Derived Waste
µg/L	Microgram per liter
NAVFAC	Naval Facilities Engineering Command
NWIRP	Naval Weapons Industrial Reserve Plant
OU	Operable Unit
PWSCP	Public Water Supply Contingency Plan
ROD	Record Of Decision
US EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

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1.0 Introduction

Tetra Tech has prepared this Groundwater Sampling Data Summary Report for the Naval Facilities Command (NAVFAC) Atlantic Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N6247016D9008 Task Order WE13, which is part of the Navy's ongoing Environmental Restoration Program for the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Operable Unit (OU) 2 Site 1 off-property plume. As shown in Figure 1, NWIRP Bethpage is located in east-central Nassau County, Long Island, New York, approximately 30 miles east of New York City.

This data summary report documents the sampling and analytical testing of samples from 36 groundwater monitoring wells for Volatile Organic Compounds (VOCs) and 1,4-dioxane by Tetra Tech in July, September and October, and December 2018. This report also provides results of sampling groundwater from 13 outpost monitoring wells with analyses provided by Northrop Grumman/Arcadis. In addition, Northrop Grumman/Arcadis provides data for other groundwater and outpost monitoring wells in separate quarterly and annual reports. Detailed analysis of the groundwater data is being conducted under separate cover.

Select VOCs have been identified in groundwater at the former NWIRP Bethpage facility related to the use of chlorinated and non-chlorinated solvents at the facility. These VOCs are identified under the OU2 Record of Decision (ROD) (Navy, 2003), and the Public Water Supply Contingency Plan (PWSCP) (Arcadis, 2003). However, several other VOCs have been identified in OU2 areas that may or may not result from former NWIRP operations (e.g., toluene and Freon 113). In addition, 1,4-dioxane has been detected in OU2 groundwater, including VOC-impacted groundwater associated with the former NWIRP Bethpage. 1,4-Dioxane is most notably known for its industrial use as a stabilizer in trichloroethane. However, it is also widely used in a variety of other residential and commercial products (including dish soaps, cosmetics, shampoos, and deodorants). As a result, the 1,4-dioxane in groundwater may not be associated with industrial activities at the facility.

The objectives of this sampling are described below:

- Evaluate the extent and magnitude of VOCs contaminant migration throughout the current groundwater contaminant plume (including the RE108 Area Hotspot).
- Evaluate concentration and spatial distribution of 1,4-dioxane.
- Evaluate concentration and spatial distribution of VOCs.

The locations of monitoring wells sampled as part of this effort are shown in Figure 2.

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2.0 Field Program

Field sampling events were conducted during July, September and October, and December 2018 in accordance with the Uniform Federal Policy (UFP) Sampling and Analysis Plan Addendum: Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation (Tetra Tech, 2019). The sampling events included purging and sampling of monitoring wells in the quarterly groundwater sampling network.

2.1 Sampling Activities

Sampling activities included groundwater sampling at OU2 and downgradient from NWIRP Bethpage to assess VOC plume migration and attenuation. The monitoring wells sampled were selected from the existing OU2 network of wells previously sampled in 2017, and from additional monitoring wells installed under the vertical profile boring and monitoring well installation program. Groundwater well sampling locations are presented on Figure 2. Monitoring well construction details are presented in Table 1.

Groundwater sampling activities included mobilizing/demobilizing, calibrating monitoring equipment, measuring water levels, managing investigation derived waste (IDW), decontaminating field equipment, documenting field activities, documenting sample custody, and handling and shipping samples. Field instruments requiring daily calibration (e.g. multi-parameter water quality meter, and turbidity meter) were calibrated in accordance with manufacturer's guidance prior to each sampling activity.

Synoptic groundwater elevations were measured in monitoring well locations (Appendix A). Water-level measurements were completed within the shortest time on the same day. Water level measurements were recorded to the nearest 0.01 foot and referenced to a top of casing notch or north side of the well casing (if a notch is absent). Instruments were decontaminated prior to conducting each measurement.

Groundwater sampling activities were conducted in 2018. During each event, 36 groundwater monitoring wells were sampled. In addition, during the October 2018 sampling event, groundwater from recovery well RE137 was sampled. Sample log sheets are presented in Appendix B and chain of custody records are presented in Appendix C. Additional samples were collected from the monitoring wells for quality control and analysis and frequency of collection was in accordance with the Work Plan (Tetra Tech, 2019).

Each monitoring well was purged prior to sampling. A down-hole pump with high-density polyethylene tubing was used for groundwater purging and collection activities.

A bladder or centrifugal pump was used in the purging and sampling. The pump was used in combination with a continuous flow-through cell suitable for taking water quality measurements (dissolved oxygen, oxidation-reduction potential, specific conductance, pH, temperature, and turbidity). Turbidity measurements were made using a separate field turbidity meter. The samples were analyzed by Chemtech for VOCs and 1,4-dioxane.

2.2 Investigation Derived Waste

Aqueous investigative-derived waste (IDW) was generated during well sampling activities. The aqueous IDW was containerized pending waste characterization analysis. The waste was discharged via the local industrial wastewater discharge permit or transported offsite and appropriately disposed by the IDW subcontractor.

2.3 Variations from the Work Plan

Except as noted below, the 2018 groundwater sampling events were conducted in accordance with the Work Plan.

- The pilot study groundwater recovery well RE137 was sampled. RE137 is screened from 625 to 750 feet below ground surface. To evaluate potential stratification of VOC-impacted groundwater within the well, groundwater samples were collected at 640 feet, 700 feet and 745 feet below ground surface.
- Prior to 2018, the groundwater monitoring wells were normally sampled with a bladder pump and drop tube that extended to the screen interval. During the October 2018 groundwater sampling event, the use of a centrifugal pump and drop tube that allowed higher purge rates was evaluated on groundwater monitoring wells RE122D1, RE122D2 and RE122D3. Based on the evaluation that indicated no significant difference in the results, centrifugal pumps and higher purge rates were used on subsequent sampling events (see Appendix D).
- In accordance with the Sampling and Analysis Plan, all the groundwater samples were analyzed for 1,4-dioxane using Method 8270D SIM (Tetra Tech, 2018). During each event, several monitoring wells were also analyzed for 1,4-dioxane using Method 8260 SIM and United States Environmental Protection Agency (US EPA) Method 522. As discussed in Section 3.0, these methods did yield different results.

3.0 Results

This section provides the results of the three field sampling events conducted by Tetra Tech in 2018. During each event, 36 groundwater monitoring wells were sampled and analyzed. During one event, three groundwater samples were collected from one recovery well.

The groundwater samples were analyzed by ChemTech of Mountainside New Jersey. The sample results were validated by Validata Chemical Services, Inc of Duluth Georgia. A summary of the data validation is presented in Appendix E. No major issues were identified during this process. Validated data with qualifiers is presented in Table 2. Stabilized water quality parameters are presented in Table 3.

Overall, there were no obvious trends in the chemicals detected or concentrations during 2018. These results are summarized below.

Trichloroethene was found in 32 of 36 wells at a concentration greater than the federal maximum contaminant level of 5 µg/L. Trichloroethene groundwater concentrations in four wells associated with the RE108 Area Hotspot (RE105D2, RE108D2, RE122D2, and RE137) were greater than 1,000 micrograms per liter (µg/L) during one or more of the 2018 sampling events, with a maximum trichloroethene concentration of 4,700 µg/L in RE122D2. Other VOCs, such as 1,1,2-trichloroethane, tetrachloroethene, and 1,1-dichloroethane were also present in these groundwater samples, but at concentrations less than 20 µg/L. Freon 113 (1,1,2-trichlorotrifluoroethane) was generally found at concentrations less than 20 µg/L, but was measured in RE131D2 and RE131D3 at concentrations ranging from 110 µg/L to 190 µg/L. The western location, depth, and chemical signature of the VOCs in these two wells suggest the presence of a separate plume.

1,4-Dioxane (via Method 8270 SIM) was found in 31 of 36 wells at a concentration greater than the United States Environmental Protection Agency Regional Screening Level of 0.46 µg/L. None of the concentrations of 1,4-dioxane exceeded the current New York State maximum contaminant level of 50 µg/L.

For three of the groundwater samples collected in 2018, 1,4-dioxane was also analyzed via Method 8260 SIM and US EPA 522, see Table 4. The results of the Method 8260 SIM and US EPA analysis were similar (15 µg/L versus 12J µg/L, 17 µg/L versus 13J µg/L, and 5.3 µg/L versus 4.4J µg/L). The corresponding results from Method 8270 SIM were 4.5 µg/L, 4 µg/L, and 1.4 µg/L, respectively. This comparison indicates that 1,4-dioxane results, as reported using Method 8270 SIM, are approximately 3.4 times lower than the corresponding results via Method 8260 SIM or US EPA Method 522. Under

the current MCL for 1,4-dioxane of 50 µg/L, there is no need for action since most of the data are less than 50 µg/L. However, if the 1,4-dioxane MCL is lowered in New York State to its proposed value of 1.0 µg/L, then this apparent conflict in analytical methods for groundwater will need to be resolved.

Analytical results for the outpost monitoring wells sampled by Northrop Grumman/Arcadis (BPOW 5-1 to 5.7 and BPOW 6-1 to 6-6) in May, September, and November 2018 are presented in Appendix F. Site-related VOCs were not detected in any of these outpost monitoring wells. Concentrations of 1,4-dioxane (via US EPA Method 522) ranged from not detected to a maximum of 1.4 µg/L.

Also presented in Appendix F are analytical results for VOCs and 1,4-dioxane for 30 additional wells being sampled by Northrop Grumman/Arcadis on a biannual basis (May 2018 and November and December 2018).

Detailed analysis of the groundwater data is being conducted under separate cover.

4.0 References

Arcadis, 2003. Public Water Supply Contingency Plan, NWIRP Bethpage, Bethpage New York. Melville, New York.

Navy, 1995. Record of Decision, NWIRP Bethpage, Sites 1,2,3. Bethpage, New York. May.

Navy, 2003. Record of Decision, Operable Unit 2- Groundwater, Revision 1, NWIRP Bethpage. Bethpage, New York. April.

Tetra Tech, 2019. *Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation.* Bethpage, New York. May.

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TABLES

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TABLE 1
MONITORING WELL CONSTRUCTION SUMMARY
 2018 ANNUAL OU2 GROUNDWATER INVESTIGATION
 NWIRP BETHPAGE, NY
 Page 1 of 2

Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Sampled By
RE103D1	645	625	640	Tetra Tech
RE103D2	673	653	673	Tetra Tech
RE103D3	735	715	730	Tetra Tech
RE104D1	375	350	370	Tetra Tech
RE104D2	735	710	730	Tetra Tech
RE104D3	785	760	780	Tetra Tech
RE105D1	555	530	550	Tetra Tech
RE105D2	755	730	750	Tetra Tech
RE108D1	555	530	550	Tetra Tech
RE108D2	655	630	650	Tetra Tech
RE109D1	540	515	535	Tetra Tech
RE109D2	575	550	570	Tetra Tech
RE109D3	605	580	600	Tetra Tech
RE117D1	760	730	755	Tetra Tech
RE117D2	810	780	805	Tetra Tech
RE120D1	655	630	650	Tetra Tech
RE120D2	713	690	710	Tetra Tech
RE120D3	765	740	760	Tetra Tech
RE122D1	545	520	540	Tetra Tech
RE122D2	615	590	610	Tetra Tech
RE122D3	740	715	735	Tetra Tech
RE123D1	505	480	500	Tetra Tech
RE123D2	660	635	655	Tetra Tech
RE123D3	840	815	835	Tetra Tech
RE125D1	345	320	340	Tetra Tech
RE125D2	605	580	600	Tetra Tech
RE125D3	695	670	690	Tetra Tech
RE126D1	525	500	520	Tetra Tech
RE126D2	580	555	575	Tetra Tech
RE126D3	665	640	660	Tetra Tech
RE131D1	455	430	450	Tetra Tech
RE131D2	595	565	590	Tetra Tech
RE131D3	685	660	680	Tetra Tech
RE137	750	630	745	Tetra Tech
TT101D	350	325	345	Tetra Tech
TT101D1	595	570	590	Tetra Tech
TT101D2	765	740	760	Tetra Tech

TABLE 1
MONITORING WELL CONSTRUCTION SUMMARY
 2018 ANNUAL OU2 GROUNDWATER INVESTIGATION
 NWIRP BETHPAGE, NY
 Page 2 of 2

Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Sampled By
BPOW5-1	515	480	510	Arcadis
BPOW5-2	585	540	580	Arcadis
BPOW5-3	665	620	660	Arcadis
BPOW5-4	575	545	570	Arcadis
BPOW5-5	545	515	540	Arcadis
BPOW5-6	615	585	610	Arcadis
BPOW5-7	555	525	550	Arcadis
BPOW6-1	580	550	575	Arcadis
BPOW6-2	785	755	780	Arcadis
BPOW6-3	780	750	775	Arcadis
BPOW6-4	575	545	570	Arcadis
BPOW6-5	555	525	550	Arcadis
BPOW6-6	800	770	795	Arcadis

ft bgs = feet below ground surface.

TABLE 2
ANALYTICAL DATA SUMMARY
2018 ANNUAL OU2 GROUNDWATER INVESTIGATION
NWIRP BETHPAGE, NY
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LOCATION	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	RE131D2	RE131D2	RE131D3	RE131D3	RE131D3	RE137- 640FT	RE137- 700FT	RE137- 745FT	TT101D	TT101D	TT101D	TT101D	TT101D1	TT101D1
SAMPLE DATE		20180927	20181205	20180710	20180927	20181205	20181009	20181009	20181009	20180710	20180928	20180928	20181212	20180710	20180928
SAMPLE CODE		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Original	Dup	Normal	Normal	Normal
VOLATILES (UG/L)															
1,1,1-TRICHLOROETHANE	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 UJ	0.75 U	0.75 U	0.75 U	0.75 U	0.58 J	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.8 J	2.3 J	2.3 J-	0.5 U	0.57 J	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5	170	180	120	160	190	33.7	51.7	54.6 J-	12.8	17.7	15.2	11.7	11.3	15
1,1-DICHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.7 J	2.7 J	2.8 J-	0.95 J	1.3 J	1 J	0.74 J	1.2 J	1 J
1,1-DICHLOROETHENE	5	0.5 U	1.9 J	0.5 U	0.5 U	1.6 J	9.4	13.5	16.4 J-	3.2 J	7.5	3.4 J	2.5 J	6	3.5 J
1,2-DICHLOROETHANE	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 UJ	3.8 U	3.8 U	3.8 U	3.8 U	3.8 UJ	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 UJ	2.5 U	2.5 U	5.8 U	2.5 U	2.5 U	4.2 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	0.39 J	0.5 U	0.5 U	0.5 U	0.5 U	5.2	6	5.8 J-	0.24 J	1.6 J	0.5 U	0.5 U	1.3 J	0.5 U
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.43 J	0.5 U	0.5 U	0.5 U	0.5 U	2.8 J	2.9 J	3.1 J-	0.58 J	1 J	0.55 J	0.51 J	1.1 J	0.57 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	5.1	4.5 J	0.5 U	0.69 J	0.54 J	6.5	6.9	7.8 J-	3.6 J	2.4 J	3.5 J	3.1 J	2.2 J	3.5 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
DICHLORODIFLUOROMETHANE	5	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 UJ	1.4 J	1.1 J	1.5 J	--	0.9 J	1.6 J
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	2.9 J	10.3	0.75 J	1.5 J	4.6 J	2.3 J	4.3 J	3.7 J-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	67.2	69.8	6.5	10.2	13.2	2100	3100	2900 J-	73.3	220 J	82.3 J	64.7	140	84.7
TRICHLOROFUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Method 8270D (UG/L)															
1,4-DIOXANE	0.46	6.7	6.8	1.1	1.1	1.3	4.9	5.5	4.3	4.7	4.5	5.2	4.5	4.1	6.2
Method 8260 SIM (UG/L)															
1,4-DIOXANE	NL	--	--	--	--	--	--	--	--	--	--	--	15	--	--
Method 522 (UG/L)															
1,4-DIOXANE	NL	--	--	--	--	--	--	--	--	--	--	--	12 J	--	--

TABLE 2
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LOCATION	NYSDEC GROUND- WATER GUIDANCE OR STANDARD VALUE (NOTE 1)	TT101D1	TT101D2	TT101D2	TT101D2
SAMPLE DATE		20181212	20180710	20180928	20181212
SAMPLE CODE		Normal	Normal	Normal	Normal
VOLATILES (UG/L)					
1,1,1-TRICHLOROETHANE	5	0.75 U	0.45 J	0.75 U	0.75 U
1,1,2,2-TETRACHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	1	0.53 J	0.5 U	0.8 J	0.62 J
1,1,2-TRICHLOROTRIFLUOROETHANE	5	14.7	20.1	26.4	18.6
1,1-DICHLOROETHANE	5	1.1 J	1.2 J	1.3 J	0.93 J
1,1-DICHLOROETHENE	5	5.5	5.9	6.9	4.9 J
1,2-DICHLOROETHANE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.6	0.75 U	0.75 U	0.75 U	0.75 U
1,2-DICHLOROPROPANE	1	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	3	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	50	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	50	3.8 U	3.8 U	3.8 U	3.8 U
4-METHYL-2-PENTANONE	NL	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	50	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	50	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	5	0.5 UJ	0.5 U	0.5 U	0.5 UJ
CARBON DISULFIDE	60	0.5 U	0.5 U	0.5 U	0.5 U
CARBON TETRACHLORIDE	5	1.1 J	1.4 J	1.5 J	0.85 J
CHLOROBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	7	0.84 J	1 J	1 J	0.84 J
CHLOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	5	1.9 J	2.3 J	2.5 J	2.3 J
CIS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
DICHLORODIFLUOROMETHANE	5	--	0.5 U	0.5 U	--
ETHYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
ISOPROPYLBENZENE	5	0.5 U	0.5 U	0.5 U	0.5 U
M+P-XYLENES	10	1 U	1 U	1 U	1 U
METHYL CYCLOHEXANE	NL	0.5 U	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	10	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	0.5 U	0.5 U	0.5 U	0.5 U
O-XYLENE	5	0.5 U	0.5 U	0.5 U	0.5 U
STYRENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	5	0.32 J	1.1 J	1.4 J	1.5 J
TOLUENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,2-DICHLOROETHENE	5	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.4	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	5	190	660	870	830
TRICHLOROFLUOROMETHANE	5	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	2	0.5 U	0.5 U	0.5 U	0.5 U
Method 8270D (UG/L)					
1,4-DIOXANE	0.46	4	1.7	1.6	1.4
Method 8260 SIM (UG/L)					
1,4-DIOXANE	NL	17	--	--	5.3
Method 522 (UG/L)					
1,4-DIOXANE	NL	13 J	--	--	4.4 J+

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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.

** = Groundwater sample was collected using impeller pump.

Bold = Exceeds NYS Groundwater Standards or guidance value.

Dup = Field Duplicate.

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

J- = Estimated value. One or more quality control parameters were outside control limits and biased low. The result was an estimated quantity, but the result may be biased low.

J+ = Estimated value. One or more quality control parameters were outside control limits and biased high. The result was an estimated quantity, but the result may be biased high.

NL = Not Listed.

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

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.

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STABILIZED WATER QUALITY PARAMETERS
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Well	Sample Date	Sample Code	PH (S.U.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Temperature (°C)	ORP (mV)	Salinity (ppt)
RE103D1	07/12/2018	Normal	4.63	0.109	5.75	0.4	17.91	303	0
RE103D1	10/03/2018	Original	5.39	0.107	0.92	0.7	16.55	275	0
RE103D1	10/03/2018	Dup	5.39	0.107	0.92	0.7	16.55	275	0
RE103D1	12/05/2018	Normal	5.36	0.115	1.43	0.6	14.77	284	0.1
RE103D2	07/12/2018	Original	5.53	0.034	4	1	17.1	245	0
RE103D2	07/12/2018	Dup	5.53	0.034	4	1	17.1	245	0
RE103D2	10/03/2018	Normal	5.42	0.042	3.1	2.18	19.82	272	0
RE103D2	12/05/2018	Normal	4.97	0.037	2.78	0.31	14.65	337	0
RE103D3	07/12/2018	Normal	5.24	0.026	4.55	1.3	24.78	262	0
RE103D3	10/03/2018	Normal	4.73	0.033	3.83	3.22	18.49	329	0
RE103D3	12/05/2018	Normal	4.62	0.028	3.26	1.81	13.66	388	0
RE104D1	07/13/2018	Normal	4.13	0.084	6.34	0	16.79	347	0
RE104D1	10/03/2018	Normal	4.93	0.086	6.67	0.4	17.76	344	0
RE104D1	12/06/2018	Normal	4.23	0.113	3.97	0.19	13.55	382	0.1
RE104D2	07/13/2018	Normal	5.17	0.024	5.2	1.1	15.03	293	0
RE104D2	10/03/2018	Normal	5.26	0.03	5.27	1.2	15.98	315	0
RE104D2	12/06/2018	Original	5.32	0.03	4.3	0.55	14.41	299	0
RE104D2	12/06/2018	Dup	5.32	0.03	4.3	0.55	14.41	299	0
RE104D3	07/13/2018	Normal	5.05	0.014	3.88	3.8	16.75	307	0
RE104D3	10/03/2018	Normal	4.96	0.026	5.1	7.55	16.11	325	0
RE104D3	10/03/2018	Normal	4.96	0.026	5.1	7.55	16.11	325	0
RE104D3	12/06/2018	Normal	4.29	0.022	3	6.09	13.84	375	0
RE105D1	07/13/2018	Normal	4.86	0.109	1.96	1.7	17.28	318	0.1

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STABILIZED WATER QUALITY PARAMETERS
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Well	Sample Date	Sample Code	PH (S.U.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Temperature (°C)	ORP (mV)	Salinity (ppt)
RE105D1	09/27/2018	Normal	4.98	0.105	0.74	0.6	15.74	333	0
RE105D1	12/10/2018	Normal	4.87	0.112	2.05	0.65	13.51	336	0.1
RE105D2	07/13/2018	Normal	5.17	0.064	1.98	0.6	18.43	303	0
RE105D2	09/27/2018	Normal	5.11	0.079	6.15	17.1	15.54	255	0
RE105D2	12/10/2018	Original	4.76	0.079	3.32	0.22	14.5	311	0
RE105D2	12/10/2018	Dup	4.76	0.079	3.32	0.22	14.5	311	0
RE108D1	07/17/2018	Normal	4.6	0.099	5.06	0	20.82	325	0
RE108D1	10/04/2018	Normal	5.03	0.116	5.86	1.2	19.4	311	0.1
RE108D1	12/10/2018	Normal	4.93	0.1	7.07	0.66	13.73	355	0
RE108D2	07/17/2018	Normal	4.51	0.08	2.31	0.19	22.21	323	0
RE108D2	10/04/2018	Original	5.16	0.09	6.26	1.11	19.87	304	0
RE108D2	10/04/2018	Dup	5.16	0.09	6.26	1.11	19.87	304	0
RE108D2	12/10/2018	Original	5.06	0.081	3.47	0.11	15.5	278	0
RE108D2	12/10/2018	Dup	5.06	0.081	3.47	0.11	15.5	278	0
RE109D1	07/16/2018	Normal	5.14	0.085	2.1	0	21.91	270	0
RE109D1	10/05/2018	Normal	5.03	0.099	3.92	33.6	16.84	250	0
RE109D1	12/06/2018	Normal	5.1	0.107	3.56	17.8	12.97	246	0
RE109D2	07/16/2018	Normal	5.45	0.095	2.95	24	26.93	201	0
RE109D2	10/05/2018	Normal	5.41	0.112	1.64	48.2	19.61	150	0.1
RE109D2	12/06/2018	Normal	5.06	0.095	4.87	5.06	13.27	266	0
RE109D3	07/16/2018	Normal	5.4	0.086	1.05	8	21.4	240	0
RE109D3	10/05/2018	Normal	5.32	0.086	1.96	20.1	16.64	210	0
RE109D3	12/06/2018	Normal	4.4	0.115	2.08	8.63	13.44	293	0.1

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STABILIZED WATER QUALITY PARAMETERS
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Well	Sample Date	Sample Code	PH (S.U.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Temperature (°C)	ORP (mV)	Salinity (ppt)
RE117D1	07/16/2018	Normal	5.48	0.02	3.68	4.2	24.5	234	0
RE117D1	09/26/2018	Normal	4.3	0.027	2.67	3.73	19.53	332	0
RE117D1	12/04/2018	Normal	5.07	0.025	3.45	3.06	14.47	305	0
RE117D2	07/16/2018	Normal	5.49	0.031	0.39	0	22.44	277	0
RE117D2	09/26/2018	Normal	4.52	0.03	0.29	43.3	21.05	110	0
RE117D2	12/04/2018	Normal	6.4	0.031	0	81.6	13.43	193	0
RE120D1	07/11/2018	Original	4.65	0.116	2.5	0	19.21	326	0
RE120D1	07/11/2018	Dup	4.65	0.116	2.5	0	19.21	326	0
RE120D1	10/02/2018	Normal	5.01	0.134	2.63	2.6	19.9	308	0.1
RE120D1	12/05/2018	Normal	4.36	0.132	1.95	0.21	14.79	363	0
RE120D2	07/11/2018	Normal	5.24	0.077	3.55	0.5	18.79	302	0
RE120D2	10/02/2018	Normal	5.09	0.086	1.55	0.81	19.94	273	0
RE120D2	12/05/2018	Normal	5.37	0.087	1.97	0.79	15.05	281	0
RE120D3	07/11/2018	Normal	4.81	0.015	1.39	1.8	19.24	343	0
RE120D3	10/02/2018	Normal	4.61	0.026	1.62	1.19	19.21	368	0
RE120D3	12/05/2018	Original	3.79	0.032	1.53	0.8	14.41	420	0
RE120D3	12/05/2018	Dup	3.79	0.032	1.53	0.8	14.41	420	0
RE122D1	07/12/2018	Normal	4.87	0.096	3.56	0	19.24	316	0
RE122D1	10/04/2018	Normal	5.18	0.111	3.58	2	18.87	289	0.1
** RE122D1	10/04/2018	Normal	5.21	0.096	3.04	1.25	16	248	0
RE122D1	12/06/2018	Normal	4.44	0.126	3.06	0.6	13.8	359	0.1
RE122D2	07/12/2018	Normal	4.96	0.095	2.03	0.8	21.26	329	0
RE122D2	10/04/2018	Normal	5	0.11	2.91	0.71	24.55	306	0

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STABILIZED WATER QUALITY PARAMETERS
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Well	Sample Date	Sample Code	PH (S.U.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Temperature (°C)	ORP (mV)	Salinity (ppt)
** RE122D2	10/04/2018	Normal	4.92	0.104	4.92	2.1	16.9	216	0
RE122D2	12/06/2018	Normal	4.58	0.107	1.83	0.24	14.03	376	0
RE122D3	07/12/2018	Normal	5.09	0.022	0.33	4.6	23.35	110	0
RE122D3	10/04/2018	Normal	4.88	0.022	0	3.08	20.38	323	0
**RE122D3	10/04/2018	Normal	4.83	0.022	1.49	3.13	16.41	256	0
RE122D3	12/06/2018	Normal	5	0.026	1.96	1.98	13.97	339	0
RE123D1	07/18/2018	Normal	5.06	0.127	6.88	1.1	16.98	318	0.1
RE123D1	10/09/2018	Normal	4.86	0.154	5.51	0.94	18.46	319	0
RE123D1	12/07/2018	Normal	4.46	0.162	6.53	0.67	13.67	383	0
RE123D2	07/18/2018	Normal	5.29	0.025	4.18	0.97	21.53	281	0
RE123D2	10/08/2018	Normal	5.32	0.031	10.52	0.51	15.56	302	0
RE123D2	12/07/2018	Normal	4.96	0.035	4.91	0.6	13.56	312	0
RE123D3	07/18/2018	Normal	5.42	0.033	1.98	0.3	20.09	-60	0
RE123D3	10/08/2018	Normal	5.72	0.045	1.13	14.6	15.59	-52	0
RE123D3	12/07/2018	Normal	5.7	0.038	0.35	9.2	12.45	41	0
RE125D1	07/11/2018	Normal	4.8	0.144	2.35	5.6	17.48	307	0.1
RE125D1	10/01/2018	Normal	4.79	0.148	0.85	1.52	19.74	330	0.1
RE125D1	12/04/2018	Normal	4.81	0.158	4.03	3.86	13.04	326	0.1
RE125D2	07/11/2018	Original	5.33	0.08	7.15	1.3	17.68	257	0
RE125D2	07/11/2018	Dup	5.33	0.08	7.15	1.3	17.68	257	0
RE125D2	10/01/2018	Normal	NA	NA	NA	NA	NA	NA	NA
RE125D2	12/04/2018	Normal	4.96	0.091	54.4	0.35	12.94	317	0
RE125D3	07/11/2018	Normal	4.65	0.052	4.94	0	21.21	312	0

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Well	Sample Date	Sample Code	PH (S.U.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Temperature (°C)	ORP (mV)	Salinity (ppt)
RE125D3	10/01/2018	Normal	5.15	0.054	5.17	4.9	18.57	279	0
RE125D3	12/04/2018	Normal	4.97	0.054	5.33	0.36	12.89	331	0
RE126D1	07/17/2018	Normal	5.3	0.096	5.29	0.8	19.84	278	0
RE126D1	10/08/2018	Normal	NA	NA	NA	NA	NA	NA	NA
RE126D1	12/07/2018	Normal	4.36	0.119	5.88	0.73	13.03	373	0.1
RE126D2	07/17/2018	Original	6.49	0.178	1.48	0.2	21.35	206	0
RE126D2	07/17/2018	Dup	6.49	0.178	1.48	0.2	21.35	206	0
RE126D2	10/08/2018	Normal	5.26	0.116	3.67	1.8	15.57	279	0.1
RE126D2	10/08/2018	Normal	5.26	0.116	3.67	1.8	15.57	279	0.1
RE126D2	12/07/2018	Normal	5.36	0.115	4.51	1.18	13.72	256	0.1
RE126D3	07/17/2018	Normal	5.16	0.036	5.24	3.2	23.3	271	0
RE126D3	10/08/2018	Normal	NA	NA	NA	NA	NA	NA	NA
RE126D3	12/07/2018	Normal	4.82	0.046	4.24	1.23	14.27	316	0
RE131D1	07/10/2018	Normal	4.68	0.112	4.84	1.23	22.93	350	0.1
RE131D1	09/27/2018	Normal	4.44	0.137	3.1	0.67	17.46	384	0.1
RE131D1	12/05/2018	Normal	4.41	0.118	2.35	5.06	13.53	362	0.1
RE131D2	07/10/2018	Normal	4.66	0.079	4.61	0.2	18.65	325	0
RE131D2	09/27/2018	Normal	5.05	0.076	4.55	1	14.72	328	0
RE131D2	12/05/2018	Normal	4.99	0.086	4.05	1.07	14	321	0
RE131D3	07/10/2018	Normal	5.26	0.041	4.68	0.7	24.09	277	0
RE131D3	09/27/2018	Normal	5.14	0.05	5.52	0.5	17.65	300	0
RE131D3	12/05/2018	Normal	12	0.054	3.75	0.68	12.81	357	0

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Well	Sample Date	Sample Code	PH (S.U.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Temperature (°C)	ORP (mV)	Salinity (ppt)
RE137-640FT	10/09/2018	Normal	4.75	0.106	2.26	19.9	15.42	220	0
RE137-700FT	10/09/2018	Normal	4.72	0.109	2.68	10.7	15.3	263	0.1
RE137-745FT	10/09/2018	Normal	4.99	0.109	2.4	49.5	15.77	207	0.1
TT101D	07/10/2018	Normal	4.89	0.101	0	2.8	16.2	271	0
TT101D	09/28/2018	Normal	4.69	0.1	0	0.87	14.71	276	0
TT101D	09/28/2018	Normal	4.69	0.1	0	0.87	14.71	276	0
TT101D	12/12/2018	Normal	4.24	0.11	0.84	8.4	15.17	308	0.1
TT-101D1	07/10/2018	Normal	4.74	0.107	0.33	0	16.8	312	0
TT-101D1	09/28/2018	Normal	5	0.119	0	0.4	15.72	360	0.1
TT-101D1	12/12/2018	Normal	4.82	0.104	4.79	2.46	14.2	312	0
TT-101D2	07/10/2018	Normal	5.02	0.047	2.48	0.6	16.07	312	0
TT-101D2	09/28/2018	Normal	5.03	0.05	6.15	1.4	14.91	343	0
TT-101D2	12/12/2018	Normal	4.65	0.033	6.08	1.23	14.08	345	0

- ** = Groundwater sample was collected using centrifugal pump.
- Dup = Field duplicate.
- S.U. = Standard Units.
- mS/cm = Micro-Siemens per centimeter.
- mg/L = Milligrams per Liter.
- NTU = Nephelometric Turbidity Units.
- °C = Degree Celsius.
- ORP = Oxidation-Reduction Potential.
- mV = Millivolts.
- ppt = Parts per thousand.
- NA = Sample not analyzed.

**TABLE 4
COMPARISON OF DIOXANE RESULTS BY METHOD
NWIRP BETHPAGE, NY**

Sample Location	Sample Date	1,4-Dioxane Result (micrograms per liter)		
		Method 8260 SIM	EPA Method 522	Method 8270 SIM
TT101D	12/12/2018	15	12J	4.5
TT101D1	12/12/2018	17	13J	4
TT101D2	12/12/2018	5.3	4.4J	1.4

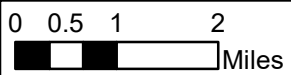
J - Estimated value. One or more quality control parameters were outside control limits or the analyte concentration was less than the limit of quantitation.

EPA – United States Environmental Protection Agency.

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FIGURES

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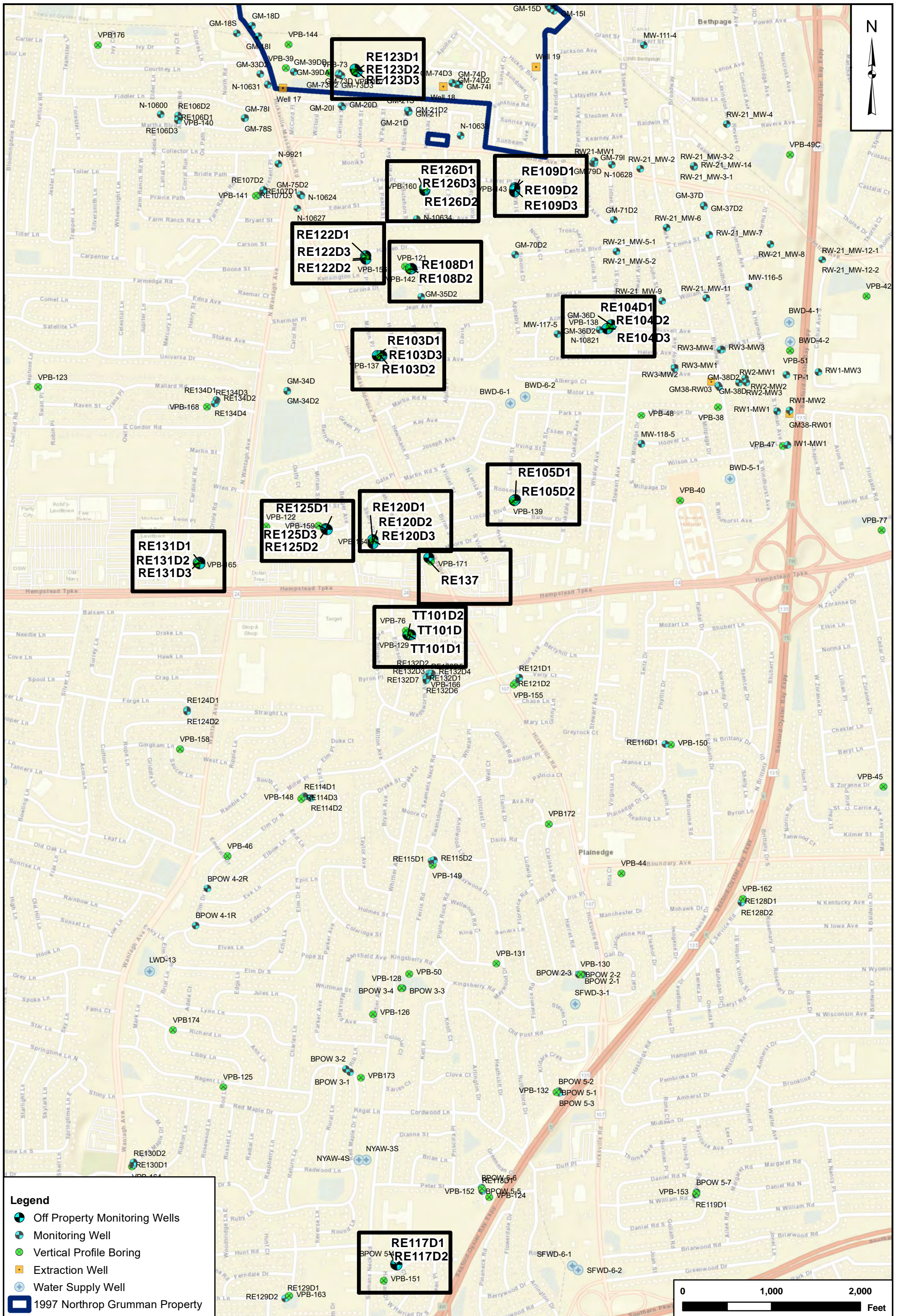
NOR P:\GIS_files\Bethpage\MAP_DOCS\IMXD\2013\RI_add\BP_longisland-new_8x11.mxd MMC



**GENERAL LOCATION MAP
NWIRP BETHPAGE, NEW YORK**

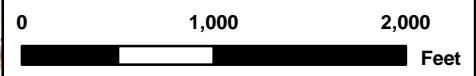
CTO	
N62470-16-D-9008 WE13	
DRAWN BY	DATE
MC	08/13/19
CHECKED BY	DATE
EW	08/13/19
FIGURE NUMBER	
1	

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- Legend**
- Off Property Monitoring Wells
 - Monitoring Well
 - Vertical Profile Boring
 - Extraction Well
 - Water Supply Well
 - 1997 Northrop Grumman Property



LOCATION MAP OF WELLS
2018 ANNUAL OU2 GROUNDWATER INVESTIGATION
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, NWIRP
BETHPAGE, NEW YORK



CTO	
N62470-16-D-9008 WE13	
DRAWN BY	DATE
MC	09/04/19
CHECKED BY	DATE
RD	09/23/19
FIGURE NUMBER	
2	

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APPENDICES

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APPENDIX A

SYNOPTIC WATER LEVELS

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TABLE 2
SYNOPTIC WATER LEVELS
 2018 ANNUAL OU2 GROUNDWATER INVESTIGATION
 NWIRP BETHPAGE, NY
 Page 1 of 2

Well	July		September/October		December	
	Date	Water Level Measurement (ft)	Date	Water Level Measurement (ft)	Date	Water Level Measurement (ft)
RE103D1	7/19/2018	42.97	10/11/2018	40.45	12/10/2018	38.63
RE103D2	7/19/2018	42.82	10/11/2018	40.25	12/10/2018	38.40
RE103D3	7/19/2018	43.02	10/11/2018	41.42	12/10/2018	38.64
RE104D1	7/19/2018	37.47	10/11/2018	36.78	12/10/2018	34.85
RE104D2	7/19/2018	43.29	10/11/2018	40.05	12/10/2018	37.47
RE104D3	7/19/2018	44.00	10/11/2018	40.33	12/10/2018	37.59
RE105D1	7/23/2018	39.98	10/11/2018	38.19	12/10/2018	35.85
RE105D2	7/19/2018	43.21	10/11/2018	39.01	12/10/2018	36.41
RE108D1	7/19/2018	42.53	10/11/2018	41.18	12/10/2018	39.53
RE108D2	7/19/2018	43.53	10/11/2018	41.62	12/10/2018	39.96
RE109D1	7/19/2018	46.63	10/11/2018	45.33	12/10/2018	43.62
RE109D2	7/19/2018	46.95	10/11/2018	45.69	12/10/2018	43.86
RE109D3	7/19/2018	46.95	10/11/2018	45.58	12/10/2018	43.82
RE117D1	7/19/2018	25.72	10/11/2018	24.45	12/10/2018	20.50
RE117D2	7/19/2018	24.41	10/11/2018	23.03	12/10/2018	19.51
RE120D1	7/23/2018	38.80	10/11/2018	36.99	12/10/2018	34.89
RE120D2	7/23/2018	38.61	10/11/2018	36.85	12/10/2018	34.66
RE120D3	7/23/2018	38.92	10/11/2018	37.26	12/10/2018	35.06
RE122D1	7/19/2018	43.92	10/11/2018	42.81	12/10/2018	41.32
RE122D2	7/19/2018	44.42	10/11/2018	43.01	12/10/2018	41.54
RE122D3	7/19/2018	45.15	10/11/2018	43.56	12/10/2018	41.97
RE123D1	7/18/2018	48.08	10/11/2018	48.32	12/10/2018	47.04
RE123D2	7/18/2018	49.25	10/11/2018	49.52	12/10/2018	48.20
RE123D3	7/18/2018	49.55	10/11/2018	49.30	12/10/2018	47.87
RE125D1	7/23/2018	35.20	10/11/2018	34.73	12/10/2018	33.17
RE125D2	7/23/2018	38.62	10/11/2018	37.04	12/10/2018	35.05
RE125D3	7/23/2018	38.90	10/11/2018	37.26	12/10/2018	33.20
RE126D1	7/19/2018	46.98	10/11/2018	46.09	12/10/2018	44.54
RE126D2	7/19/2018	47.64	10/11/2018	46.65	12/10/2018	45.11
RE126D3	7/19/2018	47.38	10/11/2018	46.36	12/10/2018	44.77

TABLE 2
SYNOPTIC WATER LEVELS
 2018 ANNUAL OU2 GROUNDWATER INVESTIGATION
 NWIRP BETHPAGE, NY
 Page 2 of 2

Well	July		September/October		December	
	Date	Water Level Measurement (ft)	Date	Water Level Measurement (ft)	Date	Water Level Measurement (ft)
RE131D1	7/23/2018	37.96	10/11/2018	36.70	12/10/2018	34.81
RE131D2	7/23/2018	38.93	10/11/2018	37.35	12/10/2018	35.29
RE131D3	7/23/2018	39.39	10/11/2018	37.79	12/10/2018	35.68
RE137	NA	NA	10/11/2018	36.95	NA	NA
TT101D	7/23/2018	33.69	10/11/2018	33.30	12/10/2018	31.40
TT101D1	7/23/2018	36.04	10/11/2018	35.00	12/10/2018	32.57
TT101D2	7/23/2018	36.65	10/11/2018	35.50	12/10/2018	33.00

ft = Feet.
 NA = Sample not analyzed.

APPENDIX B

GROUNDWATER SAMPLING LOG SHEETS

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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE103D120180712	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/12/18
MS/MSD Collected: No	Sample Time: 10:05

WELL INFORMATION:	
Well ID : RE103D1	Purge Date: 07/12/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 41.29
Top of Screen (ft-BTOR): 625	PID Monitor Reading: 3.5 ppm
Bottom of Screen (ft-BTOR): 640	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 645	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	41.26	375.00	Clear	4.90	0.109	10.22	0.0	18.42	278	0.0	NA
9:00	41.26	375.00	Clear	4.93	0.108	10.16	0.0	17.99	283	0.0	NA
9:05	41.26	375.00	Clear	4.85	0.108	9.42	0.0	17.89	291	0.0	NA
9:10	41.26	375.00	Clear	4.74	0.107	8.88	0.0	17.82	298	0.0	NA
9:20	41.26	375.00	Clear	4.72	0.107	7.72	0.0	17.66	302	0.0	NA
9:25	41.26	375.00	Clear	4.70	0.107	7.28	0.0	17.58	307	0.0	NA
9:30	41.26	375.00	Clear	4.69	0.107	7.11	0.0	17.61	308	0.0	NA
9:35	41.26	375.00	Clear	4.67	0.107	7.01	0.0	17.62	308	0.0	NA
9:40	41.26	375.00	Clear	4.67	0.107	6.62	0.3	17.65	310	0.0	NA
9:45	41.26	375.00	Clear	4.64	0.108	6.19	0.5	17.74	307	0.0	NA
9:50	41.26	375.00	Clear	4.62	0.109	5.83	0.8	17.88	304	0.0	NA
9:55	41.26	375.00	Clear	4.63	0.108	5.80	0.6	17.90	304	0.0	NA
10:00	41.26	375.00	Clear	4.63	0.109	5.77	0.5	17.89	304	0.0	NA
10:05	41.26	375.00	Clear	4.63	0.109	5.75	0.4	17.91	303	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	10:05	70.00	7.0 gal	4.63	0.109	5.75	0.4	17.91	303	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	Yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	Yes

OBSERVATIONS / NOTES:

No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shickora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE103D1-20181003	Sampled By: CM
QA/QC Duplicate ID: TT-DUP02-20181003	Sample Date: 10/03/18
MS/MSD Collected:	Sample Time: 1115

WELL INFORMATION:	
Well ID : RE103D1	Purge Date: 10/03/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 40.41
Top of Screen (ft-BTOR): 625	PID Monitor Reading:
Bottom of Screen (ft-BTOR): 640	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 645	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:10	40.41	400.00	Clear	5.23	0.124	8.03	3.1	16.56	264	0.1	NA
9:20	40.44	400.00	Clear	5.45	0.109	3.61	2.4	15.27	269	0.1	
9:30	40.55	400.00	Clear	5.40	0.108	1.43	2.5	15.24	275	0.0	
9:40	40.45	400.00	Clear	5.38	0.108	1.01	2.8	15.30	278	0.0	
9:50	40.45	400.00	Clear	5.38	0.107	0.76	3.0	15.30	278	0.0	
10:00	40.62	400.00	Clear	5.38	0.107	0.70	2.8	15.26	278	0.0	
10:10	40.92	400.00	Clear	5.36	0.107	0.72	2.2	16.91	276	0.0	
10:20	41.15	400.00	Clear	5.40	0.106	0.66	1.9	18.63	271	0.0	
10:25	41.23	400.00	Clear	5.39	0.107	0.76	1.5	18.93	269	0.0	
10:30	Air line issues										
10:40	41.36	400.00	Clear	5.44	0.107	2.21	1.0	18.65	267	0.0	
10:45	41.50	400.00	Clear	5.41	0.108	3.51	0.81	17.26	267	0.0	
10:50	41.59	400.00	Clear	5.40	0.107	1.13	0.8	16.76	271	0.0	
10:55	41.60	400.00	Clear	5.39	0.107	0.88	0.6	16.56	272	0.0	
11:00	41.63	400.00	Clear	5.39	0.107	0.81	0.6	16.36	273	0.0	
11:05	41.67	400.00	Clear	5.37	0.107	0.84	0.7	16.57	276	0.0	
11:10	41.69	400.00	Clear	5.39	0.107	0.92	0.7	16.55	275	0.0	
11:15	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:10	11:15	125.00	13	5.39	0.107	0.92	0.7	16.55	275	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 640 - 40.41 = 599.59 x 0.010 g/ft = 6.00 gal to purge drop tubing

Coordinates:	N	E	Signature(s):
			<i>Chuck Meyer</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE103D1-20181205	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/05/18
MS/MSD Collected: NO	Sample Time: 1650

WELL INFORMATION:	
Well ID : RE103D1	Purge Date: 12/05/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 38.95
Top of Screen (ft-BTOR): 625	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 640	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1557	38.95										
1605	38.97	700	Clear	5.42	0.114	3.56	1.57	14.15	301	0.1	
1610	38.97	700	Clear	5.42	0.115	2.15	1.3	14.47	293	0.1	
1615	38.97	700	Clear	5.38	0.115	1.56	1.27	14.54	282	0.1	
1620	38.97	700	Clear	5.38	0.115	1.53	0.73	14.61	282	0.1	
1625	38.97	700	Clear	5.37	0.115	1.47	0.62	14.62	284	0.1	
1630	38.97	700	Clear	5.37	0.115	1.46	0.77	14.65	285	0.1	
1635	38.97	700	Clear	5.37	0.115	1.42	0.84	14.68	284	0.1	
1640	38.97	700	Clear	5.37	0.115	1.44	0.67	14.72	282	0.1	
1645	38.97	700	Clear	5.36	0.115	1.43	0.60	14.77	284	0.1	
1650	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1600	1645	45	10	5.36	0.115	1.43	0.60	14.77	284	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
 640-38.95=601.05x0.010=6.01 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE103D2-20180712	Sampled By: Beau Benfield
QA/QC Duplicate ID: GW03-071218. 1200	Sample Date: 07/12/18
MS/MSD Collected: NO	Sample Time: 10:00

WELL INFORMATION:	
Well ID : RE103D2	Purge Date: 07/12/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 41.11
Top of Screen (ft-BTOR): 653	PID Monitor Reading: 7.3
Bottom of Screen (ft-BTOR): 673	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 673	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	Start purge										
9:00	41.18	300.00	Clear	5.18	0.034	8.18	1.24	17.60	245	0.0	
9:05	41.50	300.00	Clear	5.40	0.033	6.66	1.24	17.05	261	0.0	
9:10	41.50	300.00	Clear	5.40	0.033	5.37	0.76	17.01	254	0.0	
9:15	41.85	300.00	Clear	5.42	0.032	4.68	1.59	16.95	247	0.0	
9:20	41.85	300.00	Clear	5.39	0.032	4.32	1.30	16.94	247	0.0	
9:25	41.90	300.00	Clear	5.15	0.032	4.48	0.98	16.72	252	0.0	
9:30	42.02	300.00	Clear	5.42	0.032	3.90	1.04	16.80	260	0.0	
9:35	—	300.00	Clear	—	—	—	—	—	—	—	
9:40	—	300.00	Clear	5.41	0.032	4.07	1.07	17.09	249	0.0	
9:45	—	300.00	Clear	5.57	0.033	3.88	1.29	17.20	245	0.0	
9:50	42.20	300.00	Clear	5.55	0.034	3.95	1.16	17.18	262	0.0	
9:55	42.20	300.00	Clear	5.53	0.034	4.00	0.97	17.10	245	0.0	
10:00	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	10:00	65.00	4 gal	5.53	0.034	4.00	1.0	17.1	245	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE103D2-20181003	Sampled By: Beau Benfield
QA/QC Duplicate ID: No	Sample Date: 10/03/18
MS/MSD Collected: NO	Sample Time: 1105

WELL INFORMATION:	
Well ID : RE103D2	Purge Date: 10/03/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 40.18
Top of Screen (ft-BTOR): 653	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 673	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 673	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:

Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0900	Start purge										
0910	40.19	400.00	Clear	5.26	0.042	6.48	2.97	17.34	274	0.0	
0920	40.19	400.00	Clear	5.32	0.041	4.01	1.55	17.45	270	0.0	
0930	40.19	400.00	Clear	5.29	0.041	3.51	0.29	17.41	273	0.0	
0940	40.19	400.00	Clear	5.42	0.044	3.56	0.34	17.46	278	0.0	
0950	40.19	400.00	Clear	5.38	0.043	3.70	0.88	17.51	281	0.0	
1000	40.19	400.00	Clear	5.28	0.042	3.76	0.71	17.55	278	0.0	
1010	40.19	400.00	Clear	5.16	0.041	3.76	0.67	17.57	279	0.0	
1015	40.19	400.00	Clear	5.30	0.041	3.17	1.12	17.54	281	0.0	
1020	40.19	400.00	Clear	5.32	0.041	3.11	0.94	17.63	282	0.0	
1025	40.19	400.00	Clear	5.31	0.041	3.43	0.62	17.73	277	0.0	
1030	40.19	400.00	Clear	5.30	0.041	3.34	1.06	17.90	274	0.0	
1035	40.19	400.00	Clear	5.35	0.041	3.67	1.31	18.05	274	0.0	
1040	40.19	400.00	Clear	5.21	0.042	4.16	0.66	18.20	264	0.0	
1045	40.19	400.00	Clear	5.37	0.042	3.64	0.74	18.42	265	0.0	
1050	40.19	400.00	Clear	5.43	0.042	3.27	0.85	18.58	268	0.0	
1055	40.19	400.00	Clear	5.40	0.042	3.54	0.56	19.12	268	0.0	
1100	40.19	400.00	Clear	5.42	0.042	3.10	2.18	19.82	272	0.0	
1105	Collect sample										

FINAL PURGE / SAMPLE DATA:

Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0900	1105	125.00	9	5.42	0.042	3.10	2.18	19.82	272	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS

Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:

673-40.18=632.82x0.010=6.32 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE103D2-20181205, Sampled By: CM, Sample Date: 12/05/18, Sample Time: 1620. Includes sections for Well Information, Equipment Information, Purge Data, Final Purge / Sample Data, Analysis, Preservation and Bottle Requirements, and Observations / Notes. Includes a signature line for Chuck Meyer.

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE103D3-20180712		Sampled By: Scott Anderson	
QA/QC Duplicate ID: --		Sample Date: 07/12/18	
MS/MSD Collected:	No	Sample Time: 12:10	

WELL INFORMATION:			
Well ID : RE103D3		Purge Date: 07/12/18	
Well Diameter (in): 4		Static Water Level (ft-BTOR): 42.5	
Top of Screen (ft-BTOR): 715		PID Monitor Reading: 3.2	
Bottom of Screen (ft-BTOR): 730		Purge Method: Low Flow	
Total Well Depth (ft-BTOR): 735		Sample Method: Low Flow	

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52		Pump Controller: Bladder	
Turbidity Meter: Hanna HI 98703			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
11:00	42.50	250.00	Clear	6.26	0.029	6.87	10.4	24.65	212	0.0	
11:05	42.50	250.00	Clear	6.13	0.029	6.32	8.8	24.87	215	0.0	
11:10	42.50	250.00	Clear	5.87	0.029	5.89	7.7	24.94	224	0.0	
11:15	42.50	250.00	Clear	5.64	0.029	5.43	5.5	24.98	228	0.0	
11:20	42.50	250.00	Clear	5.48	0.028	5.07	3.7	25.12	230	0.0	
11:25	42.50	250.00	Clear	5.35	0.028	4.88	2.4	25.20	236	0.0	
11:30	42.50	250.00	Clear	5.37	0.028	4.82	2.4	25.15	240	0.0	
11:35	42.50	250.00	Clear	5.37	0.027	4.64	1.8	25.23	246	0.0	
11:40	42.50	250.00	Clear	5.37	0.027	4.59	1.7	25.33	251	0.0	
11:45	42.50	250.00	Clear	5.30	0.026	4.62	1.2	25.28	252	0.0	
11:50	42.50	250.00	Clear	5.32	0.026	4.66	3.0	24.98	258	0.0	
11:55	42.50	250.00	Clear	5.27	0.026	4.56	2.1	24.82	260	0.0	
12:00	42.50	250.00	Clear	5.24	0.026	4.55	1.3	24.78	262	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1100	1200	60	8 gal	5.24	0.026	4.55	1.3	24.78	262	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):	<i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE103D3-20181003	Sampled By: CS
QA/QC Duplicate ID: No	Sample Date: 10/03/18
MS/MSD Collected: NO	Sample Time: 1105

WELL INFORMATION:	
Well ID : RE103D3	Purge Date: 10/03/18
Well Diameter (in):	Static Water Level (ft-BTOR): 39.48
Top of Screen (ft-BTOR): 715	PID Monitor Reading:
Bottom of Screen (ft-BTOR): 730	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 735	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0820	39.48	250	Clear	4.25	0.099	5.68	2.80	17.92	290	0.0	N/a
0830	39.50	250	Clear	4.51	0.060	5.05	1.12	17.78	298	0.0	N/a
0840	39.50	250	Clear	4.74	0.039	4.85	0.99	17.69	305	0.0	N/a
0850	39.50	250	Clear	4.70	0.034	3.95	1.54	17.83	299	0.0	N/a
9000	39.50	250	Clear	4.68	0.033	4.01	1.97	17.91	303	0.0	N/a
0910	39.50	250	Clear	4.71	0.033	3.85	1.80	18.11	308	0.0	N/a
0920	39.50	250	Clear	4.71	0.031	3.40	1.15	18.40	310	0.0	N/a
0930	39.50	250	Clear	4.71	0.032	3.25	0.85	18.64	311	0.0	N/a
0940	39.50	250	Clear	4.80	0.032	3.22	0.53	18.70	308	0.0	N/a
0945	39.50	250	Clear	4.81	0.032	3.20	0.61	18.75	306	0.0	N/a
0950	39.50	250	Clear	4.82	0.032	3.22	0.65	18.84	305	0.0	N/a
0955	39.50	250	Clear	4.84	0.032	3.25	0.89	18.99	302	0.0	N/a
1000	39.50	250	Clear	4.86	0.032	3.24	1.14	19.24	301	0.0	N/a
1005	39.50	250	Clear	4.88	0.032	3.24	1.25	19.46	299	0.0	N/a
1010	39.50	250	Clear	4.90	0.032	3.26	1.40	19.57	298	0.0	N/a
1015	39.50	450	Clear	4.87	0.033	3.33	1.91	18.30	302	0.0	N/a
1020	39.50	450	Clear	4.84	0.033	3.40	2.39	17.58	306	0.0	N/a
1025	39.51	450	Clear	4.76	0.033	3.61	2.87	17.84	312	0.0	N/a
1030	39.51	450	Clear	4.68	0.033	3.70	3.20	18.08	315	0.0	N/a
1035	39.51	450	Clear	4.68	0.033	3.80	3.07	18.30	321	0.0	N/a
1040	39.51	450	Clear	4.68	0.033	3.89	2.98	18.38	326	0.0	N/a
1045	39.51	450	Clear	4.69	0.033	3.90	2.81	18.50	326	0.0	N/a
1050	39.51	450	Clear	4.72	0.033	3.79	2.89	18.79	327	0.0	N/a
1055	39.51	450	Clear	4.72	0.033	3.80	3.04	18.51	328	0.0	N/a
1100	39.51	450	Clear	4.73	0.033	3.83	3.22	18.49	329	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0820	1100	160	~12	4.73	0.033	3.83	3.22	18.49	329	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 730 - 39.48 = 690.52 x 0.010 g/ft = 6.91 gal to purge drop tubing volume
 Switched out for more powerful compressor box @ 1015 to purge deepest well in cluster @ higher rate

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE103D3-20181205	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/05/18
MS/MSD Collected: NO	Sample Time: 1520

WELL INFORMATION:	
Well ID : RE103D3	Purge Date: 12/05/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 38.84
Top of Screen (ft-BTOR): 715	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 730	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1430	Start purge										
1435	38.89	700	Clear	4.84	0.028	6.7	1.43	13.18	329	0.0	
1440	38.89	700	Clear	4.85	0.028	3.9	2.05	13.6	350	0.0	
1445	38.89	700	Clear	4.87	0.028	3.32	5.69	13.43	350	0.0	
1450	38.89	700	Clear	4.8	0.028	3.23	4.87	13.7	360	0.0	
1455	38.89	700	Clear	4.75	0.028	3.2	3.9	13.72	368	0.0	
1500	38.89	700	Clear	4.71	0.028	3.26	3.08	13.75	376	0.0	
1505	38.89	700	Clear	4.67	0.028	3.29	2.1	13.55	381	0.0	
1510	38.89	700	Clear	4.65	0.028	3.26	1.88	13.66	385	0.0	
1515	38.89	700	Clear	4.62	0.028	3.26	1.81	13.66	388	0.0	
1520	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1430	1515	45	10	4.62	0.028	3.26	1.81	13.66	388	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
6.9116

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE104D1-20180713	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/13/18
MS/MSD Collected: NO	Sample Time: 10:00

WELL INFORMATION:	
Well ID: RE104D1	Purge Date: 07/13/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 37.09
Top of Screen (ft-BTOR): 350	PID Monitor Reading: 0.3 ppm
Bottom of Screen (ft-BTOR): 370	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 375	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	37.11	375.00	Clear	4.55	0.099	8.90	0.0	18.89	299	0.0	NA
9:00	37.11	375.00	Clear	4.53	0.090	8.42	0.0	18.05	301	0.0	NA
9:05	37.11	375.00	Clear	4.44	0.086	8.16	0.0	17.41	310	0.0	NA
9:10	37.11	375.00	Clear	4.35	0.085	7.87	0.0	17.24	318	0.0	NA
9:15	37.11	375.00	Clear	4.28	0.086	7.62	0.0	17.29	324	0.0	NA
9:20	37.11	375.00	Clear	4.20	0.086	7.38	0.0	17.18	331	0.0	NA
9:25	37.11	375.00	Clear	4.13	0.087	7.19	0.0	17.09	336	0.0	NA
9:30	37.11	375.00	Clear	4.11	0.085	6.93	0.0	17.11	338	0.0	NA
9:35	37.11	375.00	Clear	4.11	0.085	6.86	0.0	17.04	341	0.0	NA
9:40	37.11	375.00	Clear	4.11	0.085	6.74	0.0	16.97	343	0.0	NA
9:45	37.11	375.00	Clear	4.12	0.084	6.59	0.0	16.86	344	0.0	NA
9:50	37.11	375.00	Clear	4.12	0.084	6.48	0.0	16.80	345	0.0	NA
9:55	37.11	375.00	Clear	4.12	0.084	6.39	0.0	16.77	346	0.0	NA
10:00	37.11	375.00	Clear	4.13	0.084	6.34	0.0	16.79	347	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	10:00	65.00	7 gal	4.13	0.084	6.34	0.0	16.79	347	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE104D1-20181001	Sampled By: CM
QA/QC Duplicate ID:	Sample Date: 10/01/18
MS/MSD Collected:	Sample Time: 1510

WELL INFORMATION:	
Well ID : RE104D1	Purge Date: 10/03/18
Well Diameter (in):	Static Water Level (ft-BTOR): 36.87
Top of Screen (ft-BTOR): 350	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 370	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 375	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:05	Start purge										
13:15	36.88	400.00	Clear	5.10	0.082	6.91	1.8	18.43	299	0.0	NA
13:25	36.87	400.00	Clear	4.89	0.084	5.48	1.0	17.23	316	0.0	NA
13:35	36.88	400.00	Clear	4.80	0.085	7.43	0.6	16.85	327	0.0	NA
13:45	36.88	400.00	Clear	4.73	0.086	7.40	0.7	16.58	338	0.0	NA
13:55	36.88	400.00	Clear	4.78	0.086	7.34	0.6	16.65	340	0.0	NA
14:05	36.88	400.00	Clear	4.82	0.086	7.07	0.6	16.54	343	0.0	NA
14:10	36.89	400.00	Clear	4.83	0.086	7.03	0.5	16.33	345	0.0	NA
14:15	36.89	400.00	Clear	4.85	0.086	7.07	0.5	16.49	344	0.0	NA
14:20	36.89	400.00	Clear	4.84	0.086	7.15	0.5	16.39	345	0.0	NA
14:30	36.89	400.00	Clear	4.86	0.086	7.02	0.5	16.99	340	0.0	NA
14:35	36.89	400.00	Clear	4.88	0.086	6.87	0.4	16.84	342	0.0	NA
14:40	36.89	400.00	Clear	4.88	0.086	6.95	0.4	17.36	339	0.0	NA
14:45	36.89	400.00	Clear	4.90	0.086	6.80	0.4	17.65	338	0.0	NA
14:50	36.89	400.00	Clear	4.91	0.086	6.95	0.5	17.39	341	0.0	NA
14:55	36.89	400.00	Clear	4.90	0.086	6.71	0.4	16.94	342	0.0	NA
15:00	36.89	400.00	Clear	4.92	0.086	6.61	0.4	17.66	340	0.0	NA
15:05	36.89	400.00	Clear	4.93	0.086	6.67	0.4	17.76	344	0.0	NA
15:10	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:05	15:10	125.00	9	4.93	0.086	6.67	0.4	17.76	344	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 Volume needed to be remove from the tubing prior to 5 minut readings $370 - 36.87 = 333.13 \times 0.010 = 3.31$ gallons

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE104D1-20181206	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/06/18
MS/MSD Collected: NO	Sample Time: 1310

WELL INFORMATION:	
Well ID : RE104D1	Purge Date: 12/06/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.02
Top of Screen (ft-BTOR): 350	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 370	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1218	35.02										
1230	35.05	700	Clear	4.47	0.116	4.12	4.24	13.5	327	0.1	
1240	35.11	700	Clear	4.3	0.115	4.17	1.25	13.75	361	0.1	
1245	35.11	700	Clear	4.3	0.113	3.96	1.2	13.44	372	0.1	
1250	35.11	700	Clear	4.3	0.113	3.93	0	13.49	374	0.1	
1255	35.11	700	Clear	4.27	0.113	3.96	0	13.67	377	0.1	
1300	35.11	700	Clear	4.26	0.113	3.94	0.22	13.56	380	0.1	
1305	35.11	700	Clear	4.23	0.113	3.97	0.19	13.55	382	0.1	
1310	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1220	1310	50	9 gal	4.23	0.113	3.97	0.19	13.55	382	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
6.6996

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE104D2-20180713			Sampled By: Scott Anderson		
QA/QC Duplicate ID: --			Sample Date: 07/13/18		
MS/MSD Collected: No			Sample Time: 9:55		

WELL INFORMATION:					
Well ID: RE104D2			Purge Date: 07/13/18		
Well Diameter (in): 4			Static Water Level (ft-BTOR): 41.45		
Top of Screen (ft-BTOR): 710			PID Monitor Reading: 0.1		
Bottom of Screen (ft-BTOR): 730			Purge Method: Low Flow		
Total Well Depth (ft-BTOR): 735			Sample Method: Low Flow		

EQUIPMENT INFORMATION:					
Water Quality Instrument: Horiba U-52			Pump Controller: Bladder		
Turbidity Meter: Hanna HI 98703					

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	41.45	375.00	Clear	5.45	0.044	5.76	0.4	15.30	267	0.0	
9:00	41.45	375.00	Clear	5.09	0.031	4.82	0.3	15.20	270	0.0	
9:05	41.45	375.00	Clear	5.14	0.024	4.56	0.5	15.14	272	0.0	
9:10	41.45	375.00	Clear	5.13	0.024	4.37	0.4	15.17	278	0.0	
9:15	41.45	375.00	Clear	5.18	0.021	3.52	0.6	15.15	281	0.0	
9:20	41.45	375.00	Clear	5.19	0.019	3.50	0.7	15.09	281	0.0	
9:25	41.45	375.00	Clear	5.21	0.020	4.75	4.0	14.99	278	0.0	
9:30	41.45	375.00	Clear	5.32	0.021	5.21	1.4	15.01	288	0.0	
9:35	41.45	375.00	Clear	5.23	0.022	5.20	0.9	14.97	286	0.0	
9:40	41.45	375.00	Clear	5.13	0.023	5.21	0.9	14.93	292	0.0	
9:45	41.45	375.00	Clear	5.17	0.023	5.17	1.0	14.95	287	0.0	
9:50	41.45	375.00	Clear	5.20	0.024	5.23	0.6	14.97	289	0.0	
9:55	41.45	375.00	Clear	5.17	0.024	5.20	1.1	15.03	293	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0855	0955	60	8 gal	5.17	0.024	5.20	1.1	15.03	293	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

FB01-071418 collected at 9:15

Coordinates:	N	E	Signature(s):	<i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE104D2-20181003	Sampled By: Beau Benfield
QA/QC Duplicate ID: No	Sample Date: 10/03/18
MS/MSD Collected: NO	Sample Time: 1505

WELL INFORMATION:	
Well ID : RE104D2	Purge Date: 10/03/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 41.73
Top of Screen (ft-BTOR): 710	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 730	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 735	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1300	Start purge										
1310	41.70	300.00	Clear	5.55	0.041	6.93	0.83	16.87	322	0.0	
1320	41.70	300.00	Clear	5.21	0.035	3.82	0.47	16.61	324	0.0	
1330	41.70	300.00	Clear	5.04	0.034	3.67	0.49	16.58	306	0.0	
1340	41.70	300.00	Clear	5.22	0.033	3.58	0.63	16.67	306	0.0	
1350	41.70	300.00	Clear	5.25	0.033	3.24	0.98	16.54	306	0.0	
1400	41.70	300.00	Clear	5.15	0.032	3.60	5.85	16.53	307	0.0	
1410	41.70	300.00	Clear	5.25	0.031	4.44	6.04	16.44	306	0.0	
1415	41.70	300.00	Clear	5.00	0.031	4.61	3.59	16.32	306	0.0	
1420	41.70	300.00	Clear	5.25	0.030	4.96	2.39	16.21	324	0.0	
1425	41.70	300.00	Clear	5.17	0.030	4.53	2.19	16.10	309	0.0	
1430	41.70	300.00	Clear	5.26	0.030	5.02	1.64	16.35	322	0.0	
1435	41.70	300.00	Clear	5.05	0.030	4.52	1.59	16.31	311	0.0	
1440	41.70	300.00	Clear	5.25	0.030	5.71	1.60	16.43	321	0.0	
1445	41.70	300.00	Clear	5.25	0.030	4.99	2.27	16.43	323	0.0	
1450	41.70	300.00	Clear	5.25	0.030	5.23	2.85	16.38	324	0.0	
1455	41.70	300.00	Clear	5.24	0.030	4.87	1.33	16.02	311	0.0	
1500	41.70	300.00	Clear	5.26	0.030	5.27	1.20	15.98	315	0.0	
1505	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1300	1505	125.00	9 gal	5.26	0.030	5.27	1.20	15.98	315	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 730-41.73=688.27x0.010=6.88 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE104D2-20181206	Sampled By: BB
QA/QC Duplicate ID: DUPO2-20181206 1500	Sample Date: 12/06/18
MS/MSD Collected: NO	Sample Time: 1345

WELL INFORMATION:	
Well ID : RE104D2	Purge Date: 12/06/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 37.8
Top of Screen (ft-BTOR): 710	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 730	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	Start purge										
1240	37.87	800	Clear	5.31	0.033	2.91	2.98	14.24	275	0.0	
1250	37.9	800	Clear	5.29	0.034	4.11	1.24	14.27	283	0.0	
1255	37.9	800	Clear	5.31	0.031	4.34	1.00	14.28	286	0.0	
1300	37.9	800	Clear	5.33	0.031	4.35	1.28	14.36	287	0.0	
1305	37.9	800	Clear	5.32	0.031	4.36	1.15	14.32	288	0.0	
1310	37.9	800	Clear	5.33	0.031	4.35	1.19	14.36	291	0.0	
1315	37.9	800	Clear	5.33	0.031	4.32	1.06	14.35	293	0.0	
1320	37.9	800	Clear	5.34	0.03	4.28	1.04	14.35	296	0.0	
1325	37.9	800	Clear	5.32	0.03	4.29	1.35	14.37	296	0.0	
1330	37.9	800	Clear	5.32	0.03	4.32	1.02	14.4	298	0.0	
1335	37.9	800	Clear	5.33	0.03	4.25	0.61	14.44	299	0.0	
1340	37.9	800	Clear	5.32	0.03	4.3	0.55	14.41	299	0.0	
1345	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	1345	75	15	5.32	0.030	4.30	0.55	14.41	299	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
 730-37.8=692.2x0.010=6.9 gal to purge drop tubing

Coordinates:	N	E	Signature(s):
			<i>Beau Benfield</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE104D3-20180713		Sampled By: Beau Benfield
QA/QC Duplicate ID: —		Sample Date: 07/13/18
MS/MSD Collected:	YES	Sample Time: 10:00

WELL INFORMATION:	
Well ID : RE104D3	Purge Date: 07/13/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 41.56
Top of Screen (ft-BTOR): 760	PID Monitor Reading: 0.1
Bottom of Screen (ft-BTOR): 780	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 785	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	Start purge										
9:00	41.57	300.00	Clear	5.07	0.018	6.56	6.43	18.16	301	0.0	
9:05	41.60	300.00	Clear	5.66	0.023	4.65	4.06	16.93	270	0.0	
9:10	41.62	300.00	Clear	5.26	0.018	4.20	3.79	16.58	272	0.0	
9:15	41.65	300.00	Clear	5.37	0.016	4.16	2.94	16.56	275	0.0	
9:20	41.65	300.00	Clear	4.78	0.015	4.06	2.15	16.61	287	0.0	
9:25	41.65	300.00	Clear	5.15	0.002	3.80	2.86	16.53	293	0.0	
9:30	41.65	300.00	Clear	5.15	0.014	3.69	3.26	16.68	319	0.0	
9:35	41.65	300.00	Clear	5.15	0.014	3.65	3.18	16.51	313	0.0	
9:40	41.65	300.00	Clear	5.15	0.014	3.57	2.31	13.52	302	0.0	
9:45	41.65	300.00	Clear	5.16	0.014	3.47	4.11	16.60	327	0.0	
9:50	41.65	300.00	Clear	5.13	0.014	3.62	3.72	16.65	321	0.0	
9:55	41.65	300.00	Clear	5.05	0.014	3.88	3.77	16.75	307	0.0	
10:00	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	10:00	65.00	4	5.05	0.014	3.88	3.8	16.75	307	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE104D3-20181003	Sampled By: CS
QA/QC Duplicate ID: TT-DUP03-20181003 @1200	Sample Date: 10/03/18
MS/MSD Collected: NO	Sample Time: 1515

WELL INFORMATION:	
Well ID : RE104D3	Purge Date: 10/03/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 42.45
Top of Screen (ft-BTOR): 760	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 780	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 785	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1310	42.45	400	Clear	5.13	0.028	8.57	2.46	17.29	276	0.0	N/a
1320	42.53	400	Clear	5.12	0.026	7.67	2.10	16.88	283	0.0	N/a
1330	42.53	400	Clear	5.11	0.025	6.65	1.88	16.42	298	0.0	N/a
1340	42.53	400	Clear	5.07	0.026	6.15	1.09	16.50	302	0.0	N/a
1350	42.53	400	Clear	4.99	0.026	5.90	1.80	16.38	308	0.0	N/a
1400	42.53	400	Clear	5.02	0.026	5.71	2.39	16.30	318	0.0	N/a
1410	42.53	400	Clear	5.00	0.027	5.48	2.56	16.25	316	0.0	N/a
1420	42.53	400	Clear	4.99	0.027	5.20	3.60	16.12	315	0.0	N/a
1430	42.53	400	Clear	4.98	0.026	5.16	4.97	16.21	318	0.0	N/a
1435	42.53	400	Clear	5.00	0.026	5.14	5.45	16.18	322	0.0	N/a
1440	42.53	400	Clear	4.98	0.026	5.08	6.77	16.16	324	0.0	N/a
1445	42.53	400	Clear	5.02	0.026	5.07	7.09	16.19	325	0.0	N/a
1450	42.53	400	Clear	4.97	0.026	5.09	7.46	16.01	327	0.0	N/a
1455	42.53	400	Clear	4.96	0.026	5.08	7.90	16.03	326	0.0	N/a
1500	42.53	400	Clear	4.98	0.026	5.08	8.15	16.05	326	0.0	N/a
1505	42.53	400	Clear	4.96	0.026	5.07	7.30	16.04	325	0.0	N/a
1510	42.53	400	Clear	4.96	0.026	5.10	7.55	16.11	325	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1310	1510	120	~13	4.96	0.026	5.10	7.55	16.11	325	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	4	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 780 - 42.45 = 737.55 x 0.010 g/ft = 7.38 gal to purge drop tubing volume

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE104D3-20181206						Sampled By: CM					
QA/QC Duplicate ID: N/A						Sample Date: 12/06/18					
MS/MSD Collected: NO						Sample Time: 1335					
WELL INFORMATION:											
Well ID : RE104D3						Purge Date: 12/06/18					
Well Diameter (in): 4						Static Water Level (ft-BTOR): 37.84					
Top of Screen (ft-BTOR): 760						PID Monitor Reading: 0					
Bottom of Screen (ft-BTOR): 780						Purge Method: Low-flow					
Total Well Depth (ft-BTOR): 785						Sample Method: Low-flow					
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52						Pump Controller: Centrifugal					
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	37.84	1000	Clear	4.62	0.024	7.89	7.42	12.62	311	0.0	
1235	38	900	Clear	4.58	0.022	2.25	4.27	13.49	330	0.0	
1240	38	900	Clear	4.44	0.022	2.41	3.65	13.69	338	0.0	
1245	38	900	Clear	4.49	0.022	2.79	2.75	13.5	340	0.0	
1250	38	900	Clear	4.39	0.022	2.82	2.85	13.63	350	0.0	
1255	38	900	Clear	4.34	0.022	2.83	2.93	13.59	361	0.0	
1300	38	900	Clear	4.36	0.022	2.90	2.86	13.65	363	0.0	
1305	38	900	Clear	4.39	0.022	2.95	2.8	13.72	366	0.0	
1310	38	900	Clear	4.35	0.022	2.93	3.02	13.8	371	0.0	
1315	38	900	Clear	4.32	0.022	2.94	3.28	13.72	374	0.0	
1320	38	900	Clear	4.35	0.022	2.97	4.12	13.74	372	0.0	
1325	38	900	Clear	4.33	0.022	3.00	5.26	13.78	370	0.0	
1330	38	900	Clear	4.29	0.022	3.00	6.09	13.89	375	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	1330	60	17	4.29	0.022	3.00	6.09	13.84	375	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
OBSERVATIONS / NOTES:											
7.4716											
Coordinates:		N	E	Signature(s):							
				<i>Chuck Meyer</i>							

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE105D1-20180713			Sampled By: Scott Anderson		
QA/QC Duplicate ID: --			Sample Date: 07/13/18		
MS/MSD Collected:	NO		Sample Time: 13:45		

WELL INFORMATION:

Well ID: RE105D1	Purge Date: 07/13/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 39.32
Top of Screen (ft-BTOR): 530	PID Monitor Reading: 0.2
Bottom of Screen (ft-BTOR): 550	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 554.9	Sample Method: Low Flow

EQUIPMENT INFORMATION:

Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna HI 98703	

PURGE DATA:

Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
12:45	39.32	300.00	Clear	5.06	0.119	8.64	1.1	18.56	275	0.1	
12:50	39.32	300.00	Clear	4.95	0.115	6.06	0.8	17.62	288	0.1	
12:55	39.32	300.00	Clear	4.89	0.114	4.94	1.1	17.34	297	0.1	
13:00	39.32	300.00	Clear	4.88	0.114	4.12	0.7	17.04	311	0.1	
13:05	39.32	300.00	Clear	4.89	0.114	3.88	0.5	16.97	312	0.1	
13:10	39.32	300.00	Clear	4.90	0.113	3.69	0.4	17.02	316	0.1	
13:15	39.92	300.00	Clear	4.96	0.112	3.08	2.6	17.02	317	0.1	
13:20	39.92	300.00	Clear	4.82	0.111	2.65	2.1	17.11	313	0.1	
13:25	39.92	300.00	Clear	4.96	0.110	2.31	2.2	17.16	322	0.1	
13:30	39.92	300.00	Clear	4.85	0.110	2.13	2.0	17.15	315	0.1	
13:35	39.92	300.00	Clear	4.87	0.110	2.06	2.0	17.21	317	0.1	
13:40	39.32	300.00	Clear	4.85	0.109	1.98	1.8	17.27	318	0.1	
13:45	39.32	300.00	Clear	4.86	0.109	1.96	1.7	17.28	318	0.1	

FINAL PURGE / SAMPLE DATA:

Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1245	1345	60	8 gal	4.86	0.109	1.96	1.7	17.28	318	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS

Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):	<i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE105D1-20180927	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 09/27/18
MS/MSD Collected: NO	Sample Time: 16:35

WELL INFORMATION:	
Well ID : RE105D1	Purge Date: 09/27/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 38.34
Top of Screen (ft-BTOR): 530	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 550	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 554.9	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
14:35	38.39	400.00	Clear	5.59	0.109	7.79	15.0	17.74	283	0.1	NA
14:45	38.40	400.00	Clear	5.23	0.109	3.97	5.9	17.90	295	0.1	NA
14:55	38.40	400.00	Clear	5.22	0.106	3.55	4.1	17.34	299	0.0	NA
15:05	38.40	400.00	Clear	5.16	0.104	3.29	4.5	17.12	312	0.0	NA
15:15	38.40	400.00	Clear	5.09	0.104	2.44	3.1	16.75	321	0.0	NA
15:25	38.40	400.00	Clear	5.04	0.104	1.77	2.5	16.20	328	0.0	NA
15:35	38.40	400.00	Clear	5.02	0.104	0.87	2.3	16.03	330	0.0	NA
15:45	38.40	400.00	Clear	5.00	0.105	0.85	2.5	15.92	330	0.0	NA
15:55	38.40	400.00	Clear	4.99	0.105	0.77	2.1	15.73	332	0.0	NA
16:00	38.40	400.00	Clear	4.98	0.105	0.69	1.6	15.80	333	0.0	NA
16:05	38.40	400.00	Clear	4.98	0.105	0.64	1.4	15.78	334	0.0	NA
16:10	38.40	400.00	Clear	4.98	0.105	0.66	1.3	15.72	333	0.0	NA
16:15	38.40	400.00	Clear	4.97	0.105	0.68	1.2	15.69	334	0.0	NA
16:20	38.40	400.00	Clear	4.98	0.105	0.70	0.9	15.72	334	0.0	NA
16:25	38.40	400.00	Clear	4.98	0.105	0.73	0.8	15.75	333	0.0	NA
16:30	38.40	400.00	Clear	4.98	0.105	0.74	0.8	15.78	334	0.0	NA
16:35	38.40	400.00	Clear	4.98	0.105	0.74	0.6	15.74	333	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
14:35	16:35	120.00	13	4.98	0.105	0.74	0.6	15.74	333	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 550-38.34=511.66x0.010gpf=5.11 gallons to purge drop tubing
 No stains or odors observed during purge.

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE105D1-20181210						Sampled By: CM					
QA/QC Duplicate ID: N/A						Sample Date: 12/10/18					
MS/MSD Collected: YES						Sample Time: 945					
WELL INFORMATION:											
Well ID : RE105D1						Purge Date: 12/10/18					
Well Diameter (in): 4" PVC						Static Water Level (ft-BTOR): 36.85					
Top of Screen (ft-BTOR): 530						PID Monitor Reading: 0					
Bottom of Screen (ft-BTOR): 550						Purge Method: Low-flow					
Total Well Depth (ft-BTOR): 555						Sample Method: Low-flow					
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52						Pump Controller: Centrifugal					
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
840	36.85	900	Clear	4.24	0.119	2.68	10.4	13.11	322	0.1	
845	35.86	900	Clear	4.68	0.119	2.12	6.73	13.05	311	0.1	
850	35.86	900	Clear	4.71	0.117	2.03	3.01	13.14	311	0.1	
855	35.86	900	Clear	4.73	0.116	2.00	1.18	13.18	314	0.1	
900	35.86	900	Clear	4.8	0.113	2.12	0.98	13.21	316	0.1	
905	35.86	900	Clear	4.81	0.113	2.17	0.98	13.3	319	0.1	
910	35.86	900	Clear	4.83	0.112	2.01	0.97	13.41	326	0.1	
915	35.86	900	Clear	4.83	0.112	1.98	0.84	13.31	327	0.1	
920	35.86	900	Clear	4.84	0.112	1.87	0.84	13.34	328	0.1	
925	35.86	900	Clear	4.84	0.112	1.93	0.81	13.46	331	0.1	
930	35.86	900	Clear	4.85	0.112	1.98	0.77	13.54	334	0.1	
935	35.86	900	Clear	4.87	0.112	2.03	0.89	13.54	335	0.1	
940	35.89	900	Clear	4.87	0.112	2.05	0.65	13.51	336	0.1	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
840	940	60	14	4.87	0.112	2.05	0.65	13.51	336	0.1	
ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	6	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	3	1-L	Amber glass	Yes					
OBSERVATIONS / NOTES:											
5.1815											
Coordinates:			N			E			Signature(s):		
									<i>Chuck Meyer</i>		

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE105D2-20180713				Sampled By: Beau Benfield							
QA/QC Duplicate ID: —				Sample Date: 07/13/18							
MS/MSD Collected: NO				Sample Time: 13:35							
WELL INFORMATION:											
Well ID : RE105D2				Purge Date: 07/13/18							
Well Diameter (in): 4				Static Water Level (ft-BTOR): 40.39							
Top of Screen (ft-BTOR): 730				PID Monitor Reading: 1.2							
Bottom of Screen (ft-BTOR): 750				Purge Method: Low Flow							
Total Well Depth (ft-BTOR): 755.9				Sample Method: Low Flow							
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52				Pump Controller: Bladder							
Turbidity Meter: Hanna fast tracker											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
12:30	Start purge										
12:35	40.36	300.00	Clear	5.02	0.067	5.75	0.77	18.91	276	0.0	
12:40	40.36	300.00	Clear	5.26	0.068	4.21	2.21	18.56	286	0.0	
12:45	40.36	300.00	Clear	5.22	0.067	3.52	0.81	18.53	293	0.0	
12:50	40.36	300.00	Clear	4.99	0.067	3.60	1.67	18.63	293	0.0	
12:55	40.36	300.00	Clear	5.25	0.067	3.26	0.62	18.51	303	0.0	
13:00	40.36	300.00	Clear	5.12	0.067	3.23	1.69	18.63	309	0.0	
13:05	40.36	300.00	Clear	5.03	0.068	2.70	0.65	18.43	296	0.0	
13:10	40.36	300.00	Clear	5.01	0.068	2.28	0.51	18.51	308	0.0	
13:15	40.36	300.00	Clear	5.29	0.068	1.82	0.59	18.24	290	0.0	
13:20	40.36	300.00	Clear	5.25	0.068	1.84	0.39	18.43	287	0.0	
13:25	40.36	300.00	Clear	4.92	0.066	1.72	0.80	18.53	308	0.0	
13:30	40.36	300.00	Clear	5.17	0.064	1.98	0.64	18.43	303	0.0	
13:35	Collect sample										
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
12:30	13:35	65.00	4 gal	5.17	0.064	1.98	0.6	18.43	303	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes					
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes					
OBSERVATIONS / NOTES:											
Coordinates:			N		E		Signature(s):				

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE105D2-20180927	Sampled By: CM
QA/QC Duplicate ID:	Sample Date: 09/27/18
MS/MSD Collected:	Sample Time: 17:10

WELL INFORMATION:	
Well ID : RE105D2	Purge Date: 09/27/18
Well Diameter (in):	Static Water Level (ft-BTOR): 38.92
Top of Screen (ft-BTOR): 730	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 750	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 755.9	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
15:10	38.92	400.00	Clear	5.08	0.085	9.29	10.9	23.64	282	0.0	NA
15:20	38.96	400.00	Clear	4.44	0.086	9.14	9.9	17.97	373	0.0	NA
15:30	36.96	400.00	Clear	4.41	0.083	8.98	10.1	17.79	379	0.0	NA
15:40	36:96	400.00	Clear	4.36	0.080	8.72	7.9	17.51	386	0.0	NA
15:50	36:96	400.00	Clear	4.29	0.076	8.51	6.6	17.32	381	0.0	NA
16:00	35:96	400.00	Clear	4.24	0.071	8.44	4.2	17.02	377	0.0	NA
16:05	36.96	400.00	Clear	4.26	0.079	8.09	2.9	17.10	352	0.0	NA
16:10	36.96	400.00	Clear	4.30	0.086	7.82	1.4	17.19	340	0.0	NA
16:15	36.96	400.00	Clear	4.77	0.083	7.43	1.0	17.56	320	0.0	NA
16:20	36.96	400.00	Clear	4.97	0.081	7.21	1.0	17.12	309	0.0	NA
16:25	36.96	400.00	Clear	4.97	0.077	6.86	2.2	17.26	305	0.0	NA
16:30	36.96	400.00	Clear	5.09	0.077	6.63	3.5	17.15	284	0.0	NA
16:35	36.96	400.00	Clear	5.35	0.076	6.57	4.2	17.10	267	0.0	NA
16:40	36.96	400.00	Clear	5.25	0.076	6.48	12.9	17.20	258	0.0	NA
16:45	36.96	400.00	Clear	5.03	0.076	6.48	20.1	16.55	248	0.0	NA
16:50	36.96	400.00	Clear	5.09	0.077	6.29	19.6	16.66	249	0.0	NA
16:55	36.96	400.00	Clear	5.14	0.075	6.24	19.2	16.64	251	0.0	NA
17:00	36.96	400.00	Clear	5.07	0.079	6.18	18.4	16.61	254	0.0	NA
17:05	36.96	400.00	Clear	5.11	0.079	6.15	17.1	15.54	255	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
15:10	17:05	115.00		5.11	0.079	6.15	17.1	15.54	255	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:

*

Coordinates:	N	E	Signature(s):
			<i>Chuck Meyer</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE105D2-20181210	Sampled By: Katie Gregory
QA/QC Duplicate ID: DUP03-20181210	Sample Date: 12/10/18
MS/MSD Collected: NO	Sample Time: 1005

WELL INFORMATION:	
Well ID : RE105D2	Purge Date: 12/10/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 36.44
Top of Screen (ft-BTOR): 730	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 750	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Hanna 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
847	36.44										
855	36.45	700	Clear	4.15	0.085	5.54	3.89	13.39	295	0.0	
900	36.45	700	Clear	4.19	0.082	2.99	1.52	13.76	292	0.0	
910	36.45	700	Clear	4.22	0.078	1.38	2.57	13.8	281	0.0	
920	36.45	700	Clear	4.27	0.081	2.53	0.79	13.94	296	0.0	
930	36.45	700	Clear	4.38	0.081	3.67	0.3	14.04	301	0.0	
940	36.47	700	Clear	4.7	0.081	3.36	0.27	14.14	298	0.0	
950	36.49	700	Clear	4.67	0.08	3.33	0.38	14.39	309	0.0	
955	36.49	700	Clear	4.72	0.08	3.31	0.31	14.46	307	0.0	
1000	36.49	700	Clear	4.76	0.079	3.32	0.22	14.5	311	0.0	
1005	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
850	1000	70	14.5	4.76	0.079	3.32	0.22	14.5	311	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
14.2712

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE108D1-20180717	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/17/18
MS/MSD Collected: NO	Sample Time: 13:40

WELL INFORMATION:	
Well ID: RE108D1	Purge Date: 07/17/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 42.25
Top of Screen (ft-BTOR): 530	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 550	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 555	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
12:35	42.26	375.00	Clear	5.93	0.106	9.91	0.0	23.77	237	0.0	NA
12:40	42.26	375.00	Clear	5.73	0.100	8.63	0.0	22.80	244	0.0	NA
12:45	42.27	375.00	Clear	5.52	0.100	7.52	0.0	21.85	254	0.0	NA
12:50	42.27	375.00	Clear	5.31	0.100	6.46	0.0	21.30	263	0.0	NA
12:55	42.27	375.00	Clear	5.07	0.100	5.50	0.0	21.17	278	0.0	NA
13:00	42.27	375.00	Clear	4.89	0.100	5.02	0.0	21.04	293	0.0	NA
13:05	42.27	375.00	Clear	4.75	0.100	4.99	0.0	20.99	306	0.0	NA
13:10	42.27	375.00	Clear	4.62	0.099	5.01	0.0	20.97	319	0.0	NA
13:15	42.27	375.00	Clear	4.58	0.099	4.99	0.0	20.98	324	0.0	NA
13:20	42.27	375.00	Clear	4.58	0.099	5.00	0.0	20.94	326	0.0	NA
13:25	42.27	375.00	Clear	4.59	0.099	5.01	0.0	20.92	328	0.0	NA
13:30	42.27	375.00	Clear	4.60	0.099	5.03	0.0	20.88	326	0.0	NA
13:35	42.27	375.00	Clear	4.60	0.099	5.04	0.0	20.85	326	0.0	NA
13:40	42.27	375.00	Clear	4.60	0.099	5.06	0.0	20.82	325	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
12:35	13:40	65.00	7 gal	4.60	0.099	5.06	0.0	20.82	325	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE108D1-20181004		Sampled By: CM
QA/QC Duplicate ID:		Sample Date: 10/04/18
MS/MSD Collected: NO		Sample Time: 17:35

WELL INFORMATION:	
Well ID : RE108D1	Purge Date: 10/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 41.11
Top of Screen (ft-BTOR): 530	PID Monitor Reading: 1.5 ppm
Bottom of Screen (ft-BTOR): 550	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 555	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
15:30	41.11	300.00	Clear	5.59	0.116	8.44	3.4	22.08	243	0.1	NA
15:40	41.14	300.00	Clear	5.53	0.117	7.82	2.9	21.89	248	0.1	NA
15:50	41.14	300.00	Clear	5.48	0.117	8.36	3.1	21.98	245	0.1	NA
16:00	41.14	300.00	Clear	5.47	0.117	7.30	2.9	21.70	249	0.1	NA
16:10	41.14	300.00	Clear	5.22	0.116	6.23	2.6	21.09	279	0.1	NA
16:20	41.14	300.00	Clear	5.25	0.115	7.83	2.5	21.11	280	0.1	NA
16:30	41.14	300.00	Clear	5.12	0.115	5.74	2.2	20.99	291	0.1	NA
16:35	41.14	300.00	Clear	5.11	0.115	5.67	2.6	20.59	305	0.1	NA
16:40	41.14	300.00	Clear	5.09	0.115	5.84	2.0	20.47	303	0.1	NA
16:45	41.14	300.00	Clear	5.10	0.115	5.89	1.2	20.21	308	0.1	NA
16:50	41.14	300.00	Clear	4.95	0.115	5.92	0.7	19.68	312	0.1	NA
16:55	41.14	300.00	Clear	5.02	0.115	5.93	0.8	19.54	314	0.1	NA
17:00	41.14	300.00	Clear	5.03	0.115	5.89	1.1	19.51	310	0.1	NA
17:05	41.14	300.00	Clear	5.02	0.116	5.93	1.0	19.45	313	0.1	NA
17:10	41.14	300.00	Clear	5.03	0.116	5.97	0.8	19.00	313	0.1	NA
17:15	41.14	300.00	Clear	5.02	0.116	5.93	1.0	19.30	312	0.1	NA
17:20	41.14	300.00	Clear	5.03	0.116	5.87	1.5	19.56	312	0.1	NA
17:25	41.14	300.00	Clear	5.03	0.116	5.94	1.3	19.47	311	0.1	NA
17:30	41.14	300.00	Clear	5.03	0.116	5.86	1.2	19.40	311	0.1	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
15:30	17:30	120.00	8gal	5.03	0.116	5.86	1.2	19.4	311	0.1	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
2119.21	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 Drop tube vplume purge 550 - 41.11 = 508.89 x 0.010 = 5.09 gallona

Coordinates:	N	E	Signature(s):	<i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE108D1-20181210		Sampled By: CM									
QA/QC Duplicate ID: N/A		Sample Date: 12/10/18									
MS/MSD Collected: NO		Sample Time: 1255									
WELL INFORMATION:											
Well ID : RE108D1		Purge Date: 12/10/18									
Well Diameter (in): 4"		Static Water Level (ft-BTOR): 49.58									
Top of Screen (ft-BTOR): 530		PID Monitor Reading: 0									
Bottom of Screen (ft-BTOR): 550		Purge Method: Low-flow									
Total Well Depth (ft-BTOR): 555		Sample Method: Low-flow									
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52		Pump Controller: Centrifugal									
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1150	49.58	900	Clear	5.21	0.102	11.25	7.42	13.49	309	0.0	
1155	49.61	900	Clear	5.14	0.102	8.77	2.31	13.74	313	0.0	
1200	49.61	900	Clear	5.01	0.101	7.41	0.71	13.77	331	0.0	
1205	49.63	900	Clear	4.93	0.1	7.14	0.55	13.77	339	0.0	
1210	49.63	900	Clear	4.91	0.1	7.11	0.52	13.75	351	0.0	
1215	49.63	900	Clear	4.9	0.1	7.09	0.42	13.67	360	0.0	
1220	49.63	900	Clear	4.91	0.1	7.09	0.36	13.63	361	0.0	
1225	49.63	900	Clear	4.89	0.1	7.07	0.53	13.56	364	0.0	
1230	49.63	900	Clear	4.89	0.1	7.01	0.55	13.56	364	0.0	
1235	49.63	900	Clear	4.87	0.1	7.06	0.5	13.57	364	0.0	
1240	49.63	900	Clear	4.89	0.1	7.06	0.42	13.64	360	0.0	
1245	49.63	900	Clear	4.91	0.1	7.08	0.37	13.69	357	0.0	
1250	49.63	900	Clear	4.93	0.1	7.07	0.66	13.73	355	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1150	1250	60	15	4.93	0.1	7.07	0.66	13.73	355	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
OBSERVATIONS / NOTES:											
10.1084											
Coordinates:		N	E	Signature(s):							
				<i>Chuck Meyer</i>							

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: <u>RE108D2-20180717</u>	Sampled By: <u>Beau Benfield</u>
QA/QC Duplicate ID: <u>—</u>	Sample Date: <u>07/17/18</u>
MS/MSD Collected: <u>NO</u>	Sample Time: <u>13:40</u>

WELL INFORMATION:	
Well ID : <u>RE108D2</u>	Purge Date: <u>07/17/18</u>
Well Diameter (in): <u>4</u>	Static Water Level (ft-BTOR): <u>43.25</u>
Top of Screen (ft-BTOR): <u>630</u>	PID Monitor Reading: <u>3.2</u>
Bottom of Screen (ft-BTOR): <u>650</u>	Purge Method: <u>Low Flow</u>
Total Well Depth (ft-BTOR): <u>655</u>	Sample Method: <u>Low Flow</u>

EQUIPMENT INFORMATION:	
Water Quality Instrument: <u>Horiba U-52</u>	Pump Controller: <u>Bladder</u>
Turbidity Meter: <u>Hanna fast tracker</u>	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
12:35	Start purge										
12:45	43.25	300.00	Clear	5.62	0.087	6.76	3.05	28.06	200	0.0	
12:50	43.25	300.00	Clear	5.30	0.085	5.31	1.04	26.35	228	0.0	
12:55	43.25	300.00	Clear	4.73	0.081	3.19	0.71	23.61	278	0.0	
13:00	43.25	300.00	Clear	4.56	0.080	2.28	0.87	23.62	297	0.0	
13:05	43.25	300.00	Clear	4.50	0.080	2.03	0.38	23.32	303	0.0	
13:10	43.25	300.00	Clear	4.47	0.080	2.00	0.31	22.90	312	0.0	
13:15	43.25	300.00	Clear	4.45	0.080	2.06	0.50	22.68	316	0.0	
13:20	43.25	300.00	Clear	4.46	0.080	2.05	0.24	22.55	318	0.0	
13:25	43.25	300.00	Clear	4.48	0.081	1.90	0.35	22.60	320	0.0	
13:30	43.25	300.00	Clear	4.50	0.080	2.04	0.19	22.16	323	0.0	
13:35	43.25	300.00	Clear	4.51	0.080	2.31	0.19	22.21	323	0.0	
13:40	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
12:35	13:40	65.00	4	4.51	0.080	2.31	0.19	22.21	323	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE108D2-20181004	Sampled By: CS
QA/QC Duplicate ID: TT-DUP04-20181004 @ 1200	Sample Date: 10/04/18
MS/MSD Collected: NO	Sample Time: 1655

WELL INFORMATION:	
Well ID : RE108D2	Purge Date: 10/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 41.64
Top of Screen (ft-BTOR): 630	PID Monitor Reading: 6.7 ppm
Bottom of Screen (ft-BTOR): 650	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 655	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1450	41.64	300	Clear	5.99	0.082	8.44	2.97	23.22	303	0.0	N/a
1500	41.64	300	Clear	5.80	0.084	8.53	2.80	22.78	302	0.0	N/a
1510	41.64	300	Clear	5.67	0.087	8.62	2.88	22.31	301	0.0	N/a
1520	41.64	300	Clear	5.44	0.089	8.66	2.09	21.87	300	0.0	N/a
1530	41.64	300	Clear	5.26	0.091	8.75	1.47	21.21	298	0.0	N/a
1540	41.64	300	Clear	5.21	0.091	8.15	1.68	21.05	299	0.0	N/a
1550	41.64	300	Clear	5.20	0.091	7.81	1.52	20.80	300	0.0	N/a
1600	41.64	300	Clear	5.18	0.091	7.47	1.44	20.45	301	0.0	N/a
1610	41.64	300	Clear	5.16	0.090	7.16	1.60	20.47	302	0.0	N/a
1615	41.64	300	Clear	5.17	0.091	7.03	1.45	20.49	302	0.0	N/a
1620	41.64	300	Clear	5.19	0.090	6.88	1.51	20.34	303	0.0	N/a
1625	41.64	300	Clear	5.19	0.091	6.71	1.48	20.35	303	0.0	N/a
1630	41.64	300	Clear	5.19	0.091	6.60	1.41	20.36	303	0.0	N/a
1635	41.64	300	Clear	5.20	0.091	6.49	1.35	20.20	303	0.0	N/a
1640	41.64	300	Clear	5.18	0.090	6.40	1.27	19.97	303	0.0	N/a
1645	41.64	300	Clear	5.17	0.090	6.31	1.19	19.92	304	0.0	N/a
1650	41.64	300	Clear	5.16	0.090	6.26	1.11	19.87	304	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1450	1650	120	~10 gal	5.16	0.090	6.26	1.11	19.87	304	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	4	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 650 - 41.64 = 608.36 x 0.010 g/ft = 6.08 gal to purge drop tubing

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE108D2-20181210	Sampled By: Katie Gregory
QA/QC Duplicate ID: DUP04-20181210	Sample Date: 12/10/18
MS/MSD Collected: NO	Sample Time: 1255

WELL INFORMATION:	
Well ID : RE108D2	Purge Date: 12/10/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 39.98
Top of Screen (ft-BTOR): 630	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 650	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Hanna 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1146	39.98										
1153	40.05	700	Clear	4.72	0.083	1.40	0.22	14.28	292	0.0	
1158	40.05	700	Clear	4.79	0.083	2.13	0.2	14.50	284	0.0	
1208	40.05	700	Clear	5.04	0.083	2.70	0.13	14.55	274	0.0	
1218	40.05	700	Clear	5.06	0.082	3.03	0.12	14.75	279	0.0	
1228	40.05	700	Clear	5.09	0.081	5.16	0.11	14.99	271	0.0	
1238	40.05	700	Clear	5.05	0.081	3.32	0.18	15.22	277	0.0	
1243	40.05	700	Clear	4.99	0.081	3.37	0.16	15.34	281	0.0	
1248	40.05	700	Clear	5.03	0.081	3.44	0.12	15.43	280	0.0	
1253	40.05	700	Clear	5.06	0.081	3.47	0.11	15.50	278	0.0	
1255	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C)	ORP (mV)	Salinity (% or ppt)	Other
1148	1253	65	12.5	5.06	0.081	3.47	0.11	15.5	278	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
 12.2024

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE109D1-20180716	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/16/18
MS/MSD Collected: NO	Sample Time: 11:30

WELL INFORMATION:	
Well ID: RE109D1	Purge Date: 07/16/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 45.89
Top of Screen (ft-BTOR): 515	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 535	Purge Method: Low Flow
Total Well Depth (ft-BTOR):	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:25	45.92	375.00	Clear	4.53	0.214	7.89	29.0	28.54	296	0.0	NA
10:30	45.93	375.00	Clear	5.05	0.099	8.42	21.5	23.61	260	0.0	NA
10:35	45.93	375.00	Clear	5.06	0.099	8.20	17.6	22.91	261	0.0	NA
10:40	45.93	375.00	Clear	5.10	0.095	7.99	14.2	22.29	262	0.0	NA
10:45	45.93	375.00	Clear	5.06	0.094	5.70	9.7	22.18	265	0.0	NA
10:50	45.93	375.00	Clear	5.06	0.091	3.99	5.3	22.15	265	0.0	NA
10:55	45.92	375.00	Clear	5.08	0.089	2.46	2.2	22.07	265	0.0	NA
11:00	45.92	375.00	Clear	5.12	0.087	2.15	1.0	22.01	265	0.0	NA
11:05	45.92	375.00	Clear	5.11	0.087	2.07	0.3	21.89	267	0.0	NA
11:10	45.92	375.00	Clear	5.13	0.087	2.11	0.0	21.90	269	0.0	NA
11:15	45.92	375.00	Clear	5.13	0.086	2.09	0.0	21.89	269	0.0	NA
11:20	45.92	375.00	Clear	5.14	0.086	2.07	0.0	21.88	270	0.0	NA
11:25	45.92	375.00	Clear	5.13	0.085	2.08	0.0	21.87	270	0.0	NA
11:30	45.92	375.00	Clear	5.14	0.085	2.10	0.0	21.91	270	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:25	11:30	65.00	7 gal	5.14	0.085	2.10	0.0	21.91	270	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE109D1-20181005	Sampled By: CM
QA/QC Duplicate ID:	Sample Date: 10/05/18
MS/MSD Collected:	Sample Time: 11:35

WELL INFORMATION:	
Well ID : RE109D1	Purge Date: 10/05/18
Well Diameter (in): 4 "	Static Water Level (ft-BTOR): 45.23
Top of Screen (ft-BTOR): 515	PID Monitor Reading 1.1 ppm
Bottom of Screen (ft-BTOR): 535	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 685	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:15	45.23	300.00	Clear	4.85	0.101	6.45	6.7	18.42	254	0.0	NA
9:25	45.25	300.00	Clear	4.91	0.098	3.47	4.1	16.12	267	0.0	NA
9:35	45.25	300.00	Clear	4.91	0.098	3.00	2.9	15.99	271	0.0	NA
9:45	45.25	300.00	Clear	4.90	0.098	2.98	2.6	15.89	276	0.0	NA
9:55	45.25	300.00	Clear	4.89	0.098	3.07	2.4	15.96	283	0.0	NA
10:05	45.25	300.00	Clear	4.89	0.098	2.55	2.8	15.94	284	0.0	NA
10:15	45.25	300.00	Clear	4.90	0.097	2.48	2.6	16.04	285	0.0	NA
10:20	45.25	300.00	Clear	4.94	0.095	2.67	4.3	16.10	282	0.0	NA
10:25	45.25	300.00	Clear	4.95	0.094	2.86	13.1	16.04	271	0.0	NA
10:30	45.25	300.00	Lt Grey	4.97	0.093	3.12	32.6	16.00	226	0.0	NA
10:35	45.25	300.00	Lt Grey	5.02	0.094	3.20	99.6	16.21	222	0.0	NA
10:40	45.25	300.00	Lt Grey	5.11	0.096	3.40	134.0	16.45	204	0.0	NA
10:45	45.25	300.00	Lt Grey	5.17	0.099	3.52	139.0	16.46	198	0.0	NA
10:50	45.25	300.00	Lt Grey	5.18	0.100	3.67	126.0	16.62	203	0.0	NA
10:55	45.25	300.00	Lt Grey	5.17	0.100	3.92	92.5	16.79	210	0.0	NA
11:00	45.25	300.00	Lt Grey	5.09	0.100	3.97	60.3	16.73	221	0.0	NA
11:05	45.25	300.00	Lt Grey	5.10	0.100	3.99	52.9	16.69	230	0.0	NA
11:10	45.25	300.00	Lt Grey	5.09	0.100	4.01	35.9	16.61	233	0.0	NA
11:15	45.25	300.00	Lt Grey	5.07	0.100	4.03	42.1	16.60	241	0.0	NA
11:20	45.25	300.00	Lt Grey	5.05	0.099	4.02	34.7	16.47	244	0.0	NA
11:25	45.25	300.00	Lt Grey	5.04	0.099	3.96	36.1	16.62	247	0.0	NA
11:30	45.25	300.00	Clear	5.02	0.099	3.96	30.9	16.79	249	0.0	NA
11:35	45.25	300.00	Clear	5.03	0.099	3.92	33.6	16.84	250	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:15	11:35	140.00	11gal	5.03	0.099	3.92	33.6	16.84	250	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 Drop tube volume is 545 - 45.23 = 499.77 x 0.016 = 8 gallons

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE109D1-20181206	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/06/18
MS/MSD Collected: NO	Sample Time: 1045

WELL INFORMATION:	
Well ID : RE109D1	Purge Date: 12/06/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 43.75
Top of Screen (ft-BTOR): 515	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 535	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Hanna HI 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
912	43.75										
919	43.8	700	Clear	4.58	0.118	3.61	24.4	11.29	297	0.1	
924	43.8	700	Clear	4.72	0.11	2.43	19	11.7	294	0.1	
929	43.8	700	Clear	4.76	0.107	2.18	16	11.71	297	0.0	
934	43.8	700	Clear	4.82	0.105	2.3	16.1	11.94	296	0.0	
944	43.8	700	Cloudy	5.27	0.109	2.67	664	12.1	157	0.1	
949	43.8	700	Cloudy	5.44	0.111	3.14	625	12.06	140	0.1	
959	43.8	700	Cloudy	5.39	0.11	3.53	272	12.16	165	0.1	
1009	43.8	700	less cloudy	5.29	0.109	3.64	81	12.39	194	0.1	
1014	43.8	700	Clear	5.23	0.109	3.66	46.8	12.62	209	0.1	
1024	43.8	700	Clear	5.16	0.108	3.61	33	12.79	226	0.1	
1029	43.8	700	Clear	5.14	0.107	3.61	22.4	12.84	234	0.1	
1034	43.8	700	Clear	5.12	0.108	3.57	16	12.85	240	0.0	
1039	43.8	700	Clear	5.1	0.107	3.56	17.8	12.97	246	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
914	1039	85	16	5.1	0.107	3.56	17.8	12.97	246	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
 15.72
 Continue onto next sheet

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE109D2-20180716		Sampled By: Scott Anderson	
QA/QC Duplicate ID: --		Sample Date: 07/16/18	
MS/MSD Collected: No		Sample Time: 11:35	

WELL INFORMATION:			
Well ID: RE109D2	Purge Date: 07/16/18		
Well Diameter (in): 4	Static Water Level (ft-BTOR): 46.23		
Top of Screen (ft-BTOR): 550	PID Monitor Reading: 0		
Bottom of Screen (ft-BTOR): 570	Purge Method: Low Flow		
Total Well Depth (ft-BTOR): 575	Sample Method: Low Flow		

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder		
Turbidity Meter: Hanna HI 98703			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:25	46.40	300.00	Clear	5.61	0.095	7.10	12.4	23.24	197	0.0	
10:30	46.41	300.00	Clear	5.46	0.095	5.61	10.9	23.04	216	0.0	
10:35	46.42	300.00	Clear	5.44	0.095	5.53	9.7	23.15	216	0.0	
10:40	46.44	300.00	Clear	5.45	0.095	5.23	10.5	23.65	226	0.0	
10:45	46.46	300.00	Clear	5.44	0.095	5.10	10.0	23.97	226	0.0	
10:50	46.46	300.00	Clear	5.45	0.095	4.51	11.8	24.99	228	0.0	
10:55	46.48	300.00	Clear	5.47	0.095	4.16	8.7	25.14	235	0.0	
11:00	46.50	300.00	Clear	5.45	0.095	3.88	14.7	24.86	239	0.0	
11:05	45.52	300.00	Clear	5.45	0.095	3.76	16.4	24.79	239	0.0	
11:10	45.54	300.00	Clear	5.45	0.095	3.53	15.0	25.34	238	0.0	
11:15	45.56	300.00	Clear	5.43	0.095	3.32	25.5	25.66	230	0.0	
11:20	45.57	300.00	Clear	5.45	0.095	3.15	27.8	26.11	221	0.0	
11:25	45.59	300.00	Clear	5.45	0.095	3.00	38.7	26.69	209	0.0	
11:30	45.60	300.00	Clear	5.44	0.095	2.98	32.7	26.82	205	0.0	
11:35	45.61	300.00	Clear	5.45	0.095	2.95	24.0	26.93	201	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1025	1135	60	8 gal	5.45	0.095	2.95	24.0	26.93	201	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates: N E	Signature(s): <i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE109D2-20181005	Sampled By: CS
QA/QC Duplicate ID: No	Sample Date: 10/05/18
MS/MSD Collected: YES	Sample Time: 1135

WELL INFORMATION:	
Well ID : RE109D2	Purge Date: 10/05/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 45.52
Top of Screen (ft-BTOR):	PID Monitor Reading: 0.3 ppm
Bottom of Screen (ft-BTOR):	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 575	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0900	45.52	325	Cloudy	5.02	0.134	7.60	35.9	18.06	272	0.1	N/a
0910	45.53	325	Cloudy	5.48	0.115	3.31	34.0	17.22	232	0.1	N/a
0920	45.53	325	Cloudy	5.55	0.115	3.03	33.1	17.21	233	0.1	N/a
0930	45.53	325	Cloudy	5.61	0.115	2.72	34.6	17.20	235	0.1	N/a
0940	45.53	325	Cloudy	5.63	0.115	2.16	30.2	17.48	226	0.1	N/a
0950	45.53	325	Cloudy	5.62	0.115	1.89	26.9	17.55	225	0.1	N/a
1000	45.53	325	Cloudy	5.61	0.115	1.68	24.4	17.64	225	0.1	N/a
1010	45.53	325	Cloudy	5.61	0.115	1.66	68.8	18.01	201	0.1	N/a
1020	45.53	325	Cloudy	5.61	0.115	1.64	147	18.56	178	0.1	N/a
1025	45.53	325	Grey	5.61	0.115	1.61	356	18.36	161	0.1	N/a
1030	45.53	325	Grey	5.58	0.114	1.64	875	18.49	136	0.1	N/a
1035	45.53	325	Grey	5.52	0.114	1.40	1000+	18.70	129	0.1	N/a
1040	45.53	325	Grey	5.58	0.115	1.62	1000+	18.56	121	0.1	N/a
1045	45.53	325	Grey	5.57	0.116	1.60	1000+	19.30	122	0.1	N/a
1050	45.53	325	Grey	5.57	0.117	1.55	1000+	19.27	121	0.1	N/a
1055	45.53	325	Grey	5.58	0.118	1.49	670	19.25	122	0.1	N/a
1100	45.53	325	Grey	5.58	0.116	1.50	483	19.03	126	0.1	N/a
1105	45.53	325	Grey	5.59	0.115	1.52	348	18.64	130	0.1	N/a
1110	45.53	325	Cloudy	5.40	0.115	1.53	196	18.59	134	0.1	N/a
1115	45.53	325	Cloudy	5.40	0.114	1.55	105	18.50	140	0.1	N/a
1120	45.53	325	Cloudy	5.40	0.113	1.66	83.5	18.39	142	0.1	N/a
1125	45.53	325	Cloudy	5.40	0.112	1.65	66.3	18.68	146	0.1	N/a
1130	45.53	325	Cloudy	5.41	0.112	1.64	48.2	19.61	150	0.1	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0900	1130	150	~10 gal	5.41	0.112	1.64	48.2	19.61	150	0.1	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	6	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	3	1 L	glass	YES

OBSERVATIONS / NOTES:
 570 - 45.52 = 524.48 x 0.016 g/ft = 8.39 gal to purge drop tubing

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE109D2-20181206	Sampled By: CWM
QA/QC Duplicate ID: No	Sample Date: 12/06/18
MS/MSD Collected: NO	Sample Time: 1050

WELL INFORMATION:	
Well ID : RE109D2	Purge Date: 12/06/18
Well Diameter (in): 4" PVC	Static Water Level (ft-BTOR): 43.96
Top of Screen (ft-BTOR): 550	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 570	Purge Method: Low-flow
Total Well Depth (ft-BTOR): 575	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
920	43.96	1000	Clear	4.49	0.130	7.04	7.08	8.43	314	0.1	
925	44.14	1000	Light gray tint	5.03	0.099	7.50	24.9	13.04	283	0.0	
930	44.14	1000	Light gray tint	5.06	0.097	7.24	61	13.01	264	0.0	
935	44.14	1000	Light gray tint	5.36	0.097	6.72	84.3	13.64	148	0.0	
940	44.14	1000	Light gray tint	5.39	0.097	6.75	96.4	13.39	146	0.0	
945	44.14	1000	Light gray tint	5.34	0.097	7.26	95.7	13.31	170	0.0	
950	44.14	1000	Light gray tint	5.31	0.097	6.53	92.3	13.22	180	0.0	
955	44.14	1000	Light gray tint	5.26	0.096	6.28	37.9	13.24	193	0.0	
1000	44.14	1000	Light gray tint	5.2	0.096	6.03	14.3	13.39	207	0.0	
1005	44.14	1000	Clear	5.14	0.096	5.78	11.7	13.46	222	0.0	
1010	44.14	1000	Clear	5.12	0.096	5.63	9.45	13.56	227	0.0	
1015	44.14	900	Clear	5.1	0.096	5.51	7.17	13.81	232	0.0	
1020	44.14	900	Clear	5.07	0.096	5.37	5.71	13.92	247	0.0	
1025	44.14	900	Clear	5.07	0.096	5.33	4.31	13.71	246	0.0	
1030	44.14	900	Clear	5.06	0.096	5.18	6.17	13.7	254	0.0	
1035	44.14	900	Clear	5.05	0.096	5.07	4.26	13.79	260	0.0	
1040	44.14	900	Clear	5.03	0.096	4.92	3	13.84	263	0.0	
1045	44.14	900	Clear	5.04	0.095	4.87	3.06	13.17	266	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
920	1045	85	23.5	5.06	0.095	4.87	3.06	13.27	266	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
 8.49664

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE109D3-20180716		Sampled By: Beau Benfield
QA/QC Duplicate ID: —		Sample Date: 07/16/18
MS/MSD Collected:	NO	Sample Time: 11:20
WELL INFORMATION:		
Well ID : RE109D3		Purge Date: 07/16/18
Well Diameter (in): 4		Static Water Level (ft-BTOR): 46.19
Top of Screen (ft-BTOR):		PID Monitor Reading: 0
Bottom of Screen (ft-BTOR):		Purge Method: Low Flow
Total Well Depth (ft-BTOR): 605		Sample Method: Low Flow

EQUIPMENT INFORMATION:		
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder	
Turbidity Meter: Hanna fast tracker		

PURGE DATA:												
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other	
10:15	Start purge											
10:25	46.20	300.00	Clear	5.61	0.088	3.07	6.42	21.80	175	0.0		
10:30	46.27	300.00	Clear	5.53	0.087	1.00	5.63	21.42	193	0.0		
10:35	46.31	300.00	Clear	5.48	0.087	0.64	4.97	21.42	201	0.0		
10:40	46.31	300.00	Clear	5.41	0.087	0.53	5.29	21.62	217	0.0		
10:45	46.31	300.00	Clear	5.32	0.088	0.48	5.45	21.90	231	0.0		
10:50	46.31	300.00	Clear	5.42	0.087	0.50	5.54	21.75	233	0.0		
10:55	46.31	300.00	Clear	5.40	0.087	0.49	6.36	21.76	240	0.0		
11:00	46.31	300.00	Clear	5.43	0.087	0.60	6.39	20.99	242	0.0		
11:05	46.31	300.00	Clear	5.26	0.087	0.68	7.59	21.77	251	0.0		
11:10	46.31	300.00	Clear	5.36	0.087	0.85	7.54	21.86	242	0.0		
11:15	46.31	300.00	Clear	5.40	0.086	1.05	8.00	21.40	240	0.0		
11:20	Collect sample											

FINAL PURGE / SAMPLE DATA:												
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other	
10:15	11:20	65.00	4	5.40	0.086	1.05	8.0	21.4	240	0.0		

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS							
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected	
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes	
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes	

OBSERVATIONS / NOTES:			

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE109D3-20181005	Sampled By: Beau Benfield
QA/QC Duplicate ID: No	Sample Date: 10/05/18
MS/MSD Collected: NO	Sample Time: 1055

WELL INFORMATION:	
Well ID : RE109D3	Purge Date: 10/05/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 45.50
Top of Screen (ft-BTOR):	PID Monitor Reading: 0.5
Bottom of Screen (ft-BTOR):	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 605	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0850	Start purge										
0900	45.52	400.00	Cloudy	5.31	0.093	1.07	119.00	15.24	236	0.0	
0910	45.52	400.00	Cloudy	5.36	0.090	0.00	72.90	15.28	242	0.0	
0920	45.52	400.00	Cloudy	5.36	0.089	0.00	63.00	15.27	245	0.0	
0930	45.52	400.00	Cloudy	5.34	0.089	0.00	44.30	15.43	249	0.0	
0940	45.52	400.00	Cloudy	5.36	0.088	0.15	110.00	15.21	215	0.0	
0950	45.52	400.00	Cloudy	5.47	0.088	0.70	649.00	15.30	151	0.0	
1000	45.52	400.00	Cloudy	5.43	0.088	1.55	244.00	15.79	166	0.0	
1005	45.52	400.00	Clear	5.40	0.087	1.67	47.90	15.80	175	0.0	
1010	45.52	400.00	Clear	5.37	0.087	1.71	43.30	16.02	182	0.0	
1015	45.52	400.00	Clear	5.36	0.087	1.84	42.30	16.20	187	0.0	
1020	45.52	400.00	Clear	5.35	0.087	1.88	34.90	16.48	191	0.0	
1025	45.52	400.00	Clear	5.34	0.086	1.92	41.70	16.16	197	0.0	
1030	45.52	400.00	Clear	5.34	0.087	1.90	27.30	16.23	200	0.0	
1035	45.52	400.00	Clear	5.34	0.087	1.90	27.70	16.42	202	0.0	
1040	45.52	400.00	Clear	5.33	0.086	1.91	23.20	16.26	206	0.0	
1045	45.52	400.00	Clear	5.33	0.086	1.91	18.90	16.67	209	0.0	
1050	45.52	400.00	Clear	5.32	0.086	1.96	20.10	16.64	210	0.0	
1055	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
850	1055	125.00	12	5.32	0.086	1.96	20.10	16.64	210	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 600-45.50=554.50x0.016=8.87 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE109D3-20181206	Sampled By: BB
QA/QC Duplicate ID: No	Sample Date: 12/06/18
MS/MSD Collected: NO	Sample Time: 1045

WELL INFORMATION:	
Well ID : RE109D3	Purge Date: 12/06/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 43.95
Top of Screen (ft-BTOR): 580	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 600	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
0915	Start purge										
0925	44.02	800	Clear	4.02	0.121	2.78	17	12.15	338	0.1	
0935	44.03	800	Clear	3.98	0.117	1.65	106	12.69	333	0.1	
0945	44.03	800	Clear	4.63	0.123	1.96	300	12.82	203	0.1	6 gal
0955	44.03	800	Clear	4.55	0.12	2.13	116	13.00	227	0.1	
1005	44.03	800	Clear	4.46	0.117	2.22	87.5	12.97	255	0.1	
1010	44.03	800	Clear	4.38	0.116	2.28	44.7	13.25	269	0.1	
1015	44.03	800	Clear	4.37	0.115	2.28	28.9	13.27	272	0.1	
1020	44.03	800	Clear	4.36	0.116	2.26	14.7	13.29	280	0.1	
1025	44.03	800	Clear	4.34	0.116	2.23	14.2	13.31	282	0.1	
1030	44.03	800	Clear	4.35	0.118	2.2	12.2	13.33	283	0.1	
1035	44.03	800	Clear	4.37	0.115	2.15	10.4	13.35	291	0.1	
1040	44.03	800	Clear	4.40	0.115	2.08	8.63	13.44	293	0.1	
1045	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
0915	1045	90	19 gal	4.40	0.115	2.08	8.63	13.44	293	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
 600-43.95=556.05x0.016=8.9 gal to purge tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE117D1-20180716	Sampled By: Beau Benfield
QA/QC Duplicate ID: —	Sample Date: 07/16/18
MS/MSD Collected: NO	Sample Time: 15:05

WELL INFORMATION:	
Well ID : RE117D1	Purge Date: 07/16/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 25.04
Top of Screen (ft-BTOR): 730	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 755	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 760	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
14:00	Start purge										
14:10	25.09	300.00	Clear	6.54	0.079	6.52	23.10	27.96	246	0.0	
14:15	25.09	300.00	Clear	6.52	0.065	5.74	9.84	25.55	236	0.0	
14:20	25.09	300.00	Clear	6.34	0.047	5.24	5.62	26.38	230	0.0	
14:25	25.09	300.00	Clear	5.99	0.036	5.29	10.50	25.99	226	0.0	
14:30	25.09	300.00	Clear	5.82	0.029	5.00	18.60	25.15	223	0.0	
14:35	25.09	300.00	Clear	5.66	0.025	4.71	20.20	24.88	223	0.0	
14:40	25.09	300.00	Clear	5.61	0.023	4.54	6.14	25.05	227	0.0	
14:45	25.09	300.00	Clear	5.53	0.022	4.33	3.92	24.81	226	0.0	
14:50	25.09	300.00	Clear	5.40	0.021	4.15	2.45	24.56	228	0.0	
14:55	25.09	300.00	Clear	5.36	0.021	3.93	2.08	24.72	233	0.0	
15:00	25.09	300.00	Clear	5.48	0.020	3.68	4.22	24.50	234	0.0	
15:05	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0:00	15:05	65.00	4	5.48	0.020	3.68	4.2	24.5	234	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:
 BPOW5-4 depth to water was 24.91 at 1335; screen at 545-570

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE117D1-20180926	Sampled By: CS
QA/QC Duplicate ID: No	Sample Date: 09/26/18
MS/MSD Collected: NO	Sample Time: 1425

WELL INFORMATION:	
Well ID : RE117D1	Purge Date: 09/26/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 23.85
Top of Screen (ft-BTOR): 730	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 755	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 760	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1225	23.85	400	Clear	5.92	0.039	2.72	2.13	24.76	225	0.0	N/a
1235	23.86	400	Clear	5.92	0.040	2.39	3.19	26.36	224	0.0	N/a
1245	23.86	400	Clear	5.87	0.039	2.37	2.56	26.79	224	0.0	N/a
1250	23.86	400	Clear	5.83	0.037	2.35	2.49	26.98	224	0.0	N/a
1255	23.86	400	Clear	5.71	0.034	2.01	3.09	26.40	228	0.0	N/a
1300	23.86	400	Clear	5.65	0.032	1.94	3.18	26.32	232	0.0	N/a
1305	23.86	400	Clear	5.60	0.030	1.89	3.30	25.83	235	0.0	N/a
1310	23.86	400	Clear	5.52	0.029	1.87	3.13	25.58	240	0.0	N/a
1315	23.86	400	Clear	5.47	0.029	1.84	4.37	25.07	243	0.0	N/a
1320	23.86	400	Clear	5.30	0.028	1.85	4.61	24.50	250	0.0	N/a
1325	23.86	400	Clear	5.21	0.027	1.96	5.02	23.41	258	0.0	N/a
1330	23.86	400	Clear	5.10	0.028	1.99	5.39	21.77	269	0.0	N/a
1335	23.86	400	Clear	4.95	0.029	2.05	5.87	20.36	284	0.0	N/a
1340	23.86	400	Clear	4.94	0.029	1.99	6.19	20.09	286	0.0	N/a
1345	23.86	400	Clear	4.80	0.029	1.97	4.14	19.84	295	0.0	N/a
1350	23.86	400	Clear	4.50	0.029	2.05	4.00	19.76	305	0.0	N/a
1355	23.86	400	Clear	4.46	0.029	2.10	3.67	19.81	317	0.0	N/a
1400	23.86	400	Clear	4.52	0.029	2.23	3.02	19.72	315	0.0	N/a
1405	23.86	400	Clear	4.56	0.029	2.34	3.60	19.71	318	0.0	N/a
1410	23.86	400	Clear	4.55	0.028	2.40	2.98	19.69	320	0.0	N/a
1415	23.86	400	Clear	4.43	0.027	2.51	4.76	19.48	325	0.0	N/a
1420	23.86	400	Clear	4.41	0.027	2.52	5.74	19.46	324	0.0	N/a
1425	23.86	400	Clear	4.33	0.027	2.67	3.73	19.53	332	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1225	1425	120.00	~13	4.30	0.027	2.67	3.73	19.53	332	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 760- 23.85 = 736.15 x 0.016 gpf = 11.78 G to purge drop tubing volume

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE117D1-20181204						Sampled By: CM					
QA/QC Duplicate ID: N/A						Sample Date: 12/04/18					
MS/MSD Collected: NO						Sample Time: 1130					
WELL INFORMATION:											
Well ID : RE117D1						Purge Date: 12/04/18					
Well Diameter (in): 4"						Static Water Level (ft-BTOR): 20.77					
Top of Screen (ft-BTOR): 730						PID Monitor Reading: 0					
Bottom of Screen (ft-BTOR): 755						Purge Method: Low-flow					
Total Well Depth (ft-BTOR): 760						Sample Method: Low-flow					
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52						Pump Controller: Centrifugal					
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1030	20.62	1000	Clear	4.97	0.023	3.56	10.7	14.42	220	0.0	
1035	20.66	1000	Clear	5.38	0.025	3.32	8.91	14.2	221	0.0	
1040	20.66	1000	Clear	5.37	0.024	3.51	6.45	14.42	253	0.0	
1045	20.66	1000	Clear	5.28	0.024	3.74	5.63	14.41	260	0.0	
1050	20.66	1000	Clear	5.20	0.024	3.91	4.97	14.4	266	0.0	
1055	20.66	1000	Clear	5.06	0.025	3.95	3.05	14.65	277	0.0	
1100	20.66	1000	Clear	5.07	0.025	3.96	2.03	14.47	283	0.0	
1105	20.66	1000	Clear	5.09	0.025	3.97	2.8	14.38	291	0.0	
1110	20.66	1000	Clear	5.06	0.025	3.97	2.81	14.34	296	0.0	
1115	20.66	1000	Clear	5.05	0.025	3.95	2.92	14.39	300	0.0	
1120	20.66	1000	Clear	5.06	0.025	3.95	3	14.43	302	0.0	
1125	20.66	1000	Clear	5.07	0.025	3.95	3.06	14.47	305	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1030	1125	55	15	5.07	0.025	3.45	3.06	14.47	305	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
OBSERVATIONS / NOTES:											
11.82768											
Coordinates:	N	E	Signature(s):								
			<i>Chuck Meyer</i>								

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE117D2-20180716	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/16/18
MS/MSD Collected: NO	Sample Time: 14:50

WELL INFORMATION:	
Well ID: RE117D2	Purge Date: 07/16/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 24.41
Top of Screen (ft-BTOR): 780	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 805	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 810	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:45	24.42	375.00	Clear	5.15	0.030	6.22	8.2	28.46	252	0.0	NA
13:50	24.42	375.00	Clear	5.86	0.037	2.49	2.0	26.33	258	0.0	NA
13:50	24.42	375.00	Clear	5.91	0.037	1.90	0.6	24.19	257	0.0	NA
13:55	24.42	375.00	Clear	5.95	0.038	1.19	0.0	23.72	256	0.0	NA
14:00	24.42	375.00	Clear	5.80	0.034	0.87	0.0	23.02	257	0.0	NA
14:05	24.42	375.00	Clear	5.64	0.030	0.59	0.0	22.60	257	0.0	NA
14:10	24.42	375.00	Clear	5.45	0.028	0.53	0.0	22.65	257	0.0	NA
14:15	24.42	375.00	Clear	5.33	0.027	0.50	0.0	22.63	264	0.0	NA
14:20	24.42	375.00	Clear	5.32	0.027	0.47	0.0	22.58	266	0.0	NA
14:25	24.42	375.00	Clear	5.39	0.028	0.45	0.0	22.57	269	0.0	NA
14:30	24.42	375.00	Clear	5.46	0.029	0.43	0.0	22.55	271	0.0	NA
14:35	24.42	375.00	Clear	5.51	0.032	0.40	0.0	22.49	273	0.0	NA
14:40	24.42	375.00	Clear	5.50	0.031	0.40	0.0	22.48	274	0.0	NA
14:45	24.42	375.00	Clear	5.50	0.031	0.39	0.0	22.46	276	0.0	NA
14:50	24.42	375.00	Clear	5.49	0.031	0.39	0.0	22.44	277	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:45	14:50	65.00	7 gal	5.49	0.031	0.39	0.0	22.44	277	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE117D2-20180926	Sampled By: CM
QA/QC Duplicate ID: NO	Sample Date: 09/26/18
MS/MSD Collected: NO	Sample Time: 15:00

WELL INFORMATION:	
Well ID : RE117D2	Purge Date: 09/26/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 22.87
Top of Screen (ft-BTOR): 780	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 805	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 810	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:

Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:00	22.87	400.00	Clear	4.83	0.028	1.49	10.5	22.76	274	0.0	NA
13:05	22.95	400.00	Clear	4.78	0.028	1.08	7.7	22.50	283	0.0	NA
13:10	22.95	400.00	Clear	4.70	0.028	0.85	5.4	22.41	289	0.0	NA
13:15	22.95	400.00	Clear	4.70	0.028	0.08	8.2	22.39	292	0.0	NA
13:20	22.95	400.00	Clear	4.74	0.028	0.75	10.4	20.32	295	0.0	NA
13:25	22.95	400.00	Clear	4.74	0.028	0.64	11.7	22.37	301	0.0	NA
13:30	22.95	400.00	Clear	4.60	0.029	0.59	12.8	22.52	307	0.0	NA
13:35	22.95	400.00	Clear	4.48	0.031	0.05	10.2	22.27	317	0.0	NA
13:40	22.97	400.00	Clear	4.47	0.031	0.04	1.0	22.20	313	0.0	NA
13:45	22.97	400.00	Clear	4.49	0.030	0.04	-	22.01	311	0.0	NA
13:50	22.97	400.00	Clear	4.60	0.029	1.29	11.6	22.14	211	0.0	NA
13:55	22.97	400.00	Clear	4.65	0.028	1.21	11.3	22.06	84	0.0	NA
14:00	22.97	400.00	Lt Grey	4.69	0.028	1.05	176.0	21.98	77	0.0	NA
14:05	22.97	400.00	Lt Grey	4.63	0.028	1.02	488.0	21.95	68	0.0	NA
14:10	22.97	400.00	Lt Grey	4.67	0.028	0.99	531.0	21.89	64	0.0	N
14:15	22.97	400.00	Lt Grey	4.69	0.028	0.95	425.0	21.81	61	0.0	NA
14:20	22.96	400.00	Lt Grey	4.87	0.028	0.72	179.0	21.73	68	0.0	NA
14:25	22.97	400.00	Lt Grey	4.69	0.028	0.65	241.0	21.49	64	0.0	NA
14:30	22.98	400.00	Lt Grey	4.68	0.028	0.58	208.0	21.49	87	0.0	NA
14:35	22.98	400.00	Lt Grey	4.69	0.028	0.49	210.0	21.76	86	0.0	NA
14:40	22.98	400.00	Lt Grey	4.69	0.028	0.68	162.0	21.52	87	0.0	NA
14:45	22.98	400.00	Lt Grey	4.59	0.029	0.43	87.6	21.28	94	0.0	NA
14:50	22.98	400.00	Lt Grey	4.56	0.029	0.38	84.4	21.13	100	0.0	NA
14:55	22.98	400.00	Lt Grey	4.54	0.029	0.33	56.6	21.15	106	0.0	NA
15:00	22.98	400.00	Lt Grey	4.52	0.030	0.29	43.3	21.05	110	0.0	NA

FINAL PURGE / SAMPLE DATA:

Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. 21.05	ORP (mV)	Salinity (ppt)	Other
13:00	15:00	120.00	13.5	4.52	0.030	0.29	43.3	21.05	110	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS 1010

Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE117D2-20181204	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/04/18
MS/MSD Collected: NO	Sample Time: 1035

WELL INFORMATION:	
Well ID : RE117D2	Purge Date: 12/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 19.72
Top of Screen (ft-BTOR): 780	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 805	Purge Method: Low-flow
Total Well Depth (ft-BTOR): 810	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
859	19.72										
951	19.84	600	Clear	3.23	0.033	0.77	1.97	12.85	280	0.0	
956	19.92	700	Clear	3.30	0.032	0.00	1.06	13.11	291	0.0	
1001	19.92	700	Clear	3.36	0.032	0.00	1.62	13.24	251	0.0	
1006	19.85	700	Clear	3.40	0.032	0.00	5.87	12.99	209	0.0	
1011	19.91	700	Clear	3.44	0.031	0.00	48.5	12.87	203	0.0	
1016	19.91	700	Clear	3.52	0.031	0.00	102	13.59	191	0.0	
1021	19.91	700	Clear	6.42	0.031	0.00	101	13.4	193	0.0	
1026	19.91	700	Clear	6.40	0.031	0.00	91.2	13.35	193	0.0	
1031	19.91	700	Clear	6.40	0.031	0.00	81.6	13.43	193	0.0	
1035	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
946	1031	45	11	6.40	0.031	0.00	81.6	13.43	193	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
7.9028

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE120D1-20180711	Sampled By: Vince Shikora
QA/QC Duplicate ID: GW-02-071118. 1600	Sample Date: 07/11/18
MS/MSD Collected: <input type="checkbox"/> No	Sample Time: 14:20

WELL INFORMATION:	
Well ID : RE120D1	Purge Date: 07/11/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 38.04
Top of Screen (ft-BTOR): 630	PID Monitor Reading: 2.9 ppm
Bottom of Screen (ft-BTOR): 650	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 655	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:10	37.07	350.00	Clear	6.04	0.119	8.66	0.0	21.49	255	0.0	NA
13:15	37.07	350.00	Clear	6.07	0.121	8.57	0.0	20.69	258	0.0	NA
13:20	37.07	350.00	Clear	5.71	0.120	6.11	0.0	20.19	270	0.0	NA
13:25	37.07	350.00	Clear	5.41	0.120	4.43	0.0	19.82	279	0.0	NA
13:30	37.07	350.00	Clear	5.25	0.119	3.49	0.0	19.56	285	0.0	NA
13:35	37.07	350.00	Clear	5.12	0.119	2.80	0.0	19.34	289	0.0	NA
13:40	37.07	350.00	Clear	4.99	0.118	2.51	0.0	19.32	295	0.0	NA
13:45	37.07	350.00	Clear	4.89	0.117	2.39	0.0	19.27	301	0.0	NA
13:50	37.07	350.00	Clear	4.85	0.117	2.32	0.0	19.19	305	0.0	NA
13:55	37.07	350.00	Clear	4.74	0.116	2.37	0.0	19.16	313	0.0	NA
14:00	37.07	350.00	Clear	4.63	0.116	2.41	0.0	19.22	318	0.0	NA
14:05	37.07	350.00	Clear	4.65	0.116	2.43	0.0	19.24	321	0.0	NA
14:10	37.07	350.00	Clear	4.64	0.116	2.47	0.0	19.25	323	0.0	NA
14:15	37.07	350.00	Clear	4.65	0.116	2.49	0.0	19.23	325	0.0	NA
14:20	37.07	350.00	Clear	4.65	0.116	2.50	0.0	19.21	326	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C.	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP	Salinity (ppt)	Other
13:10	14:20	70.00	6.5 gal	4.65	0.116	2.50	0.0	19.21	326	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE120D1-20181002	Sampled By: CM
QA/QC Duplicate ID:	Sample Date: 10/02/18
MS/MSD Collected:	Sample Time: 13:35

WELL INFORMATION:	
Well ID : RE120D1	Purge Date: 10/02/18
Well Diameter (in):	Static Water Level (ft-BTOR): 37.69
Top of Screen (ft-BTOR): 630	PID Monitor Reading:
Bottom of Screen (ft-BTOR): 650	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 655	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
11:35	37.69	400.00	Clear	5.50	0.145	8.90	8.6	23.84	222	0.1	NA
11:45	37.90	400.00	Clear	5.52	0.140	4.97	5.5	22.04	241	0.1	NA
11:55	37.99	400.00	Clear	5.52	0.138	3.62	3.1	21.79	249	0.1	NA
12:05	37.99	400.00	Clear	5.44	1.380	2.94	3.5	21.66	252	0.1	NA
12:15	37.99	400.00	Clear	5.31	0.136	2.49	2.9	21.16	266	0.1	NA
12:25	37.99	400.00	Clear	5.30	0.136	2.49	3.4	21.19	268	0.1	NA
12:35	37.99	400.00	Clear	5.22	0.136	2.51	3.3	20.76	279	0.1	NA
12:45	37.99	400.00	Clear	5.13	0.135	2.69	3.5	20.49	288	0.1	NA
12:55	37.99	400.00	Clear	5.02	0.135	2.77	2.6	20.56	295	0.1	NA
13:05	37.99	400.00	Clear	5.02	0.135	2.75	2.5	20.59	300	0.1	NA
13:10	37.99	400.00	Clear	5.02	0.135	2.73	2.2	20.49	304	0.1	NA
13:15	37.99	400.00	Clear	5.00	0.134	2.70	2.5	20.58	305	1.0	NA
13:20	37.99	400.00	Clear	5.00	0.134	2.64	2.3	20.49	305	0.1	NA
13:25	37.99	400.00	Clear	5.01	0.135	2.67	2.1	20.32	306	0.1	NA
13:30	37.99	400.00	Clear	5.03	0.134	2.65	2.3	20.00	307	0.1	NA
13:35	37.99	400.00	Clear	5.01	0.134	2.63	2.6	19.90	308	0.1	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
11:35	13:35	120.00	13.5	5.01	0.134	2.63	2.6	19.90	308	0.1	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 Volume to be purged from tubing 665 + 37.69 = 627.31 x 0.010 = 6.27 gallons

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE120D1-20181205	Sampled By: CM
QA/QC Duplicate ID: N/A	Sample Date: 12/05/18
MS/MSD Collected: NO	Sample Time: 1445

WELL INFORMATION:	
Well ID : RE120D1	Purge Date: 12/05/18
Well Diameter (in): 4"	Static Water Level (ft-BTOR): 35.07
Top of Screen (ft-BTOR): 630	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 650	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1400	35.07	1000	Clear	4.97	0.103	7.84	2.41	14.19	345	0.0	
1405	35.07	1000	Clear	4.8	0.129	3.51	0.63	14.06	343	0.0	
1410	35.07	1000	Clear	4.71	0.133	2.54	0.51	14.13	343	0.0	
1415	35.07	1000	Clear	4.54	0.132	2.04	0.44	14.37	343	0.0	
1420	35.07	1000	Clear	4.40	0.132	1.97	0.45	14.50	353	0.0	
1425	35.07	1000	Clear	4.37	0.132	1.87	0.26	14.56	357	0.0	
1430	35.07	1000	Clear	4.35	0.132	1.89	0.23	14.64	359	0.0	
1435	35.07	1000	Clear	4.36	0.132	1.9	0.21	14.65	361	0.0	
1440	35.07	1000	Clear	4.36	0.132	1.95	0.21	14.79	363	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1400	1440	40	11	4.36	0.132	1.95	0.21	14.79	363	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
6.1493

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE120D2-20181002	Sampled By: CS
QA/QC Duplicate ID: N/a	Sample Date: 10/02/18
MS/MSD Collected: NO	Sample Time: 1255

WELL INFORMATION:	
Well ID : RE120D2	Purge Date: 10/02/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 37.48
Top of Screen (ft-BTOR): 690	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 710	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 713	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1050	37.48	350	Clear	5.48	0.107	8.15	3.57	23.09	261	0.0	N/a
1100	37.60	350	Clear	5.38	0.092	3.24	2.96	21.39	267	0.0	N/a
1110	37.60	350	Clear	5.29	0.090	2.11	1.45	20.89	261	0.0	N/a
1120	37.60	350	Clear	5.20	0.088	1.58	0.79	20.35	256	0.0	N/a
1130	37.60	350	Clear	5.22	0.088	0.76	0.70	20.20	253	0.0	N/a
1140	37.60	350	Clear	5.16	0.088	0.69	0.57	20.38	252	0.0	N/a
1150	37.60	350	Clear	5.09	0.089	0.65	0.51	20.55	252	0.0	N/a
1200	37.60	350	Clear	5.20	0.089	0.56	0.60	20.74	251	0.0	N/a
1210	37.60	350	Clear	5.20	0.088	0.51	0.68	20.50	251	0.0	N/a
1215	37.60	350	Clear	5.20	0.088	0.75	0.80	20.45	253	0.0	N/a
1220	37.60	350	Clear	5.20	0.087	0.88	0.78	20.41	256	0.0	N/a
1225	37.60	350	Clear	5.20	0.086	1.04	0.69	20.36	258	0.0	N/a
1230	37.60	350	Clear	5.21	0.086	1.16	0.74	20.30	261	0.0	N/a
1235	37.60	350	Clear	5.18	0.086	1.28	0.70	20.01	263	0.0	N/a
1240	37.60	350	Clear	5.16	0.086	1.40	0.67	19.99	266	0.0	N/a
1245	37.60	350	Clear	5.13	0.086	1.46	0.75	19.96	268	0.0	N/a
1250	37.60	350	Clear	5.09	0.086	1.55	0.81	19.94	273	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1050	1250	120	~10	5.09	0.086	1.55	0.81	19.94	273	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 710 - 37.48 = 672.5 x 0.010 g/ft. = 6.73 gal. To purge drop tubing volume

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE120D2-20181205		Sampled By: CM									
QA/QC Duplicate ID: N/A		Sample Date: 12/05/18									
MS/MSD Collected: NO		Sample Time: 1305									
WELL INFORMATION:											
Well ID : RE120D2		Purge Date: 12/05/18									
Well Diameter (in): 4" PVC		Static Water Level (ft-BTOR): 34.72									
Top of Screen (ft-BTOR): 690		PID Monitor Reading: 0									
Bottom of Screen (ft-BTOR): 710		Purge Method: Low-flow									
Total Well Depth (ft-BTOR): 715		Sample Method: Low-flow									
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52		Pump Controller: Centrifugal									
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1205	34.72	1000	Clear	5.50	0.086	3.16	9.43	14.41	266	0.0	
1210	34.74	1000	Clear	5.45	0.086	1.49	4.21	14.97	261	0.0	
1215	34.83	1000	Clear	5.42	0.085	0.69	1.77	15.22	258	0.0	
1220	34.82	1000	Clear	5.42	0.085	0.51	1.45	15.02	260	0.0	
1225	34.82	1000	Clear	5.42	0.085	0.99	1.47	14.96	262	0.0	
1230	34.82	1000	Clear	5.41	0.086	1.23	1.35	15.04	266	0.0	
1235	34.82	1000	Clear	5.41	0.085	1.38	1.33	15.04	268	0.0	
1240	34.82	1000	Clear	5.39	0.085	1.51	1.02	14.95	272	0.0	
1245	34.82	1000	Clear	5.38	0.086	1.62	1.34	14.97	274	0.0	
1250	34.82	1000	Clear	5.38	0.087	1.71	1.68	14.98	276	0.0	
1255	34.82	1000	Clear	5.37	0.087	1.82	0.89	15.04	279	0.0	
1300	34.82	1000	Clear	5.37	0.087	1.97	0.79	15.05	281	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1205	1300	55	14	5.37	0.087	1.97	0.79	15.05	281	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
OBSERVATIONS / NOTES:											
6.8028 0.01 qpf 3/8" ID tubing											
Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>								

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE120D2-20180711	Sampled By: Scott Anderson
QA/QC Duplicate ID: --	Sample Date: 07/11/18
MS/MSD Collected: No	Sample Time: 14:25

WELL INFORMATION:	
Well ID: RE120D2	Purge Date: 07/11/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 37.9
Top of Screen (ft-BTOR): 690	PID Monitor Reading: 4
Bottom of Screen (ft-BTOR): 710	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 713	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna HI 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:25	37.90	350.00	Clear	5.52	0.074	2.40	5.6	19.98	243	0.0	
13:30	37.90	350.00	Clear	5.41	0.075	0.43	0.9	18.86	250	0.0	
13:35	37.90	350.00	Clear	5.29	0.074	0.21	0.5	19.02	260	0.0	
13:40	37.90	350.00	Clear	5.38	0.075	0.17	0.5	18.95	258	0.0	
13:45	37.90	350.00	Clear	5.37	0.075	0.14	0.3	18.70	265	0.0	
13:50	37.90	350.00	Clear	5.31	0.074	0.14	0.6	18.76	264	0.0	
13:55	37.90	350.00	Clear	5.28	0.074	0.97	0.6	18.82	274	0.0	
14:00	37.90	350.00	Clear	5.31	0.074	1.67	0.5	18.88	271	0.0	
14:05	37.90	350.00	Clear	5.22	0.076	2.77	0.5	18.86	277	0.0	
14:10	37.90	350.00	Clear	5.26	0.077	3.63	0.5	18.98	292	0.0	
14:15	37.90	350.00	Clear	5.28	0.077	3.56	0.6	18.94	290	0.0	
14:20	37.90	350.00	Clear	5.26	0.077	3.52	0.5	18.83	302	0.0	
14:25	37.90	350.00	Clear	5.24	0.077	3.55	0.5	18.79	302	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1325	1425	60	8 gal	5.24	0.077	3.55	0.5	18.79	302	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s): <i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE120D3-20180711	Sampled By: Beau Benfield
QA/QC Duplicate ID: —	Sample Date: 07/11/18
MS/MSD Collected: NO	Sample Time: 14:15

WELL INFORMATION:	
Well ID : RE120D3	Purge Date: 07/11/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 38.48
Top of Screen (ft-BTOR): 740	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 760	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 765	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:10	Start purge										
13:20	38.55	300.00	Clear	4.94	0.026	9.94	0.99	23.58	293	0.0	
13:30	38.55	300.00	Clear	4.66	0.016	7.21	0.73	20.35	335	0.0	
13:35	38.55	300.00	Clear	4.40	0.017	3.34	0.53	19.91	353	0.0	
13:40	38.55	300.00	Clear	4.60	0.016	2.49	0.44	19.83	350	0.0	
13:45	38.55	300.00	Clear	4.60	0.016	1.75	0.33	19.29	350	0.0	
13:50	38.55	300.00	Clear	4.55	0.016	1.39	0.27	19.49	357	0.0	
13:55	38.55	300.00	Clear	4.51	0.015	1.07	0.35	19.64	357	0.0	
14:00	38.55	300.00	Clear	4.83	0.015	1.00	0.94	19.44	335	0.0	
14:05	38.55	300.00	Clear	4.81	0.015	1.04	1.23	19.43	338	0.0	
14:10	38.55	300.00	Clear	4.81	0.015	1.39	1.81	19.24	343	0.0	
14:15	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:10	14:15	65.00	3.5 gal	4.81	0.015	1.39	1.8	19.24	343	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE120D3-20181002	Sampled By: Beau Benfield
QA/QC Duplicate ID: No	Sample Date: 10/02/18
MS/MSD Collected: NO	Sample Time: 1215

WELL INFORMATION:	
Well ID : RE120D3	Purge Date: 10/02/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 37.58
Top of Screen (ft-BTOR): 740	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 760	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 765	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1020	Start purge										
1030	37.88	400.00	Clear	4.73	0.029	4.57	0.73	19.36	320	0.0	
1040	37.90	400.00	Clear	4.65	0.027	2.43	2.92	19.49	335	0.0	
1050	37.92	400.00	Clear	4.62	0.026	0.59	1.23	19.51	346	0.0	
1100	37.96	400.00	Clear	4.58	0.025	0.14	0.77	19.04	356	0.0	
1110	38.04	400.00	Clear	4.65	0.025	0.00	0.58	18.97	349	0.0	
1120	38.06	400.00	Clear	4.74	0.024	0.00	1.42	19.04	341	0.0	
1130	38.10	400.00	Clear	4.68	0.024	0.07	2.27	18.85	350	0.0	
1135	38.10	400.00	Clear	4.65	0.024	0.49	1.58	18.89	353	0.0	
1140	38.14	400.00	Clear	4.63	0.025	0.81	2.05	19.07	358	0.0	
1145	38.15	400.00	Clear	4.61	0.025	0.74	1.61	19.08	360	0.0	
1150	38.17	400.00	Clear	4.60	0.026	1.15	1.35	19.34	363	0.0	
1155	38.18	400.00	Clear	4.59	0.026	1.30	1.47	19.26	364	0.0	
1200	38.18	400.00	Clear	4.58	0.026	1.52	1.63	19.27	365	0.0	
1205	38.18	400.00	Clear	4.58	0.027	1.50	1.84	19.25	367	0.0	
1210	38.18	400.00	Clear	4.61	0.026	1.62	1.19	19.21	368	0.0	
1215	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1020	1215	115.00	12	4.61	0.026	1.62	1.19	19.21	368	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 760-37.58=722.42x0.010=7.22 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE120D3-20181205	Sampled By: BB
QA/QC Duplicate ID: DUP01-20181205	Sample Date: 12/05/18
MS/MSD Collected: YES NO	Sample Time: 1250

WELL INFORMATION:	
Well ID : RE120D3	Purge Date: 12/05/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.14
Top of Screen (ft-BTOR): 740	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 760	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Hanna	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1200	Start purge										
1205	35.2	700	Clear	3.72	0.033	3.46	5.06	14	391	0.0	
1210	35.2	700	Clear	3.78	0.033	2.49	1.14	14.31	401	0.0	
1215	35.2	700	Clear	3.82	0.033	1.21	1.44	14.43	405	0.0	
1220	35.2	700	Clear	3.82	0.033	1.13	2.22	14.33	405	0.0	
1225	35.2	700	Clear	3.83	0.033	1.14	1.7	14.33	407	0.0	
1230	35.2	700	Clear	3.81	0.032	1.39	1.15	14.48	411	0.0	
1235	35.2	700	Clear	3.8	0.032	1.43	0.66	14.47	414	0.0	
1240	35.2	700	Clear	3.79	0.032	1.51	0.83	14.43	418	0.0	
1245	35.2	700	Clear	3.79	0.032	1.53	0.8	14.41	420	0.0	
1250	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1200	1250	50	9 gal	3.79	0.032	1.53	0.80	14.41	420	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
 760-35.14=724.86x0.010=7.24 gal

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE122D1-20180712	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/12/18
MS/MSD Collected: NO	Sample Time: 14:20

WELL INFORMATION:	
Well ID: RE122D1	Purge Date: 07/12/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 43.94
Top of Screen (ft-BTOR): 520	PID Monitor Reading: 1.9 ppm
Bottom of Screen (ft-BTOR): 540	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 545	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:20	43.98	375.00	Clear	5.93	0.103	8.21	0.0	24.18	228	0.0	NA
13:25	43.98	400.00	Clear	5.71	0.096	6.85	0.0	22.28	243	0.0	NA
13:30	43.98	400.00	Clear	5.51	0.102	5.96	0.0	20.74	259	0.0	NA
13:35	43.98	400.00	Clear	5.43	0.099	4.57	0.0	20.18	270	0.0	NA
13:40	43.98	400.00	Clear	5.30	0.099	3.96	0.0	19.85	281	0.0	NA
13:45	43.98	400.00	Clear	5.22	0.098	3.75	0.0	19.76	288	0.0	NA
13:50	43.98	375.00	Clear	5.06	0.097	3.59	0.0	19.44	297	0.0	NA
13:55	43.98	375.00	Clear	5.00	0.097	3.49	0.0	19.30	303	0.0	NA
14:00	43.98	375.00	Clear	4.94	0.096	3.51	0.0	19.22	309	0.0	NA
14:05	43.98	375.00	Clear	4.89	0.096	3.54	0.0	19.26	313	0.0	NA
14:10	43.98	375.00	Clear	4.88	0.096	3.56	0.0	19.22	315	0.0	NA
14:15	43.98	375.00	Clear	4.88	0.095	3.58	0.0	19.23	316	0.0	NA
14:20	43.98	375.00	Clear	4.87	0.096	3.56	0.0	19.24	316	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:20	14:20	60.00	7.0 gal	4.87	0.096	3.56	0.0	19.24	316	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:

No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shickora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE122D1-20181004		Sampled By: CM
QA/QC Duplicate ID: --		Sample Date: 10/04/18
MS/MSD Collected:	No	Sample Time: 12:15

WELL INFORMATION:	
Well ID : RE122D1	Purge Date: 10/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 42.73
Top of Screen (ft-BTOR): 520	PID Monitor Reading 6.7
Bottom of Screen (ft-BTOR): 540	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 545	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:10	42.73	250.00	Cear	5.33	0.126	8.74	2.7	20.63	243	0.1	NA
10:20	42.79	250.00	Cear	5.38	0.120	6.34	3.1	20.46	253	0.1	NA
10:30	42.79	250.00	Cear	5.41	0.117	4.89	2.3	21.10	258	0.1	NA
10:40	42.79	250.00	Cear	5.40	0.117	4.25	2.0	21.70	258	0.1	NA
10:50	42.79	250.00	Cear	5.38	0.117	4.05	1.5	21.49	261	0.1	NA
11:00	42.79	250.00	Cear	5.39	0.115	4.22	1.5	20.33	264	0.1	NA
11:10	42.79	250.00	Cear	5.31	0.114	4.17	2.9	19.61	274	0.1	NA
11:15	42.79	250.00	Cear	5.27	0.113	4.09	2.1	19.09	281	0.1	NA
11:20	42.79	250.00	Cear	5.25	0.112	4.00	1.8	18.79	285	0.1	NA
11:25	42.79	250.00	Cear	5.24	0.112	4.17	2.5	18.75	295	0.1	NA
11:30	42.79	250.00	Clear	5.23	0.112	4.24	2.1	18.74	285	0.1	NA
11:35	42.79	250.00	Clear	5.15	0.112	4.19	1.5	18.64	287	0.1	NA
11:40	42.70	250.00	Clear	5.16	0.111	4.15	1.2	18.60	291	0.1	NA
11:45	42.79	250.00	Clear	5.17	0.111	4.19	2.5	18.57	294	0.1	NA
11:50	42.79	250.00	Clear	5.19	0.111	3.50	3.4	18.64	290	0.1	NA
11:55	42.79	250.00	Clear	5.20	0.111	3.65	2.9	18.72	289	0.1	NA
12:00	42.79	250.00	Clear	5.21	0.111	3.58	2.5	18.78	292	0.1	NA
12:05	42.79	250.00	Clear	5.19	0.111	3.54	2.2	18.82	290	0.1	NA
12:10	42.79	250.00	Clear	5.18	0.111	3.58	2.0	18.87	289	0.1	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:10	12:10	120.00	7.5	5.18	0.111	3.58	2.0	18.87	289	0.1	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 Volume needed tp purge the drop tube 540 - 42.73 = 497.27 x 0.01 = 4.97 gallons

Coordinates:	N	E	Signature(s):	<i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE122D1-20181004		Sampled By: Beau Benfield	
QA/QC Duplicate ID: No		Sample Date: 10/04/18	
MS/MSD Collected:	NO	Sample Time: 1630	

WELL INFORMATION:			
Well ID : RE122D1		Purge Date: 10/04/18	
Well Diameter (in): 4		Static Water Level (ft-BTOR): 42.79	
Top of Screen (ft-BTOR): 520		PID Monitor Reading: 0	
Bottom of Screen (ft-BTOR): 540		Purge Method: Low Flow	
Total Well Depth (ft-BTOR): 545		Sample Method: Low Flow	

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52		Pump Controller: Centrifugal	
Turbidity Meter: Lamotte 2020			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1540	Start purge										
1545	42.87	500.00	Clear	5.22	0.095	3.50	1.70	16.35	245	0.0	
1550	42.87	500.00	Clear	5.21	0.095	3.38	1.90	16.23	246	0.0	
1555	42.87	500.00	Clear	5.20	0.095	3.31	2.35	16.12	247	0.0	
1600	42.87	500.00	Clear	5.20	0.095	3.25	1.85	16.08	247	0.0	
1605	42.87	500.00	Clear	5.19	0.095	3.23	1.42	16.14	248	0.0	
1610	42.87	500.00	Clear	5.20	0.095	3.16	1.10	16.08	248	0.0	
1615	42.87	500.00	Clear	5.20	0.096	3.18	1.23	16.02	248	0.0	
1620	42.87	500.00	Clear	5.21	0.010	3.12	1.33	16.01	248	0.0	
1625	42.87	500.00	Clear	5.21	0.096	3.04	1.25	16.00	248	0.0	
1630	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1540	1630	50.00	6	5.21	0.096	3.04	1.25	16.00	248	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:			
Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE122D2-20180712		Sampled By: Scott Anderson	
QA/QC Duplicate ID: --		Sample Date: 07/12/18	
MS/MSD Collected:	No	Sample Time: 14:15	

WELL INFORMATION:			
Well ID : RE122D2		Purge Date: 07/12/18	
Well Diameter (in): 4		Static Water Level (ft-BTOR): 44.42	
Top of Screen (ft-BTOR): 590		PID Monitor Reading: 3.3	
Bottom of Screen (ft-BTOR): 610		Purge Method: Low Flow	
Total Well Depth (ft-BTOR): 615		Sample Method: Low Flow	

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52		Pump Controller: Bladder	
Turbidity Meter: Hanna HI 98703			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:15	44.42	300.00	Clear	5.35	0.094	5.31	0.6	28.69	262	0.0	
13:20	44.42	300.00	Clear	5.10	0.098	2.13	0.4	24.97	289	0.0	
13:25	44.42	300.00	Clear	4.99	0.100	0.78	0.2	24.21	305	0.0	
13:30	44.42	300.00	Clear	4.96	0.100	0.76	0.2	24.09	306	0.0	
13:35	44.42	300.00	Clear	4.93	0.101	0.76	0.3	23.96	315	0.0	
13:40	44.42	300.00	Clear	4.90	0.101	0.83	0.3	23.82	312	0.0	
13:45	44.42	300.00	Clear	4.89	0.101	1.11	0.4	24.23	315	0.0	
13:50	44.42	300.00	Clear	4.93	0.100	1.11	0.3	24.06	329	0.0	
13:55	44.42	300.00	Clear	4.92	0.099	1.28	0.3	23.45	326	0.0	
14:00	44.42	300.00	Clear	4.93	0.096	1.36	0.4	22.21	325	0.0	
14:05	44.42	300.00	Clear	4.96	0.096	1.86	0.6	21.29	330	0.0	
14:10	44.42	300.00	Clear	4.97	0.095	1.96	0.5	21.28	329	0.0	
14:15	44.42	300.00	Clear	4.96	0.095	2.03	0.8	21.26	329	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1315	1415	60	8 gal	4.96	0.095	2.03	0.8	21.26	329	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):	<i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE122D2-20181002	Sampled By: CS
QA/QC Duplicate ID: No	Sample Date: 10/04/18
MS/MSD Collected: NO	Sample Time: 1220

WELL INFORMATION:	
Well ID : RE122D2	Purge Date: 10/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 42.96
Top of Screen (ft-BTOR): 590	PID Monitor Reading: 21.9 ppm
Bottom of Screen (ft-BTOR): 610	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 615	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1015	42.96	300	Clear	5.06	0.115	4.08	2.05	22.17	267	0.0	N/a
1025	42.98	300	Clear	5.04	0.113	2.65	1.73	21.63	273	0.0	N/a
1035	42.98	300	Clear	5.01	0.113	1.90	1.12	21.87	279	0.0	N/a
1045	42.98	300	Clear	4.98	0.112	1.14	0.78	22.08	286	0.0	N/a
1055	42.98	300	Clear	4.97	0.111	1.30	0.67	22.19	290	0.0	N/a
1105	42.98	300	Clear	4.96	0.110	1.41	0.89	22.31	294	0.0	N/a
1115	42.98	300	Clear	4.98	0.111	1.67	0.77	22.98	296	0.0	N/a
1125	42.98	300	Clear	5.00	0.111	1.96	0.84	23.55	299	0.0	N/a
1135	42.98	300	Clear	5.02	0.111	2.10	—	23.53	301	0.0	N/a
1140	42.98	300	Clear	—	—	—	—	—	—	0.0	N/a
1145	42.98	300	Clear	—	—	—	—	—	—	0.0	N/a
1150	42.98	300	Clear	4.95	0.111	2.66	1.13	23.34	306	0.0	N/a
1155	42.98	300	Clear	4.98	0.111	2.61	0.98	23.62	305	0.0	N/a
1200	42.98	300	Clear	4.99	0.111	3.07	0.97	24.07	309	0.0	N/a
1205	42.98	300	Clear	4.98	0.111	3.04	0.80	24.12	307	0.0	N/a
1210	42.98	300	Clear	5.00	0.111	2.68	0.97	24.29	307	0.0	N/a
1215	42.98	300	Clear	5.00	0.110	2.91	0.71	24.55	306	0.0	N/a
1220	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1015	1220	125	~10 gal	5.00	0.110	2.91	0.71	24.55	306	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 610 - 42.96 = 567.04 x 0.010 g/ft = 5.67 gal to purge drop tubing volume

Coordinates:	N	E	Signature(s):
N/a	N/a	Na	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE122D2-20181004		Sampled By: Beau Benfield
QA/QC Duplicate ID: No		Sample Date: 10/04/18
MS/MSD Collected:	NO	Sample Time: 1345

WELL INFORMATION:	
Well ID : RE122D2	Purge Date: 10/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 43.10
Top of Screen (ft-BTOR): 590	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 610	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 615	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1255	Start purge										
1300	43.10	500.00	Clear	4.94	0.100	3.28	3.14	16.52	214	0.0	
1305	43.10	500.00	Clear	4.83	0.101	3.01	2.45	16.29	216	0.0	
1310	43.10	500.00	Clear	4.77	0.101	3.45	1.56	16.23	218	0.0	
1315	43.10	500.00	Clear	4.73	0.102	4.02	1.70	16.10	219	0.0	
1320	43.10	500.00	Clear	4.73	0.103	4.30	1.75	16.10	220	0.0	
1325	43.10	500.00	Clear	4.74	0.105	4.31	1.50	17.11	218	0.0	
1330	43.10	500.00	Clear	4.38	0.104	4.44	1.29	17.17	212	0.0	
1335	43.10	500.00	Clear	4.85	0.105	5.15	2.12	17.02	215	0.0	
1340	43.10	500.00	Clear	4.92	0.104	4.92	2.10	16.90	216	0.0	
1345	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1255	1345	50.00	6	4.92	0.104	4.92	2.10	16.90	216	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 Centrifugal pump
 Oily sheen on surface of purge water

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE122D2-20181206				Sampled By: BB							
QA/QC Duplicate ID: No				Sample Date: 12/06/18							
MS/MSD Collected: NO				Sample Time: 1605							
WELL INFORMATION:											
Well ID : RE122D2				Purge Date: 12/06/18							
Well Diameter (in):				Static Water Level (ft-BTOR): 41.62							
Top of Screen (ft-BTOR): 590				PID Monitor Reading: 0							
Bottom of Screen (ft-BTOR): 610				Purge Method: Low-flow							
Total Well Depth (ft-BTOR):				Sample Method: Low-flow							
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52				Pump Controller: Centrifugal							
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1500	Start purge										
1510	41.68	800	Clear	4.47	0.106	1.10	1.22	14.08	358	0	
1520	41.68	800	Clear	4.54	0.104	0.93	0.46	14.04	364	0	
1525	41.68	800	Clear	4.55	0.104	1.00	0.43	13.87	367	0	
1530	41.68	800	Clear	4.53	0.104	1.10	0.36	13.87	370	0	
1535	41.68	800	Clear	4.39	0.105	1.79	0.3	14.25	360	0	
1540	41.68	800	Clear	4.43	0.105	1.34	1.72	14.04	369	0	
1545	41.68	800	Clear	4.42	0.105	1.38	0.33	13.96	379	0	
1550	41.68	800	Clear	4.40	0.106	1.58	0.35	14.18	385	0	
1555	41.68	800	Clear	4.63	0.107	1.57	0.33	14.13	373	0	
1600	41.68	800	Clear	4.58	0.107	1.83	0.24	14.03	376	0	
1605	Collect sample										
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1500	1605	65	13	4.58	0.107	1.83	0.24	14.03	376	0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
OBSERVATIONS / NOTES:											
5.6838											
Coordinates:		N	E	Signature(s): <i>Beau Benfield</i>							

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE122D3-20180712		Sampled By: Beau Benfield
QA/QC Duplicate ID: —		Sample Date: 07/12/18
MS/MSD Collected:	NO	Sample Time: 14:20

WELL INFORMATION:	
Well ID : RE122D3	Purge Date: 07/12/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 45.32
Top of Screen (ft-BTOR): 715	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 735	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 740	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:15	Start purge										
13:25	45.35	300.00	Clear	5.03	0.024	3.48	4.00	25.11	290	0.0	
13:30	45.35	300.00	Clear	4.90	0.022	1.70	3.74	24.17	276	0.0	
13:35	45.35	300.00	Clear	4.98	0.021	0.92	3.58	24.05	205	0.0	
13:40	45.35	300.00	Clear	5.04	0.021	0.94	4.00	24.14	146	0.0	
13:45	45.35	300.00	Clear	5.12	0.021	0.77	5.51	24.63	147	0.0	
13:50	45.35	300.00	Clear	5.06	0.022	0.75	4.44	23.92	121	0.0	
13:55	45.35	300.00	Clear	5.10	0.022	0.65	4.24	23.57	120	0.0	
14:00	45.35	300.00	Clear	5.04	0.022	0.50	4.23	23.02	102	0.0	
14:05	45.35	300.00	Clear	5.09	0.022	0.42	4.39	23.57	110	0.0	
14:10	45.35	300.00	Clear	4.56	0.022	0.35	4.81	23.52	106	0.0	
14:15	45.35	300.00	Clear	5.09	0.022	0.33	4.57	23.35	110	0.0	
14:20	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:15	14:20	65.00	4 gal	5.09	0.022	0.33	4.6	23.35	110	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE122D3-20181004		Sampled By: CS
QA/QC Duplicate ID: No		Sample Date: 10/04/18
MS/MSD Collected: YES		Sample Time: 1215

WELL INFORMATION:	
Well ID : RE122D3	Purge Date: 10/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 43.64
Top of Screen (ft-BTOR): 715	PID Monitor Reading: 0.5 ppm
Bottom of Screen (ft-BTOR): 735	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 740	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1010	43.64	400	Clear	4.89	0.032	5.08	5.11	18.99	281	0.0	N/a
1020	43.65	400	Clear	4.95	0.023	0.00	4.68	18.69	270	0.0	N/a
1030	43.65	400	Clear	4.94	0.022	0.00	4.02	18.73	274	0.0	N/a
1040	43.65	400	Clear	4.94	0.022	0.00	3.64	18.75	278	0.0	N/a
1050	43.65	400	Clear	5.00	0.023	0.00	3.26	19.28	286	0.0	N/a
1100	43.65	400	Clear	4.94	0.022	0.00	2.55	19.34	298	0.0	N/a
1110	43.65	400	Clear	4.90	0.022	0.00	2.29	19.48	310	0.0	N/a
1120	43.65	400	Clear	4.89	0.022	0.00	1.90	20.07	315	0.0	N/a
1130	43.65	400	Clear	4.89	0.022	0.00	1.99	20.22	318	0.0	N/a
1135	43.65	400	Clear	4.89	0.022	0.00	2.45	20.20	319	0.0	N/a
1140	43.65	400	Clear	4.89	0.022	0.00	2.80	20.14	320	0.0	N/a
1145	43.65	400	Clear	4.89	0.022	0.00	2.57	20.09	321	0.0	N/a
1150	43.65	400	Clear	4.89	0.022	0.00	2.55	20.08	322	0.0	N/a
1155	43.65	400	Clear	4.89	0.022	0.00	2.61	20.06	323	0.0	N/a
1200	43.65	400	Clear	4.88	0.022	0.00	2.40	20.14	324	0.0	N/a
1205	43.65	400	Clear	4.88	0.022	0.00	2.89	20.22	323	0.0	N/a
1210	43.65	400	Clear	4.88	0.022	0.00	3.08	20.38	323	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1010	1210	120	~13 gal	4.88	0.022	0.00	3.08	20.38	323	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	6	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 735 - 43.64 = 691.36 x 0.010 g/ft = 6.91 gal to purge drop tubing

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE122D3-20181004	Sampled By: Beau Benfield
QA/QC Duplicate ID: No	Sample Date: 10/04/18
MS/MSD Collected: NO	Sample Time: 1500

WELL INFORMATION:	
Well ID : RE122D3	Purge Date: 10/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 43.60
Top of Screen (ft-BTOR): 715	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 735	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 740	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1410	Start purge										
1415	43.65	500.00	Clear	4.91	0.022	1.67	4.16	18.08	244	0.0	
1420	43.65	500.00	Clear	4.90	0.022	1.60	3.79	17.58	245	0.0	
1425	43.65	500.00	Clear	4.89	0.022	1.46	4.41	17.09	245	0.0	
1430	43.65	500.00	Clear	4.89	0.022	1.37	3.97	16.98	248	0.0	
1435	43.65	500.00	Clear	4.87	0.022	1.35	4.31	16.75	250	0.0	
1440	43.65	500.00	Clear	4.87	0.022	1.44	3.82	16.71	252	0.0	
1445	43.65	500.00	Clear	4.85	0.022	1.46	3.36	16.51	254	0.0	
1450	43.65	500.00	Clear	4.84	0.022	1.50	3.28	16.47	255	0.0	
1455	43.65	500.00	Clear	4.83	0.022	1.49	3.13	16.41	256	0.0	
1500	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1410	1500	50.00	6 gal	4.83	0.022	1.49	3.13	16.41	256	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 Centrifugal pump

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE122D3-20181206				Sampled By: CM							
QA/QC Duplicate ID: N/A				Sample Date: 12/06/18							
MS/MSD Collected: NO				Sample Time: 1605							
WELL INFORMATION:											
Well ID : RE122D3				Purge Date: 12/06/18							
Well Diameter (in): 4" PVC				Static Water Level (ft-BTOR): 42.11							
Top of Screen (ft-BTOR): 715				PID Monitor Reading: 0							
Bottom of Screen (ft-BTOR): 735				Purge Method: Low-flow							
Total Well Depth (ft-BTOR): 740				Sample Method: Low-flow							
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52				Pump Controller: Centrifugal							
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1500	42.11	1000	Clear	5.06	0.026	1.94	7.46	13.57	295	0.0	
1505	42.15	1000	Clear	5.06	0.026	1.33	3.92	13.77	301	0.0	
1510	42.16	1000	Clear	5.06	0.026	1.09	2.58	13.77	286	0.0	
1515	42.16	1000	Clear	5.06	0.026	1	2.65	13.84	294	0.0	
1520	42.16	1000	Clear	5.06	0.027	1.22	2.14	13.97	305	0.0	
1525	42.16	1000	Clear	5.04	0.027	1.63	1.73	13.95	313	0.0	
1530	42.16	1000	Clear	5.03	0.026	1.79	1.63	13.97	319	0.0	
1535	42.16	1000	Clear	5.01	0.027	1.86	1.87	13.91	324	0.0	
1540	42.16	1000	Clear	5.01	0.026	1.9	1.95	14	329	0.0	
1545	42.16	1000	Clear	5.01	0.026	1.95	1.78	13.81	332	0.0	
1550	42.16	1000	Clear	5	0.026	1.95	1.84	13.76	335	0.0	
1555	42.16	1000	Clear	5	0.026	1.96	1.91	13.4	337	0.0	
1600	42.16	1000	Clear	5	0.026	1.96	1.98	13.97	339	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1500	1600	60	16	5	0.026	1.96	1.98	13.97	339	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes					
OBSERVATIONS / NOTES:											
6.9789											
Coordinates:		N	E	Signature(s):							
				<i>Chuck Meyer</i>							

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE123D1-20180718		Sampled By: Scott Anderson	
QA/QC Duplicate ID: --		Sample Date: 07/18/18	
MS/MSD Collected: No		Sample Time:	

WELL INFORMATION:			
Well ID: RE123D1	Purge Date: 07/18/18		
Well Diameter (in): 4	Static Water Level (ft-BTOR): 48.08		
Top of Screen (ft-BTOR): 480	PID Monitor Reading: 0		
Bottom of Screen (ft-BTOR): 500	Purge Method: Low Flow		
Total Well Depth (ft-BTOR): 505	Sample Method: Low Flow		

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder		
Turbidity Meter: Hanna HI 98703			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
11:00	48.08	350.00	Clear	5.80	0.123	8.34	1.1	19.38	210	0.1	
11:05	48.12	350.00	Clear	5.97	0.111	6.68	0.5	16.94	212	0.1	
11:10	48.13	350.00	Clear	5.77	0.111	6.17	1.0	16.39	226	0.1	
11:15	48.14	350.00	Clear	5.66	0.111	5.59	0.5	16.49	240	0.1	
11:20	48.15	350.00	Clear	5.65	0.111	5.57	1.1	16.44	240	0.1	
11:25	48.15	350.00	Clear	5.59	0.116	5.56	1.7	16.53	251	0.1	
11:30	48.16	350.00	Clear	5.20	0.122	6.23	1.3	16.52	279	0.1	
11:35	48.16	350.00	Clear	5.07	0.124	6.98	1.1	16.55	308	0.1	
11:40	48.17	350.00	Clear	5.05	0.126	6.83	1.2	16.84	310	0.1	
11:45	48.17	350.00	Clear	5.04	0.126	6.82	1.3	16.74	313	0.1	
11:50	48.17	350.00	Clear	5.06	0.126	6.87	1.3	16.83	316	0.1	
11:55	48.17	350.00	Clear	5.03	0.127	6.86	1.7	16.95	317	0.1	
12:00	48.17	350.00	Clear	5.06	0.127	6.88	1.1	16.98	318	0.1	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1100	1200	60	8 gal	5.06	0.127	6.88	1.1	16.98	318	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates: N E	Signature(s): <i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE123D1-20181009	Sampled By: CS
QA/QC Duplicate ID: No	Sample Date: 10/09/18
MS/MSD Collected: NO	Sample Time: 1045

WELL INFORMATION:	
Well ID : RE123D1	Purge Date: 10/09/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 48.20
Top of Screen (ft-BTOR): 480	PID Monitor Reading: 0.3 ppm
Bottom of Screen (ft-BTOR): 500	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 505	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0840	48.20	300	Clear	5.09	0.204	8.34	1.32	19.55	212	0.0	N/a
0850	48.20	300	Clear	5.46	0.183	6.98	1.09	18.99	214	0.0	N/a
0900	48.20	300	Clear	5.77	0.140	5.26	0.77	18.43	218	0.0	N/a
0910	48.20	300	Clear	5.70	0.137	4.62	0.80	18.38	229	0.0	N/a
0920	48.20	300	Clear	5.65	0.134	4.60	0.76	18.33	242	0.0	N/a
0930	48.20	300	Clear	5.29	0.137	4.65	0.79	18.27	268	0.0	N/a
0940	48.20	300	Clear	5.04	0.140	4.71	0.76	18.23	280	0.0	N/a
0950	48.20	300	Clear	4.99	0.147	4.82	0.64	18.28	294	0.0	N/a
1000	48.20	300	Clear	4.90	0.152	4.90	0.59	18.32	305	0.0	N/a
1005	48.20	300	Clear	4.90	0.154	5.24	0.56	18.36	308	0.0	N/a
1010	48.20	300	Clear	4.91	0.153	5.62	0.70	18.38	310	0.0	N/a
1015	48.20	300	Clear	4.89	0.154	5.60	0.79	18.46	313	0.0	N/a
1020	48.20	300	Clear	4.88	0.154	5.66	0.88	18.43	315	0.0	N/a
1025	48.20	300	Clear	4.88	0.154	5.70	0.92	18.40	316	0.0	N/a
1030	48.20	300	Clear	4.87	0.154	5.64	0.90	18.42	318	0.0	N/a
1035	48.20	300	Clear	4.86	0.154	5.55	0.89	18.40	320	0.0	N/a
1040	48.20	300	Clear	4.86	0.154	5.51	0.94	18.46	319	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0840	1040	120	~10 gal	4.86	0.154	5.51	0.94	18.46	319	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 500 - 48.20 = 451.80 x 0.010 g/ft. =4.52 gal to purge drop tubing

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE123D1-20181207				Sampled By: CM							
QA/QC Duplicate ID: No				Sample Date: 12/07/18							
MS/MSD Collected: NO				Sample Time: 1255							
WELL INFORMATION:											
Well ID : RE123D1				Purge Date: 12/07/18							
Well Diameter (in): 4" PVC				Static Water Level (ft-BTOR): 47.12							
Top of Screen (ft-BTOR): 480				PID Monitor Reading: 0							
Bottom of Screen (ft-BTOR): 500				Purge Method: Low-flow							
Total Well Depth (ft-BTOR): 505				Sample Method: Low-flow							
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52				Pump Controller: Centrifugal							
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1150	47.12	800	Clear	5.00	0.154	12.18	7.92	12.3	334	0.0	
1155	47.12	800	Clear	5.27	0.145	6.23	4.67	13.17	312	0.0	
1200	47.12	800	Clear	5.21	0.145	5.14	2.39	13.32	304	0.0	
1205	47.15	800	Clear	4.91	0.151	5.91	2.09	13.27	316	0.0	
1210	47.15	800	Clear	4.59	0.157	6.29	1.47	13.54	349	0.0	
1215	47.14	800	Clear	4.44	0.161	6.58	1.18	13.62	359	0.0	
1220	47.14	800	Clear	4.42	0.162	6.61	1.09	13.61	368	0.0	
1225	47.14	800	Clear	4.44	0.162	6.61	1.03	13.54	369	0.0	
1230	47.14	800	Clear	4.43	0.161	6.61	0.99	13.49	374	0.0	
1235	47.14	800	Clear	4.44	0.162	6.59	0.93	13.59	377	0.0	
1240	47.14	800	Clear	4.45	0.162	6.57	0.89	13.67	379	0.0	
1245	47.14	800	Clear	4.46	0.162	6.53	0.73	13.66	381	0.0	
1250	47.14	800	Clear	4.46	0.162	6.53	0.67	13.67	383	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1150	1250	60	16	4.46	0.162	6.53	0.67	13.67	383	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
OBSERVATIONS / NOTES:											
4.5788											
Coordinates:		N	E	Signature(s):							
				<i>Chuck Meyer</i>							

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE123D2-20180718	Sampled By: Beau Benfield
QA/QC Duplicate ID: —	Sample Date: 07/18/18
MS/MSD Collected: NO	Sample Time: 11:45

WELL INFORMATION:	
Well ID : RE123D2	Purge Date: 07/18/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 49.25
Top of Screen (ft-BTOR): 635	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 655	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 660	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:40	Start purge										
10:50	49.25	300.00	Clear	5.02	0.022	7.82	1.15	21.40	243	0.0	
10:55	49.25	300.00	Clear	5.45	0.022	6.88	2.86	20.95	251	0.0	
11:00	49.25	300.00	Clear	5.38	0.020	5.82	0.53	19.76	267	0.0	
11:05	49.25	300.00	Clear	5.05	0.020	4.95	0.74	19.83	275	0.0	
11:10	49.25	300.00	Clear	4.63	0.021	4.53	0.78	20.01	294	0.0	
11:15	49.25	300.00	Clear	4.56	0.021	4.17	0.31	20.50	294	0.0	
11:20	49.25	300.00	Clear	4.62	0.021	3.86	0.47	20.92	299	0.0	
11:25	49.25	300.00	Clear	4.68	0.021	3.74	0.40	20.72	294	0.0	
11:30	49.25	300.00	Clear	5.11	0.022	3.54	0.49	20.98	270	0.0	
11:35	49.25	300.00	Clear	5.43	0.024	3.80	2.75	21.46	286	0.0	
11:40	49.25	300.00	Clear	5.29	0.025	4.18	0.97	21.53	281	0.0	
11:45	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:40	11:45	65.00	4	5.29	0.025	4.18	0.97	21.53	281	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE123D2-20181010	Sampled By: Beau Benfield
QA/QC Duplicate ID: No	Sample Date: 10/10/18
MS/MSD Collected: NO	Sample Time: 1705

WELL INFORMATION:	
Well ID : RE123D2	Purge Date: 10/10/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 49.55
Top of Screen (ft-BTOR): 635	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 655	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 660	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1500	Start purge										
1510	49.50	400.00	Clear	5.52	0.032	8.05	1.67	17.17	270	0.0	
1520	49.50	400.00	Clear	5.44	0.031	8.07	0.53	16.30	270	0.0	
1530	49.50	400.00	Clear	5.40	0.031	6.69	0.50	16.07	277	0.0	
1540	49.50	400.00	Clear	5.37	0.031	5.97	0.39	15.92	282	0.0	
1550	49.50	400.00	Clear	5.50	0.033	5.78	0.85	15.80	288	0.0	
1600	49.50	400.00	Clear	5.50	0.033	8.09	0.85	15.78	290	0.0	
1610	49.50	400.00	Clear	5.38	0.032	9.65	0.86	15.71	293	0.0	
1615	49.50	400.00	Clear	5.36	0.031	8.98	0.77	15.69	294	0.0	
1620	49.50	400.00	Clear	5.35	0.031	10.51	0.80	15.72	294	0.0	
1625	49.50	400.00	Clear	5.34	0.031	10.22	0.85	15.74	295	0.0	
1630	49.50	400.00	Clear	5.33	0.031	9.74	0.66	15.76	296	0.0	
1635	49.50	400.00	Clear	5.33	0.031	10.76	0.63	15.79	296	0.0	
1640	49.50	400.00	Clear	5.32	0.031	9.79	0.50	15.76	297	0.0	
1645	49.50	400.00	Clear	5.32	0.031	9.80	0.63	15.71	298	0.0	
1650	49.50	400.00	Clear	5.32	0.031	10.83	0.44	15.63	299	0.0	
1655	49.50	400.00	Clear	5.32	0.031	10.85	0.58	15.58	301	0.0	
1700	49.50	400.00	Clear	5.32	0.031	10.52	0.51	15.56	302	0.0	
1705	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1500	1705	125.00	13 gal	5.32	0.031	10.52	0.51	15.56	302	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 655-49.55=605.45x0.010=6.05 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE123D2	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/07/18
MS/MSD Collected: NO	Sample Time: 1250

WELL INFORMATION:	
Well ID : RE123D2	Purge Date: 12/07/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 48.3
Top of Screen (ft-BTOR): 635	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 655	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Hanna 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1143	48.3										
1150	48.33	700	Clear	4.58	0.036	6.01	0.8	13.11	312	0.0	
1155	48.33	700	Clear	4.44	0.035	4.17	0.9	13.15	326	0.0	
1205	48.33	700	Clear	4.46	0.035	4.37	0.66	13.23	331	0.0	
1215	48.33	700	Clear	4.71	0.036	5.53	0.78	13.47	311	0.0	
1225	48.33	700	Clear	4.86	0.035	5.00	0.67	13.30	311	0.0	
1235	48.34	700	Clear	4.91	0.036	4.87	0.61	13.62	311	0.0	
1240	48.34	700	Clear	4.91	0.035	4.81	0.6	13.63	312	0.0	
1245	48.34	700	Clear	4.96	0.035	4.91	0.6	13.56	312	0.0	
1250	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1145	1245	60	12.5	4.96	0.035	4.91	0.6	13.56	312	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
12.134

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE123D3-20180718	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/18/18
MS/MSD Collected: YES	Sample Time: 12:00

WELL INFORMATION:	
Well ID : RE123D3	Purge Date: 07/18/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 49.55
Top of Screen (ft-BTOR): 815	PID Monitor Reading: 0.0 ppm
Bottom of Screen (ft-BTOR): 835	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 840	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:50	49.57	375.00	Clear	4.80	0.048	7.29	0.0	22.85	274	0.0	NA
10:55	49.57	375.00	Clear	5.43	0.035	4.09	0.0	20.54	254	0.0	NA
11:00	49.57	375.00	Clear	5.71	0.032	3.31	0.0	20.05	238	0.0	NA
11:05	49.57	375.00	Clear	5.63	0.033	2.35	0.0	20.06	188	0.0	NA
11:10	49.57	375.00	Clear	5.63	0.034	1.66	0.0	20.08	85	0.0	NA
11:15	49.58	375.00	Clear	5.61	0.034	1.16	0.0	20.04	12	0.0	NA
11:20	49.58	375.00	Clear	5.47	0.034	1.89	0.0	20.02	-23	0.0	NA
11:25	49.58	375.00	Clear	5.44	0.034	1.78	0.0	20.01	-36	0.0	NA
11:30	49.58	375.00	Clear	5.40	0.034	1.98	0.6	20.04	-41	0.0	NA
11:35	49.58	375.00	Clear	5.40	0.033	2.12	0.7	20.08	-49	0.0	NA
11:40	49.58	375.00	Clear	5.41	0.033	2.07	0.5	20.10	-52	0.0	NA
11:45	49.58	375.00	Clear	5.41	0.033	2.05	0.3	20.11	-54	0.0	NA
11:50	49.58	375.00	Clear	5.42	0.033	2.01	0.3	20.09	-56	0.0	NA
11:55	49.58	375.00	Clear	5.42	0.033	1.99	0.4	20.10	-58	0.0	NA
12:00	49.58	375.00	Clear	5.42	0.033	1.98	0.3	20.09	-60	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
10:50	12:00	70.00	7.5 gal	5.42	0.033	1.98	0.3	20.09	-60	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE123D3-20181008	Sampled By: CS
QA/QC Duplicate ID: NO	Sample Date: 10/08/18
MS/MSD Collected: NO	Sample Time: 1705

WELL INFORMATION:	
Well ID : RE123D3	Purge Date: 10/08/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 49.43
Top of Screen (ft-BTOR): 815	PID Monitor Reading: 0.5 ppm
Bottom of Screen (ft-BTOR): 835	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 840	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1500	49.43	400	Clear	5.41	0.045	8.56	10.7	18.22	240	0.0	N/a
1510	49.44	400	Clear	5.60	0.045	5.43	10.1	17.38	107	0.0	N/a
1520	49.44	400	Clear	5.74	0.045	3.24	9.64	16.21	-20	0.0	N/a
1530	49.44	400	Clear	5.72	0.044	2.72	16.7	16.06	-47	0.0	N/a
1540	49.44	400	Clear	5.72	0.044	2.33	16.2	15.94	-48	0.0	N/a
1550	49.44	400	Clear	5.72	0.044	1.01	16.0	15.91	-49	0.0	N/a
1600	49.44	400	Clear	5.72	0.044	1.78	15.2	15.87	-49	0.0	N/a
1610	49.44	400	Clear	5.72	0.046	1.48	15.9	15.84	-50	0.0	N/a
1620	49.44	400	Clear	5.74	0.046	1.50	15.7	15.75	-52	0.0	N/a
1625	49.44	400	Clear	5.73	0.046	1.46	14.9	15.73	-52	0.0	N/a
1630	49.44	400	Clear	5.71	0.046	1.41	15.0	15.71	-52	0.0	N/a
1635	49.44	400	Clear	5.72	0.046	1.34	14.8	15.73	-52	0.0	N/a
1640	49.44	400	Clear	5.72	0.046	1.26	15.4	15.74	-54	0.0	N/a
1645	49.44	400	Clear	5.73	0.046	1.32	15.2	15.70	-54	0.0	N/a
1650	49.44	400	Clear	5.72	0.045	1.22	14.8	15.68	-53	0.0	N/a
1655	49.44	400	Clear	5.72	0.045	1.16	14.9	15.63	-51	0.0	N/a
1700	49.44	400	Clear	5.72	0.045	1.13	14.6	15.59	-52	0.0	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1500	1700	120	~13 gal	5.72	0.045	1.13	14.6	15.59	-52	0.0	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 835 - 49.43 = 785.57 x 0.010 g/ft. = 7.86 gal to purge drop tubing

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE123D3-20181207	Sampled By: BB
QA/QC Duplicate ID: No	Sample Date: 12/07/18
MS/MSD Collected: NO	Sample Time: 1310

WELL INFORMATION:	
Well ID : RE123D3	Purge Date: 12/07/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 48.12
Top of Screen (ft-BTOR): 815	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 835	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Hanna 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1145	Start purge										
1155	48.26	800	Clear	5.77	0.041	0.66	18.8	11.92	27	0.0	
1205	48.26	800	Clear	5.77	0.042	0.6	18.8	11.81	26	0.0	
1215	48.26	800	Clear	5.77	0.043	0.53	17.7	12.17	24	0.0	
1225	48.26	800	Clear	5.78	0.043	0.46	15.7	12.05	25	0.0	
1230	48.26	800	Clear	5.77	0.042	0.46	14.8	11.91	27	0.0	
1235	48.26	800	Clear	5.76	0.042	0.42	16.1	12.3	28	0.0	
1240	48.26	800	Clear	5.75	0.041	0.42	15.6	12.48	30	0.0	
1245	48.26	800	Clear	5.77	0.041	0.39	15.4	12.56	30	0.0	
1250	48.26	800	Clear	5.74	0.04	0.38	14.5	12.31	35	0.0	
1255	48.26	800	Clear	5.73	0.039	0.37	13.6	12.19	36	0.0	
1300	48.26	800	Clear	5.72	0.039	0.37	14	12.49	38	0.0	
1305	48.26	800	Clear	5.70	0.038	0.35	9.2	12.45	41	0.0	
1310	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1145	1310	85	18 gal	5.70	0.038	0.35	9.2	12.45	41	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
 835-48.12=786.88x0.010=7.8 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE125D1-20180711	Sampled By: Scott Anderson
QA/QC Duplicate ID: --	Sample Date: 07/11/18
MS/MSD Collected: <input type="checkbox"/> No	Sample Time: 10:30

WELL INFORMATION:	
Well ID: RE125D1	Purge Date: 07/11/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.08
Top of Screen (ft-BTOR): 320	PID Monitor Reading: 2
Bottom of Screen (ft-BTOR): 340	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 345	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna HI 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:30	35.08	325.00	Clear	4.96	0.144	7.01	1.5	18.06	269	0.1	
9:35	35.08	325.00	Clear	4.90	0.142	5.37	1.5	17.62	285	0.1	
9:40	35.08	325.00	Clear	4.87	0.143	4.17	2.3	17.57	292	0.1	
9:45	35.08	325.00	Clear	4.71	0.143	2.86	10.3	17.41	301	0.1	
9:50	35.08	325.00	Clear	4.84	0.143	2.63	10.1	17.36	300	0.1	
9:55	35.08	325.00	Clear	4.84	0.143	2.52	10.4	17.43	301	0.1	
10:00	35.08	325.00	Clear	4.85	0.143	2.46	10.5	17.48	301	0.1	
10:05	35.08	325.00	Clear	4.85	0.145	2.41	9.3	17.38	303	0.1	
10:10	35.08	325.00	Clear	4.83	0.144	2.40	9.3	17.37	308	0.1	
10:15	35.08	325.00	Clear	4.81	0.144	2.39	9.2	17.37	313	0.1	
10:20	35.08	325.00	Clear	4.80	0.144	2.35	8.5	17.38	308	0.1	
10:25	35.08	325.00	Clear	4.79	0.145	2.31	8.0	17.47	307	0.1	
10:30	35.08	325.00	Clear	4.80	0.144	2.35	5.6	17.48	307	0.1	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0930	1030	60	8 gal	4.80	0.144	2.35	5.6	17.48	307	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s): <i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE125D1-20181001		Sampled By: CS
QA/QC Duplicate ID: NO		Sample Date: 10/01/18
MS/MSD Collected:	NO	Sample Time: 1325

WELL INFORMATION:	
Well ID : RE125D1	Purge Date: 10/01/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 34.87
Top of Screen (ft-BTOR): 320	PID Monitor Reading 4.9 ppm
Bottom of Screen (ft-BTOR): 340	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 345	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1110	34.87	400	Clear	5.43	0.175	14.22	3.24	18.63	245	0.1	N/a
1120	34.89	400	Clear	5.02	0.160	5.97	2.80	18.68	288	0.1	N/a
1130	34.89	400	Clear	4.74	0.149	2.38	1.43	18.72	311	0.1	N/a
1140	34.89	400	Clear	4.74	0.149	1.46	1.39	18.39	318	0.1	N/a
1150	34.89	400	Clear	4.74	0.149	1.23	1.63	18.45	323	0.1	N/a
1200	34.89	400	Clear	4.75	0.149	1.17	2.03	18.64	325	0.1	N/a
1210	34.89	400	Clear	4.76	0.149	1.13	1.86	18.70	326	0.1	N/a
1220	34.89	400	Clear	4.77	0.149	1.07	1.78	18.79	328	0.1	N/a
1230	34.89	400	Clear	4.79	0.149	1.03	1.99	18.87	329	0.1	N/a
1235	34.89	400	Clear	4.80	0.149	0.99	2.34	19.91	330	0.1	N/a
1240	34.89	400	Clear	4.80	0.148	1.00	2.19	19.82	331	0.1	N/a
1245	34.89	400	Clear	4.80	0.148	1.02	2.07	19.67	332	0.1	N/a
1250	34.89	400	Clear	4.80	0.148	0.97	2.27	19.53	332	0.1	N/a
1255	34.89	400	Clear	4.80	0.148	0.95	2.22	19.44	332	0.1	N/a
1300	34.89	400	Clear	4.79	0.148	0.94	2.09	19.40	331	0.1	N/a
1305	34.89	400	Clear	4.79	0.148	0.92	1.87	19.55	331	0.1	N/a
1310	34.89	400	Clear	4.79	0.148	0.90	1.60	19.60	330	0.1	N/a
1315	34.89	400	Clear	4.79	0.148	0.87	1.67	19.89	330	0.1	N/a
1320	34.89	400	Clear	4.79	0.148	0.85	1.52	19.74	330	0.1	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1110	1320	130	~13 g	4.79	0.148	0.85	1.52	19.74	330	0.1	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 340 - 34.87 = 305.13 x 0.010 g/ft. = 3.05 gal to purge drop tubing volume

Coordinates:	N	E	Signature(s): <i>Chris Sinisi</i>
N/a	N/a	N/a	

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE125D1	Sampled By: BB
QA/QC Duplicate ID: —	Sample Date: 12/04/18
MS/MSD Collected: NO	Sample Time: 1435

WELL INFORMATION:	
Well ID : RE125D1-20181204	Purge Date: 12/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 33.4
Top of Screen (ft-BTOR): 320	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 340	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1345	Start purge										
1350	33.42	800	Clear	4.87	0.159	7.65	7.27	12.95	302	0.1	
1355	33.42	800	Clear	4.79	0.159	7.04	4.94	13.08	312	0.1	
1400	33.42	800	Clear	4.80	0.159	6.63	5.89	13.11	320	0.1	
1405	33.42	800	Clear	4.80	0.159	5.93	4.26	13.08	322	0.1	6 gal
1410	33.42	800	Clear	4.80	0.159	5.43	4.30	13.12	319	0.1	
1415	33.42	800	Clear	4.79	0.159	5.13	4.61	13.10	321	0.1	
1420	33.42	800	Clear	4.80	0.159	4.76	4.25	13.08	324	0.1	
1425	33.42	800	Clear	4.80	0.158	4.36	2.87	13.06	325	0.1	
1430	33.42	800	Clear	4.81	0.158	4.03	3.86	13.04	326	0.1	
1435	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1345	1435	50	13 gal	4.81	0.158	4.03	3.86	13.04	326	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
 340-33.40=306.60x0.010=3 gal to purge tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE125D2-20180711	Sampled By: Beau Benfield
QA/QC Duplicate ID: GW01-071118 1200	Sample Date: 07/11/18
MS/MSD Collected: NO	Sample Time: 10:00

WELL INFORMATION:	
Well ID : RE125D2	Purge Date: 07/11/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 38
Top of Screen (ft-BTOR):	PID Monitor Reading: 2.5
Bottom of Screen (ft-BTOR): 0	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 605	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	Start purge										
9:10	37.97	300.00	Clear	5.42	0.092	7.57	0.99	18.79	248	0.0	
9:20	37.97	300.00	Clear	5.58	0.087	9.41	1.83	19.11	238	0.0	
9:25	37.97	300.00	Clear	5.43	0.085	8.95	0.91	18.01	236	0.0	
9:30	38.00	300.00	Clear	5.48	0.085	8.67	0.81	17.98	236	0.0	
9:35	38.00	300.00	Clear	5.52	0.084	8.13	0.57	17.67	239	0.0	
9:40	38.00	300.00	Clear	5.49	0.084	7.85	0.95	17.73	243	0.0	
9:45	38.00	300.00	Clear	5.46	0.082	7.56	1.20	17.63	246	0.0	
9:50	38.00	300.00	Clear	5.41	0.081	7.41	1.30	17.62	249	0.0	
9:55	38.00	300.00	Clear	5.33	0.080	7.15	1.30	17.68	257	0.0	
10:00	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
8:55	10:00	65.00	4 gal	5.33	0.080	7.15	1.3	17.68	257	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE125D2-20181204	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/04/18
MS/MSD Collected: NO	Sample Time: 1353

WELL INFORMATION:	
Well ID : RE125D2	Purge Date: 12/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.2
Top of Screen (ft-BTOR): 580	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 600	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1300	35.2										
1307	35.21	700	Clear	5.43	0.094	113	9.43	12.79	257	0.0	
1312	35.21	700	Clear	5.37	0.092	90	3.72	12.75	267	0.0	
1317	35.21	700	Clear	5.20	0.091	81.3	2.32	12.8	280	0.0	
1322	35.21	700	Clear	5.10	0.09	73.8	1.54	12.87	294	0.0	
1327	35.22	700	Clear	5.03	0.09	68	0.97	12.87	305	0.0	
1332	35.22	700	Clear	5.01	0.09	64.1	0.6	12.93	309	0.0	
1337	35.22	700	Clear	5.02	0.09	59.9	0.34	12.89	316	0.0	
1342	35.22	700	Clear	4.97	0.091	66.7	0.52	12.9	312	0.0	
1347	35.22	700	Clear	4.96	0.091	54.4	0.35	12.94	317	0.0	
1353	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1302	1347	45	10	4.96	0.091	54.4	0.35	12.94	317	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
5.648

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE125D3-20180711		Sampled By: Vince Shikora	
QA/QC Duplicate ID: No		Sample Date: 07/11/18	
MS/MSD Collected: <input type="checkbox"/> No		Sample Time: 10:20	

WELL INFORMATION:			
Well ID : RE125D3		Purge Date: 07/11/18	
Well Diameter (in): 4 inch		Static Water Level (ft-BTOR): 38.21	
Top of Screen (ft-BTOR): 670		PID Monitor Reading: 1.5 ppm	
Bottom of Screen (ft-BTOR): 690		Purge Method: Low Flow	
Total Well Depth (ft-BTOR): 690		Sample Method: Low Flow	

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52		Pump Controller: Bladder	
Turbidity Meter: Lamotte 2020			

PURGE DATA:												
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other	
9:15	38.23	400.00	Clear	4.82	0.064	8.15	0.0	24.23	280	0.0	NA	
9:20	38.23	375.00	Clear	4.82	0.059	6.41	0.0	23.88	283	0.0	NA	
9:25	38.23	375.00	Clear	4.83	0.058	5.26	0.0	22.53	286	0.0	NA	
9:30	38.23	375.00	Clear	4.81	0.057	5.13	0.0	22.18	287	0.0	NA	
9:35	38.23	375.00	Clear	4.83	0.056	4.93	0.0	22.05	290	0.0	NA	
9:40	38.23	375.00	Clear	4.76	0.055	4.92	0.0	21.77	294	0.0	NA	
9:45	38.23	375.00	Clear	4.72	0.053	4.91	0.0	21.41	301	0.0	NA	
9:50	38.23	375.00	Clear	4.68	0.053	4.93	0.0	21.25	303	0.0	NA	
9:55	38.23	375.00	Clear	4.65	0.053	4.94	0.0	21.20	306	0.0	NA	
10:00	38.23	375.00	Clear	4.66	0.053	4.92	0.0	21.22	307	0.0	NA	
10:05	38.23	376.00	Clear	4.66	0.052	4.95	0.0	21.21	308	0.0	NA	
10:10	38.23	375.00	Clear	4.65	0.052	4.94	0.0	21.23	310	0.0	NA	
10:15	38.23	375.00	Clear	4.65	0.052	4.93	0.0	21.22	311	0.0	NA	
10:20	38.23	375.00	Clear	4.65	0.052	4.94	0.0	21.21	312	0.0	NA	

FINAL PURGE / SAMPLE DATA:												
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other	
9:15	4:48	65.00	7 gal	4.65	0.052	4.94	0.0	21.21	312	0.0	NA	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS							
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected	
VOCs	SW846 8260B	HCL	3	40-ml	glass	Yes	
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	Yes	

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE125D3-20181001	Sampled By: CM
QA/QC Duplicate ID:	Sample Date: 10/01/18
MS/MSD Collected:	Sample Time: 16:10

WELL INFORMATION:	
Well ID : RE125D3	Purge Date: 10/01/18
Well Diameter (in): 4"	Static Water Level (ft-BTOR): 38.14
Top of Screen (ft-BTOR): 670	PID Monitor Reading 6.0 ppm
Bottom of Screen (ft-BTOR): 690	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 695	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:55	38.14	400.00	Clear	5.47	0.061	6.78	17.9	20.36	233	0.0	NA
14:05	38.48	400.00	Clear	5.45	0.061	6.23	-	20.04	237	0.0	NA
14:15	38.57	400.00	Clear	5.43	0.060	5.86	9.5	19.91	240	0.0	NA
14:25	38.60	400.00	Clear	5.36	0.060	5.27	11.6	19.77	249	0.0	NA
14:35	38.60	400.00	Clear	5.33	0.058	4.93	12.5	19.69	254	0.0	NA
14:45	38.60	400.00	Clear	5.26	0.057	5.04	14.5	19.41	254	0.0	NA
14:55	38.60	400.00	Clear	5.28	0.056	5.01	17.1	19.35	256	0.0	NA
15:05	38.60	400.00	Clear	5.16	0.055	5.29	15.9	18.46	274	0.0	NA
15:15	38.60	400.00	Clear	5.15	0.055	5.27	13.4	18.53	275	0.0	NA
15:20	38.60	400.00	Clear	5.15	0.054	5.20	10.6	18.60	277	0.0	NA
15:25	38.60	400.00	Clear	5.14	0.055	5.24	9.8	18.63	277	0.0	NA
15:30	38.61	400.00	Clear	5.15	0.055	5.28	7.1	18.70	277	0.0	NA
15:35	36.62	400.00	Clear	5.14	0.055	5.25	6.2	18.83	277	0.0	NA
15:40	26.63	400.00	Clear	5.14	0.550	5.21	5.9	18.85	277	0.0	NA
15:45	38.62	400.00	Clear	5.14	0.055	5.19	5.7	18.87	277	0.0	NA
15:50	38.63	400.00	Clear	5.15	0.055	5.23	5.5	18.73	276	0.0	NA
15:55	38.62	400.00	Clear	5.15	0.055	5.18	4.6	18.69	278	0.0	NA
16:00	38.61	400.00	Clear	5.13	0.055	5.21	5.2	18.61	279	0.0	NA
16:05	38.61	400.00	Clear	5.15	0.054	5.17	4.9	18.57	279	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
14:05	1:12	120.00	11 gal	5.15	0.054	5.17	4.9	18.57	279	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE125D3-20181204	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/04/18
MS/MSD Collected: NO	Sample Time: 1525

WELL INFORMATION:	
Well ID : RE125D3	Purge Date: 12/04/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.41
Top of Screen (ft-BTOR): 670	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 690	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1435	35.41										
1441	35.42	700	Clear	5.44	0.059	62.5	0.35	12.16	271	0.0	
1446	35.42	700	Clear	5.31	0.057	48.3	2.77	12.57	290	0.0	
1451	35.42	700	Clear	5.2	0.056	46.7	4.34	12.62	299	0.0	
1456	35.42	700	Clear	5.21	0.055	49.2	4.72	12.63	299	0.0	
1501	35.43	700	Clear	5.13	0.055	50.4	3.8	12.7	304	0.0	
1506	35.43	700	Clear	5.04	0.054	50.7	1.84	12.68	313	0.0	
1511	35.43	700	Clear	4.87	0.054	52	0.91	12.84	328	0.0	
1516	35.43	700	Clear	4.81	0.054	5.32	0.49	12.88	321	0.0	
1521	35.43	700	Clear	4.97	0.054	5.33	0.36	12.89	331	0.0	
1525	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1436	1521	45	10	4.97	0.054	5.33	0.36	12.89	331	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
6.5459

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE126D1-20180717		Sampled By: Scott Anderson	
QA/QC Duplicate ID: --		Sample Date: 07/17/18	
MS/MSD Collected:	No	Sample Time: 10:00	

WELL INFORMATION:			
Well ID: RE126D1	Purge Date: 07/17/18		
Well Diameter (in): 4	Static Water Level (ft-BTOR): 46.27		
Top of Screen (ft-BTOR): 500	PID Monitor Reading: 0		
Bottom of Screen (ft-BTOR): 520	Purge Method: Low Flow		
Total Well Depth (ft-BTOR): 525	Sample Method: Low Flow		

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder		
Turbidity Meter: Hanna HI 98703			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:00	46.27	375.00	Clear	5.50	0.100	6.46	0.9	19.60	230	0.0	
9:05	46.27	375.00	Clear	5.40	0.099	6.02	0.9	19.50	237	0.0	
9:10	46.27	375.00	Clear	5.34	0.098	5.43	0.6	19.64	244	0.0	
9:15	46.27	375.00	Clear	5.32	0.098	5.38	0.5	19.63	257	0.0	
9:20	46.27	375.00	Clear	5.34	0.097	5.34	0.5	19.94	268	0.0	
9:25	46.27	375.00	Clear	5.31	0.097	5.36	1.6	19.83	267	0.0	
9:30	46.27	375.00	Clear	5.30	0.097	5.33	1.8	19.73	266	0.0	
9:35	46.27	375.00	Clear	5.30	0.097	5.31	1.5	19.76	269	0.0	
9:40	46.27	375.00	Clear	5.29	0.097	5.31	1.6	19.85	269	0.0	
9:45	46.27	375.00	Clear	5.28	0.097	5.30	1.8	19.90	270	0.0	
9:50	46.27	375.00	Clear	5.28	0.097	5.32	1.3	19.73	274	0.0	
9:55	46.27	375.00	Clear	5.29	0.096	5.30	0.9	19.94	276	0.0	
10:00	46.27	375.00	Clear	5.30	0.096	5.29	0.8	19.84	278	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0900	1000	60	8 gal	5.30	0.096	5.29	0.8	19.84	278	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):	<i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE126D1-20181008		Sampled By:
QA/QC Duplicate ID: No		Sample Date:
MS/MSD Collected:	No	Sample Time:

WELL INFORMATION:	
Well ID : RE126D1	Purge Date:
Well Diameter (in):	Static Water Level (ft-BTOR):
Top of Screen (ft-BTOR):	PID Monitor Reading:
Bottom of Screen (ft-BTOR):	Purge Method:
Total Well Depth (ft-BTOR):	Sample Method:

EQUIPMENT INFORMATION:	
Water Quality Instrument:	Pump Controller:
Turbidity Meter:	

PURGE DATA:

Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
BLANK											

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE126D1-20181207	Sampled By: BB
QA/QC Duplicate ID: No	Sample Date: 12/07/18
MS/MSD Collected: NO	Sample Time: 950

WELL INFORMATION:	
Well ID : RE126D1	Purge Date:
Well Diameter (in): 4	Static Water Level (ft-BTOR): 44.75
Top of Screen (ft-BTOR): 500	PID Monitor Reading:
Bottom of Screen (ft-BTOR): 520	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
0845	Start purge										
0855	44.75	800	Clear	4.07	0.121	5.86	3.52	13.08	348	0.1	
0905	44.75	800	Clear	4.08	0.119	5.76	1.19	13.06	361	0.1	
0910	44.75	800	Clear	4.12	0.119	5.76	0.87	13.25	365	0.1	5 gal
0915	44.75	800	Clear	4.14	0.119	5.75	0.9	13.38	366	0.1	
0920	44.75	800	Clear	4.18	0.119	5.78	0.65	13.33	368	0.1	
0925	44.75	800	Clear	4.21	0.119	5.83	0.58	13.40	370	0.1	
0930	44.75	800	Clear	4.26	0.119	5.85	0.58	13.41	372	0.1	
0935	44.75	800	Clear	4.31	0.119	5.87	0.57	13.25	373	0.1	
0940	44.75	800	Clear	4.33	0.119	5.85	0.51	13.23	373	0.1	
0945	44.75	800	Clear	4.36	0.119	5.88	0.73	13.03	373	0.1	
0950	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
0845	0950	65	14 gal	4.36	0.119	5.88	0.73	13.03	373	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	yes

OBSERVATIONS / NOTES:
 520-44.75=475.25x0.010=4.75 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE126D2-20180717	Sampled By: Vince Shikora
QA/QC Duplicate ID: GW-04-071718	Sample Date: 07/17/18
MS/MSD Collected: NO	Sample Time: 10:25

WELL INFORMATION:	
Well ID : RE126D2	Purge Date: 07/17/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 46.81
Top of Screen (ft-BTOR): 555	PID Monitor Reading: 13.4 ppm
Bottom of Screen (ft-BTOR): 575	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 580	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:05	46.82	375.00	Clear	4.52	0.128	8.08	0.0	22.49	295	0.0	NA
9:10	46.82	375.00	Clear	5.57	0.106	5.45	0.0	21.70	260	0.0	NA
9:15	46.82	375.00	Clear	5.52	0.105	3.78	0.0	21.29	262	0.0	NA
9:20	46.82	375.00	Clear	5.45	0.105	3.18	0.0	21.31	266	0.0	NA
9:25	46.82	375.00	Clear	5.40	0.105	3.10	0.0	21.30	270	0.0	NA
9:30	46.82	375.00	Clear	5.32	0.105	2.91	0.0	21.26	274	0.0	NA
9:35	46.82	375.00	Clear	5.24	0.105	2.81	0.0	21.28	277	0.0	NA
9:40	46.82	375.00	Clear	5.27	0.105	2.72	0.0	21.30	275	0.0	NA
9:45	46.82	375.00	Clear	5.33	0.105	2.76	0.0	21.31	273	0.0	NA
9:50	46.82	375.00	Clear	5.36	0.105	2.78	0.0	21.33	270	0.0	NA
9:55	46.82	375.00	Clear	5.77	0.111	2.70	0.5	21.29	268	0.0	NA
10:00	46.82	375.00	Clear	6.04	0.123	2.53	1.5	21.31	252	0.0	NA
10:05	46.82	375.00	Clear	6.33	0.157	2.17	2.8	21.33	234	0.0	NA
10:10	46.82	375.00	Clear	6.51	0.177	1.69	3.9	21.32	220	0.0	NA
10:15	46.82	375.00	Clear	6.51	0.178	1.52	1.9	21.34	211	0.0	NA
10:20	46.82	375.00	Clear	6.50	0.179	1.50	0.6	21.36	208	0.0	NA
10:25	46.82	375.00	Clear	6.49	0.178	1.48	0.2	21.35	206	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:05	10:25	80.00	8 gal	6.49	0.178	1.48	0.2	21.35	206	0.0	No

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS							0.2
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected	
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES	
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	YES	

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s): <i>Vince Shickora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE126D2	Sampled By: Beau Benfield
QA/QC Duplicate ID: TT-DUP05-20181008. 1310	Sample Date: 10/08/18
MS/MSD Collected: No	Sample Time: 1210

WELL INFORMATION:	
Well ID : RE126D2	Purge Date: 10/08/18
Well Diameter (in):	Static Water Level (ft-BTOR): 46.72
Top of Screen (ft-BTOR): 555	PID Monitor Reading: 13.6
Bottom of Screen (ft-BTOR): 575	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 580	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1005	Start purge										
1015	46.80	400.00	Clear	5.68	1.390	7.39	5.26	16.51	215	0.1	
1025	46.80	400.00	Clear	5.57	0.126	4.10	1.88	15.94	230	0.1	
1035	46.80	400.00	Clear	5.56	0.123	3.43	1.79	15.68	234	0.1	
1045	46.80	400.00	Clear	5.40	0.121	3.48	1.99	15.59	245	0.1	
1055	46.80	400.00	Clear	5.34	0.118	3.53	4.16	15.52	247	0.1	
1105	46.80	400.00	Clear	5.26	0.116	4.14	2.86	15.62	267	0.1	
1115	46.80	400.00	Clear	5.09	0.116	4.13	2.64	15.54	263	0.1	
1120	46.80	400.00	Clear	5.21	0.116	4.11	2.76	15.54	264	0.1	
1125	46.80	400.00	Clear	5.25	0.116	3.84	2.31	15.48	266	0.1	
1130	46.80	400.00	Clear	5.22	0.116	3.94	2.20	15.59	270	0.1	
1135	46.80	400.00	Clear	5.09	0.116	4.06	2.41	15.53	269	0.1	
1140	46.80	400.00	Clear	5.12	0.116	3.95	2.52	15.56	272	0.1	
1145	46.80	400.00	Clear	5.25	0.116	3.76	2.34	15.49	271	0.1	
1150	46.80	400.00	Clear	5.24	0.116	3.87	1.81	15.57	276	0.1	
1155	46.80	400.00	Clear	5.26	0.116	3.74	1.93	15.56	275	0.1	
1200	46.80	400.00	Clear	5.25	0.116	3.75	1.84	15.55	275	0.1	
1205	46.80	400.00	Clear	5.26	0.116	3.67	1.80	15.57	279	0.1	
1210	collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1005	1210	125.00	13 gal	5.26	0.116	3.67	1.80	15.57	279	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	

OBSERVATIONS / NOTES:
 575-46.72=528.28x0.010=5.28 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE126D2-20181207	Sampled By: CM
QA/QC Duplicate ID: N/A	Sample Date: 12/07/18
MS/MSD Collected: NO	Sample Time: 1010

WELL INFORMATION:	
Well ID : RE126D2	Purge Date: 12/07/18
Well Diameter (in): 4" PVC	Static Water Level (ft-BTOR): 45.23
Top of Screen (ft-BTOR): 555	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 575	Purge Method: Low-flow
Total Well Depth (ft-BTOR): 580	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
845	45.23	800	Clear	5.08	0.115	5.86	14.7	13.17	279	0.1	
850	45.4	800	Clear	5.15	0.115	4.47	45.6	13.22	272	0.1	
855	45.4	800	Light gray	5.89	0.137	2.54	300	13.29	97	0.1	
900	45.4	800	Light gray	6.13	0.149	1.93	500	13.35	35	0.1	
905	45.4	800	Light gray	6.22	0.159	1.72	600	13.39	45	0.1	
910	45.4	800	Clear	6.17	0.152	1.38	14.8	13.49	50	0.1	
915	45.39	800	Clear	6.06	0.139	2.35	8.7	13.59	84	0.1	
920	45.39	800	Clear	5.85	0.127	3.28	4.59	13.64	125	0.1	
925	45.39	800	Clear	5.70	0.124	3.62	2.43	13.52	143	0.1	
930	45.39	800	Clear	5.58	0.118	4.13	2.45	13.65	179	0.1	
935	45.39	800	Clear	5.50	0.117	4.24	2.48	13.68	194	0.1	
940	45.39	800	Clear	5.43	0.115	4.36	1.74	13.7	214	0.1	
945	45.39	800	Clear	5.39	0.115	4.40	1.18	13.69	228	0.1	
950	45.39	800	Clear	5.37	0.115	4.45	1.12	13.65	238	0.1	
955	45.39	800	Clear	5.35	0.115	4.51	1.18	13.76	250	0.1	
1000	45.39	800	Clear	5.36	0.115	4.51	1.21	13.65	252	0.1	
1005	45.39	800	Clear	5.36	0.115	4.51	1.2	13.65	254	0.1	
1010	45.39	800	Clear	5.36	0.115	4.51	1.18	13.72	256	0.1	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
845	1010	85		5.36	0.115	4.51	1.18	13.72	256	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
 5.3477
 0905 picked pump up 2 feet due to turbidity- cleared up immediately

Coordinates:	N	E	Signature(s): <i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE126D3-20180717	Sampled By: Beau Benfield
QA/QC Duplicate ID: —	Sample Date: 07/17/08
MS/MSD Collected: NO	Sample Time: 10:15

WELL INFORMATION:	
Well ID : RE126D3	Purge Date: 07/17/08
Well Diameter (in): 4	Static Water Level (ft-BTOR): 46.49
Top of Screen (ft-BTOR): 640	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 660	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 665	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:00	Start purge										
9:10	—	300.00	Clear	5.38	0.034	7.23	19.10	23.71	273	0.0	
9:15	46.45	300.00	Clear	5.22	0.034	7.09	5.86	23.47	262	0.0	
9:20	46.45	300.00	Clear	5.38	0.034	6.92	2.92	23.19	256	0.0	
9:25	46.45	300.00	Clear	5.39	0.034	6.61	2.84	23.33	270	0.0	
9:30	46.45	300.00	Clear	5.39	0.034	6.40	2.74	23.05	259	0.0	
9:35	46.45	300.00	Clear	5.18	0.034	6.13	2.61	23.28	256	0.0	
9:40	46.45	300.00	Clear	5.21	0.034	5.95	2.21	23.25	257	0.0	
9:45	46.45	300.00	Clear	5.38	0.034	5.75	1.68	23.39	268	0.0	
9:50	46.45	300.00	Clear	5.37	0.033	5.61	6.59	23.38	262	0.0	
9:55	46.45	300.00	Clear	5.39	0.032	5.41	12.00	23.10	262	0.0	
10:00	46.45	300.00	Clear	5.34	0.033	5.31	10.90	23.07	263	0.0	
10:05	46.45	300.00	Clear	5.26	0.036	5.24	5.09	23.46	266	0.0	
10:10	46.45	300.00	Clear	5.16	0.036	5.24	3.24	23.30	271	0.0	
10:15	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:00	10:15	75.00	4 gal	5.16	0.036	5.24	3.2	23.3	271	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID:	RE126D3-20181008	Sampled By:	
QA/QC Duplicate ID:	No	Sample Date:	
MS/MSD Collected:	No	Sample Time:	

WELL INFORMATION:			
Well ID :	RE126D3	Purge Date:	
Well Diameter (in):		Static Water Level (ft-BTOR):	
Top of Screen (ft-BTOR):		PID Monitor Reading:	
Bottom of Screen (ft-BTOR):		Purge Method:	
Total Well Depth (ft-BTOR):		Sample Method:	

EQUIPMENT INFORMATION:	
Water Quality Instrument:	Pump Controller:
Turbidity Meter:	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
BLANK											

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE126D3-20181207	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/07/18
MS/MSD Collected: NO	Sample Time: 955

WELL INFORMATION:	
Well ID : RE126D3	Purge Date: 12/07/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 45.01
Top of Screen (ft-BTOR): 640	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 660	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Hanna 98703	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
839	45.01										
847	45.01	700	Cear	3.74	0.07	7.87	1.88	12.10	336	0.0	
852	44.91	700	Clear	4.02	0.05	5.48	0.77	13.28	323	0.0	
857	44.91	700	Clear	4.08	0.048	3.45	0.54	13.34	312	0.0	
902	44.91	700	Clear	4.12	0.047	2.58	1.39	13.39	316	0.0	
907	44.91	700	Cear	4.17	0.046	2.63	3.08	13.31	322	0.0	
912	44.91	700	Clear	4.44	0.046	2.8	2.13	13.44	312	0.0	
922	44.91	700	Clear	4.55	0.047	3.22	1.38	13.67	311	0.0	
932	44.91	700	Clear	4.69	0.046	3.82	1.09	13.96	312	0.0	
942	44.91	700	Cear	4.84	0.046	7.53	0.54	14.22	305	0.0	
947	44.91	700	Cear	4.82	0.046	4.26	0.43	14.24	312	0.0	
952	44.91	700	Clear	4.82	0.046	4.14	1.25	14.27	316	0.0	
955	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
842	952	70	12.5	4.82	0.046	4.24	1.23	14.27	316	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
12.2998

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE131D1-20180710	Sampled By: Beau Benfield
QA/QC Duplicate ID: —	Sample Date: 07/10/18
MS/MSD Collected: NO	Sample Time: 14:40

WELL INFORMATION:	
Well ID: RE131D1	Purge Date: 07/10/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 38.29
Top of Screen (ft-BTOR): 430	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 450	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 455	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:35	Start purge										
13:40	38.40	250.00	Clear	5.87	0.152	6.18	2.84	32.36	219	0.1	
13:45	38.40	250.00	Clear	5.75	0.120	6.07	0.94	30.34	233	0.1	
13:50	38.40	250.00	Clear	5.31	0.117	5.69	1.66	29.18	251	0.1	
13:55	38.40	250.00	Clear	5.30	0.115	5.37	1.18	28.26	266	0.1	
14:00	38.44	250.00	Clear	5.13	0.114	4.89	0.91	27.48	286	0.1	
14:05	38.44	250.00	Clear	4.86	0.114	4.81	1.26	27.42	308	0.1	
14:10	38.44	250.00	Clear	4.88	0.114	4.72	1.01	26.74	316	0.1	
14:15	38.44	300.00	Clear	4.77	0.113	4.75	1.02	26.37	331	0.1	
14:20	38.44	300.00	Clear	4.72	0.114	4.71	0.92	26.24	338	0.1	
14:25	38.44	300.00	Clear	4.73	0.113	4.72	1.28	26.22	340	0.1	
14:30	38.44	300.00	Clear	4.64	0.111	4.79	0.96	23.60	345	0.1	
14:35	38.44	300.00	Clear	4.68	0.112	4.84	1.23	22.93	350	0.1	
14:40	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:35	14:40	65.00	4	4.68	0.112	4.84	1.23	22.93	350	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE131D1-20180927	Sampled By: CS
QA/QC Duplicate ID: NO	Sample Date: 09/27/18
MS/MSD Collected: NO	Sample Time: 1130

WELL INFORMATION:	
Well ID : RE131D1	Purge Date: 09/27/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 36.99
Top of Screen (ft-BTOR): 430	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 450	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 455	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0925	36.99	400	Clear	4.99	0.141	7.27	3.58	16.77	283	0.1	N/a
0935	36.99	400	Clear	4.67	0.136	3.37	1.01	16.44	322	0.1	N/a
0945	36.99	400	Clear	4.33	0.137	3.32	1.56	16.37	365	0.1	N/a
0955	36.99	400	Clear	4.37	0.138	3.32	2.01	16.55	364	0.1	N/a
1005	36.99	400	Clear	4.38	0.138	3.16	1.69	16.53	372	0.1	N/a
1015	36.99	400	Clear	4.40	0.138	3.18	1.41	16.38	377	0.1	N/a
1025	36.99	400	Clear	4.42	0.138	3.22	1.28	16.38	378	0.1	N/a
1035	36.99	400	Clear	4.41	0.138	3.20	1.42	16.32	380	0.1	N/a
1045	36.99	400	Clear	4.42	0.138	3.18	1.38	16.94	381	0.1	N/a
1050	36.99	400	Clear	4.44	0.138	3.17	1.59	16.99	381	0.1	N/a
1055	36.99	400	Clear	4.45	0.138	3.15	1.48	17.06	382	0.1	N/a
1100	36.99	400	Clear	4.45	0.138	3.15	1.28	17.42	383	0.1	N/a
1105	36.99	400	Clear	4.46	0.138	3.13	1.11	17.51	383	0.1	N/a
1110	36.99	400	Clear	4.48	0.138	3.09	0.73	17.57	386	0.1	N/a
1115	36.99	400	Clear	4.47	0.138	3.07	0.80	17.36	385	0.1	N/a
1120	36.99	400	Clear	4.46	0.137	3.12	0.78	17.12	383	0.1	N/a
1125	36.99	400	Clear	4.44	0.137	3.10	0.67	17.46	384	0.1	N/a

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0925	1125	120.00	~13	4.44	0.137	3.10	0.67	17.46	384	0.1	N/a

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	2	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 455 - 36.99 = 418.01 x 0.010 g/ft = 4.18 G to purge drop tubing volume
 Missing 2 bolts

Coordinates:	N	E	Signature(s):
N/a	N/a	N/a	<i>Chris Sinisi</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE131D1-20181205	Sampled By: BB
QA/QC Duplicate ID: No	Sample Date: 12/05/18
MS/MSD Collected: YES	Sample Time: 1010

WELL INFORMATION:	
Well ID : RE131D1	Purge Date: 12/05/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 34.92
Top of Screen (ft-BTOR): 430	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 450	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
0920	Start purge										
0925	34.95	700	Clear	4.07	0.118	2.98	1.09	13.00	338	0.1	
0930	34.95	700	Clear	4.08	0.119	3.00	4.82	13.04	340	0.1	
0935	34.95	700	Clear	4.28	0.119	2.86	6.77	13.10	349	0.1	
0940	34.95	700	Clear	4.32	0.119	2.73	4.88	13.13	351	0.1	5 gal
0945	34.95	700	Clear	4.38	0.119	2.6	6.59	13.25	354	0.1	
0950	34.95	700	Clear	4.44	0.119	4.28	6.26	13.23	351	0.1	
0955	34.95	700	Clear	4.42	0.119	2.59	7.46	13.20	355	0.1	
1000	34.95	700	Clear	4.43	0.118	2.46	5.87	13.40	358	0.1	
1005	34.95	700	Clear	4.41	0.118	2.35	5.06	13.53	362	0.1	
1010	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
0920	1010	50	9 gal	4.41	0.118	2.35	5.06	13.53	362	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	6	40-mL	Glass	Yes
1,4-Dioxane	SW846 8270D SIM	None	3	1-L	Amber glass	Yes

OBSERVATIONS / NOTES:
 450-34.92=415.08x0.010=4.15 gal to purge drop tubing

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE131D2-20180710		Sampled By: Vince Shikora	
QA/QC Duplicate ID: No		Sample Date: 07/10/18	
MS/MSD Collected: No		Sample Time: 14:50	

WELL INFORMATION:			
Well ID : RE131D2		Purge Date: 07/10/18	
Well Diameter (in): 4 inch		Static Water Level (ft-BTOR): 39.38	
Top of Screen (ft-BTOR): 565		PID Monitor Reading: 0.9 ppm	
Bottom of Screen (ft-BTOR): 590		Purge Method: Low Flow	
Total Well Depth (ft-BTOR): 595		Sample Method: Low Flow	

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52		Pump Controller: Bladder	
Turbidity Meter: Lamotte 2020			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:40	39.40	420.00	Clear	6.25	0.083	7.58	0.0	20.85	228	0.0	NA
13:45	39.40	420.00	Clear	5.62	0.080	6.95	0.0	19.81	244	0.0	NA
13:50	39.40	400.00	Clear	5.41	0.080	5.56	0.0	19.45	260	0.0	NA
13:55	39.40	400.00	Clear	5.30	0.080	4.94	0.6	19.13	272	0.0	NA
14:00	39.40	400.00	Clear	5.15	0.079	4.72	1.1	19.04	294	0.0	NA
14:05	39.40	400.00	Clear	4.85	0.079	4.67	8.7	19.02	318	0.0	NA
14:10	39.40	375.00	Clear	4.62	0.079	4.64	11.5	19.01	324	0.0	NA
14:15	39.40	375.00	Clear	4.63	0.079	4.66	7.4	18.97	327	0.0	NA
14:20	39.40	375.00	Clear	4.62	0.079	4.68	3.3	18.81	325	0.0	NA
14:25	39.40	375.00	Clear	4.63	0.079	4.67	1.2	18.76	324	0.0	NA
14:30	39.40	375.00	Clear	4.64	0.079	4.65	0.7	18.72	324	0.0	NA
14:35	39.40	375.00	Clear	4.65	0.079	4.63	0.2	18.74	324	0.0	NA
14:40	39.40	375.00	Clear	4.65	0.079	4.64	0.3	18.71	324	0.0	NA
14:45	39.40	375.00	Clear	4.66	0.079	4.63	0.2	18.69	325	0.0	NA
14:50	39.40	375.00	Clear	4.66	0.079	4.61	0.2	18.65	325	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:40	14:50	70.00	7.0 gal	4.66	0.079	4.61	0.2	18.65	325	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	Yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	Yes

OBSERVATIONS / NOTES:
 No stains or odors observed during purge

Coordinates:	N	E	Signature(s):	<i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE131D2-20180927		Sampled By: Vince Shikora
QA/QC Duplicate ID: NO		Sample Date: 09/27/18
MS/MSD Collected:	NO	Sample Time: 11:25

WELL INFORMATION:	
Well ID : RE131D2	Purge Date: 09/27/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 37.68
Top of Screen (ft-BTOR): 565	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 590	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 595	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:25	37.71	400.00	Clear	5.29	0.147	8.63	17.2	16.68	270	0.0	NA
9:35	37.72	400.00	Tan tint	5.59	0.085	9.96	38.8	16.25	245	0.0	NA
9:45	37.72	400.00	Clear	5.32	0.076	7.21	5.4	15.46	271	0.0	NA
9:55	37.72	400.00	Clear	5.17	0.075	5.89	3.1	15.38	291	0.0	NA
10:05	37.72	400.00	Clear	5.09	0.075	5.80	3.8	15.04	303	0.0	NA
10:15	37.72	400.00	Clear	5.09	0.075	5.68	2.7	14.76	308	0.0	NA
10:25	37.72	400.00	Clear	5.04	0.076	5.21	1.7	14.63	302	0.0	NA
10:35	37.72	400.00	Clear	5.04	0.076	4.95	1.3	14.64	313	0.0	NA
10:45	37.72	400.00	Clear	5.05	0.076	4.82	1.4	14.61	317	0.0	NA
10:50	37.72	400.00	Clear	5.04	0.076	4.86	1.3	14.63	319	0.0	NA
10:55	37.72	400.00	Clear	5.04	0.076	4.78	1.2	14.64	322	0.0	NA
11:00	37.72	400.00	Clear	5.04	0.076	4.60	1.2	14.68	324	0.0	NA
11:05	37.72	400.00	Clear	5.04	0.075	4.49	1.2	14.70	324	0.0	NA
11:10	37.72	400.00	Clear	5.05	0.076	4.53	1.3	14.72	326	0.0	NA
11:15	37.72	400.00	Clear	5.04	0.076	4.53	1.1	14.73	327	0.0	NA
11:20	37.72	400.00	Clear	5.05	0.076	4.56	1.1	14.74	327	0.0	NA
11:25	37.72	400.00	Clear	5.05	0.076	4.55	1.0	14.72	328	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:25	11:25	120.00	13 gal	5.05	0.076	4.55	1.0	14.72	328	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 590-37.68=552.32x0.010gpf=5.52 gallons to purge drop tubing.
 No stains or odors observed during purge.

Coordinates:	N	E	Signature(s):	<i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '18
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE131D2-20181205	Sampled By: Katie Gregory
QA/QC Duplicate ID: No	Sample Date: 12/05/18
MS/MSD Collected: NO	Sample Time: 1000

WELL INFORMATION:	
Well ID : RE131D2	Purge Date: 12/05/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.4
Top of Screen (ft-BTOR): 565	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 590	Purge Method: Low-flow
Total Well Depth (ft-BTOR):	Sample Method: Low-flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: HACH 2100Q	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
908	35.5										
916	35.5	700	Clear	4.63	0.091	6.29	5.48	13.23	297	0.0	
921	35.5	700	Clear	4.79	0.086	4.62	5.06	13.45	308	0.0	
926	35.5	700	Clear	4.85	0.086	4.47	3.84	13.50	306	0.0	
931	35.5	700	Clear	4.95	0.085	4.36	2.76	13.64	306	0.0	
936	35.5	700	Clear	4.97	0.085	4.29	2.38	13.61	309	0.0	
941	35.5	700	Clear	5.01	0.085	4.23	1.76	13.81	310	0.0	
946	35.5	700	Clear	5.00	0.086	4.12	2.14	13.85	314	0.0	
951	35.5	700	Clear	5.00	0.086	4.04	1.26	13.93	318	0.0	
956	35.5	700	Clear	4.99	0.086	4.05	1.07	14.00	321	0.0	
1000	Grab sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
911	956	45	10	4.99	0.086	4.05	1.07	14.00	321	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCl	2	40-mL	Glass	
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	

OBSERVATIONS / NOTES:
5.545

Coordinates:	N	E	Signature(s): <i>Katie Gregory</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE131D3-20180710		Sampled By: Scott Anderson	
QA/QC Duplicate ID: --		Sample Date: 07/10/18	
MS/MSD Collected: No		Sample Time: 14:35	

WELL INFORMATION:			
Well ID: RE131D3		Purge Date: 07/10/18	
Well Diameter (in): 4		Static Water Level (ft-BTOR): 39.93	
Top of Screen (ft-BTOR): 660		PID Monitor Reading: 0	
Bottom of Screen (ft-BTOR): 680		Purge Method: Low Flow	
Total Well Depth (ft-BTOR): 685		Sample Method: Low Flow	

EQUIPMENT INFORMATION:			
Water Quality Instrument: Horiba U-52		Pump Controller: Bladder	
Turbidity Meter: Hanna HI 98703			

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
13:35	39.93	400.00	Clear	5.62	0.047	7.07	0.6	21.97	225	0.0	
13:40	39.96	400.00	Clear	5.63	0.046	6.19	3.1	21.97	232	0.0	
13:45	39.96	400.00	Clear	5.46	0.043	5.88	2.7	22.13	239	0.0	
13:50	39.96	400.00	Clear	5.42	0.042	5.38	2.8	22.46	246	0.0	
13:55	39.96	400.00	Clear	5.44	0.040	5.22	2.7	22.74	256	0.0	
14:00	39.96	400.00	Clear	5.34	0.039	5.14	2.5	22.83	262	0.0	
14:05	39.97	400.00	Clear	5.36	0.039	4.99	1.9	23.22	267	0.0	
14:10	39.97	400.00	Clear	5.33	0.039	4.91	1.5	23.63	273	0.0	
14:15	39.97	400.00	Clear	5.28	0.039	4.87	1.4	23.83	274	0.0	
14:20	39.97	400.00	Clear	5.26	0.039	4.90	1.5	23.70	275	0.0	
14:25	39.98	400.00	Clear	5.27	0.040	4.78	1.3	24.07	275	0.0	
14:30	39.98	400.00	Clear	5.26	0.040	4.74	1.9	23.98	276	0.0	
14:35	39.98	400.00	Clear	5.26	0.041	4.68	0.7	24.09	277	0.0	

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1335	1435	60	8 gal	5.26	0.041	4.68	0.7	24.09	277	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates: N E	Signature(s): <i>Scott Anderson</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE131D3-20180927	Sampled By: CM
QA/QC Duplicate ID:	Sample Date: 09/27/18
MS/MSD Collected:	Sample Time: 11:30

WELL INFORMATION:	
Well ID : RE131D3	Purge Date: 09/27/18
Well Diameter (in): 4"	Static Water Level (ft-BTOR): 38.11
Top of Screen (ft-BTOR): 660	PID Monitor Reading 0
Bottom of Screen (ft-BTOR): 680	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 685	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:30	38.11	400.00	Clear	5.18	0.082	7.79	5.4	17.86	240	0.0	NA
9:40	38.13	400.00	Clear	5.37	0.053	5.76	1.5	16.44	249	0.0	NA
9:50	38.13	400.00	Clear	5.33	0.051	5.49	1.6	16.42	261	0.0	NA
10:00	38.15	400.00	Clear	5.25	0.049	5.55	1.3	16.24	277	0.0	NA
10:10	38.16	400.00	Clear	5.18	0.048	5.47	1.4	16.17	281	0.0	NA
10:20	38.16	400.00	Clear	5.14	0.048	5.56	0.8	16.24	289	0.0	NA
10:30	38.16	400.00	Clear	5.12	0.049	5.16	0.8	16.83	290	0.0	NA
10:40	38.16	400.00	Clear	5.15	0.049	5.43	0.5	16.80	291	0.0	NA
10:50	38.16	400.00	Clear	5.13	0.049	5.34	0.7	17.43	293	0.0	NA
10:56	38.16	400.00	Clear	5.13	0.050	5.24	0.6	17.39	295	0.0	NA
11:00	38.16	400.00	Clear	5.17	0.500	5.20	0.5	17.72	296	0.0	NA
11:05	38.26	400.00	Clear	5.13	0.050	5.15	0.5	17.84	295	0.0	NA
11:10	38.16	400.00	Clear	5.13	0.050	5.65	0.5	17.81	207	0.0	NA
11:15	38.16	400.00	Clear	5.12	0.050	5.65	0.3	17.37	300	0.0	NA
11:20	38.16	400.00	Clear	5.13	0.050	5.52	0.5	17.40	300	0.0	NA
11:25	38.16	400.00	Clear	5.15	0.050	5.49	0.4	17.58	300	0.0	NA
11:30	38.16	400.00	Clear	5.14	0.050	5.52	0.5	17.65	300	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:30	11:30	120.00		5.14	0.050	5.52	0.5	17.65	300	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 594 - 38.11 = 555.89 x 0.010 g/ft = 5.5 g to purge drop tubing volume

Coordinates:	N	E	Signature(s):
			<i>Chuck Meyer</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE137-20181009		Sampled By: Beau Benfield
QA/QC Duplicate ID: --		Sample Date: 10/09/18
MS/MSD Collected:	NO	Sample Time: 1605

WELL INFORMATION:	
Well ID : RE137	Purge Date: 10/09/18
Well Diameter (in): 12	Static Water Level (ft-BTOR): 36.77
Top of Screen (ft-BTOR):	PID Monitor Reading: 4.1 ppm
Bottom of Screen (ft-BTOR): 0	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 750	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1350	Start purge										
1400	36.79	800.00	Brown	8.23	0.130	0.71	—	15.77	-51	0.1	
1410	36.79	800.00	Brown	5.34	0.124	1.40	—	15.69	80	0.1	
1420	36.79	800.00	Brown	4.62	0.117	1.94	—	15.53	150	0.1	15 gal
1430	36.79	800.00	Brown	4.47	0.117	1.97	—	15.58	159	0.1	
1440	36.79	800.00	Brown	5.12	0.113	2.17	—	15.45	152	0.1	
1450	36.79	800.00	Brown	5.01	0.114	2.62	—	15.56	161	0.1	
1500	36.79	800.00	Brown	5.09	0.113	2.21	—	15.55	164	0.1	
1510	36.79	800.00	Brown	5.24	0.114	1.79	—	16.67	157	0.1	
1520	36.79	800.00	Brown	5.22	0.113	1.81	—	16.81	160	0.1	
1530	36.79	800.00	Brown	5.23	0.114	1.70	—	17.53	158	0.1	
1540	36.79	800.00	Clear	5.23	0.113	2.08	72.7	16.62	160		Pulled tubing up 5'
1550	36.79	800.00	Clear	5.20	0.113	2.03	61.2	15.78	166		30 gal
1600	36.79	800.00	Clear	4.99	0.109	2.40	49.5	15.77	207	0.1	
1605	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1350	1605	135.00	30 gal	4.99	0.109	2.40	49.5	15.77	207	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:

750-36.77=713.23x0.010=7.13 gal to purge 1 tubing volume

Bottom of well appears to be very silty

Coordinates:	N	E	Signature(s):	<i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: RE137-20181009	Sampled By: Beau Benfield
QA/QC Duplicate ID: --	Sample Date: 10/09/18
MS/MSD Collected: No	Sample Time: 1640

WELL INFORMATION:	
Well ID : RE137	Purge Date: 10/09/18
Well Diameter (in): 12	Static Water Level (ft-BTOR): 36.68
Top of Screen (ft-BTOR):	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 0	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 750	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Centrifugal
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1610	Start purge										
1620	36.68	900.00	Clear	4.89	0.110	2.81	41.8	15.27	228	0.1	
1630	36.68	900.00	Clear	4.87	0.109	2.55	18.3	15.34	242	0.1	
1635	36.68	900.00	Clear	4.72	0.109	2.68	10.7	15.30	263	0.1	
1640	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1610	1640	30.00	7 gal	4.72	0.109	2.68	10.7	15.30	263	0.1	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 700-36.68=663.32x0.010x2=13.26 gal to purge 2 drop tube volumes

Coordinates:	N	E	Signature(s):
			<i>Beau Benfield</i>

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: RE137-20181009	Sampled By: Beau Benfield
QA/QC Duplicate ID: --	Sample Date: 10/09/18
MS/MSD Collected: No	Sample Time: 1755

WELL INFORMATION:	
Well ID : RE137	Purge Date: 10/09/18
Well Diameter (in): 12	Static Water Level (ft-BTOR): 36.61
Top of Screen (ft-BTOR):	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 0	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 750	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1720	Start purge										
1730	36.61	900.00	Clear	8.89	0.131	0.06	59.2	15.44	-157	0.1	
1735	36.61	900.00	Clear	6.03	0.110	2.22	24.2	15.46	134	0.1	
1740	36.61	900.00	Clear	4.72	0.106	2.28	21.3	15.40	205	0.0	
1745	36.61	900.00	Clear	4.83	0.106	2.25	21.2	15.41	211	0.0	
1750	36.61	900.00	Clear	4.75	0.106	2.26	19.9	15.42	220	0.0	
1755	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
1720	1755	35.00	8 gal	4.75	0.106	2.26	19.9	15.42	220	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 640-36.61=603.39x0.010x2=12.06 gal to purge 2 drop tube volumes

Coordinates:	N	E	Signature(s): <i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: TT-101D-20180710	Sampled By: Beau Benfield
QA/QC Duplicate ID: —	Sample Date: 07/10/18
MS/MSD Collected: NO	Sample Time: 10:12

WELL INFORMATION:	
Well ID : TT-101D	Purge Date: 07/10/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 33.6
Top of Screen (ft-BTOR): 325	PID Monitor Reading: 0.9
Bottom of Screen (ft-BTOR): 345	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 363	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Hanna fast tracker	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:10	Start purge										
9:15	33.62	450.00	Clear	4.85	0.104	0.57	0.37	16.45	282	0.0	
9:20	33.62	450.00	Clear	4.76	0.108	0.20	1.09	16.48	310	0.0	
9:25	33.62	450.00	Clear	4.67	0.107	0.13	2.92	16.37	319	0.1	
9:30	33.62	450.00	Clear	4.62	0.107	0.07	5.24	16.19	289	0.0	
9:35	33.62	450.00	Clear	4.62	0.106	0.05	6.54	16.24	274	0.0	
9:40	33.62	450.00	Clear	4.75	0.109	0.03	6.25	16.14	268	0.1	
9:45	33.62	450.00	Clear	4.72	0.106	0.00	4.80	16.24	264	0.1	
9:50	33.62	450.00	Clear	4.85	0.103	0.00	5.62	16.20	278	0.0	
10:00	33.62	450.00	Clear	4.77	0.103	0.00	5.33	16.02	264	0.0	
10:05	33.62	450.00	Clear	4.64	0.103	0.00	3.06	16.10	262	0.0	
10:10	33.62	450.00	Clear	4.89	0.101	0.00	2.84	16.20	271	0.0	
10:12	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:10	10:12	62.00	8 gal	4.89	0.101	0.00	2.8	16.2	271	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	yes

OBSERVATIONS / NOTES:

Coordinates:	N	E	Signature(s):
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: TT-101D-20180928		Sampled By: Beau Benfield
QA/QC Duplicate ID: TT-DUP01-20180928		Sample Date: 09/28/18
MS/MSD Collected: NO		Sample Time: 1120

WELL INFORMATION:	
Well ID : TT-101D	Purge Date: 09/28/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 33.33
Top of Screen (ft-BTOR): 325	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 345	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 363	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0915	Start purge										
0925	33.40	450.00	Clear	4.53	0.102	0.00	1.33	15.04	366	0.0	
0935	33.40	450.00	Clear	4.57	0.099	0.00	5.18	15.04	280	0.0	
0945	33.40	450.00	Clear	4.65	0.098	0.00	8.07	14.92	276	0.0	
0955	33.40	450.00	Clear	4.66	0.098	0.00	5.91	14.88	277	0.0	
1005	33.40	450.00	Clear	4.64	0.098	0.00	5.39	14.86	276	0.0	
1015	33.40	450.00	Clear	4.66	0.098	0.00	4.19	14.80	276	0.0	
1025	33.40	450.00	Clear	4.67	0.099	0.00	4.01	14.79	275	0.0	
1030	33.40	450.00	Clear	4.65	0.099	0.00	2.00	14.77	273	0.0	
1035	33.40	450.00	Clear	4.67	0.099	0.00	1.74	14.77	275	0.0	
1040	33.40	450.00	Clear	4.68	0.099	0.00	1.38	14.74	273	0.0	
1045	33.40	450.00	Clear	4.67	0.099	0.00	1.14	14.75	273	0.0	
1050	33.40	450.00	Clear	4.67	0.099	0.00	1.17	14.73	276	0.0	
1055	33.40	450.00	Clear	4.67	0.099	0.00	0.60	14.72	274	0.0	
1100	33.40	450.00	Clear	4.65	0.099	0.00	0.57	14.72	276	0.0	
1105	33.40	450.00	Clear	4.67	0.099	0.00	0.78	14.73	276	0.0	
1110	33.40	450.00	Clear	4.67	0.099	0.00	0.72	14.72	275	0.0	
1115	33.40	450.00	Clear	4.69	0.100	0.00	0.87	14.71	276	0.0	
1120	Collect sample										

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
0915	1120	125.00	15 gal	4.69	0.100	0.00	0.87	14.71	276	0.0	

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 363-33.33=329.67x0.010gpf=3.29 gal to purge drop tubing

Coordinates:	N	E	Signature(s):	<i>Beau Benfield</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: TT101D-20181212						Sampled By: BB					
QA/QC Duplicate ID: N/A						Sample Date: 12/12/18					
MS/MSD Collected: NO						Sample Time: 1320					
WELL INFORMATION:											
Well ID : TT101D						Purge Date: 12/12/18					
Well Diameter (in): 4" PVC						Static Water Level (ft-BTOR): 32.48					
Top of Screen (ft-BTOR): 325						PID Monitor Reading: 0					
Bottom of Screen (ft-BTOR): 345						Purge Method: Low-flow					
Total Well Depth (ft-BTOR): 363						Sample Method: Low-flow					
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52						Pump Controller: Centrifugal					
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	Start Purge										
1235	31.47	900	Clear	4.14	0.111	1.97	13.6	14.59	322	0.1	
1240	31.47	900	Clear	4.25	0.111	1.76	13.3	14.83	316	0.1	
1245	31.47	900	Clear	4.28	0.111	1.47	12.5	14.37	313	0.1	
1250	31.47	900	Clear	4.17	0.111	1.30	21.2	14.52	314	0.1	
1255	31.47	900	Clear	4.17	0.110	1.19	15.7	15.06	316	0.1	
1300	31.47	900	Clear	4.14	0.110	1.01	11.2	15.17	315	0.1	
1305	31.47	900	Clear	4.22	0.110	0.94	10.3	15.21	307	0.1	
1310	31.47	900	Clear	4.21	0.110	0.87	9.65	15.14	312	0.1	
1315	31.47	900	Clear	4.24	0.110	0.84	8.40	15.17	308	0.1	
1320	Collect Sample										
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	1320	50	12 gal	4.24	0.110	0.84	8.40	15.17	308	0.1	
ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
1,4-Dioxane	8260 SIM	HCl	1	1-L	Amber glass	Yes					
1,4-Dioxane	EPA 522	HCl	2	40-mL	Glass	Yes					
OBSERVATIONS / NOTES:											
345-31.45=313.55x0.016=5x2=10 gal to purge drop tubing											
Coordinates:		N	E	Signature(s):							
				<i>Beau Benfield</i>							

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: TT-101D1-20180710	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 07/10/18
MS/MSD Collected: <input type="checkbox"/> No	Sample Time: 10:25

WELL INFORMATION:	
Well ID : TT-101D1	Purge Date: 07/10/18
Well Diameter (in): 4 inch	Static Water Level (ft-BTOR): 36.12
Top of Screen (ft-BTOR): 570	PID Monitor Reading: 3.6
Bottom of Screen (ft-BTOR): 590	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 603	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:15	36.14	400.00	Clear	4.64	0.124	3.65	0.0	17.78	297	NA	NA
9:20	36.14	400.00	Clear	4.67	0.108	1.23	0.0	16.78	298	0.0	NA
9:25	36.14	400.00	Clear	4.68	0.108	0.89	0.0	16.88	298	0.0	NA
9:30	36.14	400.00	Clear	4.71	0.106	0.71	0.0	16.80	298	0.0	NA
9:35	36.14	400.00	Clear	4.74	0.106	0.54	0.0	16.61	299	0.0	NA
9:40	36.14	400.00	Clear	4.74	0.105	0.44	0.0	16.56	301	0.0	NA
9:45	36.14	400.00	Clear	4.73	0.106	0.41	0.0	16.68	303	0.0	NA
9:50	36.14	400.00	Clear	4.75	0.105	0.32	0.0	16.75	304	0.0	NA
9:55	36.14	400.00	Clear	4.76	0.105	0.31	0.0	16.80	304	0.0	NA
10:00	36.14	400.00	Clear	4.77	0.105	0.30	0.0	16.74	304	0.0	NA
10:05	36.14	400.00	Clear	4.77	0.106	0.30	0.0	16.81	306	0.0	NA
10:10	36.14	400.00	Clear	4.76	0.106	0.32	0.0	16.74	309	0.0	NA
10:15	36.14	400.00	Clear	4.75	0.106	0.33	0.0	16.80	310	0.0	NA
10:20	36.14	400.00	Clear	4.74	0.107	0.34	0.0	16.84	311	0.0	NA
10:25	36.14	400.00	Clear	4.74	0.107	0.33	0.0	16.80	312	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:15	10:25	70.00	8 gal	4.74	0.107	0.33	0.0	16.8	312	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	Yes
1,4-Dioxane	SW846 8270D SIM	none	2	1 L	glass	Yes

OBSERVATIONS / NOTES:

No odors or stains observed
Purge and sampling conducted thru dedicated pump installed in well

Coordinates:	N	E	Signature(s): <i>Vince Shikora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: TT-101D1-20180928	Sampled By: Vince Shikora
QA/QC Duplicate ID: No	Sample Date: 09/28/18
MS/MSD Collected: NO	Sample Time: 11:15

WELL INFORMATION:	
Well ID : TT-101D1	Purge Date: 09/28/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.03
Top of Screen (ft-BTOR): 570	PID Monitor Reading: 0
Bottom of Screen (ft-BTOR): 590	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 603	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:15	35.08	450.00	Clear	4.95	0.130	6.26	2.1	16.75	307	0.1	NA
9:25	35.07	450.00	Clear	4.91	0.119	1.23	1.7	16.07	321	0.1	NA
9:35	35.07	450.00	Clear	5.09	0.119	0.34	1.5	15.98	305	0.1	NA
9:45	35.07	450.00	Clear	5.04	0.120	0.35	0.9	15.99	320	0.1	NA
9:55	35.07	450.00	Clear	4.99	0.119	0.27	0.7	15.92	325	0.1	NA
10:05	35.07	450.00	Clear	4.94	0.120	0.19	0.6	15.90	332	0.1	NA
10:15	35.07	450.00	Clear	4.95	0.120	0.11	0.7	15.85	340	0.1	NA
10:25	35.07	450.00	Clear	4.96	0.119	0.11	0.8	15.83	348	0.1	NA
10:30	35.07	450.00	Clear	4.96	0.119	0.10	0.7	15.80	352	0.1	NA
10:35	35.07	450.00	Clear	4.96	0.119	0.08	0.7	15.78	360	0.1	NA
10:40	35.07	450.00	Clear	4.96	0.119	0.06	0.6	15.76	368	0.1	NA
10:45	35.07	450.00	Clear	4.97	0.120	0.04	0.6	15.75	363	0.1	NA
10:50	35.07	450.00	Clear	4.99	0.119	0.02	0.5	15.74	356	0.1	NA
10:55	35.07	450.00	Clear	4.99	0.120	0.02	0.5	15.73	357	0.1	NA
11:00	35.07	450.00	Clear	4.99	0.119	0.01	0.5	15.71	358	0.1	NA
11:05	35.07	450.00	Clear	5.00	0.119	0.00	0.4	15.72	358	0.1	NA
11:10	35.07	450.00	Clear	5.00	0.119	0.00	0.4	15.73	359	0.1	NA
11:15	35.07	450.00	Clear	5.00	0.119	0.00	0.4	15.72	360	0.1	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:15	11:15	120.00	15 gal	5.00	0.119	0.00	0.4	15.72	360	0.1	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 590-35.03=554.97x0.010gpf=5.54 gallons to purge drop tubing.
 No stains or odors observed during purge.

Coordinates:	N	E	Signature(s): <i>Vince Shickora</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: TT101D1-20181212				Sampled By: CM							
QA/QC Duplicate ID: N/A				Sample Date: 12/12/18							
MS/MSD Collected: NO				Sample Time: 1335							
WELL INFORMATION:											
Well ID : TT101D1				Purge Date: 12/12/18							
Well Diameter (in): 4" PVC				Static Water Level (ft-BTOR): 32.48							
Top of Screen (ft-BTOR): 570				PID Monitor Reading: 0							
Bottom of Screen (ft-BTOR): 590				Purge Method: Low-flow							
Total Well Depth (ft-BTOR): 595				Sample Method: Low-flow							
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52				Pump Controller: Centrifugal							
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	32.51	900	Clear	4.90	0.105	0.56	10.4	14.26	271	0.0	
1235	32.57	900	Clear	4.90	0.105	0.00	8.73	14.23	296	0.0	
1240	32.57	900	Clear	4.96	0.104	0.00	6.17	14.19	300	0.0	
1245	32.57	900	Clear	4.88	0.104	0.17	4.62	14.14	313	0.0	
1250	32.57	900	Clear	4.86	0.104	3.57	4.17	13.9	313	0.0	
1255	32.57	900	Clear	4.85	0.103	4.01	3.71	13.84	312	0.0	
1300	32.57	900	Clear	4.84	0.103	4.39	3.19	13.76	311	0.0	
1305	32.57	900	Clear	4.85	0.103	4.45	2.93	13.93	309	0.0	
1310	32.57	900	Clear	4.85	0.102	4.57	2.65	14.04	307	0.0	
1315	32.57	900	Clear	4.83	0.102	4.03	2.47	14.11	311	0.0	
1320	32.57	900	Clear	4.83	0.103	4.71	2.52	14.17	311	0.0	
1325	32.57	900	Clear	4.83	0.103	4.75	2.48	14.21	312	0.0	
1330	32.57	900	Clear	4.82	0.104	4.79	2.46	14.20	312	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1230	1330	60	14 gal	4.82	0.104	4.79	2.46	14.20	312	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
1,4-Dioxane	8260 SIM	HCl	1	1-L	Amber glass	Yes					
1,4-Dioxane	EPA 522	HCl	2	40-mL	Glass	Yes					
OBSERVATIONS / NOTES:											
5.6252 Missing 1 bolt in flush mount lid											
Coordinates:		N		E		Signature(s):					
						<i>Chuck Meyer</i>					

GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property Groundwater
 Project Site Name: NWIRP Bethpage
 Project No.: 112G08005-WE13

Sample ID: TT-101D2-20180928		Sampled By: CM
QA/QC Duplicate ID: --		Sample Date: 09/28/18
MS/MSD Collected: NO		Sample Time: 1110

WELL INFORMATION:	
Well ID : TT-101D2	Purge Date: 09/28/18
Well Diameter (in): 4	Static Water Level (ft-BTOR): 35.61
Top of Screen (ft-BTOR): 740	PID Monitor Reading:
Bottom of Screen (ft-BTOR): 760	Purge Method: Low Flow
Total Well Depth (ft-BTOR): 777	Sample Method: Low Flow

EQUIPMENT INFORMATION:	
Water Quality Instrument: Horiba U-52	Pump Controller: Bladder
Turbidity Meter: Lamotte 2020	

PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:10	36.60	450.00	Clear	4.97	0.055	1.01	9.6	15.27	257	0.0	NA
9:20	36.63	450.00	Clear	5.06	0.054	0.64	7.3	15.21	254	0.0	NA
9:30	36.63	450.00	Clear	5.07	0.054	0.57	5.2	15.21	260	0.0	NA
9:40	36.63	450.00	Clear	4.97	0.054	1.12	2.8	15.13	275	0.0	NA
9:50	36.63	450.00	Clear	5.01	0.054	1.87	1.7	15.12	283	0.0	NA
10:00	36.63	450.00	Clear	5.05	0.054	2.74	1.4	15.12	290	0.0	NA
10:10	36.63	450.00	Clear	4.98	0.054	4.14	1.9	15.06	304	0.0	NA
10:15	36.63	450.00	Clear	5.04	0.054	4.63	1.5	15.06	311	0.0	NA
10:20	36.63	450.00	Clear	5.04	0.054	4.96	1.6	15.02	316	0.0	NA
10:25	36.63	450.00	Clear	5.06	0.052	5.41	1.4	14.98	321	0.0	NA
10:30	36.63	450.00	Clear	5.05	0.052	5.43	1.7	14.97	323	0.0	NA
10:35	36.63	450.00	Clear	5.04	0.052	5.65	2.2	14.96	329	0.0	NA
10:40	36.63	450.00	Clear	5.05	0.052	5.61	1.6	14.95	331	0.0	NA
10:45	36.63	450.00	Clear	5.05	0.051	5.76	1.6	14.94	330	0.0	NA
10:50	36.63	450.00	Clear	5.04	0.051	5.87	1.4	14.92	335	0.0	NA
10:55	36.63	450.00	Clear	5.04	0.051	5.96	1.8	14.92	339	0.0	NA
11:00	36.63	450.00	Clear	5.03	0.051	6.01	2.0	14.91	341	0.0	NA
11:05	36.63	450.00	Clear	5.04	0.051	6.07	1.8	14.91	344	0.0	NA
11:10	36.63	450.00	Clear	5.03	0.051	6.15	1.4	14.91	343	0.0	NA

FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (ppt)	Other
9:10	11:10	12.00	15	5.03	0.050	6.15	1.4	14.91	343	0.0	NA

ANALYSIS, PRESERVATION AND BOTTLE REQUIREMENTS						
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected
VOCs	SW846 8260B	HCL	3	40-ml	glass	YES
1,4-Dioxane	SW846 8270D SIM	none	1	1 L	glass	YES

OBSERVATIONS / NOTES:
 760-35.60=724.4 x0.010=7.24 gallons in the tubing

Coordinates:	N	E	Signature(s):	<i>Chuck Meyer</i>
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GROUNDWATER SAMPLE LOG SHEET



Event: Bethpage Off Property GW Monitoring Dec '1
Project Site Name: NWIRP Bethpage
Project No.: 112G08005-WE13

Sample ID: TT101D2-20181212						Sampled By: BB					
QA/QC Duplicate ID: No						Sample Date: 12/12/18					
MS/MSD Collected: NO						Sample Time: 1350					
WELL INFORMATION:											
Well ID : TT101D2						Purge Date: 12/12/18					
Well Diameter (in): 4						Static Water Level (ft-BTOR): 33.19					
Top of Screen (ft-BTOR): 740						PID Monitor Reading: 0					
Bottom of Screen (ft-BTOR): 760						Purge Method: Low-flow					
Total Well Depth (ft-BTOR): 765						Sample Method: Low-flow					
EQUIPMENT INFORMATION:											
Water Quality Instrument: Horiba U-52						Pump Controller: Centrifugal					
Turbidity Meter: HACH 2100Q											
PURGE DATA:											
Time (Hrs)	H ₂ O Level (ft-BTOR)	Flow mL / min.	Color	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1220	33.17	900	Clear	5.22	0.055	0.62	0.69	13.56	313	0.0	
1230	33.18	900	Clear	5.32	0.066	0.55	0.72	14.46	316	0.0	
1240	33.18	900	Clear	5.66	0.046	0.56	0.85	14.69	319	0.0	
1250	33.19	900	Clear	5.22	0.046	0.88	1.46	14.35	335	0.0	
1300	33.19	900	Clear	4.23	0.033	3.46	1.52	14.26	340	0.0	
1310	33.19	900	Clear	4.65	0.033	4.69	1.89	14.15	345	0.0	
1320	33.19	900	Clear	4.65	0.033	4.88	2.15	14.16	345	0.0	
1325	33.19	900	Clear	4.65	0.033	4.78	2.36	14.15	340	0.0	
1330	33.19	900	Clear	4.65	0.033	5.32	1.15	14.25	342	0.0	
1335	33.19	900	Clear	4.65	0.033	5.01	1.12	14.09	344	0.0	
1340	33.19	900	Clear	4.65	0.033	5.44	1.32	14.12	341	0.0	
1345	33.19	900	Clear	4.65	0.033	5.69	1.42	14.09	344	0.0	
1350	33.20	900	Clear	4.65	0.033	6.08	1.23	14.08	345	0.0	
FINAL PURGE / SAMPLE DATA:											
Start Purge	End Purge	Total (min.)	Total Vol. (gal. / L.)	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTU)	Temp. (C°)	ORP (mV)	Salinity (% or ppt)	Other
1220	1350	90	21 gal	4.65	0.033	6.08	1.23	14.08	345	0.0	
ANALYSIS, PRESERVATION AND BOTTLE REQUIRMENTS											
Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected					
VOCs	SW846 8260B	HCl	2	40-mL	Glass	Yes					
1,4-Dioxane	SW846 8270D SIM	None	1	1-L	Amber glass	Yes					
1,4-Dioxane	8260 SIM	HCl	1	1-L	Amber glass	Yes					
1,4-Dioxane	EPA 522	HCl	2	40-mL	Glass	Yes					
OBSERVATIONS / NOTES:											
7.3183											
Coordinates:		N	E	Signature(s):							
				<i>Beau Benfield</i>							

APPENDIX C

CHAIN OF CUSTODY RECORDS

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CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. 83170
QUOTE NO. Q1712081
COC Number 2022444

COC 1 of 2

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO: COMPANY: <u>Tetra Tech</u>		PROJECT NAME: <u>Bethpage Offsite</u>		BILL TO: <u>Ernie Wu</u> PO#: <u>CTO WE13</u>	
ADDRESS: <u>661 Anderson Drive</u>		PROJECT NO.: <u>CTO WE13</u> LOCATION: <u>Bethpage, NY</u>		ADDRESS: <u>661 Anderson Drive</u>	
CITY: <u>Pittsburgh</u> STATE: <u>PA</u> ZIP: <u>15220</u>		PROJECT MANAGER: <u>Ernie Wu</u>		CITY: <u>Pittsburgh</u> STATE: <u>PA</u> ZIP: <u>15108</u>	
ATTENTION: <u>Ernie Wu (Norfolk)</u>		e-mail: <u>Ernie.Wu@tetra-tech.com</u>		ATTENTION: <u>Ernie Wu</u> PHONE: <u>757-466-4901</u>	
PHONE: <u>757-466-4901</u> FAX: <u>412-94-4040</u>		PHONE: <u>757-466-4901</u> FAX: <u>—</u>			

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS * HARD COPY: _____ DAYS * EDD: _____ DAYS * PREAPPROVED TAT: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B" <input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A" <input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____ <input type="checkbox"/> EDD FORMAT _____

MeOH extraction requires an additional 4 oz jar for percent solid.

*VOCS 8260B
1,4Dioxane 8270B
5TAA*

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other		
			COMP	GRAB	DATE	TIME		A	E										
			1	2	3	4		5	6	7	8	9							
1.	TT101D-071018	GW		X	7/10	1012	5	3	2										
2.	TT101D1-071018					1025	5	3	2										
3.	TT101D2-071018					1040	5	3	2										
4.	RE131D3-071018					1435	5	3	2										
5.	RE131D1-071018					1440	5	3	2										
6.	RE131D2-071018					1450	5	3	2										
7.	RE125D1-071118				7/11	1030	5	3	2										
8.	RE120D2-071118					1425	5	3	2										
9.	RE125D2-071118					1000	5	3	2										
10.	GW01-071118					1200	5	3	2										

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY: <u>[Signature]</u>	DATE/TIME: <u>7/11/18 1200</u>	RECEIVED BY: <u>[Signature]</u>
RELINQUISHED BY: _____	DATE/TIME: <u>7-12-18</u>	RECEIVED BY: <u>[Signature]</u>
RELINQUISHED BY: _____	DATE/TIME: _____	RECEIVED FOR LAB BY: _____

Comments: TR-Cover #1
3.1, 3.6, 2.3

Cooler Temp.: y=5
Shipment
Complete: Yes No
By Client: _____
By Chemtech: _____

CHEMTECH

CHAIN OF CUSTODY RECORD

J3170

284 Sheffield Street, Mountainside, NJ 07092
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www.chemtech.net

COE 2 of 2

CHEMTECH PROJECT NO. Q1712081
QUOTE NO. Q1712081
COC Number **2022445**

J3170

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:		PROJECT NAME: <u>Bethpage Offsite</u>		BILL TO: <u>Ernie Wu.</u> PO#: <u>CTO WE13</u>	
COMPANY: <u>Tetra Tech</u>		PROJECT NO: <u>CTO WE13</u> LOCATION: <u>Bethpage, NY</u>		ADDRESS: <u>661 Anderson Drive</u>	
ADDRESS: <u>661 Anderson Drive</u>		PROJECT MANAGER: <u>Ernie Wu</u>		CITY: <u>Pittsburgh</u> STATE: <u>PA</u> ZIP: <u>15220</u>	
CITY: <u>Pittsburgh</u> STATE: <u>PA</u> ZIP: <u>15220</u>		e-mail: <u>Ernie.Wu@tetratech.com</u>		ATTENTION: <u>Ernie Wu</u> PHONE: <u>757-466-4901</u>	
ATTENTION: <u>Ernie Wu (Norfolk)</u>		PHONE: <u>757-466-4901</u> FAX: <u>---</u>		PHONE: <u>757-466-4901</u> FAX: <u>---</u>	

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS* HARD COPY: _____ DAYS* EDD: _____ DAYS* PREAPPROVED: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B" <input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A" <input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____ <input type="checkbox"/> EDD FORMAT _____

MeOH extraction requires an additional 4 oz jar for percent solid.

VOCs 8260 D
14D EXTRA 8220 D
SIPA

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A	E	1	2	3	4	5	6	7		8	9	
1.	RE120D3-071118	GW	X		7/11	1415	5	3	2											
2.	RE125D3-071118	↓				1020	5	3	2											
3.	RE120D1-071118	↓				1420	5	3	2											
4.	GW02-071118	↓				1600	5	3	2											
5.	TB01	---			7/3	---	2	-	2											
6.																				
7.																				
8.																				
9.																				
10.																				

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. <u>[Signature]</u>	<u>7/11/18 1700</u>	1. <u>[Signature]</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2. <u>[Signature]</u>	<u>9:35</u>	2. <u>[Signature]</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:
3. <u>[Signature]</u>	<u>7-12-18</u>	3. <u>[Signature]</u>

Comments: IL-COR # 7
3.1j 3.6c, 2.3c

Cooler Temp.: yes
Shipment
Complete: Yes No
By Client: _____
By Chemtech: _____

CHEMTECH

CHAIN OF CUSTODY RECORD

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CHEMTECH PROJECT NO. *Job 14*
QUOTE NO. *Q1712081*
COC Number **2022446**

COC 1 of 2

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
COMPANY: <i>Tetra Tech</i> <small>REPORT TO BE SENT TO:</small>		PROJECT NAME: <i>Bethpage Offsite</i>		BILL TO: <i>Ernie Wu</i> PO#: <i>CFO WE13</i>	
ADDRESS: <i>661 Andersen Drive</i>		PROJECT NO.: <i>Crowe13</i> LOCATION: <i>Bethpage NY</i>		ADDRESS: <i>661 Andersen Drive</i>	
CITY: <i>Pittsburgh</i> STATE: <i>PA</i> ZIP: <i>15220</i>		PROJECT MANAGER: <i>Ernie Wu/Dave Brayak</i>		CITY: <i>Pittsburgh</i> STATE: <i>PA</i> ZIP: <i>15220</i>	
ATTENTION: <i>Ernie Wu (Norfolk)</i>		e-mail: <i>Ernie.Wu@tetratech.com</i>		ATTENTION: <i>Ernie Wu</i> PHONE: <i>757-466-4901</i>	
PHONE: <i>757-466-4901</i> FAX: <i>412-921-4040</i>		PHONE: <i>757-466-4901</i> FAX: <i>---</i>			

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS* HARD COPY: _____ DAYS* EDD: _____ DAYS* PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B" <input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A" <input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____ <input type="checkbox"/> EDD FORMAT _____	MeOH extraction requires an additional 4 oz jar for percent solid.

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other		
			COMP	GRAB	DATE	TIME		A	E										
								1	2	3	4	5	6	7	8	9			
1.	RE103D1-071218	GW	X		7/12	10:05	5	3	2										
2.	RE122D1-071218	↓			7/12	14:20	↓	3	2										
3.	RE104D1-071318	↓			7/13	10:00	↓	3	2										
4.	RB01-071218	Water	X		7/12	7:00	↓	3	2										
5.	RE122D3-071218	GW	X		7/12	14:20	↓	3	2										
6.	RE103D2-071218	GW	X		7/12	10:00	↓	3	2										
7.	RE104D3-071318	GW	X		7/13	14:20	↓	9	6	15 Bottles MS/MSD MS/MSD									
8.	RE105D2-071318	GW	X		7/13	13:35	↓	5	3										
9.	FB01-071318	Water	X		7/13	9:15	↓	5	3										
10.	TB02-070318	Water	X		7/13	---	↓	2	2										

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <i>[Signature]</i>	DATE/TIME: <i>1630/7/13</i>	RECEIVED BY: 1. <i>[Signature]</i>	Comments: <i>4 coolers received (FEDEX)</i>	Cooler Temp.: <i>2.5°C</i> Shipment Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No By Client: <i>[Signature]</i> By Chemtech: _____
RELINQUISHED BY: 2. _____	DATE/TIME: _____	RECEIVED BY: 2. _____		
RELINQUISHED BY: 3. <i>[Signature]</i>	DATE/TIME: <i>7/14/13 11:14</i>	RECEIVED FOR LAB BY: 3. <i>[Signature]</i>		

CHEMTECH

CHAIN OF CUSTODY RECORD

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COC 2 of 2

CHEMTECH PROJECT NO. *J4014*
QUOTE NO. *Q1712081*
COC Number **2022447**

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:
COMPANY: *See page 1*
ADDRESS: *See page 1*
CITY: STATE: ZIP:
ATTENTION:
PHONE: FAX:

PROJECT NAME:
PROJECT NO.: *See page 1*
PROJECT MANAGER:
e-mail:
PHONE: FAX:

BILL TO: PO#:
ADDRESS: *See page 1*
CITY: STATE: ZIP:
ATTENTION: PHONE:

ANALYSIS

DATA TURNAROUND INFORMATION

DATA DELIVERABLE INFORMATION

FAX: _____ DAYS *
HARD COPY: _____ DAYS *
EDD: _____ DAYS *
PREAPPROVED TAT: YES NO
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

RESULTS ONLY USEPA CLP
 RESULTS + QC New York State ASP "B"
 New Jersey REDUCED New York State ASP "A"
 New Jersey CLP Other _____
 EDD FORMAT _____

MeOH extraction requires an additional 4 oz jar for percent solid.

*VOCs 82600
14 P. Oxone 82700
SM*

PRESERVATIVES

COMMENTS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other	
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9		
1.	GW03-071218	GW	X		7/12	1200	5	A	E									
2.	RE103D3-071218	↓	X		7/12	1210	↓	↓	↓									
3.	RE122D2-071218	↓	X		7/12	1415	↓	↓	↓									
4.	RE104D2-071318	↓	X		7/13	9:55	↓	↓	↓									
5.	RE105D1-071318	↓	X		7/13	1345	↓	↓	↓									
6.																		
7.																		
8.																		
9.																		
10.																		

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <i>[Signature]</i>	DATE/TIME: 1630/7/13	RECEIVED BY: 1. <i>[Signature]</i>
RELINQUISHED BY: 2. <i>[Signature]</i>	DATE/TIME:	RECEIVED BY: 2. <i>[Signature]</i>
RELINQUISHED BY: 3. <i>[Signature]</i>	DATE/TIME: 7/14/13 12:14	RECEIVED FOR LAB BY: 3. <i>[Signature]</i>

Comments: *4 Coolers received (FEDEX)*

Cooler Temp.: *2.50c*
Shipment
Complete: Yes No
By Client: *[Signature]*
By Chemtech: _____

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CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
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74073

CHEMTECH PROJECT NO.
QUOTE NO. Q172081
COC Number 2022448

COC 1 of 2

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO: COMPANY: Tetra Tech		PROJECT NAME: Bethpage Offsite		BILL TO: Ernie Wu PO#: CTO WE 13	
ADDRESS: 661 Andersen Drive		PROJECT NO. CTO 13 LOCATION: Bethpage NY		ADDRESS: 661 Andersen Drive	
CITY: Pittsburgh STATE: PA ZIP: 15220		PROJECT MANAGER: Ernie Wu		CITY: Pittsburgh STATE: PA ZIP: 15220	
ATTENTION: Ernie Wu (Norfolk)		e-mail: Ernie.Wu@tetratech.com		ATTENTION: Ernie Wu PHONE: 7574664901	
PHONE: 757-466-4901 FAX: 412-921-4040		PHONE: 757 466-4901 FAX: _____			

DATA TURNAROUND INFORMATION		DATA DELIVERABLE INFORMATION	
FAX: _____ DAYS *	HARD COPY: _____ DAYS *	PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS
<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B" <input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A" <input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____ <input type="checkbox"/> EDD FORMAT _____		MeOH extraction requires an additional 4 oz jar for percent solid. 1 2 3 4 5 6 7 8 9	

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A	E											
			1	2	3	4		5	6	7	8	9								
1.	TR03-070318	Water	X		7/3	-	2	X												
2.	FB02-071718	Water	X		7/17	1245	5	3	2											
3.	EB02-071718	Water	X		7/17	730	5	3	2											
4.	RE10902-071618	GW	X		7/16	1135	5	3	2											
5.	RE126D1-071718	GW	X		7/17	1000	5	3	2											
6.	RE123D1-071818	GW	X		7/18	1200	5	3	2											
7.	GW04-071718	GW	X		7/17	1200	5	3	2											
8.	RE109D3-071618	GW	X		7/16	1120	5	3	2											
9.	RE117D1-071618	GW	X		7/16	1505	5	3	2											
10.	RE126D3-071718	GW	X		7/17	1015	5	3	2											

VOCS 8260 B
14 Dioxane
82707 SIM

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <i>[Signature]</i>	DATE/TIME: 7/18 1500	RECEIVED BY: 1. <i>[Signature]</i>	Comments: <u>JK Gun #1</u> <u>EDEX # 7819 1591 7169</u>	Cooler Temp.: <u>2-8</u> Shipment Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No By Client: <u>[Signature]</u> By Chemtech: _____
RELINQUISHED BY: 2. _____	DATE/TIME: <u>9:00</u> 7-19-18	RECEIVED BY: 2. <i>[Signature]</i>		
RELINQUISHED BY: 3. _____	DATE/TIME: _____	RECEIVED FOR LAB BY: 3. _____		



TETRA TECH NUS, INC.

J4073

CHAIN OF CUSTODY

NUMBER

No

1290

J4073

PAGE 2 OF 2

PROJECT NO: C10WE13	FACILITY: Bethpage	PROJECT MANAGER Ernie Wu	PHONE NUMBER 757-466-4901	LABORATORY NAME AND CONTACT: ChemTech
SAMPLERS (SIGNATURE) <i>[Signature]</i>		FIELD OPERATIONS LEADER Scott Anderson	PHONE NUMBER 412-921-8608	ADDRESS 661 Anderson Dr., SA
CARRIER/WAYBILL NUMBER Fed Ex			CITY, STATE Pittsburgh, PA 15220	

STANDARD TAT <input checked="" type="checkbox"/> X	CONTAINER TYPE PLASTIC (P) or GLASS (G)
RUSH TAT <input type="checkbox"/>	PRESERVATIVE USED
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day	

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS	COMMENTS
7/17	1340	RE108D2-071718	-	-	-	GW	G	5	3	2
7/18	1145	RE123D2-071818	-	-	-	GW	G	5	3	2
7/16	1130	RE109D1-071618	-	-	-	GW	G	5	3	2
7/16	1450	RE117D2-071618	-	-	-	GW	G	5	3	2
7/17	1025	RE126D2-071718	-	-	-	GW	G	5	3	2
7/17	1340	RE108D2 ^A -071718	-	-	-	GW	G	5	3	2
7/18	1200	RE123D3-071818	-	-	-	GW	G	15	9	6

TYPE OF ANALYSIS
 VOCs 8260B Hel
 14Dioxene 8270DSIM None

1. RELINQUISHED BY <i>[Signature]</i>	DATE 7/18/18	TIME 1500	1. RECEIVED BY <i>[Signature]</i>	DATE 7-18-18	TIME 9:06
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: **FedEx # 7819 1591 7169 IR-Con # I 280**

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
 (908) 789-8900 Fax (908) 789-8922
 www.chemtech.net

CHEMTECH PROJECT NO. **J5189**
 QUOTE NO. _____
 COC Number **2018839**

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <u>Tetra Tech</u>	PROJECT NAME: <u>Bethpage GW</u>	BILL TO:	PO#:		
ADDRESS: <u>5700 Lake Wright Drive</u>	PROJECT NO. <u>112608005</u> LOCATION: <u>Bethpage NY</u>	ADDRESS:			
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>	PROJECT MANAGER: <u>Dave Brayack</u>	CITY:	STATE:	ZIP:	
ATTENTION: <u>Dave Brayack</u>	e-mail: <u>dave.brayack@tetra.tech.com</u>	ATTENTION:	PHONE:		
PHONE:	FAX:	PHONE:	FAX:		

DATA TURNAROUND INFORMATION		DATA DELIVERABLE INFORMATION		ANALYSIS								
FAX: _____	DAYS *	<input type="checkbox"/> RESULTS ONLY	<input type="checkbox"/> USEPA CLP	MeOH extraction requires an additional 4 oz jar for percent solid. 10 ml VOA Vials VOC Number 14-Dioxane								
HARD COPY: _____	DAYS *	<input type="checkbox"/> RESULTS + QC	<input type="checkbox"/> New York State ASP "B"									
EDD: _____	DAYS *	<input type="checkbox"/> New Jersey REDUCED	<input type="checkbox"/> New York State ASP "A"									
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> New Jersey CLP	<input type="checkbox"/> Other _____									
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS		<input type="checkbox"/> EDD FORMAT _____										

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other		
			COMP	GRAB	DATE	TIME		A	F										
			1	2	3	4		5	6	7	8	9							
1.	BP-TT-TB01-20180926	Aq	✓		9/26/18	0800	2	2											
2.	RE117D1-20180926	GW	✓		9/26/18	1425	3	2	1										
3.	RE117D2-20180926	GW	✓		9/26/18	1505	3	2	1										
4.	RE131D2-20180927	GW	✓		9/27/18	1125	3	2	1										
5.	RE131D1-20180927	GW	✓		9/27/18	1130	3	2	1										
6.	RE131D3-20180927	GW	✓		9/27/18	1130	3	2	1										
7.	RE105D1-20180927	GW	✓		9/27/18	1635	3	2	1										
8.	RE105D2-20180927	GW	✓		9/27/18	1710	3	2	1										
9.	TT101D2-20180928	GW	✓		9/28/18	1110	3	2	1										
10.	TT101D-20180928	GW	✓		9/28/18	1115	3	2	1										

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>[Signature]</u>	DATE/TIME: <u>1410</u> <u>9/28/18</u>	RECEIVED BY: 1. <u>[Signature]</u>	Comments: _____ _____ _____	Cooler Temp.: <u>3.2°C</u>
RELINQUISHED BY: 2. _____	DATE/TIME: _____	RECEIVED BY: 2. _____		Shipment Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
RELINQUISHED BY: 3. <u>[Signature]</u>	DATE/TIME: <u>9/28/18</u>	RECEIVED FOR LAB BY: 3. <u>[Signature]</u>		By Client: _____ By Chemtech: <u>yes</u>

CHEMTECH

CHAIN OF CUSTODY RECORD

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CHEMTECH PROJECT NO. 55189
 QUOTE NO. _____
 COC Number **2018840**

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <u>Tetra Tech</u>		PROJECT NAME: <u>Bethpage GW</u>		BILL TO: _____ PO#: _____	
ADDRESS: <u>5700 Lake Wright Drive</u>		PROJECT NO.: <u>112608005</u> LOCATION: <u>Bethpage NY</u>		ADDRESS: _____	
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>		PROJECT MANAGER: <u>Dave Brayack</u>		CITY: _____ STATE: _____ ZIP: _____	
ATTENTION: <u>Dave Brayack</u>		e-mail: <u>dave.brayack@tetratech.com</u>		ATTENTION: _____ PHONE: _____	
PHONE: _____	FAX: _____	PHONE: _____	FAX: _____		

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS * HARD COPY: _____ DAYS * EDD: _____ DAYS * PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B" <input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A" <input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____ <input type="checkbox"/> EDD FORMAT _____	MeOH extraction requires an additional 4 oz jar for percent solid. 1 2 3 4 5 6 7 8 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other								
			COMP	GRAB	DATE	TIME		A	E																
								1	2	3	4	5	6	7	8	9									
1.	TT10ID1-20180928	GW	✓		9/28/18	1120	3																		
2.	TT-DUPOL-20180928	GW	✓		9/28/18	1200	3																		
3.	BP-TT-EB01-20180928	AW	✓		9/28/18	1300	3																		
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>[Signature]</u>	DATE/TIME: <u>9/28/18 1410</u>	RECEIVED BY: <u>[Signature]</u>	Comments: _____ _____ _____	Cooler Temp.: <u>32°C</u> Shipment Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No By Client: _____ By Chemtech: <u>yes</u>
RELINQUISHED BY: 2. _____	DATE/TIME: _____	RECEIVED BY: 2. _____		
RELINQUISHED BY: 3. <u>[Signature]</u>	DATE/TIME: <u>9/28/18</u>	RECEIVED FOR LAB BY: 3. <u>[Signature]</u>		

Revision 7/2017

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CHAIN OF CUSTODY RECORD

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CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT
REPORT TO BE SENT TO:				
COMPANY: <u>Tetra Tech</u>		PROJECT NAME: <u>Bethpage GW</u>		BILL TO:
ADDRESS: <u>5700 Lake Wright Drive</u>		PROJECT NO: <u>112608005</u> LOCATION: <u>Bethpage NY</u>		ADDRESS:
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>		PROJECT MANAGER: <u>Dave Brayack</u>		CITY:
ATTENTION: <u>Dave Brayack</u>		e-mail: <u>dave.brayack@tetratech.com</u>		ATTENTION:
PHONE:	FAX:	PHONE:	FAX:	

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT
	<input type="checkbox"/> USEPA CLP
	<input type="checkbox"/> New York State ASP "B"
	<input type="checkbox"/> New York State ASP "A"
	<input type="checkbox"/> Other _____

MeOH extraction re
 1 2 3 4 5 6
 40 MIN VIALS
 2 LITER AMBET
 1/4 - DIOXANE

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES								
			COMP	GRAB	DATE	TIME		A	B							
			1	2	3	4		5	6	7						
1.	BP-TT-TB02-2018001	Aq	✓		10/1/18	0800	2	2								
2.	RE125D2-20181001	GW	✓		10/1/18	1320	9	6	3							
3.	RE125D1-20181001	GW	✓		10/1/18	1325	3	2	1							
4.	RE125D3-20181001	GW	✓		10/1/18	1610	3	2	1							
5.	RE120D3-20181002	GW	✓		10/2/18	1215	3	2	1							
6.	RE120D2-20181002	GW	✓		10/2/18	1255	3	2	1							
7.	RE120D1-20181002	GW	✓		10/2/18	1335	3	2	1							
8.	RE103D3-20181003	GW	✓		10/3/18	1105	3	2	1							
9.	RE103D2-20181003	GW	✓		10/3/18	1105	3	2	1							
10.	RE103D3-20181003	GW	✓		10/3/18	1115	3	2	1							

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER

RELINQUISHED BY SAMPLER:	DATE/TIME: 1520	RECEIVED BY:
1. <u>[Signature]</u>	10/4/18	1. <u>[Signature]</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2. _____		2. _____
RELINQUISHED BY:	DATE/TIME: 18:30	RECEIVED FOR LAB BY:
3. <u>[Signature]</u>	10/4/18	3. _____

Comments: _____

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CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT
REPORT TO BE SENT TO:				
COMPANY: <u>Tetra Tech</u>		PROJECT NAME: <u>Bethpage GW</u>		BILL TO:
ADDRESS: <u>5700 Lake Wright Drive</u>		PROJECT NO: <u>112608005</u> LOCATION: <u>Bethpage NY</u>		ADDRESS:
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>		PROJECT MANAGER: <u>Dave Brayack</u>		CITY:
ATTENTION: <u>Dave Brayack</u>		e-mail: <u>dave.brayack@tetra.tech.com</u>		ATTENTION:
PHONE:	FAX:	PHONE:	FAX:	

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT
	<input type="checkbox"/> USEPA CLP
	<input type="checkbox"/> New York State ASP "B"
	<input type="checkbox"/> New York State ASP "A"
	<input type="checkbox"/> Other _____

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES								
			COMP	GRAB	DATE	TIME		A	B							
			1	2	3	4		5	6	7						
1.	BP-TT-TB02-20180001	Aq	✓		10/1/18	0800	2	2								
2.	RE125D2-20181001	GW	✓		10/1/18	1320	9	6	3							
3.	RE125D1-20181001	GW	✓		10/1/18	1325	3	2	1							
4.	RE125D3-20181001	GW	✓		10/1/18	1610	3	2	1							
5.	RE120D3-20181002	GW	✓		10/2/18	1215	3	2	1							
6.	RE120D2-20181002	GW	✓		10/2/18	1255	3	2	1							
7.	RE120D1-20181002	GW	✓		10/2/18	1335	3	2	1							
8.	RE103D3-20181003	GW	✓		10/3/18	1105	3	2	1							
9.	RE103D2-20181003	GW	✓		10/3/18	1105	3	2	1							
10. RD CORRECTED 08/15/2019	RE103D1-20181003	GW	✓		10/3/18	1115	3	2	1							

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER

RELINQUISHED BY SAMPLER:	DATE/TIME: 1520	RECEIVED BY:	Comments: _____
1. <u>[Signature]</u>	10/4/18	1. <u>[Signature]</u>	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	
2. _____		2. _____	
RELINQUISHED BY:	DATE/TIME: 18:30	RECEIVED FOR LAB BY:	
3. <u>[Signature]</u>	10/4/18	3. _____	

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
 (908) 789-8900 Fax (908) 789-8922
 www.chemtech.net

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CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT
REPORT TO BE SENT TO:				
COMPANY: <u>Tetra Tech</u>	PROJECT NAME: <u>Bethpage GW</u>	BILL TO:		
ADDRESS: <u>5700 Lake Wright Drive</u>	PROJECT NO. <u>112609005</u> LOCATION: <u>Bethpage NY</u>	ADDRESS:		
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>	PROJECT MANAGER: <u>Dave Brayack</u>	CITY:		
ATTENTION: <u>Dave Brayack</u>	e-mail: <u>dave.brayack@tetra.tech.com</u>	ATTENTION:		
PHONE: _____ FAX: _____	PHONE: _____ FAX: _____			

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B"
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A"
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT _____

MeOH extraction re
 1 2 3 4 5 6
 40 ml vials
 1 liter amber
 1 liter amber

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES								
			COMP	GRAB	DATE	TIME		A	E							
			1	2	3	4		5	6	7						
1.	RE104D2-20181003	GW	✓	✓	10/3/18	1305	3	2	1							
2.	RE104D1-20181003	GW	✓	✓	10/3/18	1310	3	2	1							
3.	RE104D3-20181003	GW	✓	✓	10/3/18	1315	3	2	1							
4.	TF-DUP02-20181003	GW	✓	✓	10/3/18	1600	3	2	1							
5.	TF-DUP03-20181003	GW	✓	✓	10/3/18	1200	3	2	1							
6.																
7.																
8.																
9.																
10.																

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. <u>[Signature]</u>	<u>10/18/18 1500</u>	1. <u>[Signature]</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2. _____	_____	2. _____
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:
3. <u>[Signature]</u>	<u>10/18/18 18:30</u>	3. _____

Comments: _____

Revision 7/2017

CLIENT INFORMATION	CLIENT PROJECT INFORMATION	CLIENT BILLING INFORMATION
REPORT TO BE SENT TO:		
COMPANY: <u>Tetra Tech</u>	PROJECT NAME: <u>Bethpage G-W</u>	BILL TO: _____ PO#: _____
ADDRESS: <u>5700 Lake Wright Drive</u>	PROJECT NO.: <u>1126 08005</u> LOCATION: <u>Bethpage NY</u>	ADDRESS: _____
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>	PROJECT MANAGER: <u>Dave Brayack</u>	CITY: _____ STATE: _____ ZIP: _____
ATTENTION: <u>Dave Brayack</u>	e-mail: <u>dave.brayack@tetra.tech.com</u>	ATTENTION: _____ PHONE: _____
PHONE: _____ FAX: _____	PHONE: _____ FAX: _____	

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY	MeOH extraction requires an additional 4 oz jar for percent solid. <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;"> 40 ml vials 1 liter amber 114-dioxane </div>
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC	
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED	
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP	
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT	

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other		
			COMP	GRAB	DATE	TIME		A	E										
			1	2	3	4		5	6	7	8	9							
1.	BP-TT-TB03-20181004	AG		✓	10/4/18	0800	2	2											
2.	RE12203-20181004	GW		✓	10/4/18	1215	4	6	3										DO MS/MSD
3.	RE12201-20181004	GW		✓	10/4/18	1215	3	2	1										
4.	RE12202-20181004	GW		✓	10/4/18	1220	3	2	1										
5.	RE12202-IMP-20181004	GW		✓	10/4/18	1345	3	2	1										
6.	RE12203-IMP-20181004	GW		✓	10/4/18	1500	3	2	1										
7.	RE12201-IMP-20181004	GW		✓	10/4/18	1630	3	2	1										
8.	RE10802-20181004	GW		✓	10/4/18	1655	3	2	1										
9.	RE10801-20181004	GW		✓	10/4/18	1735	3	2	1										
10.	TT-DUP04-20181004	GW		✓	10/4/18	1200	3	2	1										

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	Comments: _____	Cooler Temp.: <u>2.9°C</u>
1. <u>[Signature]</u>	<u>10/5/18 1500</u>	1. <u>[Signature]</u>		
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:		
2. _____	_____	2. _____		Shipment Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:		By Client: _____
3. <u>[Signature]</u>	<u>10/5/18 18:21</u>	3. _____		By Chemtech: <u>YRS</u>

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
 (908) 789-8900 Fax (908) 789-8922
 www.chemtech.net

CHEMTECH PROJECT NO. J5374
 QUOTE NO. _____
 COC Number **2018847**

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <u>Tetra Tech</u>	PROJECT NAME: <u>Bethpage G.W</u>	BILL TO:	PO#:		
ADDRESS: <u>5700 Lake Wright Drive</u>	PROJECT NO.: <u>1126-08005</u> LOCATION: <u>Bethpage NY</u>	ADDRESS:			
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>	PROJECT MANAGER: <u>Dave Brayack</u>	CITY:	STATE:	ZIP:	
ATTENTION: <u>Dave Brayack</u>	e-mail: <u>dave.brayack@tetratech.com</u>	ATTENTION:	PHONE:		
PHONE:	FAX:	PHONE:	FAX:		

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY	MeOH extraction requires an additional 4 oz jar for percent solid. 40 MIVORADU 1106 114 - Dioxane
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC	
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED	
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP	
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT _____	

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A	E											
			1	2	3	4		5	6	7	8	9								
1.	RE109D3-20181005	GW	✓		10/5/18	1055	3	2	1											
2.	RE109D2-20181005	GW	✓		10/5/18	1135	9	6	3											DO MS/MSD
3.	RE109D1-20181005	GW	✓		10/5/18	1135	3	2	1											
4.	BP-TT-ERB02-20181005	AQ	✓		10/5/18	1300	3	2	1											
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	Comments: _____	Cooler Temp.: <u>2.9°C</u>
1. <u>[Signature]</u>	<u>10/5/18 1500</u>	1. <u>[Signature]</u>		
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:		
2. _____	_____	2. _____	Shipment	Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:	By Client: _____	By Chemtech: <u>yes</u>
3. <u>[Signature]</u>	<u>10/5/18 18:21</u>	3. _____		

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
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CHEMTECH PROJECT NO. **J5393**
 QUOTE NO. **10**
 COC Number **2018846** **2011**

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: Tetra Tech	PROJECT NAME: Bethpage GW	BILL TO:	PO#:		
ADDRESS: 5700 Lake Wright Drive	PROJECT NO.: 112608005-wel3 LOCATION: Bethpage, NY	ADDRESS:			
CITY: Norfolk STATE: VA ZIP: 23502	PROJECT MANAGER: Dave Brayack	CITY:	STATE:	ZIP:	
ATTENTION: Dave Brayack	e-mail: dave.brayack@tetratech.com	ATTENTION:	PHONE:		
PHONE:	FAX:	PHONE:	FAX:		

DATA TURNAROUND INFORMATION		DATA DELIVERABLE INFORMATION	
FAX: _____ DAYS *	HARD COPY: _____ DAYS *	PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS
<input type="checkbox"/> RESULTS ONLY	<input type="checkbox"/> USEPA CLP	<input type="checkbox"/> New Jersey REDUCED	<input type="checkbox"/> New York State ASP "A"
<input type="checkbox"/> RESULTS + QC	<input type="checkbox"/> New York State ASP "B"	<input type="checkbox"/> New Jersey CLP	<input type="checkbox"/> Other _____
<input type="checkbox"/> EDD FORMAT _____			

MeOH extraction requires an additional 4 oz jar for percent solid.

1 40 ML WQA Vials
 2 1 L Amber Glass
 3 1 L Amber Glass
 4 1 L Amber Glass
 5 500 ML HNO3 spiked bottle
 6
 7
 8
 9
 TOTAL METALS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS		
			COMP	GRAB	DATE	TIME		A,E	E										
			1	2	3	4		5	6	7	8	9							
1.	BP-TT-TR04-20181008	QA/QC	✓		10/08/18	0800	2	2											Trip Blank
2.	RE-126D2-20181008	GW	✓		10/08/18	1210	3	2	1										
3.	TT-DUP05-20181008	GW	✓		10/08/18	1310	3	2	1										Duplicate
4.	RE126D1-20181008	GW	✓		10/08/18	1235	3	2	1										
5.	RE126D3-20181008	GW	✓		10/08/18	1215	3	2	1										
6.	RE123D2-20181008	GW	✓		10/08/18	1705	3	2	1										
7.	RE123D3-20181008	GW	✓		10/08/18	1705	3	2	1										
8.	RE123D1-20181009	GW	✓		10/09/18	1045	3	2	1										
9.	RE137-745FT-20181009	GW	✓		10/09/18	1605	3	2	1										
10.	RE137-700FT-20181009	GW	✓		10/09/18	1540	3	2	1										

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	Comments: PAGE 1 OF 2	Cooler Temp.: 2.0
1. <i>Clinton M. Brown</i>	10/10/18 1245	1. <i>Paul Gzulak</i>		
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:		
2.		2.		Shipment
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:		Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No
3. <i>Paul Gzulak</i>	10-10-18 5:24	3. <i>[Signature]</i>		By Client: _____
				By Chemtech: _____

CHEMTECH

CHAIN OF CUSTODY RECORD

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 (908) 789-8900 Fax (908) 789-8922
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CHEMTECH PROJECT NO. **J5393**
 QUOTE NO. **10**
 COC Number **2018848** **2011**

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:		PROJECT NAME: Bethpage GW		BILL TO: _____ PO#: _____	
COMPANY: Tetra Tech		PROJECT NO.: 11260805-WE13 LOCATION: Bethpage, NY		ADDRESS: _____	
ADDRESS: 5700 Lake Wright Drive		PROJECT MANAGER: Dave Brayack		CITY: _____ STATE: _____ ZIP: _____	
CITY: Norfolk STATE: VA ZIP: 23502		e-mail: dave.brayack@tetratech.com		ATTENTION: _____ PHONE: _____	
ATTENTION: Dave Brayack		PHONE: _____ FAX: _____		PHONE: _____	
PHONE: _____ FAX: _____					

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B"
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A"
PRE-APPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT _____

MeOH extraction requires an additional 4 oz jar for percent solid.

40 ML VOA VIALS
 4 L Amber Glass
 2 L Amber Glass
 1 L Amber Glass
 500 ML HNO₃ SPIRIT
 bottle TOTAL METALS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A ₁	E	E										
								1	2	3	4	5	6	7	8	9				
1.	RE137-640FT-20181009	GW		✓	10/09/18	1755	3		2	1										
2.	WE13-GW-Tank3-IDW-10102018	GW		✓	10/10/18	1000	5		2		1	1	1							
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. <i>Charles M. Smith</i>	10/10/18 1245	1. <i>Paul Zylak</i>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2.		2. <i>12:53</i>
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:
3. <i>Paul Zylak</i>	10/10/18 5:24	3. <i>[Signature]</i>

Comments: **PAGE 2 OF 2**

Cooler Temp.: **2-0**

Shipment

Complete: Yes No

By Client: _____

By Chemtech: _____

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <u>Tetra Tech</u>		PROJECT NAME: <u>Bethpage Regional G-W</u>		BILL TO: _____ PO#: _____	
ADDRESS: <u>5700 Lake Wright Drive</u>		PROJECT NO.: <u>112608005-WE13</u> LOCATION: <u>Bethpage NY</u>		ADDRESS: _____	
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>		PROJECT MANAGER: <u>Dave Brayack</u>		CITY: _____ STATE: _____ ZIP: _____	
ATTENTION: <u>Eric Wu</u>		e-mail: <u>dave.brayack@tetra.tech.com</u>		ATTENTION: _____ PHONE: _____	
PHONE: <u>757 466 4901</u> FAX: _____		PHONE: _____ FAX: _____			

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B"
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A"
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT _____

MeOH extraction requires an additional 4 oz jar for percent solid.

1 2 3 4 5 6 7 8 9

NO-MIVOC Vials
 VOL 8/26/03
 2 LITERS APPROX 4-1000
 W-DIGSON 2 8/26/03

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A	E											
			1	2	3	4		5	6	7	8	9								
1.	RE123D1-20181207	GW	✓		12/7/18	1255	3	Z	I											
2.	RE123D3-20181207	GW	✓		12/7/18	1316	3	Z	I											
3.	EB01-20181207	GW	✓		12/7/18	1400	3	Z	I											
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. Vince Shikora RD 9/7/2019	DATE/TIME: 12/8/18	RECEIVED BY: 1.	Comments: <u>DEF S, & VOC LIST</u>	Cooler Temp.: <u>23°C</u> Shipment Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No By Client: _____ By Chemtech: _____
RELINQUISHED BY: 2.	DATE/TIME: 11/11	RECEIVED BY: 2.		
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED FOR LAB BY: 3.		

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <u>Tetra Tech</u>	PROJECT NAME: <u>Bethpage Regional G-W</u>	BILL TO:	PO#:		
ADDRESS: <u>5700 Lake Wright Drive</u>	PROJECT NO.: <u>112609005</u> ^{WE13} LOCATION: <u>Bethpage</u>	ADDRESS:			
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>23502</u>	PROJECT MANAGER: <u>Dave Brayack</u>	CITY:	STATE:	ZIP:	
ATTENTION: <u>Eric Wu</u>	e-mail: <u>dave.brayack@tetratech.com</u>	ATTENTION:	PHONE:		
PHONE: <u>757 466 4901</u> FAX:	PHONE:	FAX:			

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY	MeOH extraction requires an additional 4 oz jar for percent solid.
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC	
EDD: _____ DAYS *	<input type="checkbox"/> New York State ASP "B"	
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A"	
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____	
	<input type="checkbox"/> EDD FORMAT _____	

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A	E											
			1	2	3	4		5	6	7	8	9								
1.	12E104D3-20181206	GW		V	12/6/18	1335	3	2	1											
2.	12E104D2-20181206	GW		V	12/6/18	1345	3	2	1											
3.	12E122D1-20181206	GW		V	12/6/18	1542	3	2	1											
4.	12E122D2-20181206	GW		V	12/6/18	1605	3	2	1											
5.	12E122D3-20181206	GW		V	12/6/18	1605	3	2	1											
6.	DUP02-20181206	GW		V	12/6/18	1500	3	2	1											
7.	12E126D1-20181207	GW		V	12/7/18	0950	3	2	1											
8.	12E126D3-20181207	GW		V	12/7/18	0955	3	2	1											
9.	12E126D2-20181207	GW		V	12/7/18	1010	3	2	1											
10.	12E123D2-20181207	GW		V	12/7/18	1250	3	2	1											

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. Vince Shikora RD 9/7/2019	DATE/TIME: <u>12/8/18</u>	RECEIVED BY: 1. <u>[Signature]</u>	Comments: <u>OR site VOC list</u>	Cooler Temp.: <u>2.1°C</u>
RELINQUISHED BY: 2.	DATE/TIME: <u>11-15</u>	RECEIVED BY: 2.		Shipment
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED FOR LAB BY: 3.		Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No
			By Client: _____	By Chemtech: _____

CLIENT INFORMATION	CLIENT PROJECT INFORMATION	CLIENT BILLING INFORMATION
REPORT TO BE SENT TO:		
COMPANY: <u>Tetra Tech</u>	PROJECT NAME: <u>Bethpage Regional GW</u>	BILL TO: _____ PO#: _____
ADDRESS: <u>5200 Lake Wright Drive</u>	PROJECT NO: <u>112608005</u> ^{WE13} LOCATION: <u>Bethpage NY</u>	ADDRESS: _____
CITY: <u>Norfolk</u> STATE: <u>VA</u> ZIP: <u>32502</u>	PROJECT MANAGER: <u>Dave Brayack</u>	CITY: _____ STATE: _____ ZIP: _____
ATTENTION: <u>Ernie Wu</u>	e-mail: <u>dave.brayack@tetratech.com</u>	ATTENTION: _____ PHONE: _____
PHONE: <u>757 466 4901</u> FAX: _____	PHONE: _____ FAX: _____	

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS * HARD COPY: _____ DAYS * EDD: _____ DAYS * PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B" <input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A" <input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____ <input type="checkbox"/> EDD FORMAT _____	MeOH extraction requires an additional 4 oz jar for percent solid. <div style="border: 1px solid black; padding: 5px; transform: rotate(-15deg); display: inline-block;"> 4091 VOA UCL V.D. = 3260.13 1.4-DIBACAL 22708 SIM </div>

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other		
			COMP	GRAB	DATE	TIME		A	E										
			1	2	3	4		5	6	7	8	9							
1.	RE120D2-20181205	GW		✓	12/5/18	1300	3	2	1										
2.	RE120D1-20181205	GW		✓	12/5/18	1440	3	2	1										
3.	RE103D3-20181205	GW		✓	12/5/18	1520	3	2	1										
4.	RE103D2-20181205	GW		✓	12/5/18	1620	3	2	1										
5.	RE103D1-20181205	GW		✓	12/5/18	1650	3	2	1										
6.	DUP01-20181205	GW		✓	12/5/18	1400	3	2	1										
7.	RE104D1-20181206	GW		✓	12/6/18	1045	3	2	1										
8.	RE104D3-20181206	GW		✓	12/6/18	1045	3	2	1										
9.	RE104D2-20181206	GW		✓	12/6/18	1050	3	2	1										
10.	RE104D1-20181206	GW		✓	12/6/18	1310	3	2	1										

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	Comments: <u>Offsite VOC List</u>	Cooler Temp.: <u>2.5</u>
1. Vince Shikora RD 9/7/2019	12/8/18			Shipment
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:		Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No
2.	11.15	2.	By Client: _____	
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:	By Chemtech: _____	
3.		3.		

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
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CHEMTECH PROJECT NO. **J6325** **5**
 QUOTE NO. **J6325**
 COC Number **2019699** **5.1**

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <i>Tetra Tech</i>	PROJECT NAME: <i>Bethpage Regional G-W</i>	BILL TO:	PO#:		
ADDRESS: <i>5200 Lake Wright Drive</i>	PROJECT NO.: <i>112608005</i> ^{WE13} LOCATION: <i>Bethpage NY</i>	ADDRESS:			
CITY: <i>Norfolk</i> STATE: <i>VA</i> ZIP: <i>32502</i>	PROJECT MANAGER: <i>Dave Brayack</i>	CITY:	STATE:	ZIP:	
ATTENTION: <i>ERIC WU</i>	e-mail: <i>dave.brayack@tetra.tech.com</i>	ATTENTION:	PHONE:		
PHONE: <i>757 466 4901</i> FAX:	PHONE:	FAX:			

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B"
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A"
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT _____

MeOH extraction requires an additional 4 oz jar for percent solid.

1 *DOMI VPA Vials
 2 VOC's Substrate 866DB
 3 1/4" Lids Amber Glass
 4 "Dixie" 320 D 50

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A	E											
			1	2	3	4		5	6	7	8	9								
1.	<i>TB01-20181204</i>	<i>AG</i>		<input checked="" type="checkbox"/>	<i>12/4/18</i>	<i>0800</i>	<i>2</i>	<i>2</i>												
2.	<i>RE11701-20181204</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/4/18</i>	<i>1130</i>	<i>3</i>	<i>2</i>	<i>1</i>											
3.	<i>RE11702-20181204</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/4/18</i>	<i>1035</i>	<i>3</i>	<i>2</i>	<i>1</i>											
4.	<i>RE12502-20181204</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/4/18</i>	<i>1353</i>	<i>3</i>	<i>2</i>	<i>1</i>											
5.	<i>12E125D1-20181204</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/4/18</i>	<i>1435</i>	<i>3</i>	<i>2</i>	<i>1</i>											
6.	<i>12E125D3-20181204</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/4/18</i>	<i>1525</i>	<i>3</i>	<i>2</i>	<i>1</i>											
7.	<i>RE131D2-20181205</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/5/18</i>	<i>1000</i>	<i>3</i>	<i>2</i>	<i>1</i>											
8.	<i>RE131D1-20181205</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/5/18</i>	<i>1010</i>	<i>9</i>	<i>6</i>	<i>3</i>											<i>DO MS/MSD</i>
9.	<i>RE131D3-20181205</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/5/18</i>	<i>1030</i>	<i>3</i>	<i>2</i>	<i>1</i>											
10.	<i>12E120D3-20181205</i>	<i>G-W</i>		<input checked="" type="checkbox"/>	<i>12/5/18</i>	<i>1250</i>	<i>3</i>	<i>2</i>	<i>1</i>											

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. Vince Shikora RD 9/7/2019	DATE/TIME: <i>12/9/18</i>	RECEIVED BY: <i>[Signature]</i>	Comments: <i>OFFSITE VOC list</i>	Cooler Temp.: <i>2.6°C</i>
RELINQUISHED BY: 2.	DATE/TIME: <i>11-15</i>	RECEIVED BY: 2.		Shipment
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED FOR LAB BY: 3.		Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No
			By Client: _____	By Chemtech: _____



CHAIN OF CUSTODY RECORD

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36405

CHEMTECH PROJECT NO.

QUOTE NO.

COC Number 2019697

7
7.1

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: Tetra Tech
ADDRESS: 5200 Lake Wright Dr.
CITY: Norfolk STATE: VA ZIP: 23502
ATTENTION: Ernie Wo
PHONE: (757) 466-4901 FAX:

PROJECT NAME: Bethpage Regional Glw
PROJECT NO. 116085 WE13 LOCATION: Bethpage, NY
PROJECT MANAGER: Dave Brayack
e-mail: Dave.Brayack@tetratech.com
PHONE: FAX:

BILL TO: PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

ANALYSIS

MeOH extraction requires an additional 4 oz jar for percent solid.

DATA TURNAROUND INFORMATION

FAX: DAYS *
HARD COPY: DAYS *
EDD: DAYS *
PREAPPROVED TAT: YES NO
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

RESULTS ONLY USEPA CLP
RESULTS + QC New York State ASP "B"
New Jersey REDUCED New York State ASP "A"
New Jersey CLP Other
EDD FORMAT

Handwritten notes: 1 40-100% Vol VOCs 2 1-2 14 Dioxane 3 1-2 14 Dioxane 4 40-ML 1,4 Dioxane

Table with columns: CHEMTECH SAMPLE ID, PROJECT SAMPLE IDENTIFICATION, SAMPLE MATRIX, SAMPLE TYPE, SAMPLE COLLECTION DATE/TIME, # OF BOTTLES, PRESERVATIVES (A, A, E, A), COMMENTS. Includes 10 rows of sample data.

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

Table for custody documentation with columns: RELINQUISHED BY, DATE/TIME, RECEIVED BY. Includes entries for Bau Benfield and FedEx.

Comments: 1) VOC offsite list 2) 1-L Dioxane w/ HCL Method 8260 sim 3) 1-L Dioxane w/ no preservative method 8270 sim 4) 40-ml Dioxane w/ HCL Method EPA 522
IR Temp: 2, 1°C
Shipment
Complete: YES NO
By Client:
By Chemtech:

CHEMTECH

CHAIN OF CUSTODY RECORD

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CHEMTECH PROJECT NO.
 QUOTE NO.
 COC Number 2019695

7
7.1

CLIENT INFORMATION	CLIENT PROJECT INFORMATION	CLIENT BILLING INFORMATION
REPORT TO BE SENT TO		
COMPANY: Tetra Tech	PROJECT NAME: Bethesda Regional Ctr	BILL TO: PO#:
ADDRESS: 5200 Lake Wright Dr.	PROJECT NO: 11260005	ADDRESS:
CITY: Norfolk STATE: VA ZIP: 23502	LOCATION: Bethesda, MD	CITY: STATE: ZIP:
ATTENTION: Ernie Wu	PROJECT MANAGER: Dave Brayack	ATTENTION: PHONE:
PHONE: (757) 466-4901 FAX:	e-mail: Dave.Brayack@tetratech.com	
	PHONE: FAX:	

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP	MeOH extraction requires an additional 4 oz jar for percent solid.
HARD COPY: _____ DAYS *	<input type="checkbox"/> RESULTS + QC <input type="checkbox"/> New York State ASP "B"	
EDD: _____ DAYS *	<input type="checkbox"/> New Jersey REDUCED <input type="checkbox"/> New York State ASP "A"	
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP <input type="checkbox"/> Other _____	
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT _____	

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other			
			COMP	GRAB	DATE	TIME		A	E											
			1	2	3	4		5	6	7	8	9								
1.	EB01-20181211	Ag	✓		12/14/18	1500	3	2	1											
2.	EB02-20181211	Ag	✓		12/14/18	1530	3	2	1											
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. Ben Bentfield	DATE/TIME: 12/12/18 1630	RECEIVED BY: 1.	Comments: 1) Offsite VOC list 2) 1,4-Dioxane w/ no preservative method 8270 sim	Temp: 2.1°C Shipment #1 Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No By Client: _____ By Chemtech: _____
RELINQUISHED BY: 2.	DATE/TIME:	RECEIVED BY: 2.		
RELINQUISHED BY: 3. Fed Ex	DATE/TIME: 9:42 12/13/18	RECEIVED FOR LAB BY: 3.		

564051
56406

CHEMTECH PROJECT NO.
 QUOTE NO.
 COC Number **2019697**

CLIENT INFORMATION		CLIENT PROJECT INFORMATION		CLIENT BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: Tetra Tech	PROJECT NAME: Bethpage Regional Gov	BILL TO:	PO#:		
ADDRESS: 5200 Lake Wright Dr.	PROJECT NO.: 1126085 WEI LOCATION: Bethpage, NY	ADDRESS:			
CITY: Norfolk STATE: VA ZIP: 23502	PROJECT MANAGER: Dave Brayack	CITY:	STATE:	ZIP:	
ATTENTION: Ernie Wu	e-mail: Dave.Brayack@tetratech.com	ATTENTION:	PHONE:		
PHONE: (757) 466-4901 FAX:	PHONE:	FAX:			

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION	ANALYSIS
FAX: _____ DAYS*	<input type="checkbox"/> RESULTS ONLY	MeOH extraction requires an additional 4 oz jar for percent solid.
HARD COPY: _____ DAYS*	<input type="checkbox"/> RESULTS + QC	
EDD: _____ DAYS*	<input type="checkbox"/> New Jersey REDUCED	
PREAPPROVED TAT: <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> New Jersey CLP	
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS	<input type="checkbox"/> EDD FORMAT _____	

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other		
			COMP	GRAB	DATE	TIME		A	A	E	A								
			1	2	3	4		5	6	7	8	9							
1.	TT101D-20181212	GLW		✓	12/12/18	1320	6	2	1	1	2								
2.	TT101D1-20181212	GLW		✓	12/12/18	1335	6	2	1	1	2								
3.	TT101D2-20181212	GLW		✓	12/12/18	1350	6	2	1	1	2								
4.	TB-20181210	Ag		✓	12/10/18	0800	2	2											
5.	RE105D1-20181210	GLW		✓	12/10/18	0945	9	6		3									MS/MSD
6.	RE105D2-20181210	GLW		✓	12/10/18	1005	3	2		1									
7.	RE108D1-20181210	GLW		✓	12/10/18	1255	3	2		1									
8.	RE108D2-20181210	GLW		✓	12/10/18	1255	3	2		1									
9.	DUP03-20181210	GLW		✓	12/10/18	1400	3	2		1									
10.	DUP04-20181210	GLW		✓	12/10/18	1600	3	2		1									

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	Comments: 1) VOC offsite (1st) 2) 1-L Dioxene w/ HCl Method 8260 sim 3) 1-L Dioxene w/ no preservative method 8270 sim 4) 40-mk Dioxene w/ HCl Method EPA 522	Temp.: 2.1°C Shipment #1 Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No By Client: _____ By Chemtech: _____
1. Bau Penfield	12/12/18 1630	1.		
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:		
2.		2.		
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:		
3. FedEx	12/13/18 9:42	3. [Signature]		



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CHEMTECH PROJECT NO.

QUOTE NO.

COC Number 2019695

564051

56406

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: Tetra Tech
ADDRESS: 5200 Lake Wright Dr.
CITY: Norfolk STATE: VA ZIP: 23502
ATTENTION: Ernie Wu
PHONE: (757) 466-4901 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: Bethesda Regional Gas
PROJECT NO.: 11260805
PROJECT LOCATION: Bethesda, MD
PROJECT MANAGER: Dave Brayack
e-mail: Dave.Brayack@tetratech.com
PHONE: FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:

ANALYSIS

MeOH extraction requires an additional 4 oz jar for percent solid.

DATA TURNAROUND INFORMATION

FAX: DAYS *
HARD COPY: DAYS *
EDD: DAYS *
PREAPPROVED TAT: YES NO
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

RESULTS ONLY USEPA CLP
RESULTS + QC New York State ASP "B"
New Jersey REDUCED New York State ASP "A"
New Jersey CLP Other
EDD FORMAT

Table with 9 columns (1-9) and 1 row, containing handwritten notes and diagonal lines.

Main data table with columns: CHEMTECH SAMPLE ID, PROJECT SAMPLE IDENTIFICATION, SAMPLE MATRIX, SAMPLE TYPE, SAMPLE COLLECTION (DATE, TIME), # OF BOTTLES, PRESERVATIVES (A, E, 1-9), COMMENTS.

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

Table for sample custody with columns: RELINQUISHED BY, DATE/TIME, RECEIVED BY.

Comments: 1) Offsite VOC list
2) 1,4-Dioxane w/ no preservative method
8270 atm
Temp.: 21°C
Shipment Complete: YES NO
By Client:
By Chemtech:

CHEMTECH

CHAIN OF CUSTODY RECORD

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564051
 564061/56404

CHEMTECH PROJECT NO.
 QUOTE NO.
 COC Number **2019697**

CLIENT INFORMATION CLIENT PROJECT INFORMATION CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: Tetra Tech PROJECT NAME: Bethpage Regional Gov BILL TO: _____ PO#: _____

ADDRESS: 5200 Lake Wright Dr. PROJECT NO.: 11260805WE1 LOCATION: Bethpage, NY ADDRESS: _____

CITY: Norfolk STATE: VA ZIP: 23502 PROJECT MANAGER: Dave Brayack CITY: _____ STATE: _____ ZIP: _____

ATTENTION: Ernie Wu e-mail: Dave.Bravack@tetratech.com ATTENTION: _____ PHONE: _____

PHONE: (757)4664901 FAX: _____ PHONE: _____ FAX: _____

DATA TURNAROUND INFORMATION DATA DELIVERABLE INFORMATION ANALYSIS

FAX: _____ DAYS*
 HARD COPY: _____ DAYS*
 EDD: _____ DAYS*
 PREAPPROVED TAT: YES NO
 STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

RESULTS ONLY USEPA CLP
 RESULTS + QC New York State ASP "B"
 New Jersey REDUCED New York State ASP "A"
 New Jersey CLP Other _____
 EDD FORMAT _____

MeOH extraction requires an additional 4 oz jar for percent solid.

1-40 ml VOCs 8260 83
 2-1-L 1/4 Dioxane
 3-1-L 1/4 Dioxane
 4-40 ml 1/4 Dioxane
 5
 6
 7
 8
 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-ICE F-Other		
			COMP	GRAB	DATE	TIME		A	A	E	A								
								1	2	3	4	5	6	7	8	9			
1.	TT101D-20181212	GL		✓	12/12/18	1320	6	2	1	1	2								
2.	TT101D1-20181212	GL		✓	12/12/18	1335	6	2	1	1	2								
3.	TT101D2-20181212	GL		✓	12/12/18	1350	6	2	1	1	2								
4.	TB-20181210	Aq		✓	12/10/18	0800	2	2											
5.	RE105D1-20181210	GL		✓	12/10/18	0945	9	6		3									MS/MSD
6.	RE105D2-20181210	GL		✓	12/10/18	1005	3	2		1									
7.	RE108D1-20181210	GL		✓	12/10/18	1255	3	2		1									
8.	RE108D2-20181210	GL		✓	12/10/18	1255	3	2		1									
9.	DUP03-20181210	GL		✓	12/10/18	1400	3	2		1									
10.	DUP04-20181210	GL		✓	12/10/18	1600	3	2		1									

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>Baw Benfield</u>	DATE/TIME: <u>12/12/18 1630</u>	RECEIVED BY: 1. _____	Comments: <u>1) VOC offsite list</u> <u>2) 1-L Dioxene w/ HCl Method 8260 sim</u> <u>3) 1-L Dioxene w/ no preservative method 8270 sim</u> <u>4) 40-ml Dioxene w/ HCl Method EPA 522</u> FR 6000 #1 Temp.: <u>2.1°C</u> Shipment Complete: <input type="checkbox"/> Yes <input type="checkbox"/> No By Client: _____ By Chemtech: _____
RELINQUISHED BY: 2. _____	DATE/TIME: _____	RECEIVED BY: 2. _____	
RELINQUISHED BY: 3. <u>Fedex</u>	DATE/TIME: <u>9:42</u> <u>12/13/18</u>	RECEIVED FOR LAB BY: <u>[Signature]</u>	



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CHEMTECH PROJECT NO.

QUOTE NO.

COC Number 2019695

Handwritten numbers: 56405, 56406, 56404

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: Tetra Tech
ADDRESS: 5200 Lake Wright Dr.
CITY: Norfolk STATE: VA ZIP: 23502
ATTENTION: Ernie Wu
PHONE: (757) 466-4901 FAX:

PROJECT NAME: Bethesda Regional Gas
PROJECT NO.: 11260005 LOCATION: Bethesda, MD
PROJECT MANAGER: Dave Brayack
e-mail: Dave.Brayack@tetratech.com
PHONE: FAX:

BILL TO: PO#:
ADDRESS:
CITY: STATE: ZIP:
ATTENTION: PHONE:
ANALYSIS

ANALYSIS

MeOH extraction requires an additional 4 oz jar for percent solid.

DATA TURNAROUND INFORMATION

DATA DELIVERABLE INFORMATION

FAX: DAYS *
HARD COPY: DAYS *
EDD: DAYS *
PREAPPROVED TAT: YES NO
STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

RESULTS ONLY USEPA CLP
RESULTS + QC New York State ASP "B"
New Jersey REDUCED New York State ASP "A"
New Jersey CLP Other
EDD FORMAT

Handwritten notes: 40-ml VOC via 1/4-L 1/4-Dioxane

Table with columns: CHEMTECH SAMPLE ID, PROJECT SAMPLE IDENTIFICATION, SAMPLE MATRIX, SAMPLE TYPE, SAMPLE COLLECTION, # OF BOTTLES, PRESERVATIVES (A, E, 1-9), COMMENTS. Includes handwritten entries for samples 1 and 2.

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

Table for sample custody with columns: RELINQUISHED BY, DATE/TIME, RECEIVED BY. Includes handwritten entries for Ben Berthel and Fed Ex.

Comments: 1) Offsite VOC list
2) 1/4-Dioxane w/ no preservative method
8270 g/m
Temp.: 2.1°C
Shipment #1
Complete: Yes No
By Client:
By Chemtech:

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APPENDIX D

BLADDER VERSUS IMPELLAR PUMP EVALUATION

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TABLE D-1 - EVALUATION OF USING A BLADDER PUMP VERSUS IMPELLAR PUMP FOR PURGING

Well	Well Depth (feet below ground surface)	Bladder Pump with Drop Tube			Centrifugal Pump with Drop Tube		
		Sample Date and Time	Purge Rate (milliliters per minute)	TCE Concentration (ug/L)	Sample Date and Time	Purge Rate (milliliters per minute)	TCE Concentration (ug/L)
RE-122D1	540	7/12/18 @ 1420	375	250			
RE-122D1	540	10/4/18 @ 1215	250	400	10/4/18 @ 1630	500	670
RE-122D1	540				12/6/18 @ 1542	700	470
RE-122D2	610	7/12/18 @ 1415	300	3,700			
RE-122D2	610	10/4/18 @ 1220	300	4,700	10/4/18 @ 1345	500	4,400
RE-122D2	610				12/6/18 @ 1605	800	3,100
RE-122D3	735	7/12/18 @ 1420	300	9			
RE-122D3	735	10/4/18 @ 1215	400	4.1 U	10/4/18 @ 1500	500	1.4 J
RE-122D3	735				12/6/18 @ 1600	1,000	4.4 J

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

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

ug/L - Micrograms per liter.

TCE - Trichloroethene.

Summary	<p>Historically, bladder pumps with drop tubes have been used in the OU2 program to collect groundwater samples. The pumps are set at approximately 100 feet below ground surface and 50 feet below the water table. Drop tubes are attached to the bottom of the pump and extend several hundred feet to the middle of the well screen. The wells are then purged at a rate of 200 to 400 milliliters per minute, which is near the pumps limit. Because of the volume of water in the drop tube, extended purge times (greater than 2 hours) are often required. In order to decrease the purge time (less than 1 hour), a different type of pump (centrifugal) was selected. Well depths prevent installing centrifugal pumps into the screen interval. During purging, even at the highest rates, drawdowns within the well are less than 0.07 feet.</p>
Concern	<p>Pulling water through a drop tube at too high of a rate could result in very high velocities and potential cavitation. Cavitation could result in bubble formation and loss of volatile organics.</p>
Evaluation	<p>See Table D-1 above. One well cluster (RE-122D1, D2, and D3) was selected to be sampled using both methods on October 4, 2018. Also, data from the July and December 2018 sampling events was considered.</p>
Conclusion	<p>Although there is some variability in the data, the use of higher purge rates with a centrifugal pump does not appear to have any significant impact on the quality of the results.</p>

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APPENDIX E DATA VALIDATION

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VALIDATA

Chemical Services, Inc.

2159 Wynnton Pointe, Duluth, GA 30097

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(770) 232-5082 (Fax)

www.datavalidator.com

DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: December 27, 2018
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J4014
SAMPLING DATE(S): July 3-13, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE103D1-071218	J4014-01	X	X
RE103D1-071218DL	J4014-01DL	X	X
RE122D1-071218	J4014-02	X	X
RE122D1-071218DL	J4014-02DL	X	X
RE104D1-071318	J4014-03	X	X
RE104D1-071318DL	J4014-03DL		X
RB01-071218	J4014-04	X	X
RE122D3-071218	J4014-05	X	X
RE103D2-071218	J4014-06	X	X
RE103D2-071218DL	J4014-06DL	X	
RE104D3-071318	J4014-07	X	X
RE104D3-071318MS	J4014-08	X	X
RE104D3-071318MSD	J4014-09	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE105D2-071318	J4014-10	X	X
RE105D2-071318DL	J4014-10DL	X	X
FB01-071318	J4014-11	X	X
TB02-070318	J4014-12	X	
GW03-071218	J4014-13	X	X
GW03-071218DL	J4014-13DL	X	
RE103D3-071218	J4014-14	X	X
RE103D3-071218DL	J4014-14DL	X	
RE122D2-071218	J4014-15	X	X
RE122D2-071218DL	J4014-15DL	X	X
RE104D2-071318	J4014-16	X	X
RE104D2-071318RE	J4014-16RE	X	
RE105D1-071318	J4014-17	X	X
RE105D1-071318DL	J4014-17DL		X
RE105D1-071318RE	J4014-17RE	X	

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J4014 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

The 17 days between sample collection and analysis for TB02-071318 exceeded the 14-day QC limit. The results for this sample, which consisted entirely of non-detects, were qualified as with an X and reason code H.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 7/20/18 at 20:31 on instrument MSVOAX was 20.5% for 2-hexanone, which exceeded the 20% QC limit. The results for 2-hexanone in all samples except RE104D3-071318, which consisted entirely of non-detects, were qualified as estimated (UJ) with reason code C.

The Percent Differences (%Ds) for the standards run on 7/21/18 at 10:19 on instrument MSVOAX exceeded the 20% QC limit for the following compounds:

acetone	38.8%
carbon tetrachloride	24.2%
1,2-dichloroethane	21.0%

The results for these compounds in associated sample RE104D3-071318, which were all non-detects, were qualified as estimated (UJ) with reason code C.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment Blanks:

Acetone (10.5 ug/L) was detected in equipment blank EB02-071718. All positive results for acetone in the SDG samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Field Blanks:

Acetone (7.9 ug/L) and toluene (0.44 ug/L) were detected in field blank FB01-071318. Acetone (10.6 ug/L) and 2-butanone (2.7 ug/L) were detected in field blank FB02-071718. All positive results for these compounds in the SDG samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Rinsate Blanks:

There were no detections in associated rinsate blank RB01-071218. No data qualification was necessary.

Trip Blank:

There were no detections in associated trip blank TB02-070318. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

Two LCS were analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed on SDG sample RE104D3-071318. All criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE103D2-071218 / GW03-071218) was identified as part of this SDG. The only calculable RPD was 8.5% for trichloroethene, which was within the 30% QC limit. The calculated differences for 1,1,2-trichlorotrifluoroethane, carbon tetrachloride, chloroform and 1,1,2-trichloroethane were all less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples RE103D1-071218, RE122D1-071218, RE103D2-071218, RE105D2-071318, GW03-071218, RE103D3-071218 and

RE122D2-071218 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

Citing professional judgment, based on holding time and continuing calibration criteria and the review of the sample raw data, the validator has determined that the initial analysis results for samples RE104D2-071318 and RE105D1-071318 are of preferable data quality to the reanalysis results for these samples.

All forty-four requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Field Blank:

There was no detection in field blank FB01-071318. No data qualification was necessary.

Rinsate Blank:

1,4-dioxane (0.470 ug/L) was detected in rinsate blank RB01-071218. The positive result for 1,4-dioxane in SDG sample RE103D3-071218, which was greater than the LOQ but equal to the blank concentration, was qualified as undetected (U) with reason code B.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for surrogate compounds nitrobenzene-d5, 2-fluorobiphenyl, terphenyl-d14 were outside the established QC limits for most samples and the %R for

fluoranthene-d10 was also outside the established QC limits for several SDG samples. Since the listed surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed on SDG sample RE104D3-071318. All criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE103D2-071218 / GW03-071218) was identified as part of this SDG. The calculable RPD was 4.4%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

The Area Count Percent Recoveries (%Rs) for perylene-d12 for samples RE122D2-071218DL (47.8%) and RE105D1-071318DL (45.6%) were below the 50-200% QC limits. Since the target compound was not quantitated using this ISTD, no data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for samples RE103D1-071218, RE122D1-071218, RE104D1-071318, RE105D2-071318, RE122D2-071218 and RE105D1-071318 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

VALIDATA

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: December 27, 2018
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J4073
SAMPLING DATE(S): July 3-18, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
TB03-070318	J4037-01	X	X
FB02-071718	J4037-02	X	X
EB02-071718	J4037-03	X	X
RE109D2-071618	J4037-04	X	X
RE126D1-071718	J4037-05	X	X
RE126D1-071718DL	J4073-05DL		X
RE123D1-071818	J4073-06	X	X
GW04-071718	J4073-07	X	X
GW04-071818DL	J4073-07DL	X	X
RE109D3-071618	J4073-08	X	X
RE109D3-071618DL	J4073-08DL		X
RE117D1-071618	J4073-09	X	X
RE126D3-071718	J4073-10	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE108D2-071718	J4073-11	X	X
RE108D2-071718DL	J4073-11DL	X	X
RE108D2-071718RE	J4073-11RE		X
RE123D2-071818	J4073-12	X	X
RE109D1-071618	J4073-13	X	X
RE109D1-071618DL	J4073-13DL		X
RE109D1-071618RE	J4073-13RE		X
RE117D2-071618	J4073-14	X	X
RE126D2-071718	J4073-15	X	X
RE126D2-071718DL	J4073-15DL	X	X
RE108D1-071718	J4073-16	X	X
RE108D1-071718L	J4073-16DL		X
RE123D3-071818	J4040-17	X	X
RE123D3-071818MS	J4073-18	X	X
RE123D3-071818MSD	J4073-19	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J4073 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

The 16 days between sample collection and analysis for TB03-070318 exceeded the 14-day QC limit. The positive result for acetone in the sample was qualified as estimated (J) and the non-detect results for this sample were qualified with an X and reason code H.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 7/26/18 at 12:56 on instrument MSVOAX was -24.3% for 4-bromofluorobenzene, which exceeded the 20% QC limit. Since the compound is a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment Blanks:

Acetone (10.5 ug/L) was detected in equipment blank EB02-071718. All positive results for acetone in the SDG samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Field Blanks:

Acetone (7.9 ug/L) and toluene (0.44 ug/L) were detected in field blank FB01-071318. Acetone (10.6 ug/L) and 2-butanone (2.7 ug/L) were detected in field blank FB02-071718. All positive results for acetone in the SDG samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B. There were no positive results for 2-butanone and toluene in the SDG samples, so no further data qualification was necessary.

Rinsate Blanks:

There were no detections in associated rinsate blank RB01-071218. No data qualification was necessary.

Trip Blank:

Acetone (10.7 ug/L) was detected in associated trip blank TB03-070318. All positive results for acetone in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

V.) Surrogate Recoveries:

The Percent Recovery (%R) for toluene-d8 (87%) in sample GW04-071718DL was below the QC limits. The positive result for trichloroethene, the only reported result from this sample analysis, was qualified as estimated biased low (J-) with reason code R.

VI.) Laboratory Control Samples (LCS):

Five LCS were analyzed by the laboratory for this fraction of the SDG. The Percent Recoveries (%Rs) for VX0723WBS02 exceeded the QC limits for the following compounds:

1,1,2-trichloroethane	125%
2-hexanone	140%
1,1,2,2-tetrachloroethane	123%

All positive results for these compounds in the associated SDG samples were qualified as estimated biased high (J+) with reason code E.

The Percent Recovery (%R) for bromomethane (159%) exceeded the QC limits for VX0725WBS01. Since bromomethane was not a target compound for the associated SDG sample analysis, no data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed on SDG sample RE123D3-071818. All criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE126D2-071718 / GW04-071718) was identified as part of this SDG. The calculable RPDs for cis-1,2-dichloroethene (2.3%) and trichloroethene (2.5%) were within the 30% QC limit. The calculated differences for 1,1-dichloroethene, 1,1-dichloroethane, carbon tetrachloride, chloroform, 1,1,1-trichloroethane and 1,1,2-trichloroethane were all less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples GW04-071718, RE108D2-071718 and RE126D2-071718 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-four requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

The Percent Differences (%Ds) for the standards run on 7/23/18 at 22:51 on instrument BNAE were 21.6% for 2-fluorophenol and 33.7% for 2,4,6-tribromophenol, which exceeded the 20% QC limit. Since the compounds are surrogate compounds, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Field Blank:

There was no detection in field blank FB01-071318. No data qualification was necessary.

Rinsate Blank:

1,4-dioxane (0.470 ug/L) was detected in rinsate blank RB01-071218. All positive results for 1,4-dioxane in the SDG samples were than the LOQ and the blank concentration, so no data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for surrogate compounds nitrobenzene-d5, 2-fluorobiphenyl, terphenyl-d14 were outside the established QC limits for most samples and the %R for fluoranthene-d10 was also outside the established QC limits for several SDG samples. Since the listed surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed on SDG sample RE123D3-071718. The Percent Recoveries (%Rs) for 1,4-dioxane in the MS (45%) and MSD (43%) were below the QC limits. The non-detect result for 1,4-dioxane in the parent sample was qualified as estimated (UJ) with reason code D.

VIII.) Field Duplicates:

One set of field duplicate samples (RE126D2-071718 / GW04-071718) was identified as part of this SDG. The calculable RPD was 8.7%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

The Area Count Percent Recoveries (%Rs) for the following samples were below the 50-200% QC limits:

RE109D1-071618	acenaphthene-d10	41%
	chrysene-d12	49%
	perylene-d12	6.9%
RE109D1-071618RE	perylene-d12	9.3%

Since the target compound was not quantitated using these ISTD, no data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for samples RE126D1-071718, GW04-071718, RE109D3-071618, RE108D2-071718M RE109D1-071618, RE126D2-071718 and RE108D1-071718 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane.

Citing the CRQL criteria and professional judgment, the validator has determined that the dilution analysis for samples RE108D2-071718 and RE109D1-071618 To be of preferable data quality to both the initial analysis and reanalysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: December 13, 2018
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J3170
SAMPLING DATE(S): July 3-11, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
TT101D-071018	J3170-01	X	X
TT101D-071018DL	J3170-01DL		X
TT101D1-071018	J3170-02	X	X
TT101D1-071018DL	J3170-02DL	X	X
TT101D2-071018	J3170-03	X	X
TT101D2-071018DL	J3170-03DL	X	
RE131D3-071018	J3170-04	X	X
RE131D1-071018	J3170-05	X	X
RE131D1-071018DL	J3170-05DL		X
RE131D2-071018	J3170-06	X	X
RE131D2-071018DL	J3170-06DL		X
RE125D1-071118	J3170-07	X	X
RE125D1-071118DL	J3170-07DL		X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE120D2-071118	J3170-08	X	X
RE120D2-071118DL	J3170-08DL	X	X
RE125D2-071118	J3170-09	X	X
RE125D2-071118DL	J3170-09DL		X
RE125D2-071118RE	J3170-09RE		X
GW01-071118	J3170-10	X	X
GW01-071118DL	J3170-10DL		X
RE120D3-071118	J3170-11	X	X
RE125D3-071118	J3170-12	X	X
RE120D1-071118	J3170-13	X	X
RE120D1-071118DL	J3170-13DL	X	X
GW02-071118	J3170-14	X	X
GW02-071118DL	J3170-14DL	X	X
GW02-071118RE	J3170-14RE		X
TB01	J3170-15	X	

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J3170 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

The 16 days between sample collection and analysis for TB01 exceeded the 14-day QC limit. The results for this sample, which consisted entirely of non-detects, were qualified as estimated (UJ) with reason code H.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 7/20/18 at 20:31 on instrument MSVOAX was 20.5% for 2-hexanone, which exceeded the 20% QC limit. The non-detect result for 2-hexanone in associated SDG sample RE131D3-071018 was qualified as estimated (UJ) with reason code C.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Trip Blank:

There were no detections in associated trip blank TB01. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

Four LCS / LCSD were analyzed by the laboratory for this fraction of the SDG. The Percent Recovery (%R) for 1,2-dichlorobenzene was 128% for LCS VX0720WBS02, which exceeded the 80-119% QC limits. Since 1,2-dichlorobenzene was not a target compound for the associated SDG samples (Dilution analyses for trichloroethene only), no data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analysis data was not submitted for this SDG. Data qualification based on the absence of the data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

Two sets of field duplicate samples (RE125D2-071118 / GW01-071118 and RE120D1-071118 / GW02-071118) were identified as part of this SDG.

The only calculable RPD for RE125D2-071118 / GW01-071118 was 0% for trichloroethene, which was within the 30% QC limit. The calculated differences for 1,1,1-trichlorotrifluoroethane, 1,1-dichloroethene, acetone, carbon tetrachloride, cis-1,2-dichloroethene, chloroform, 1,1,1-trichloroethane and tetrachloroethane were all less than the 2X the LOQ. No data qualification was necessary for this set.

The only calculable RPD for RE120D1-071118 / GW02-071118 was 1.6% for trichloroethene, which was within the 30% QC limit. The calculated differences for 1,1,1-trichlorotrifluoroethane, 1,1-dichloroethene, acetone, 1,1-dichloroethane, carbon tetrachloride, cis-1,2-dichloroethene, chloroform, 1,1,2-trichloroethane and tetrachloroethane were all less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples TT101D1-071018, TT101D2-071018, RE120D2-071118, RE120D1-071118 and GW02-071118 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-four requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Differences (%Ds) for the standards run on 7/14/18 at 00:42 on instrument BNA-E exceeded the 20% QC limit for the following compounds:

2-fluorophenol	23.0%
phenol-d6	25.3%

nitrobenzene-d5

21.9%

Since the listed compounds were surrogate compounds, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for surrogate compounds nitrobenzene-d5, 2-fluorobiphenyl, terphenyl-d14 were outside the established QC limits for all samples and the %R for fluoranthene-d10 was also outside the established QC limits for several SDG samples. Since the listed surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS / LCSD set was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analysis data was not submitted for this SDG. Data qualification based on the absence of the data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

Two sets of field duplicate samples (RE125D2-071118 / GW01-071118 and RE120D1-071118 / GW02-071118) were identified as part of this SDG.

The calculable RPDs for RE125D2-071118 / GW01-071118 at 1.5% and RE120D1-071118 / GW02-071118 at 3.7% were within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for all SDG samples except TT101D2-071018, RE131D3-071018, RE120D3-071118 and RE125D3-071118 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

VALIDATA

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 6, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J5189
SAMPLING DATE(S): September 26-28, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
BP-TT-TB01-20180926	J5189-01	X	
RE-117D1-20180926	J5189-02	X	X
RE-117D2-20180926	J5189-03	X	X
RE-131D2-20180927	J5189-04	X	X
RE-131D2-20180927DL	J5189-04DL	X	X
RE-131D1-20180927	J5189-05	X	X
RE-131D1-20180927DL	J5189-05DL	X	X
RE-131D3-20180927	J5189-06	X	X
RE-131D3-20180927DL	J5189-06DL	X	
RE-105D1-20180927	J5189-07	X	X
RE-105D1-20180927DL	J5189-07DL		X
RE-105D2-20180927	J5189-08	X	X
RE-105D2-20180927DL	J5189-08DL	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
TT-101D2-20180928	J5189-09	X	X
TT-101D2-20180928DL	J5189-09DL	X	
TT-101D-20180928	J5189-10	X	X
TT-101D-20180928DL	J5189-10DL	X	X
TT-101D1-20180928	J5189-11	X	X
TT-101-D1-20180928DL	J5189-11DL		X
TT-DUP01-20180928	J5189-12	X	X
TT-DUP01-20180928DL	J5189-12DL		X
BP-TT-EB01-20180928	J5189-13	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J5189 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 10/8/18 at 20:56 on instrument MSVOAX was 20.3% for 1,2-dichloroethane-d4. Since the compound was a surrogate, no data qualification was necessary. It was noted by the validator that several other compounds for the standard exceeded the 20% QC limit, but since they were not target compounds for the associated dilution analyses, they are not listed in this report and data qualification was not necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

Acetone (7.9 ug/L) was detected in equipment blank BP-TT-EB01-20180928. All positive results for acetone in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Acetone (6.70 ug/L) and trichloroethene (0.65 ug/L) were detected in equipment blank BP-TT-ERB02-20181005. All positive results for acetone and trichloroethene in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Trip Blank:

There were no detections in associated trip blank BP-TT-TB01-20180926. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch MS / MSD analyses data were submitted for this SDG. The Percent Recovery (%R) for trichloroethene in the MS sample was 140%, which exceeded the QC limits. Data qualification

based on batch QC data was not required, so data qualification was not necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (TT-101D-20180928 / TT-DUP01-20180928) was identified as part of this SDG. The calculable RPDs were 15% for 1,1,2-trichlorotrifluoroethane and 91% for trichloroethene, with the RPD for trichloroethene exceeding the 30% QC limit. The positive results for this compound in the two samples were qualified as estimated (J) with reason code G.

The calculated differences for dichlorodifluoromethane, 1,1-dichloroethene, 1,1-dichloroethane, carbon tetrachloride, cis-1,2-dichloroethene, chloroform and 1,1,2-trichloroethane were all less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,1,2-trichlorotrifluoromethane in the initial analyses for RE-131D2-20180927 and RE-131D3-2018927 and the results for trichloroethene in the initial analyses for SDG samples RE-131D1-20180927, RE-105D2-20180927, TT-101D2-20180928 and TT-101D-20180928 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for either 1,1,2-trichlorotrifluoroethane or trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,1,2-trichlorotrifluoromethane or trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for these compounds in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-four requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 10/4/18 at 15:31 on instrument BNA-E was 27.7% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/5/18 at 02:37 on instrument BNA-E was 56.2% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/5/18 at 08:44 on instrument BNA-E was 56.2% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/5/18 at 16:25 on instrument BNA-E was 50.8% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/5/18 at 17:40 on instrument BNA-E was 60.8% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/6/18 at 04:15 on instrument BNA-E was 82.3% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/8/18 at 20:34 on instrument BNA-E was 68.5% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/9/18 at 01:30 on instrument BNA-E was 64.6% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no detections in the associated equipment and rinsate blanks. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS / LCSD set was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analysis data was not submitted for this fraction of the SDG. Data qualification based on the absence of MS / MSD data was not required, so no data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (TT-101D-20180928 / TT-DUP01-20180928) was identified as part of this SDG. The calculable RPD was 14%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for SDG samples RE-131D2-20180927, RE-131D1-20180927, RE-105D1-20180827, RE-105D2-20180927, TT-101D-20180928, TT-101D1-20180928 and TT-DUP01-20180928 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 6, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J5284
SAMPLING DATE(S): October 1-3, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
BP-TT-TB02-20181001	J5284-01	X	
RE-125D2-2018001	J5284-02	X	X
RE-125D2-2018001DL	J5284-02DL	X	X
RE-125D2-2018001MS	J5284-03	X	X
RE-125D2-2018001MSD	J5284-04	X	X
RE-125D1-20181001	J5284-05	X	X
RE-125D1-20181001DL	J5284-05DL		X
RE-125D3-20181001	J5284-06	X	X
RE-120D3-20181002	J5284-07	X	X
RE-120D2-20181002	J5284-08	X	X
RE-120D2-20181002DL	J5284-08DL	X	X
RE-120D1-20181002	J5284-09	X	X
RE-120D1-20181002DL	J5284-09DL	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE-103D3-20181003	J5284-10	X	X
RE-103D3-20181003DL	J5284-10DL	X	X
RE-103D2-20181003	J5284-11	X	X
RE-103D2-20181003DL	J5284-11DL	X	
RE-103D1-20181003	J5284-12	X	X
RE-103D1-20181003DL	J5284-12DL	X	X
RE-104D2-20181003	J5284-13	X	X
RE-104D1-20181003	J5284-14	X	X
RE-104D1-20181003DL	J5284-14DL		X
RE-104D3-20181003	J5284-15	X	X
TT-DUP02-20181003	J5284-16	X	X
TT-DUP02-20181003DL	J5284-16DL	X	X
TT-DUP03-20181003	J5284-17	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J5284 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Differences (%Ds) for the standards run on 10/9/18 at 17:09 on instrument MSVOAU were 24.9% for bromomethane and -20.5% for carbon disulfide, which exceed the 20% QC limit. The non-detect results for these compounds in associated sample BP-TT-TB02-20181001 were qualified as estimated (UJ) with reason code C.

The Percent Difference (%D) for the standards run on 10/10/18 at 02:04 on instrument MSVOAX was 21.5% for 4-methyl-2-pentanone, which exceeded the 20% QC limit. The non-detect results for this compound in associated samples TT-DUP02-20181003 and TT-DUP03-20181003 were qualified as estimated (UJ) with reason code C.

The Percent Differences (%Ds) for the standards run on 10/11/18 at 02:43 on instrument MSVOAX were -20.9% for 1,2-dichloroethene-d4 and -25.9% for dibromochloromethane, which exceeded the 20% QC limit. Since the listed compounds were surrogate compounds, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

Acetone (7.9 ug/L) was detected in equipment blank BP-TT-EB01-20180928. All positive results for acetone in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Acetone (6.70 ug/L) and trichloroethene (0.65 ug/L) were detected in equipment blank BP-TT-ERB02-20181005. All positive results for acetone and trichloroethene in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Trip Blank:

There were no detections in associated trip blank BP-TT-TB02-20181001. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recovery (%R) for 4-bromofluorobenzene (84%) was below the QC limits for sample BP-TT-TB02-20181001. The results for this sample, which consisted entirely of non-

detects, were qualified as estimated (UJ) with reason code R.

VI.) Laboratory Control Samples (LCS):

Three LCS were analyzed by the laboratory for this fraction of the SDG. The Percent Recoveries (%Rs) for VU1010WBS01 were below the QC limits for the following compounds:

trans-1,2-dichloroethene	73%
chlorobenzene	80%
ethylbenzene	77%
m,p-xylene	78%
o-xylene	77%
styrene	76%
1,3-dichlorobenzene	79%

All results for these compounds in associated sample BP-TT-TB02-20181001, which consisted entirely of non-detects, were qualified as estimated (UJ) with reason code E.

The Percent Recoveries (%Rs) for VX1009WBS01 exceeded the QC limits for the following compounds:

MTBE	126%
toluene	123%

Since the results for these compounds in the associated samples were all non-detects, no data qualification was necessary.

The Percent Recovery (%R) for VX1010WBS09 was 52% for bromomethane, which was below the QC limits. Since the compound was not a target compound for the associated samples (Dilution analyses for trichloroethene only), no data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample RE-125D2-2018001. The Percent Recovery (%R) for trichloroethene in the MS sample was 140%, which exceeded the QC limits. Since the reported result for this compound in the sample was reported from a dilution analysis, citing professional judgment, the validator determined that data qualification was not necessary.

VIII.) Field Duplicates:

Two sets of field duplicate samples (RE-103D1-20181003 / TT-DUP02-20181003 and RE-104D3-20181003 / TT-DUP03-20181003) were identified as part of this SDG.

The calculable RPDs for RE-103D1-20181003 / TT-DUP02-20181003 were 1.6% for 1,1,2-

trichlorotrifluoroethane and 1.7% for trichloroethene, which were within the 30% QC limit. The calculated differences for 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, chloroform, 1,1,2-trichloroethane and tetrachloroethane were all less than the 2X the LOQ. No data qualification was necessary for this set.

The calculated percent difference for trichloroethene for RE-104D3-20181003 / TT-DUP03-20181003 was less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples RE-125D2-2018001, RE120-D2-20181002, RE-120D1-20181002, RE-103D3-20181003, RE-103D2-20181003, RE-103D1-20181003 and TT-DUP02-20181003 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-four requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 10/5/18 at 17:40 on instrument BNA-E was 60.8% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/6/18 at 04:15 on instrument BNA-E was 82.3% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/8/18 at 12:43 on instrument BNA-E was 46.9% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/8/18 at 19:19 on instrument BNA-E was 55.4% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/8/18 at 20:34 on instrument BNA-E was 68.5% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/9/18 at 01:30 on instrument BNA-E was 64.6% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/9/18 at 12:45 on instrument BNA-E was 61.5% for nitrobenzene-d5, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/9/18 at 14:46 on instrument BNA-E was 62.3% for nitrobenzene-d5, which exceeded the 50% QC limit for closing calibrations. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no detections in the associated equipment and rinsate blanks. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS set was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analysis was performed using sample RE-125D2-2018001. Since the parent result for 1,4-dioxane was greater than 4X the spike concentration, the results were not considered meaningful. No data qualification was necessary.

VIII.) Field Duplicates:

Two sets of field duplicate samples (RE-103D1-20181003 / TT-DUP02-20181003 and RE-104D3-20181003 / TT-DUP03-20181003) were identified as part of this SDG.

The only calculable RPD was 0% for the first set, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for SDG samples RE-125D2-2018001, RE-125D1-20181001, RE-120D2-20181002, RE-120D1-20181002, RE-103D1-20181003, RE-104D1-20181003 and TT-DUP02-20181003 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 6, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J5317
SAMPLING DATE(S): October 4-5, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
BP-TT-TB03-20181004	J5317-01	X	
RE-122D3-20181004	J5317-02	X	X
RE-122D3-20181004MS	J5317-03	X	X
RE-122D3-20181004MSD	J5317-04	X	X
RE-122D1-20181004	J5317-05	X	X
RE-122D1-20181004DL	J5317-05DL		X
RE-122D2-20181004	J5317-06	X	X
RE-122D2-20181004DL	J5317-06DL		X
RE-122D2-IMP-20181004	J5317-07	X	X
RE-122D2-IMP-20181004DL	J5317-07DL		X
RE-122D3-20181004	J5317-08	X	X
RE-122D1-IMP-20181004	J5317-09	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE-122D1-IMP-20181004DL	J5317-09DL	X	X
RE-108D2-20181004	J5317-10	X	X
RE-108D2-20181004DL	J5317-10DL		X
RE-108D1-20181004	J5317-11	X	X
RE-108D1-20181004DL	J5317-11DL		X
TT-DUP04-20181004	J5317-12	X	X
TT-DUP04-20181004DL	J5317-12DL	X	X
RE-109D3-20181005	J5317-13	X	X
RE-109D3-20181005DL	J5317-13DL		X
RE-109D2-20181005	J5317-14	X	X
RE-109D2-20181005MS	J5317-15MS	X	X
RE-109D2-20181005MSD	J5317-15MSD	X	X
RE-109D1-20181005	J5317-17	X	X
BP-TT-ERB02-20181005	J5317-18	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J5317 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Differences (%Ds) for the standards run on 10/10/18 at 15:33 on instrument MSVOAX were -29.1% for 1,2-dichloroethane-d4, -30.7% for dibromofluoromethane and -23.4% for toluene-d8, which exceeded the 20% QC limit. Since the compounds were surrogates, no data qualification was necessary.

The Percent Differences (%Ds) for the standards run on 10/11/18 at 15:45 on instrument MSVOAX were -25.4% for 1,2-dichloroethane-d4 and -24.3% for dibromofluoromethane, which exceeded the 20% QC limit. Since the compounds were surrogates, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

Acetone (7.9 ug/L) was detected in equipment blank BP-TT-EB01-20180928. All positive results for acetone in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Acetone (6.70 ug/L) and trichloroethene (0.65 ug/L) were detected in equipment blank BP-TT-ERB02-20181005. All positive results for acetone and trichloroethene in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Trip Blank:

Acetone (3.6 ug/L) was detected in associated trip blank BP-TT-TB03-20181004. All positive results for acetone in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for toluene-d8 (80%) in RE-122D3-20181004MS, 1,2-dichloroethane-d4 (80%), dibromofluoromethane (75%) and toluene-d8 (81%) for RE-109D2-20181005MS and 1,2-dichloroethane-d4 (80%), dibromofluoromethane (75%) and toluene-d8 (82%) for RE-109D2-20181005MSD were below the QC limits. Since the listed samples were laboratory QC samples, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

Three LCS were analyzed by the laboratory for this fraction of the SDG. The Percent Recovery (%R) for MTBE at 125% for VX1010WBS02 exceeded the QC limits. Since there were no positive results for this compound in the associated samples, no data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using samples RE-122-D3-20181004 and RE-109D2-20181005. All criteria were met. No data qualification was not necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-108D2-20181004 / TT-DUP04-20181004) was identified as part of this SDG. The only calculable RPD was 11% for trichloroethene, which was within the 30% QC limit. The calculated differences for 1,1,2-trichlorotrifluoromethane, 1,1-dichloroethene, 1,1-dichloroethane, carbon tetrachloride, cis-1,2-dichloroethene, chloroform, 1,1,1-trichloroethane and 1,1,2-trichloroethane were all less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The result for trichloroethene in the initial analysis for SDG sample TT-DUP04-20181004 exceeded the linear calibration range. A dilution analysis was performed for the sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis result for trichloroethene in the listed sample to be of preferable data quality to the initial analysis result for the compound and the initial analysis results for all other compounds in the listed sample to be of preferable data quality to the reanalysis results for all other compounds in the listed sample.

It was noted that the laboratory analyzed samples RE-122D1-20181004, RE-122D2-20181004, RE122-D2-IMP-20181004, RE-122D1-IMP-20181004 and RE-108D2-20181004 at a dilution based on what is described by the laboratory as bad matrices.

All forty-four requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 10/16/18 at 17:38 on instrument BNA-E was 28.6% for terphenyl-d14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/17/18 at 05:19 on instrument BNA-E was 66.5% for terphenyl-d14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no detections in the associated equipment and rinsate blanks. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analysis was performed using samples RE-122D3-20181004 and RE-109D2-20181005. All criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-108D2-20181004 / TT-DUP04-20181004) was identified as part of this SDG. The calculable RPD was 2.8%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

The Area Count Percent Recoveries (%Rs) for phenanthrene-d10 for samples RE-122D1-IMP-2181004, RE-122D1-IMP-20181004DL and RE-108D1-20181004 were all below the QC limits. Since the target compound is not associated with this ISTD, no data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for SDG samples RE-122D1-20181004, RE-122D2-20181004, RE-122D2-IMP-20181004, RE-122D1-IMP-20181004, RE-108D2-20181004, RE-108D1-20181004, TT-DUP04-20181004 and RE-109D3-20181005 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 6, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J5393
SAMPLING DATE(S): October 8-9, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
BP-TT-TB04-20181008	J5393-01	X	
RE-126D2-20181008	J5393-02	X	X
RE-126D2-20181008DL	J5393-02DL	X	
TT-DUP05-20181008	J5393-03	X	X
TT-DUP05-20181008DL	J5393-03DL	X	
RE-126D1-20181008	J5393-04	X	X
RE-126D3-20181008	J5393-05	X	X
RE-123D2-20181008	J5393-06	X	X
RE-123D3-20181008	J5393-07	X	X
RE-123D1-20181009	J5393-08	X	X
RE-137-745FT-2018109	J5393-09	X	X
RE-137-745FT-2018109DL	J5393-09DL	X	X
RE137-700FT-20181009	J5393-10	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE137-700FT-20181009DL	J5393-10DL	X	X
RE137-640FT-20181009	J5393-11	X	X
RE137-640FT-20181009DL	J5393-11DL	X	X
WE13-GW-TANK-IDW**	J5393-12	X	

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE,
RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

** - Full client sample id WE13-GW-TANK-IDW-10102018

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J5393 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C for all samples except WE13-GW-TANK3-IDW-10102018, which was performed by Gas Chromatography / Mass Spectrometry (GC / MS) per EPA Method 624.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

The laboratory reported that samples RE-126D1-20181008 and RE-137-745FT-2018109 were logged into the lab with a pH of greater than 2. The exact pH for the samples was not reported by the laboratory. Citing the exceedance and professional judgment, the validator has qualified the positive results for these samples as estimated biased low (J-) and the non-detect results as estimated (UJ) with reason code M.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

The Percent Relative Standard Deviations (%RSDs) for the standards analyzed on 10/12/18 on instrument MSVOAN exceeded the 15% QC limit for the following compounds:

bromoform	23.3%
1,3-dichlorobezene	18.1%
1,4-dichlorobenzene	21.6%
1,2-dichlorobenzene	16.1%

The results for these compounds in associated sample WE13-GW-TANK13-IDW-10102018, which were all non-detects, were qualified as estimated (UJ) with reason code C.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Differences (%Ds) for the standards run on 10/11/18 at 15:45 on instrument MSVOAX were -25.4% for 1,2-dichloroethane-d4 and -24.3% for dibromofluoromethane, which exceeded the 20% QC limit. Since the compounds were surrogates, no data qualification was necessary.

The Percent Differences (%Ds) for the standards run on 10/24/18 at 10:38 on instrument MSVOAN exceeded the 20% QC limit for the following compounds:

vinyl chloride	-27.7%
chloroethane	-26.2%
trans-1,3-dichloropropene	-20.1%
bromoform	-25.8%

The results for these compounds in associated sample WE13-GW-TANK13-IDW-10102018, which were all non-detects, were qualified as estimated (UJ) with reason code C.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

Acetone (7.9 ug/L) was detected in equipment blank BP-TT-EB01-20180928. All positive results for acetone in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Acetone (6.70 ug/L) and trichloroethene (0.65 ug/L) were detected in equipment blank BP-TT-ERB02-20181005. All positive results for acetone and trichloroethene in the samples, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

Trip Blank:

There were no detections in associated trip blank BP-TT-TB04-20181008. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recovery (%R) for toluene-d8 in a batch QC sample was below the QC limits. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

Three LCS and one LCS / LCSD set were analyzed by the laboratory for this fraction of the SDG. The Relative Percent Difference (RPD) for 1,2-dichlorobenzene at 23% exceeded the 20% QC limit. The non-detect result for this compound in associated sample WE31-GW-TANK12-IDW-10102018 was qualified as estimated (UJ) with reason code F.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch MS / MSD analyses data were submitted for this fraction of the SDG. All criteria were met. No data qualification was not necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-126D2-20181008 / TT-DUP05-20181008) was identified as part of this SDG. The only calculable RPD was 0% for trichloroethene, which was within the 30% QC limit. The calculated differences for 1,1,2-trichlorotrifluoromethane, 1,1-dichloroethene, 1,1-dichloroethane, carbon tetrachloride, cis-1,2-dichloroethene, chloroform and tetrachloroethene were all less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples RE-126D2-20181008, TT-DUP05-20181008, RE-137-745FT-2018109, RE137-700FT-20181009 and RE137-640FT-20181009 exceeded the linear calibration range. A dilution analysis was performed for each of the samples with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis result for the compound and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-four requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP, with exception of the reported LOD and LOQ for WE13-GW-TANK3-IDW-10102018.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples, except WE13-GW-TANK3-IDW-10102018, were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples, except WE13-GW-TANK3-IDW-10102018, were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for all compounds in sample WE13-GW-TANK3-IDW-10102018 exceeded the PAL limits.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 10/16/18 at 17:38 on instrument BNA-E was 28.6% for terphenyl-d14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 10/17/18 at 05:19 on instrument BNA-E

was 66.5% for terphenyl-d14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no detections in the associated equipment and rinsate blanks. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS / LCSD set was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analysis data was not submitted for this fraction of the SDG. Data qualification based on the absence of QC data was not required. All criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-126D2-20181008 / TT-DUP05-20181008) was identified as part of this SDG. The calculable RPD was 10%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

The Area Count Percent Recoveries (%Rs) for acenaphthene-d10, chrysene-d12 and perylene-d12

were all below the QC limits for RE-123D3-20181008. Since the target compound is not associated with these ISTDs, no data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for SDG samples RE-137-745FT-2018109, RE137-700FT-20181009 and RE137-640FT-20181009 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

VALIDATA

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 25, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J6325
SAMPLING DATE(S): December 4-5, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
TB01-20181204	J6325-01	X	
RE-117D1-20181204	J6325-02	X	X
RE-117D1-20181204RE	J6325-02RE		X
RE-117D2-20181204	J6325-03	X	X
RE-125D2-20181204	J6325-04	X	X
RE-125D2-20181204DL	J6325-04DL	X	X
RE-125D1-20181204	J6325-05	X	X
RE-125D1-20181204DL	J6325-05DL	X	X
RE-125D3-20181204	J6325-06	X	X
RE-125D3-20181204DL	J6325-06DL	X	
RE-131D2-20181205	J6325-07	X	X
RE-131D2-20181205DL	J6325-07DL	X	X
RE-131D1-20181205	J6325-08	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE-131D1-20181205DL	J6325-08DL	X	X
RE-131D1-20181205MS	J6325-09	X	X
RE-131D1-20181205MSD	J6325-10	X	X
RE-131D3-20181205	J6325-11	X	X
RE-131D3-20181205DL	J6325-11DL	X	
RE-120D3-20181205	J6325-12	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J6324 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were associated equipment blanks for this SDG. No data qualification was necessary.

Trip Blank:

There were no detections in associated trip blank TB01-20181204. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

Three LCS were analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data were performed using sample RE-131D1-20181205. The Percent Recovery (%R) for trichloroethene was 140% for the MS sample, which exceeded the QC limits. The positive result for this compound in the parent sample was qualified as estimated (J+) with reason code D.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-120D3-20181205 / DUP01-20181205 (SDG J6324) was identified as part of this SDG. The calculable Relative Percent Difference (RPD) for trichloroethene (4.9%) was within the 30% QC limit and the calculable difference for 1,1,2-trichlorotrifluoroethane was within the 2X LOQ limits, so no data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples RE-125D2-20181204, RE-125D1-20181204, RE-125D3-20181204 and RE-131D1-20181205 and the results for 1,1,2-trichlorotrifluoroethane in the initial analyses for SDG samples RE-131D2-20181205 and RE-131D3-20181205 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene or 1,1,2-trichlorotrifluoroethane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for these compounds in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-three requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

The non-detect results for samples RE-117D1-20181204 and RE-117D1-20181204RE were qualified as X based on surrogate recovery criteria.

All other laboratory data were acceptable without qualifications.

MAJOR ISSUES

I.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for all surrogates in both the initial and reanalysis for sample RE-117D1-20181204 were below the QC limits and were at or below 10%. Citing surrogate recovery criteria and professional judgment, the validator has qualified the non-detect results for both samples as X with reason code R.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 12/12/18 at 15:42 on instrument BNA-E was -21.1% for terphenyld-14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 12/13/18 at 15:16 on instrument BNA-E was -21.0% for terphenylid-14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no equipment blanks associated with this SDG. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

Please also see the Major Issues section for this fraction of the SDG.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample RE-131D1-20181205. Since the parent sample result was greater than 4X the spike concentration, the results were not considered meaningful. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-120D3-20181205 / DUP01-20181205 (SDG J6324) was identified as part of this SDG. The calculable Relative Percent Difference (RPD) was 4.1%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analysis for SDG samples RE-125D2-20181204, RE-125D1-20181204, RE-131D2-20181205 and RE-131D1-20181205 exceeded the linear calibration range. A dilution analysis was performed for each of the samples with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis result for this compound in the samples.

The surrogate compound %Rs were below the QC limits and less than 10% for the initial analysis of sample RE-117D1-20181204. The sample was reanalyzed, but not re-extracted due to limited sample volume, with all surrogate %Rs at or below 10%. Citing the similar surrogate performance, holding times and professional judgment, the validator has determined that the initial analysis result for the sample to be of preferable data quality to the reanalysis sample result.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

VALIDATA

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 25, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J6324
SAMPLING DATE(S): December 5-6, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE-120D2-20181205	J6324-01	X	X
RE-120D2-20181205DL	J6324-01DL	X	X
RE-120D1-20181205	J6324-02	X	X
RE-120D1-20181205DL	J6324-02DL		X
RE-103D3-20181205	J6324-03	X	X
RE-103D3-20181205DL	J6324-03DL	X	
RE-103D2-20181205	J6324-04	X	X
RE-103D2-20181205DL	J6324-04DL	X	
RE-103D1-20181205	J6324-05	X	X
RE-103D1-20181205DL	J6324-05DL	X	X
DUP01-20181205	J6324-06	X	X
RE-109D1-20181206	J6324-07	X	X
RE-109D3-20181206	J6324-08	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE-109D3-20181206DL	J6324-08DL		X
RE-109D2-20181206	J6324-09	X	X
RE-104D1-220181206	J6324-10	X	X
RE-104D1-20181206DL	J6324-10DL		X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J6324 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Differences (%Ds) for the standards run on 12/11/18 at 10:47 on instrument MOVOAX were 26.7% for bromomethane and 23.8% for acetone, which exceeded the 20% QC limit. The results for these compounds in associated sample DUP01-20181205, which were both non-detect, were qualified as estimated (UJ) with reason code C.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were associated equipment blanks for this SDG. No data qualification was necessary.

Trip Blank:

There were associated trip blanks submitted for this SDG. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS and one LCS / LCSD set were analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data were not submitted for this fraction of the SDG. Data qualification based on the absence of QC data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-120D3-20181205 (SDG J6325) / DUP01-20181205) was identified as part of this SDG. The calculable Relative Percent Difference (RPD) for trichloroethene (4.9%) was within the 30% QC limit and the calculable difference for 1,1,2-trichlorotrifluoroethane was within the 2X LOQ limits, so no data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples RE-120D2-20181208, RE-120D1-20181205, RE-103D3-20181205, RE-103D2-20181205 and RE103D1-20181205 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-three requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 12/12/18 at 15:42 on instrument BNA-E was -21.1% for terphenyld-14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

The Percent Difference (%D) for the standards run on 12/13/18 at 15:16 on instrument BNA-E was -21.0% for terphenyld-14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no equipment blanks associated with this SDG. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch MS / MSD analyses data were submitted for this fraction of the SDG. Since the parent sample result was greater than 4X the spike concentration, the results were not considered meaningful. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE-120D3-20181205 (SDG J6325) / DUP01-20181205) was identified as part of this SDG. The calculable Relative Percent Difference (RPD) was 4.1%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analysis for SDG samples RE-120D2-20181205, RE-120D1-20181205, RE-103D1-20181205, RE-109D3-20181206 and RE-104D1-20181206 exceeded the linear calibration range. A dilution analysis was performed for each of the samples with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis result for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 24, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J6323
SAMPLING DATE(S): December 6-7, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE-104D3-20181206	J6323-01	X	X
RE-104D2-20181206	J6323-02	X	X
RE-122D1-20181206	J6323-03	X	X
RE-122D1-20181206DL	J6323-03DL	X	
RE-122D2-20181206	J6232-04	X	X
RE-122D2-20181206DL	J6323-04DL	X	X
RE-122D3-20181206	J6323-05	X	X
DUP02-20181206	J6323-06	X	X
RE-126D1-20181207	J6323-07	X	X
RE-126D3-20181207	J6323-08	X	X
RE-126D2-2181207	J6323-09	X	X
RE-126D2-20181207DL	J6323-09DL	X	
RE-123D2-20181207	J6323-10	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE,
RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J6323 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were associated equipment blanks for this SDG. No data qualification was necessary.

Trip Blank:

There were associated trip blanks submitted for this SDG. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

Two LCS were analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Batch MS / MSD analyses data were submitted for this fraction of the SDG. One Percent Recovery (%R) exceeded the QC limits. Data qualification based on batch QC data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE104D2-20181206 / DUP02-20181206) was identified as part of this SDG. The calculable Relative Percent Differences (RPDs) for cis-1,2-dichloroethene (4.4%) and trichloroethene (3.0%) were within the 30% QC limit and the calculable difference for chloroform was within the 2X LOQ limits, so no data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples RE-122D1-20181206, RE-122D2-20181206 and RE-126D2-20181207 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-three requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 12/13/18 at 15:16 on instrument BNA-E was -21.0% for terphenylid-14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no equipment blanks associated with this SDG. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target

compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS / LCSD set was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data were not submitted for this fraction of the SDG. Data qualification based on the absence of QC data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (RE104D2-20181206 / DUP02-20181206) was identified as part of this SDG. The calculable Relative Percent Difference (RPD) was 0%, which was within the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The result for 1,4-dioxane in the initial analysis for SDG sample RE-122D2-20181206 exceeded the linear calibration range. A dilution analysis was performed for the sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis result for 1,4-dioxane in the sample to be of preferable data quality to the initial analysis result for this compound in the sample.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 24, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J6321
SAMPLING DATE(S): December 7, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE123D1-20181207	J6321-01	X	X
RE123D3-20181207	J6321-02	X	X
EB01-20181207	J6321-03	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J6321 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no detections in associated equipment blank EB01-20181207. No data qualification was necessary.

Trip Blank:

There were associated trip blanks submitted for this SDG. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS / LCSD set was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data were not submitted for this fraction of the SDG. Data qualification based on the absence of QC data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

There were no field duplicate samples identified as part of this SDG. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

All forty-three requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 12/13/18 at 15:16 on instrument BNA-E was -21.0% for terphenylid-14, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

1,4-dioxane (1.7 ug/L) was detected in associated equipment blank EB01-20181207. Since the sample results for this compound were non-detects, no data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS / LCSD set was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data were not submitted for this fraction of the SDG. Data qualification based on the absence of QC data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

There were no field duplicate samples identified as part of this SDG. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260C and 8270 Modified
VALIDATION GUIDELINES: Draft Tier II Sampling and Analysis Plan, (Field Sampling Plan and Quality Assurance Project Plan) for Regional Groundwater Investigation Site 0001, Former Drum Marshalling Area Operable Unit 2 Plan, Naval Weapons Industrial Plant, Bethpage, New York, June 2018, DOD QSM 5.0; July 2013, DOD Data Validation Guidance, February 2018 and Professional Judgment
SAMPLE MATRIX: Water
TYPES OF ANALYSES: Volatile Organic Compounds (VOC) and Semivolatile Organic Compounds (SVOC)*
DATA VALIDATION DATE: March 24, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J6405
SAMPLING DATE(S): December 10-12, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
TT101D-20181212	J6405-01	X	X
TT101D-20181212DL	J6405-01DL		X
TT101D1-20181212	J6405-02	X	X
TT101D1-20181212DL	J6405-02DL	X	X
TT101D2-20181212	J6405-03	X	X
TT101D2-20181212DL	J6405-03DL	X	
TB-20181210	J6405-04	X	
RE105D1-20181210	J6405-05	X	X
RE105D1-20181210DL	J6405-05DL		X
RE105D1-20181210MS	J6405-06	X	X
RE105D1-20181210MSD	J6405-07	X	X
RE105D-2-20181210	J6405-08	X	X
RE105D-2-20181210DL	J6405-08DL	X	X

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>	<u>SVOC*</u>
RE108D1-20181210	J6405-09	X	X
RE108D2-20181210	J6405-10	X	X
RE108D2-20181210DL	J6405-10DL	X	
DUP03-20181210	J6405-11	X	X
DUP03-20181210DL	J6405-11DL	X	X
DUP04-20181210	J6405-12	X	X
DUP04-20181210DL	J6405-12DL	X	
EB01-20181211	J6405-13	X	X
EB02-20181211	J6405-14	X	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* SVOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J6405 – Organic Chemistry

VOLATILE ORGANICS

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260C.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 12/17/18 at 09:36 on instrument MSVOAX was 22.7%, which exceeded the 20% QC limit. The results for these compounds in the associated samples, which were all non-detects, were qualified as estimated (UJ) with reason code C. The associated samples were: TT101D-20181212, TT101D1-20181212, TT101D2-20181212, TB-20181210, RE105D1-20181210, RE108D2-20181210, DUP03-20181210, DUP04-20181210 and EB02-20181211.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

Acetone (4.20 ug/L) was detected in associated equipment blank EB02-20181211. The positive results for acetone in associated samples RE105D1-20181210 and RE105D2-20181210, which were less than the LOQ, were qualified as undetected (U) with the result being raised to the LOQ with reason code B.

There were no detections in associated equipment blank EB01-20181211. No data qualification was necessary.

Trip Blank:

There were no detections in associated trip blank TB-20181210. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

Four LCS were analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample RE-105D1-20181210. The Percent Recoveries (%Rs) for trichloroethene (149%, 149%) exceeded the QC limits. The positive result for

trichloroethene in the parent sample was qualified as estimated biased high (J+) with reason code D.

VIII.) Field Duplicates:

Two sets of field duplicate samples (RE-105D2-20181210 / DUP03-20181210 and RE-108D2-20181210 / DUP04-20181210) were identified as part of this SDG.

The calculable RPDs for RE-105D2-20181210 / DUP03-20181210 were 0% for 1,1,2-trichlorotrifluoroethane, 3.9% for 1,1-dichloroethene and 0% for trichloroethene, which were within the 30% QC limit. The calculated differences for 1,1-dichloroethene, carbon tetrachloride, cis-1,2-dichloroethene, chloroform, 1,1,2-trichloroethane and tetrachloroethene were all less than the 2X the LOQ. No data qualification was necessary for this set.

The calculable RPDs for RE-108D2-20181210 / DUP04-20181210 were 1.7% for 1,1,2-trichlorotrifluoroethane, 3.6% for 1,1-dichloroethene, 2.7% for ci-1,2-dichloreothene and 0% for trichloroethene, which were within the 30% QC limit. The calculated differences for 1,1-dichoroethane, carbon tetrachloride, chloroform, 1,1,2-trichloroethane and tetrachloroethene were less than the 2X the LOQ. No data qualification was necessary for this set.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for trichloroethene in the initial analyses for SDG samples TT101D1-20181212, TT101D2-20181212, RE105D2-20181210, RE108D2-20181210, DUP03-20181210 and DUP04-20181210 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for trichloroethene. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for trichloroethene in the listed samples to be of preferable data quality to the initial analysis results for this compound in the listed samples and the initial analysis results for all other compounds in the listed samples to be of preferable data quality to the reanalysis results for all other compounds in the listed samples.

All forty-three requested compounds were reported with acceptable LOD and LOQ results as determined by the SAP.

The validator has noted that the non-detect results for 1,2-dichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

The validator has noted that the non-detect results for 1,1,1trichloroethane in all samples were reported at 0.75 ug/L, which exceeds the PAL limit of 0.50 ug/L.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

SEMIVOLATILE ORGANICS (1,4-DIOXANE ONLY)

SUMMARY

I.) General:

The analyses for Semivolatile Organics (1,4-dioxane only) were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8270 Modified.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was not necessary.

Continuing Calibration:

The Percent Difference (%D) for the standards run on 12/16/18 at 13:14 on instrument BNA-E was 20.2% for fluoranthene-d10, which exceeded the 20% QC limit. Since the listed compound was a surrogate compound, no data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no detections in the associated equipment and rinsate blanks. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) for several surrogate compounds were outside the established QC limits for multiple samples. Since the surrogate compounds were not associated with the target compound, no data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this fraction of the SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analysis was performed using sample RE-105D1-20181210. The Relative Percent Difference (RPD) was 50%, which exceeded the 20% QC limit. The positive result for the parent sample was qualified as estimated (J) with reason code F.

VIII.) Field Duplicates:

Two sets of field duplicate samples (RE-105D2-20181210 / DUP03-20181210 and RE-108D2-20181210 / DUP04-20181210) were identified as part of this SDG.

The calculable RPDs were 13% for the first set and 3.4% for the second set, which were within

the 30% QC limit. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

The results for 1,4-dioxane in the initial analyses for SDG samples TT101D-20181212, TT101D1-20181212, RE105D1-20181210, RE105D2-2181210 and DUP03-20181210 exceeded the linear calibration range. A dilution analysis was performed for each sample with all calibration criteria met for 1,4-dioxane. Citing the CRQL criteria and professional judgment, the validator has determined that the reanalysis results for 1,4-dioxane in the samples to be of preferable data quality to the initial analysis results for this compound in the samples.

1,4-dioxane was reported with acceptable LOD and LOQ results as determined by the SAP.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

VALIDATA

Chemical Services, Inc.

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(770) 232-5082 (Fax)

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DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ; subcontracted to Eurofins / Lancaster Laboratories
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): SW846 Methods 8260CSIM
VALIDATION GUIDELINES: Method criteria, Laboratory limits and Professional Judgment
SAMPLE MATRIX: Groundwater
TYPES OF ANALYSES: Volatile Organic Compounds (VOC)*
DATA VALIDATION DATE: March 21, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J6406
SAMPLING DATE(S): December 12, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>
TT101D-20181212	9948251	X
TT101D1-20181212	9948252	X
TT101D2-20181212	9948253	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* VOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J6406 – Organic Chemistry

VOLATILE ORGANICS (1,4-dioxane only)

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per SW846 Method 8260CSIM.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinse Blanks:

There were no associated equipment blanks analyzed under this method. No data qualification was necessary.

Field Blank:

There were no associated field blanks for this SDG. No data qualification was necessary.

Trip Blank:

There were no associated trip blanks for this SDG analyzed under this method. No data qualification was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data were not submitted for this SDG. Data qualification based on the absence of QC data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

There were no field duplicate samples identified as part of this SDG. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

VALIDATA

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(770) 232-5082 (Fax)

www.datavalidator.com

DATA VALIDATION SUMMARY REPORT - CHEMISTRY

COMPANY: Tetra Tech, Inc., Norfolk, VA
PROJECT NAME: Basewide Groundwater Investigation, Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, N62470-16-D-9008
SITE NAME: CTO-WE13
CONTRACTED LAB: CHEMTECH, Mountainside, NJ; subcontracted to TestAmerica-Burlington
JOB NO./ACCOUNTING CODE: 112G08005-WE13
QA/QC LEVEL: EPA Stage 4
ANALYTICAL METHOD(S): EPA Method 522
VALIDATION GUIDELINES: Method criteria, Laboratory limits and Professional Judgment
SAMPLE MATRIX: Groundwater
TYPES OF ANALYSES: Volatile Organic Compounds (VOC)*
DATA VALIDATION DATE: March 21, 2019
DATA REVIEWER(S): Amy L. Hogan
SDG NUMBER: J6407
SAMPLING DATE(S): December 12, 2018

SAMPLES:

<u>Client Sample ID</u>	<u>Laboratory ID</u>	<u>VOC</u>
TT101D-20181212	J6407-01	X
TT101D1-20181212	J6407-02	X
TT101D2-20181212	J6407-03	X

Suffix Codes: DL – DILUTION, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

* VOC analyses reported 1,4-dioxane only

Qualifier	Definition
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.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in 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.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA VALIDATION SUMMARY

CHEMTECH – SDG: J64076 – Organic Chemistry

VOLATILE ORGANICS (1,4-dioxane only)

SUMMARY

I.) General:

The analyses for Volatile Organics were performed by Gas Chromatography / Mass Spectrometry (GC / MS) per EPA Method 522.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no Major Issues for this SDG.

MINOR ISSUES

I.) Holding Times:

It was noted on the chain of custody that all samples were preserved using hydrochloric acid as opposed to sodium sulfite, which is required by the method. Citing the method criteria and professional judgment, the validator has qualified the sample results, which were all positive, as estimated (J) with reason code M.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blank for this SDG. No data qualification was necessary.

Equipment and Rinsate Blanks:

There were no associated equipment blanks analyzed under this method. No data qualification was necessary.

Field Blank:

There were no associated field blanks for this SDG. No data qualification was necessary.

Trip Blank:

There were no associated trip blanks for this SDG analyzed under this method. No data qualification was necessary.

V.) Surrogate Recoveries:

The Percent Recovery (%R) for 1,4-dioxane-d8 was 159% for TT101D2-20181212, which exceeded the laboratory QC limits (46-130%). The positive result for this sample was qualified as estimated (J) with reason code R.

VI.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this SDG. All criteria were met. No data qualification was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses data were not submitted for this SDG. Data qualification based on the absence of QC data was not required. No data qualification was necessary.

VIII.) Field Duplicates:

There were no field duplicate samples identified as part of this SDG. No data qualification was necessary.

IX.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

X.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

XII.) Sample Calculation Verification (Stage 4):

No discrepancies were noted in the sample calculation verification process.

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APPENDIX F

ARCADIS MONITORED WELLS

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Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Second Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-1 BPOW 5-1 5/7/2018	BPOW 5-2 BPOW 5-2 5/7/2018	BPOW 5-3 BPOW 5-3 5/7/2018	BPOW 5-3 REP050718AD1 5/7/2018
<u>Volatile Organic Compounds (VOCs) ⁽¹⁾</u>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0
1,4-Dioxane ⁽³⁾		0.102 J	< 0.200	1.81	1.94

See last page for Notes and Abbreviations

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Second Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-4 BPOW 5-4 5/3/2018	BPOW 5-5 BPOW 5-5 5/4/2018	BPOW 5-6 BPOW 5-6 5/4/2018	BPOW 5-7 BPOW 5-7 5/2/2018
<u>Volatile Organic Compounds (VOCs) ⁽¹⁾</u>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0
1,4-Dioxane ⁽³⁾		0.897	1.46	0.206	0.120 J

See last page for Notes and Abbreviations

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Second Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
(2) Total VOCs are rounded to two significant figures.
(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
TCL	Target Compound List
REP	Blind duplicate sample
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

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Table 1.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6, Second Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT units (ug/L)	Well:	BPOW 6-1	BPOW 6-2	BPOW 6-3	BPOW 6-4	BPOW 6-5	BPOW 6-6
	Sample ID:	BPOW 6-1	BPOW 6-2	BPOW 6-3	BPOW 6-4	BPOW 6-5	BPOW 6-6
	Date:	5/10/2018	5/7/2018	5/8/2018	5/8/2018	5/9/2018	5/9/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾							
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0	0	0
1,4-Dioxane ⁽³⁾		0.131 J	< 0.200	0.143 J	< 0.200	< 0.200	< 0.200

See last page for Notes and Abbreviations.

Table 1.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6, Second Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
(2) Total VOCs are rounded to two significant figures.
(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.
Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Third Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-1 BPOW 5-1 9/13/2018	BPOW 5-2 BPOW 5-2 9/14/2018	BPOW 5-3 BPOW 5-3 9/13/2018	BPOW 5-3 REP091318AD1 9/13/2018
<u>Volatile Organic Compounds (VOCs) ⁽¹⁾</u>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,1,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,1,2-trichloro-1,2,2-trifluoroethane		<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0
1,4-Dioxane ⁽³⁾		0.104 J	< 0.200	1.45	0.132 J

See last page for Notes and Abbreviations

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Third Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT Units (ug/L)	Well: Sample ID: Date:	BPOW 5-4 BPOW 5-4 9/4/2018	BPOW 5-5 BPOW 5-5 9/12/2018	BPOW 5-6 BPOW 5-6 9/12/2018	BPOW 5-7 BPOW 5-7 9/5/2018
<u>Volatile Organic Compounds (VOCs) ⁽¹⁾</u>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,1,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,1,2-trichloro-1,2,2-trifluoroethane		<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0
1,4-Dioxane ⁽³⁾		0.985	1.65	0.263	< 0.200

See last page for Notes and Abbreviations

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Third Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

(1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.

(2) Total VOCs are rounded to two significant figures.

(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
TCL	Target Compound List
REP	Blind duplicate sample
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

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Table 1.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,
Third Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

Well:	BPOW 6-1	BPOW 6-2	BPOW 6-3	BPOW 6-4	BPOW 6-5	BPOW 6-6
Sample ID:	BPOW 6-1	BPOW 6-2	BPOW 6-3	BPOW 6-4	BPOW 6-5	BPOW 6-6
Date:	9/11/2018	9/11/2018	9/11/2018	9/11/2018	9/10/2018	9/10/2018
CONSTITUENT units (ug/L)						
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Acetone	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromoform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾	0	0	0	0	0	0
1,4-Dioxane ⁽³⁾	< 0.200	< 0.200	< 0.200	0.161 J	< 0.200	< 0.200

See last page for Notes and Abbreviations.

Table 1.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,
Third Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
(2) Total VOCs are rounded to two significant figures.
(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.
Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Fourth Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT Units (ug/L)	Well:	BPOW 5-1	BPOW 5-2	BPOW 5-3	BPOW 5-4
	Sample ID: Date:	BPOW5-1_20181128 11/28/2018	BPOW5-2_20181128 11/28/2018	BPOW5-3_20181128 11/28/2018	BPOW5-4_20181127 11/27/2018
<u>Volatile Organic Compounds (VOCs) ⁽¹⁾</u>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0
1,4-Dioxane ⁽³⁾		0.121 J	< 0.200	1.52 J	0.858

See last page for Notes and Abbreviations

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Fourth Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT Units (ug/L)	Well:	BPOW 5-4	BPOW 5-5	BPOW 5-6	BPOW 5-7
	Sample ID: Date:	REP112718LV1 11/27/2018	BPOW5-5_20181126 11/26/2018	BPOW5-6_20181126 11/26/2018	BPOW5-7_20181129 11/29/2018
<u>Volatile Organic Compounds (VOCs) ⁽¹⁾</u>					
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0
1,4-Dioxane ⁽³⁾		< 0.200	1.40	0.311	< 0.200 J

See last page for Notes and Abbreviations

Table 1.
Concentrations of Volatile Organic Compounds
and 1,4-Dioxane in Outpost Wells BPOW 5-1 through BPOW 5-7,
Fourth Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
TCL	Target Compound List
REP	Blind duplicate sample
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

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Table 1.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,
Fourth Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

CONSTITUENT units (ug/L)	Well: Sample in: Date:	BPOW 6-1	BPOW 6-2	BPOW 6-3	BPOW 6-4	BPOW 6-5	BPOW 6-6
		BPOW6-1_20181126 11/26/2018	BPOW6-2_20181126 11/26/2018	BPOW6-3_20181130 11/30/2018	BPOW6-4_20181130 11/30/2018	BPOW6-5_20181127 11/27/2018	BPOW6-6_20181127 11/27/2018
<u>Volatile Organic Compounds (VOCs) ⁽¹⁾</u>							
1,1,1-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloropropane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Butanone (MEK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-Methyl-2-Pentanone		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Acetone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromoform		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromomethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorodibromomethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dichloromethane		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ethylbenzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
m&p-Xylenes		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methyl N-Butyl Ketone (2-Hexanone)		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
o-Xylene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Styrene (Monomer)		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,2-Dichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
trans-1,3-Dichloropropene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Vinyl chloride		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total VOCs ⁽²⁾		0	0	0	0	0	0
1,4-Dioxane ⁽³⁾		0.118 J	< 0.200	< 0.200	0.217	< 0.200	< 0.200

See last page for Notes and Abbreviations.

Table 1.
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Outpost Wells BPOW 6-1 through BPOW 6-6,
Fourth Quarter 2018
Operable Unit 2 (Groundwater),
Bethpage, New York

Notes and Abbreviations:

(1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2.

(2) Total VOCs are rounded to two significant figures.

(3) Samples were analyzed for 1,4-Dioxane using USEPA Method 522.

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
TCL	Target Compound List
VOC	Volatile Organic Compound
USEPA	United States Environmental Protection Agency
µg/L	Micrograms per liter
J	Constituent value is estimated
<0.50	Constituent not detected above its laboratory detection limit

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE106D1	RE106D2	RE106D3	RE107D1	RE107D2
	Sample ID:	RE106D1	RE106D2	RE106D3	RE107D1	RE107D2
	Date:	5/17/2018	5/17/2018	5/18/2018	5/15/2018	5/15/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		1.6	3.9	90	0.62 J	40
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	1.1	< 1.0	0.82 J
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	0.34 J
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	2.4	< 1.0	3.3
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		1.2	2.4	55	1.1	11
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		10	24	94	12	180 D
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		13	30	240	14	240
1,4-Dioxane ⁽³⁾		11	13	15	9.5	17

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE107D3	RE109D1	RE109D2	RE109D3	RE114D1
	Sample ID:	RE107D3	RE109D1	RE109D2	RE109D3	RE114D1
	Date:	5/15/2018	5/24/2018	5/24/2018	5/24/2018	5/21/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	0.45 J
1,1,1,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		2.8	0.65 J	0.84 J	2.2	22
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	2.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	1.3
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	0.52 J	4.6
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	2.5
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	2.6
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	0.27 J	0.72 J	4.5
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	22	28	59	390 D
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		2.8	23	30	63	430
1,4-Dioxane ⁽³⁾		< 0.24 J	6.1	6	9.3	6.7

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE114D1	RE114D2	RE114D3	RE115D1
	Sample ID:	REP052118MM1	RE114D2	RE114D3	RE115D1
	Date:	5/21/2018	5/21/2018	5/21/2018	5/23/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾					
1,1,1-Trichloroethane		0.51 J	< 1.0	< 1.0	0.28 J
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		23	10	15	2.9
1,1,2-Trichloroethane		2.1	1.1	< 1.0 U	1.2
1,1-Dichloroethane		1.3	0.60 J	< 1.0 U	< 1.0 U
1,1-Dichloroethene		4.2	1.4	1.2	2.4
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		2.3	0.35 J	0.37 J	< 1.0 U
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		2.6	0.59 J	< 1.0	2.6
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		4.3	0.94 J	0.94 J	1.7
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		360 D	82 J	48	71
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		400	97	66	82
1,4-Dioxane ⁽³⁾		6.6	4.7 J	3.2	6.7

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE115D2	RE116D1	RE118D1	RE119D1	RE121D1
	Sample ID:	RE115D2	RE116D1	RE118D1	RE119D1	RE121D1
	Date:	5/23/2018	6/1/2018	5/16/2018	5/16/2018	5/23/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		1.1	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		28	< 5.0	< 5.0	< 5.0	7.4
1,1,2-Trichloroethane		1.5	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		1.3	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		11	< 1.0	< 1.0	< 1.0	1.8
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		1.7	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		1.2	< 1.0	< 1.0	< 1.0	0.33 J
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		3.0	< 1.0	< 1.0	< 1.0	0.98 J
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	0.54	0.31 J	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		320 D	< 1.0	< 1.0	< 1.0	27
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		370	0.54	0.31	0	38
1,4-Dioxane ⁽³⁾		6.5	4.7	< 0.24	< 0.24	10

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE121D2	RE121D2	RE124D1	RE124D2
	Sample ID:	RE121D2	REP052318DC1	RE124D1	RE124D2
	Date:	5/23/2018	5/23/2018	5/24/2018	5/24/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾					
1,1,1-Trichloroethane		< 1.0	0.39 J	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		16	16	62	< 5.0
1,1,2-Trichloroethane		1.2	1.4	< 1.0	< 1.0
1,1-Dichloroethane		0.78 J	0.75 J	< 1.0	< 1.0
1,1-Dichloroethene		4.0 J	4.2 J	0.86	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		3.4	3.4	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		1.8	1.8	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		4.1	4.2	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		<5.0	<5.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		640 D	650 D	3.2	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		670	680	66	0
1,4-Dioxane ⁽³⁾		7.1	7.1	3.1	< 0.24

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE127D1	RE127D2	RE128D1	RE128D2	RE129D1
	Sample ID:	RE127D1	RE127D2	RE128D1	RE128D2	RE129D1
	Date:	5/22/2018	5/22/2018	5/18/2018	5/17/2018	5/16/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		0	0	0	0	0
1,4-Dioxane ⁽³⁾		< 0.24	< 0.24	< 0.24	0.092 J	< 0.24

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE129D2	RE130D1	RE130D2	RE133D1	RE133D2
	Sample ID:	RE129D2	RE130D1	RE130D2	RE133D1	RE133D2
	Date:	5/16/2018	5/15/2018	5/21/2018	5/22/2018	5/22/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		0	0	0	0	0
1,4-Dioxane ⁽³⁾		< 0.24	< 0.10 J	< 0.24	0.12 J	< 0.24

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Monitoring Wells Installed by the Navy Second Quarter 2018, Operable Unit 2 (Groundwater) Bethpage, New York.

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 8260C.
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
D	Concentration is based on a diluted sample analysis
J	Constituent value is estimated
REP	Blind Duplicate Sample
SIM	Selected Ion Monitoring
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
µg/L	Micrograms per liter
<0.50	Compound not detected above its laboratory detection limit

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells TT-102D and TT-102D2
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (units in µg/L)	Well: Sample ID: Date:	TT-102D TT-102D 5/29/2018	TT-102D2 TT-102D2 5/29/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾			
1,1,1-Trichloroethane		< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0
1,1,2-Trichloroethane		< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0
1,1-Dichloroethene		< 1.0 J	< 1.0 J
1,2-Dichloroethane		< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0
2-Butanone (MEK)		< 5.0	< 5.0
2-Hexanone		< 5.0 J	< 5.0 J
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0
Acetone		< 5.0	< 5.0
Benzene		< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0
Bromoform		< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0
Carbon Disulfide		< 1.0	< 1.0
Carbon tetrachloride		< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0
Chloroform		< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0
Dibromochloromethane		< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0
Methylene Chloride		< 0.50	< 0.50
Styrene		< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0
Toluene		< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0
Xylenes - m,p		< 2.0	< 2.0
Total VOCs ⁽²⁾		0	0
1,4-Dioxane ⁽³⁾		< 0.25	0.61

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells TT-102D and TT-102D2
Second Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Notes and Abbreviations on next page.

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 8260C
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
SIM	Selected Ion Monitoring
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
J	Constituent value is estimated
µg/L	Micrograms per liter
<0.50	Compound not detected above its laboratory detection limit

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE106D1	RE106D2	RE106D3	RE106D3	RE107D1
	Sample ID:	RE106D1	RE106D2	RE106D3	REP121218DC1	RE107D1
	Date:	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		1.6	7.2	70	65	0.46 J
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	0.62J	3.6	3.4	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		1.4	4.8	69	64	1.3
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		12	33	99	95	13
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		15	46	240	220	15
1,4-Dioxane ⁽³⁾		11	14	14	13	11

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE107D2	RE107D3	RE109D1	RE109D2	RE109D3
	Sample ID:	RE107D2	RE107D3	RE109D1	RE109D2	RE109D3
	Date:	12/6/2018	12/6/2018	12/6/2018	12/19/2018	12/19/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		16	4.0	0.69 J	1.5	2.4
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		0.60 J	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	0.34 J
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	0.67 J
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		2.8	< 1.0	< 1.0	0.40 J	0.78 J
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		9.4	0.59 J	0.54 J	< 1.0 U	0.52 J
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		190 D	< 1.0	30	44	71
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		220	5	31	46	76
1,4-Dioxane ⁽³⁾		17	0.13 J	6.4	7.1	7.6

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE114D1	RE114D1	RE114D2	RE114D3	RE115D1
	Sample ID:	RE114D1	REP120418 PP1	RE114D2	RE114D3	RE115D1
	Date:	12/17/2018	12/4/2018	12/4/2018	12/4/2018	12/4/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		0.36 J	0.53 J	< 1.0 U	< 1.0 U	0.26 J
1,1,2,2-Tetrachloroethane		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane		16 J	25 J	9.6	16	5.1
1,1,2-Trichloroethane		1.3	1.4	< 1.0 U	< 1.0 U	0.49 J
1,1-Dichloroethane		1.2	1.6	0.78 J	< 1.0 U	< 1.0 U
1,1-Dichloroethene		5.0	6.3	1.3	1.3	3.6
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		2.2	3.0	0.34 J	0.26 J	0.46 J
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		2.5	3.2	< 1.0 U	< 1.0 U	2.7
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 U
cis-1,2-dichloroethene		4.6	4.4	1.2	1.1	1.8
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		360 D	390 D	87	48	110
Vinyl Chloride		1.4	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		390	430	100	67	120
1,4-Dioxane ⁽³⁾		8.0	7.7	5.1	4.4	6.9

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE115D2	RE116D1	RE118D1	RE119D1	RE121D1
	Sample ID:	RE115D2	RE116D1	RE118D1	RE119D1	RE121D1
	Date:	12/3/2018	12/3/2018	12/14/2018	12/14/2018	11/29/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		0.84 J	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Tetrachloroethane		< 1.0 U	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		24	< 5.0	< 5.0	< 5.0	8.1
1,1,2-Trichloroethane		0.95 J	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		1.2	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		15	< 1.0	< 1.0	< 1.0	1.8
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		1.6	< 1.0	< 1.0	< 1.0 U	0.36 J
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		1.0	< 1.0	< 1.0	< 1.0 U	0.48 J
Chloromethane		< 1.0 U	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		3.3	< 1.0	< 1.0	< 1.0 U	1.2
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		400 D	< 1.0	< 1.0	< 1.0 U	37
Vinyl Chloride		0.29 J	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		450	0	0	0	49
1,4-Dioxane ⁽³⁾		8.1	6.4	< 0.24	< 0.24	12

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE121D2	RE124D1	RE124D2	RE127D1	RE127D2
	Sample ID:	RE121D2	RE124D1	RE124D2	RE127D1	RE127D2
	Date:	12/18/2018	12/13/2018	12/13/2018	12/10/2018	12/10/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		10	57	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		3.3	1.1	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		3.4	0.34 J	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		1.9 J	< 1.0 U	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		2.8	0.46 J	< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	0.78 J	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		650 D	4.3	< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		670	64	0	0	0
1,4-Dioxane ⁽³⁾		5.0	3.1	< 0.24	< 0.24	< 0.24

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE128D1	RE128D2	RE129D1	RE129D2	RE130D1
	Sample ID:	RE128D1	RE128D2	RE129D1	RE129D2	RE130D1
	Date:	12/10/2018	12/10/2018	12/5/2018	12/5/2018	12/5/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾						
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		0	0	0	0	0
1,4-Dioxane ⁽³⁾		< 0.24	0.12 J	< 0.24	< 0.24	< 0.14 J

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Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells Installed by the Navy
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (Units in µg/L)	Well:	RE130D2	RE133D1	RE133D2
	Sample ID:	RE130D2	RE133D1	RE133D2
	Date:	12/5/2018	12/3/2018	12/3/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾				
1,1,1-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1,2-Tetrachloroethane		< 1.0	< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0	< 1.0
1,1-Dichloroethene		< 1.0	< 1.0	< 1.0
1,2-Dichloroethane		< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0	< 1.0
2-Butanone (MEK)		< 10	< 10	< 10
2-Hexanone		< 5.0	< 5.0	< 5.0
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0	< 5.0
Acetone		< 10	< 10	< 10
Benzene		< 0.50	< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0	< 1.0
Bromoform		< 1.0	< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0	< 2.0
Carbon Disulfide		< 2.0	< 2.0	< 2.0
Carbon tetrachloride		< 1.0	< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0	< 1.0
Chloroform		< 1.0	< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0	< 1.0
Dibromochloromethane		< 1.0	< 1.0	< 1.0
Ethylbenzene		< 1.0	< 1.0	< 1.0
Methylene Chloride		< 2.0	< 2.0	< 2.0
Styrene		< 1.0	< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0	< 1.0
Toluene		< 1.0	< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0	< 1.0
Xylenes - m,p		< 1.0	< 1.0	< 1.0
Total VOCs ⁽²⁾		0	0	0
1,4-Dioxane ⁽³⁾		0.12 J	0.18 J	< 0.24

Notes and Abbreviations on last page.

Table 1
Concentrations of Volatile Organic Compounds and 1,4-Dioxane in Monitoring Wells Installed by the Navy Fourth Quarter 2018, Operable Unit 2 (Groundwater) Bethpage, New York.

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 8260C.
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
D	Concentration is based on a diluted sample analysis
J	Constituent value is estimated
REP	Blind Duplicate Sample
SIM	Selected Ion Monitoring
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
µg/L	Micrograms per liter
<0.50	Compound not detected above its laboratory detection limit

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells TT-102D and TT-102D2
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Constituent (units in µg/L)	Well: Sample ID: Date:	TT-102D TT-102D 12/7/2018	TT-102D2 TT-102D2 12/7/2018
Volatile Organic Compounds (VOCs) ⁽¹⁾			
1,1,1-Trichloroethane		< 1.0	< 1.0
1,1,2,2-Tetrachloroethane		< 1.0	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane		< 1.0	< 1.0
1,1,2-Trichloroethane		< 1.0	< 1.0
1,1-Dichloroethane		< 1.0	< 1.0
1,1-Dichloroethene		< 1.0 J	< 1.0 J
1,2-Dichloroethane		< 1.0	< 1.0
1,2-Dichloropropane		< 1.0	< 1.0
2-Butanone (MEK)		< 5.0	< 5.0
2-Hexanone		< 5.0 J	< 5.0 J
4-methyl-2-pentanone (MIK)		< 5.0	< 5.0
Acetone		< 5.0	< 5.0
Benzene		< 0.50	< 0.50
Bromodichloromethane		< 1.0	< 1.0
Bromoform		< 1.0	< 1.0
Bromomethane		< 2.0	< 2.0
Carbon Disulfide		< 1.0	< 1.0
Carbon tetrachloride		< 1.0	< 1.0
Chlorobenzene		< 1.0	< 1.0
Chloroethane		< 1.0	< 1.0
Chloroform		< 1.0	< 1.0
Chloromethane		< 1.0	< 1.0
cis-1,2-dichloroethene		< 1.0	< 1.0
cis-1,3-dichloropropene		< 1.0	< 1.0
Dibromochloromethane		< 2.0	< 2.0
Ethylbenzene		< 1.0	< 1.0
Methylene Chloride		< 0.50	< 0.50
Styrene		< 1.0	< 1.0
Tetrachloroethene		< 1.0	< 1.0
Toluene		< 1.0	< 1.0
trans-1,2-dichloroethene		< 1.0	< 1.0
trans-1,3-dichloropropene		< 1.0	< 1.0
Trichloroethylene		< 1.0	< 1.0
Vinyl Chloride		< 1.0	< 1.0
Xylene-o		< 1.0	< 1.0
Xylenes - m,p		< 2.0	< 2.0
Total VOCs ⁽²⁾		0	0
1,4-Dioxane ⁽³⁾		0.46	< 0.25

Notes and Abbreviations on next page.

Table 1
Concentrations of Volatile Organic Compounds and
1,4-Dioxane in Monitoring Wells TT-102D and TT-102D2
Fourth Quarter 2018, Operable Unit 2 (Groundwater)
Bethpage, New York.

Notes and Abbreviations:

- (1) Samples were analyzed for the TCL VOCs using USEPA Method 524.2
- (2) Total VOCs are rounded to two significant figures.
- (3) Samples were analyzed for 1,4-Dioxane using USEPA Method 8270D SIM

Results validated following protocols specified in OU2 Groundwater Monitoring Plan (ARCADIS 2016).

Bold	Constituent detected
SIM	Selected Ion Monitoring
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
J	Constituent value is estimated
µg/L	Micrograms per liter
<0.50	Compound not detected above its laboratory detection limit