

**SEPTEMBER 2014 GROUNDWATER SAMPLING DATA  
SUMMARY REPORT  
BETHPAGE, NY**

Prepared for:



**Department of the Navy  
Naval Facilities Engineering Command, Mid-Atlantic  
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**CTO WE15**

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### List of Acronyms and Abbreviations

DOT	Department of Transportation
IDW	Investigation Derived Waste
Katahdin	Katahdin Analytical Services, Inc.
NWIRP	Naval Weapons Industrial Reserve Plant
ONCT	Onsite Containment System
OU	Operable Unit
POTW	Publicly Owned Treatment Works
QA	Quality Assurance
QC	Quality Control
SAP	Sampling and Analysis Plan
UFP	Uniform Federal Policy
VOC	Volatile Organic Compounds

## **1.0 PROJECT BACKGROUND**

Resolution Consultants has prepared this Data Summary Report for the Naval Facilities Engineering Command, Mid-Atlantic under contract task order WE15 Contract N62470-11-D-8013. The report describes monitoring well sampling activities in September 2014 for the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage Operable Unit (OU) 2 Site 1 offsite plume. NWIRP Bethpage is located in east-central Nassau County, Long Island, New York, approximately 30 miles east of New York City (Figure 1).

This data summary report provides information on sampling 13 monitoring wells. The purpose of this sampling is to provide information on the extent and magnitude of volatile organic compounds (VOCs) located in a narrow area immediately south of the Onsite Containment System (ONCT) in the western offsite plume, which could represent contamination that has bypassed the ONCT. The locations of monitoring wells sampled as part of this effort are shown in Figure 2.

Documentation of these activities is included in the appendices of this report. Appendix A contains the groundwater sampling forms, Appendix B contains analytical lab sheets, and Appendix C contains documentation of data validation.

## **2.0 FIELD PROGRAM**

Field tasks were conducted in September of 2014 in accordance with the Uniform Federal Policy (UFP) Sampling and Analysis Plan (SAP) Addendum: Groundwater Sampling Using Low Stress (Low Flow) Purging and Sampling Protocol (Resolution Consultants, 2013). The field investigation included purging and sampling of the 13 monitoring wells.

### **2.1 Sampling**

Wells were purged with a bladder pump with the intake placed at the approximate midpoint of the screened interval. The following field water quality parameters were continuously measured during purging: water temperature, pH, conductivity, oxidation-reduction potential, dissolved oxygen and turbidity. Groundwater analytical samples were collected when field water quality parameters stabilized. Samples were analyzed for VOCs via Method 8260C and 1,4-dioxane via Method 8270C by Katahdin Analytical Services (Katahdin). All purge water was managed as investigation derived waste (IDW). Samples were placed in a cooler containing ice and held for sample pick up by the laboratory courier. All samples were submitted to the laboratory for analyses of VOCs for the analytes listed in, and in accordance with, GC method SW846-8260C. Quality assurance (QA) and quality control (QC) samples were collected during the sampling effort.

Resolution Consultants utilized dedicated and disposable sampling equipment when possible to avoid the potential for cross-impacting of samples. The sampling equipment included dedicated disposable polyethylene tubing, disposable gloves, and laboratory supplied sample bottles. Hand held equipment was decontaminated using an alconox and water wash, a potable water rinse followed by a distilled water rinse. Water was collected in 5-gallon pails or 55-gallon drums.

### **2.2 Investigation Derived Waste**

Purge water was transported from point of generation to the designated staging area at NWIRP in Department of Transportation (DOT) approved 55-gallon drums. Purge water was then containerized in a frac tank and stored at NWIRP Bethpage for characterization and ultimate disposal to the Nassau County Publicly Owned Treatment Works (POTW) in accordance with the facility's existing discharge permit. A representative water sample will be collected from each of the frac tanks and submitted to Katahdin for analysis. No solid waste was generated during sampling.

### **3.0 SUMMARY**

Well construction information is summarized in Table 1; analytical data is summarized in Table 2; stabilized field water quality parameters are summarized in Table 3. Groundwater sample logs, lab analytical sheets, and data validation packages are included in Appendix A, B and C, respectively.

#### **4.0 REFERENCES**

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

## Tables



Table 1.  
 Monitoring Well  
 Construction Summary

Well	Total Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Mid-screen (ft bgs)	Sump Length (ft)	VPB affiliation
RE103 D1	645	625	640	630	5	VPB137
RE103 D2	673	653	673	663	0	
RE103 D3	735	715	730	720	5	
RE104 D1	375	350	370	360	5	VPB138
RE104 D2	735	710	730	720	5	
RE104 D3	785	760	780	770	5	
RE105 D1	554.9	530	550	540	5	VPB139
RE105 D2	755.9	730	750	740	5	
RE108D1	545	530	550	540	5	VPB142
RE108D2	655	630	650	640	5	
TT101D	350	325	345	335	5	VPB129
TT101D1	595	570	590	580	5	
TT101D2	765	740	760	750	5	

Table 2. Analytical Data Summary

Location	RE103D1	RE103D2	RE103D3	RE104D1	
Sample Date	NYSDEC Groundwater Guidance or Standard Value (Note 1)	9/23/2014	9/23/2014	9/23/2014	9/24/2014
Sample ID	RE103D1-GW- 09232014	RE103D2-GW- 09232014	RE103D3-GW- 09232014	RE104D1-GW- 09242014	
Sample type code	N	N	N	N	
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	0.55 J	< 0.50 U	< 0.50 U	0.31 J
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	16	5.3	2.6	5.9
1,1,2-TRICHLOROETHANE	1	0.82 J	0.47 J	< 0.50 U	< 0.50 U
1,1-DICHLOROETHANE	5	1.3	0.73 J	0.55 J	0.40 J
1,1-DICHLOROETHENE	5	5.9	1.1	0.39 J	1.2
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	4.5	1.8 J	1.0 J	1.8 J
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	21	2.2	1.0	9.1
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	1.0	1.1	0.69 J	< 0.50 U
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	4.5	1.8	1.0	1.8
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	0.28 J	< 1.0 U	< 1.0 U	0.52 J
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	4.7	1.1	< 0.50 U	2.8
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE	5	850	1300	460	140
TRICHLOROFUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Table 2. Analytical Data Summary

Location	NYSDEC	RE104D2	RE104D3	RE105D1	RE105D2
Sample Date	Groundwater	9/24/2014	9/24/2014	9/26/2014	9/26/2014
Sample ID	Guidance or	RE104D2-GW-	RE104D3-GW-	RE105D1-GW-	RE105D2-GW-
Sample type code	Standard Value	09242014	09242014	09262014	09262014
	(Note 1)	N	N	N	N
<b>VOC 8260C (ug/L)</b>					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	< 0.50 U	<b>0.52 J</b>	< 0.50 U
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	< 0.50 U	< 0.50 U	<b>12</b>	<b>28</b>
1,1,2-TRICHLOROETHANE	1	< 0.50 U	< 0.50 U	< 0.50 U	<b>1.2</b>
1,1-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	<b>0.33 J</b>	<b>1.5</b>
1,1-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	<b>1.6</b>	<b>5.5</b>
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	<b>&lt; 0.75 UJ</b>	<b>&lt; 0.75 U</b>	<b>&lt; 0.75 U</b>	<b>&lt; 0.75 U</b>
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	<b>1.5 J</b>	< 1.0 U	<b>1.9 J</b>	<b>3.5</b>
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	<b>0.14 J</b>	< 0.17 U	<b>12 J</b>	<b>5.8 J</b>
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 U	< 2.5 U
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	< 0.50 U	< 0.50 U	<b>3.5</b>
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
CHLOROFORM	7	<b>0.54 J</b>	< 0.50 U	<b>0.40 J</b>	<b>2.2</b>
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	<b>1.5</b>	< 0.50 U	<b>1.9</b>	<b>3.5</b>
CIS-1,3-DICHLOROPROPENE	0.4	<b>&lt; 0.50 U</b>	<b>&lt; 0.50 U</b>	<b>&lt; 0.50 U</b>	<b>&lt; 0.50 U</b>
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	<b>0.75 J</b>	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.60 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	<b>0.79 J</b>
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	<b>&lt; 0.50 U</b>	<b>&lt; 0.50 U</b>	<b>&lt; 0.50 U</b>	<b>&lt; 0.50 U</b>
TRICHLOROETHENE	5	<b>2.3</b>	< 0.50 U	<b>92</b>	<b>1500</b>
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Table 2. Analytical Data Summary

Location	NYSDEC	RE108D1	RE108D2	RE108D2	TT101D
Sample Date	Groundwater	9/24/2014	9/24/2014	9/24/2014	9/25/2014
Sample ID	Guidance or Standard Value (Note 1)	RE108D1-GW-09242014	RE108D2-GW-09242014	DUP-GW-09242014	TT101D-GW-092514
Sample type code		N	N	FD	N
VOC 8260C (ug/L)					
1,1,1-TRICHLOROETHANE	5	< 0.50 U	1.2	1.1	0.42 J
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	1.4	7.4	7.5	20
1,1,2-TRICHLOROETHANE	1	< 0.50 U	1.8	1.7	< 0.50 U
1,1-DICHLOROETHANE	5	< 0.50 U	4.8	5.2	0.85 J
1,1-DICHLOROETHENE	5	0.43 J	7.6	7.6	4.0
1,2,4-TRICHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 UJ
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	0.44 J	9.9	9.7	3.3
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,3-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DICHLOROBENZENE	3	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	9.0 J	5.8	7.3	9.1 J
2-BUTANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
BENZENE	1	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	< 0.50 U	0.83 J	0.88 J	< 0.50 U
CHLOROBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 U
CHLOROFORM	7	< 0.50 U	3.5	3.6	0.47 J
CHLOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	0.44 J	9.9	9.7	3.3
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	2.1
ETHYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	1.6	1.7	1.6	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
TRICHLOROETHENE	5	140 J	3700	3500	66
TRICHLOROFUOROMETHANE	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U

Table 2. Analytical Data Summary

Location	NYSDEC	TT101D1	TT101D2
Sample Date	Groundwater	9/25/2014	9/25/2014
Sample ID	Guidance or Standard Value (Note 1)	TT101D1-GW- 092514	TT101D2-GW-092514
Sample type code		N	N
VOC 8260C (ug/L)			
1,1,1-TRICHLOROETHANE	5	0.62 J	0.49 J
1,1,2,2-TETRACHLOROETHANE	5	< 0.50 U	< 0.50 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5	16	22
1,1,2-TRICHLOROETHANE	1	0.40 J	0.63 J
1,1-DICHLOROETHANE	5	0.74 J	0.92 J
1,1-DICHLOROETHENE	5	4.7	5.7
1,2,4-TRICHLOROENZENE	5	< 0.50 U	< 0.50 U
1,2-DIBROMO-3-CHLOROPROPANE	0.04	< 0.75 UJ	< 0.75 UJ
1,2-DIBROMOETHANE	NL	< 0.50 U	< 0.50 U
1,2-DICHLOROENZENE	3	< 0.50 U	< 0.50 U
1,2-DICHLOROETHANE	5	< 0.50 U	< 0.50 U
1,2-DICHLOROETHENE, TOTAL	5	2.0	2.2
1,2-DICHLOROPROPANE	1	< 0.50 U	< 0.50 U
1,3-DICHLOROENZENE	3	< 0.50 U	< 0.50 U
1,4-DICHLOROENZENE	3	< 0.50 U	< 0.50 U
1,4-DIOXANE	NL	9.6 J	2.9 J
2-BUTANONE	50	< 2.5 U	< 2.5 U
2-HEXANONE	50	< 2.5 U	< 2.5 U
4-METHYL-2-PENTANONE	NL	< 2.5 U	< 2.5 U
ACETONE	50	< 2.5 UJ	< 2.5 UJ
BENZENE	1	< 0.50 U	< 0.50 U
BROMODICHLOROMETHANE	50	< 0.50 U	< 0.50 U
BROMOFORM	50	< 0.50 U	< 0.50 U
BROMOMETHANE	5	< 1.0 U	< 1.0 U
CARBON DISULFIDE	60	< 0.50 U	< 0.50 U
CARBON TETRACHLORIDE	5	0.94 J	< 0.50 U
CHLOROENZENE	5	< 0.50 U	< 0.50 U
CHLOROETHANE	5	< 1.0 U	< 1.0 U
CHLOROFORM	7	0.93 J	0.93 J
CHLOROMETHANE	5	< 1.0 U	< 1.0 U
CIS-1,2-DICHLOROETHENE	5	2.0	2.2
CIS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U
CYCLOHEXANE	NL	< 0.50 U	< 0.50 U
DIBROMOCHLOROMETHANE	5	< 0.50 U	< 0.50 U
DICHLORODIFLUOROMETHANE	5	1.8 J	< 1.0 U
ETHYLBENZENE	5	< 0.50 U	< 0.50 U
ISOPROPYLBENZENE	5	< 0.50 U	< 0.50 U
M- AND P-XYLENE	NL	< 1.0 U	< 1.0 U
METHYL ACETATE	NL	< 0.75 U	< 0.75 U
METHYL CYCLOHEXANE	NL	< 0.50 U	< 0.50 U
METHYL TERT-BUTYL ETHER	10	< 0.50 U	< 0.50 U
METHYLENE CHLORIDE	5	< 2.5 U	< 2.5 U
O-XYLENE	NL	< 0.50 U	< 0.50 U
STYRENE	5	< 0.50 U	< 0.50 U
TETRACHLOROETHENE	5	< 0.50 U	< 0.50 U
TOLUENE	5	< 0.50 U	< 0.50 U
TRANS-1,2-DICHLOROETHENE	5	< 0.50 U	< 0.50 U
TRANS-1,3-DICHLOROPROPENE	0.4	< 0.50 U	< 0.50 U
TRICHLOROETHENE	5	160	560
TRICHLOROFLUOROMETHANE	5	< 1.0 U	< 1.0 U
VINYL CHLORIDE	2	< 1.0 U	< 1.0 U
XYLENES, TOTAL	5	< 1.5 U	< 1.5 U

**Notes:**

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

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

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

**Yellow** highlighted values exceed Groundwater Standards or guidance value

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

U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

M = the matrix spike or matrix spike duplicate did not meet recovery or precision requirements.

September 2014

Groundwater Sampling Report  
 Naval Weapons Industrial  
 Reserve Plant, Bethpage, NY

Table 3.  
 Stabilized Field Parameters

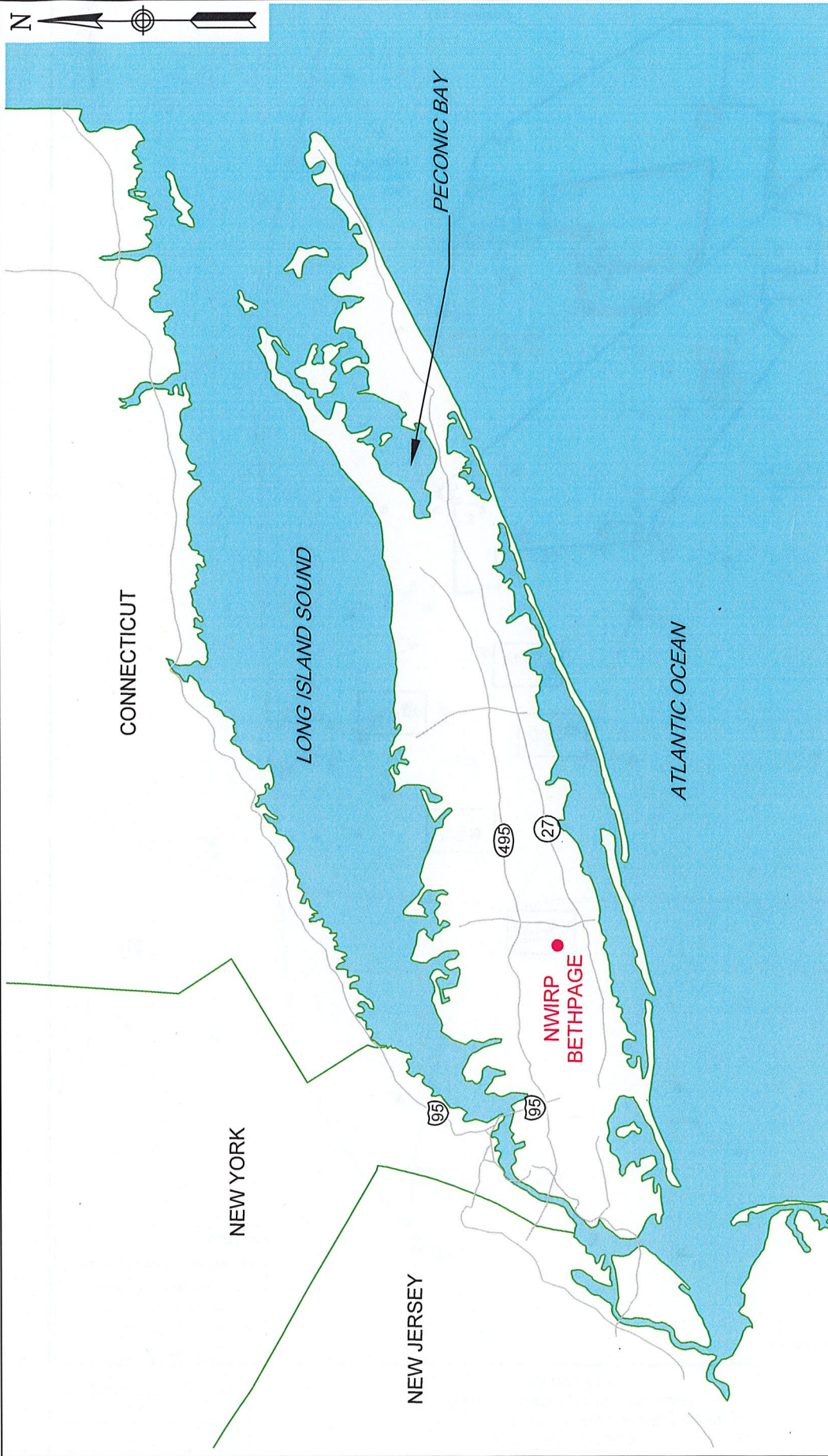
November 2014

Well	Date	Temperature (°C)	pH	Specific Conductance (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to water (ft bgs)	Flow rate (ml/min)	Drawdown (ft)
RE103 D1	9/23/2014	16.34	4.59	0.094	4.32	179.2	0.32	41.42	400	*
RE103 D2	9/23/2014	17.52	4.92	0.032	8.33	65.7	0.47	41.1	400	*
RE103 D3	9/23/2014	15.77	4.14	0.027	5.11	37.5	0.68	41.91	450	0.31
RE104 D1	9/24/2014	15.26	5.00	0.063	4.86	14.58	0.54	36.35	500	*
RE104 D2	9/24/2014	14.79	5.19	0.021	6.51	142.3	1.87	42.11	450	*
RE104 D3	9/24/2014	15.1	4.80	0.019	6.19	170.6	11.30	43.28	500	0.45
RE105 D1	9/26/2014	15.4	6.56	0.102	1.16	88.3	1.59	38.53	500	*
RE105 D2	9/26/2014	15.33	4.95	0.106	4.62	140.2	0.63	39.78	425	*
RE108 D1	9/24/2014	15.51	4.99	0.081	8.31	13.85	1.48	40.31	500	*
RE108 D2	9/24/2014	15.41	4.97	0.07	4.82	144.7	1.03	41.81	500	0.89
TT101D	9/25/2014	15.51	4.48	0.085	0.55	79.7	0.51	33.39	500	0.04
TT101D1	9/25/2014	15.84	4.42	0.085	0.51	184.5	1.3	35.5	500	*
TT101D2	9/25/2014	15.73	4.98	0.038	6.48	140.7	0.12	35.89	500	*

\* Initial water level not equilibrated due to pump installation; drawdown during sampling not determined.

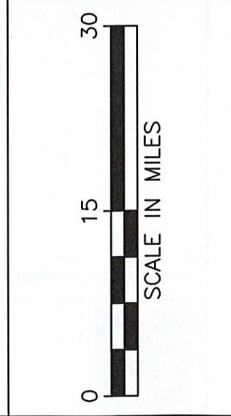
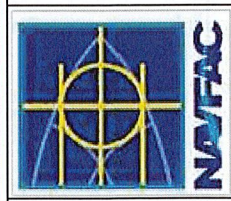
## Figures



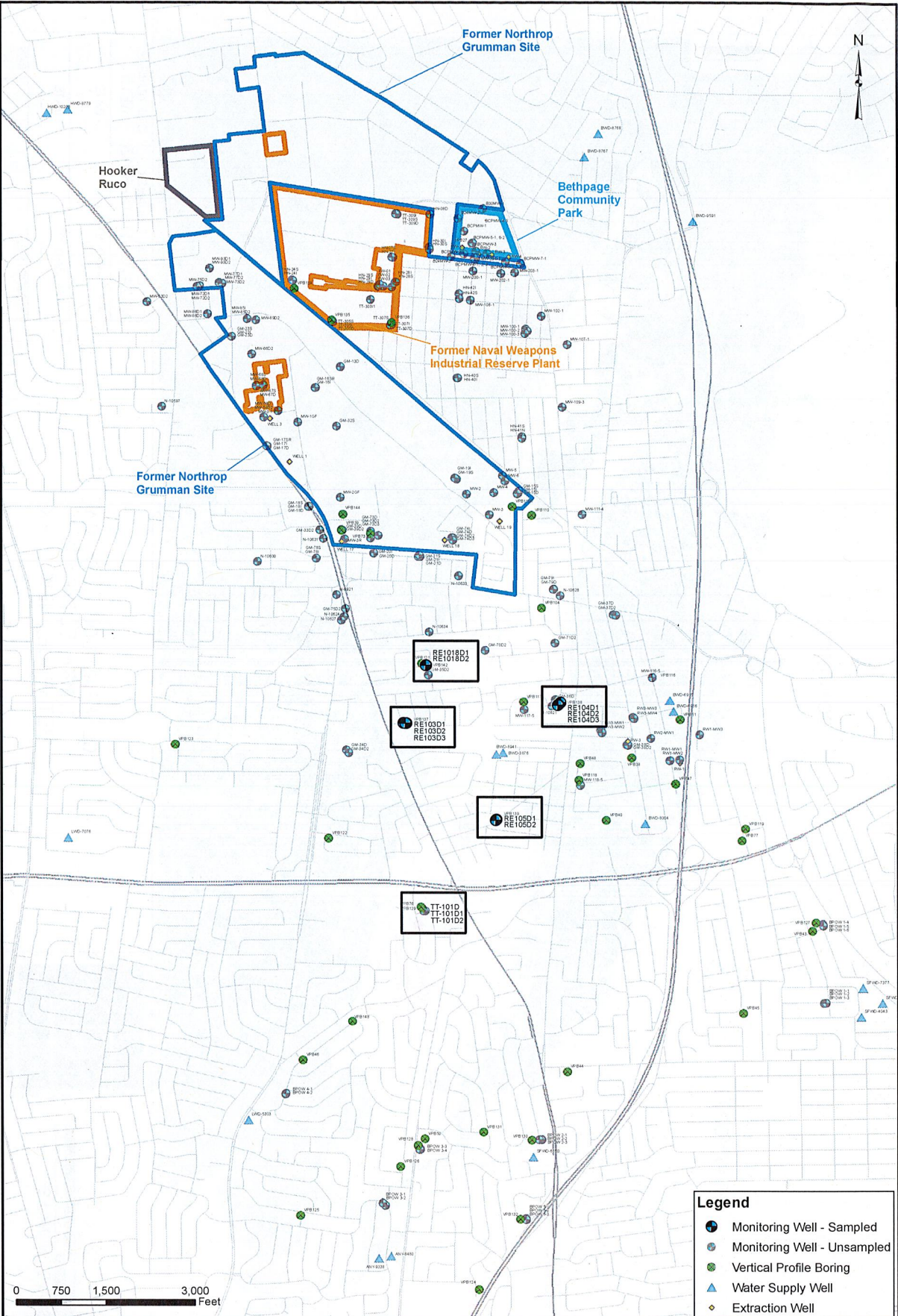


CONTRACT NUMBER N62470-11-D-8013	CTO NUMBER WE15
APPROVED BY --	DATE --
APPROVED BY --	DATE --
FIGURE NO. 1	REV 0

GENERAL LOCATION MAP  
NWRP BETHPAGE  
BETHPAGE, NEW YORK



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LOCATION MAP  
 SEPTEMBER 2014 GROUNDWATER SAMPLING  
 NAVAL WEAPONS INDUSTRIAL RESERVE PLANT  
 BETHPAGE, NEW YORK

CONTRACT NUMBER N62470-11-D8013	CTO NUMBER WE15
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 2	REV 0