Quarterly Operations Report
First Quarter 2014

Groundwater Treatment Plant
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant
Bethpage, New York

Contract No. N40085-10-D-9409
Contract Task Order No. 0002

September 2014

Prepared for:

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Acronyms and Abbreviations

ARAR	Applicable or Relevant and Appropriate Requirement
AS	air stripper
ASE	air stripper effluent
BFE	bag filter effluent
bgs	below ground surface
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
DAR	Division of Air Resources
DCA	dichloroethane
DCE	dichloroethene
DMR	Discharge Monitoring Report
DO	dissolved oxygen
DoD	Department of Defense
DTW	depth to water
ECL	Environmental Conservation Law
EB	equipment rinsate blank
ELAP	Environmental Laboratory Accreditation Program
GOCO	Government Owned Contractor Operated
gpm	gallon per minute
GWTP	groundwater treatment plant
H&S	H&S Environmental, Inc.
HMI	human-machine interface
IRP	Installation Restoration Program
LGAC	liquid-phase granular activated carbon
MS/MSD	matrix spike/matrix spike duplicate
NAVFAC	Naval Facilities Engineering Command Mid-Atlantic
NELAC	National Environmental Accreditation Conference
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and Maintenance
ORP	oxidation reduction potential
OU	operable unit

PCE	tetrachloroethene
PLC	programmable logic controller
QA/QC	quality assurance / quality control
ROD	Record of Decision
RPD	relative percent difference
SC	standard conductivity
scfm	standard cubic feet per minute
SPDES	Storm Pollution Discharge Elimination System
TB	trip blank
TCE	trichloroethene
TE	treated effluent
TSS	total suspended solids
TtEC	Tetra Tech EC, Inc.
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VGAC	vapor–phase granular activated carbon
VOC	volatile organic compound

1.0 INTRODUCTION

H&S Environmental, Inc. (H&S) has prepared this Quarterly Operations Report for the GM-38 Area Groundwater Treatment Plant (GWTP) at the Naval Weapons Industrial Reserve Plant (NWIRP) in Bethpage, New York. This report has been prepared for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC), Mid-Atlantic, under Contract No. N40085-10-D-9409, Contract Task Order No. 0002. This First Quarter 2014 Operations Report details activities that occurred from January 2014 to March 2014. Data was collected and operational activities were performed by H&S in accordance with the following documents:

- *Final Operation, Maintenance & Monitoring Plan for Groundwater Treatment Plant GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by Tetra Tech EC, Inc. (TtEC) in 2010, hereafter referred to as the "O&M Manual."
- *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), UFP-SAP for Operations, Maintenance, and Monitoring of the Groundwater Treatment Plant, GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by TtEC in 2010.

1.1 Background

NWIRP Bethpage is located in east central Nassau County, Long Island, New York, approximately 30 miles east of New York City (**Figure 1**) and is currently listed by New York State Department of Environmental Conservation (NYSDEC) as an "inactive hazardous waste site" (#1-30-003B). In the late 1990s, the Navy's property totaled approximately 109.5 acres and was a Government Owned Contractor-Operated (GOCO) facility that was operated by Northrop Grumman (NG) until September 1998. NWIRP Bethpage was bordered on the north, west, and south by property owned, or formerly owned, by NG that covered approximately 550 acres, and on the east by a residential neighborhood.

The GM-38 Area refers to a cluster of monitoring wells installed in the 1990s by NG. The GM-38 Area is approximately 8,500 feet south, southeast and hydraulically downgradient of NWIRP Bethpage. The GWTP is located within a utility easement with a street address of 100 Broadway, Bethpage, NY.

The "hot spot" cleanup remedy for the GM-38 Area groundwater was originally set forth in Record of Decision (ROD) documents for Operable Unit 2 (OU 2) Groundwater for the NG and NWIRP Sites (New York State Registry Site Numbers 1-30-003A & 1-30-003B, respectively) issued by NYSDEC Division of Environmental Remediation in March 2001 and for the NWIRP Bethpage Site by NAVFAC in April 2003 (Revision 1). The selected remedy was chosen in accordance with the New York State Environmental Conservation Law (ECL) and the Navy's Installation Restoration Program (IRP). It is also consistent with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), as amended, 42 U.S.C. §§ 9601-9675.

1.2 GWTP Overview

Groundwater is extracted from recovery wells RW-1 and RW-3 and treated in the GWTP. The treatment process consists of flow equalization, air stripping and vapor-phase carbon treatment, bag filtration, and liquid-phase carbon treatment. Though the GWTP was originally equipped with a pH adjustment system utilizing sodium hydroxide, it has since been determined that pH adjustment is not necessary and the equipment has been taken off-line and sodium hydroxide sent off site for beneficial reuse. A process flow diagram is presented as **Figure 2**. The treated water is either re-injected into injection well IW-1 or discharged into the Nassau County Recharge Basin #495. Under CERCLA, the Navy is required to meet the effluent requirement in the NYSDEC's Storm Pollution Discharge Elimination System (SPDES) Permit Application as an Applicable or Relevant and Appropriate Requirements (ARAR).

The GWTP was designed to operate at an average flow rate of 1,100 gallons per minute (gpm) (800 gpm from RW-1 and 300 gpm from RW-3), as measured by the average discharge flow rate. It was determined that this flow rate would be necessary to effectively contain the higher concentration of contaminated groundwater in the GM-38 Area. Volatile Organic Compounds (VOCs) in the influent groundwater consist of trichloroethene (TCE), tetrachloroethene (PCE), vinyl chloride (VC), cis-1,2-dichloroethene (cis-1,2-DCE), 1,2-dichloroethane (1,2-DCA), benzene, toluene, and total xylenes.

The air stripper (AS) is a structural aluminum tower that is packed with 3.5-inch diameter polypropylene Jaeger Tripack. Groundwater is pumped to the air stripper distribution port and sprayed over the column of Jaeger Tripack at a flow rate of approximately 1,100 gpm. Previously, 100 gpm of recirculated water was also rerouted through the AS, but as of October 2010, recirculation was no longer deemed necessary to the operation of the system. An induced draft countercurrent flow of air enters the air stripper below the base of the packing material at a rate of 8,000 standard cubic feet per minute (scfm). The large surface area of the packing material allows for a mass transfer of the VOCs from the groundwater into the air stream. The VOCs in the off-gas, except for vinyl chloride, are removed via two 20,000-lb vapor phase granular activated carbon (VGAC) units (VGAC-1 and VGAC-2). Vinyl chloride is oxidized by a 20,000-lb vessel containing zeolite impregnated with potassium permanganate (VGAC-3) into potassium chloride and carbon dioxide. The potassium chloride remains in the pore structure of the zeolite substrate. The treated off-gas is discharged from the stack.

Water treated by the air stripper is processed through three 8,000-lb liquid phase granular activated carbon (LGAC) units in parallel prior to discharge in the recovery basin (or injection well, if necessary).

The GWTP is controlled by a programmable logic controller (PLC)-based digital and analog control system, with instrumentation that monitors pH, pressure, tank level, flow transmitters, differential pressure transmitters, water level in recovery wells, and motor operational status. The information in the PLC is made available to an operator via a human-machine interface (HMI) program. By using this program, the status of the GWTP can be displayed in real time and adjusted, if necessary, by the operator.

2.0 GWTP OPERATIONS AND MAINTENANCE

While designed to run completely automated, the GWTP requires regular weekly visits by an operator to record and adjust operational parameters and to perform scheduled maintenance. The GWTP is equipped with telemetry that will alert an on-call operator in the event of a plant shutdown.

2.1 Routine Maintenance Activities

Routine maintenance activities at the GWTP were performed during the operator's weekly visits. These activities include general site inspections, collection of operational data (water and vapor flowrates, differential pressures across the AS, carbon units, bag filter units and blower discharge pressures, tank levels and totalizer readings), measurement of water levels in the recovery wells, adjustment of pump signal settings, collection of vapor and process water samples, changing out of bag filters, switching of lead/lag pump assignments, and preventive maintenance of system equipment. In addition, the following maintenance tasks were also performed during this reporting period:

- On 9 January, 12 January, 16 January, 19 January, 28 January, 29 January, 10 February, 25 February, and 25 March, bag filters were changed out.
- On 19 March, the annual backflow preventer inspection was performed. Results were submitted to Bethpage Water District and New York State Department of Health (NYSDOH), as required.

2.2 Non-routine Maintenance / Site Activities

The following non-routine activities were performed during the First Quarter:

- On 10 January, a clean-out of the GWTP building sump was performed. Waste was transported off site for proper disposal.
- On 15 March, the system went down due to a power interruption caused by storms and/or loss of power in the area. The system was restarted upon arrival by the operator and/or restoration of power.
- On 18 March, various maintenance activities were performed, including resealing of several leaks in the vapor duct, replacement of snow blocks on the roof, and cleaning of wye strainers for various process pumps (P-3A, P-3B, P-4A, and P-4B).

3.0 GWTP MONITORING

The intent of the GWTP is to remove contaminant mass and reduce elevated VOC levels to levels similar to those in the surrounding aquifer. It is anticipated that GWTP operation will minimize contaminant impacts on water supply wells and currently unaffected portions of the groundwater aquifer. The GWTP is not intended to remediate groundwater contamination in the local aquifer to non-detectable levels (TtEC 2010). Various process samples (water and vapor) are collected on a monthly basis to monitor GWTP efficiency and to ensure compliance with Federal and State effluent discharge and air emission requirements. In addition, groundwater samples are collected quarterly to monitor water quality and determine the effectiveness of the remediation activities and monitor the hydraulic containment and capture of impacted groundwater by the recovery wells.

3.1 Process Water Quality Monitoring

Processed groundwater is analyzed to comply with calculations submitted by the Navy and approved by NYSDEC Water Division for the effluent limitations and monitoring requirements. These results are also submitted to the NYSDEC on a monthly basis in the form of a Discharge Monitoring Report (DMR). A copy of the approved NYSDEC effluent limitation and monitoring constituents and the reporting forms are included in **Appendix A**.

Monthly aqueous samples are collected from each recovery well (RW-1 and RW-3), as well as the treated effluent (TE) discharge line. In addition, various intermediary process system samples are collected monthly, consisting of air stripper effluent (ASE), bag filter effluent (BFE), and effluent of each of the three LGAC units (LC1, LC2, and LC3). The analytical results of monthly process water samples collected during the First Quarter are presented in **Table 1**. The data demonstrates that all permitted constituents were in compliance with regulatory requirements during the First Quarter. **Table 1** also summarizes the average monthly flowrates in gallons per minute along with the total volume of water processed during each month of the First Quarter.

Monthly DMRs for the First Quarter (January – March 2014) are included in **Appendix A**.

3.2 Air Quality Monitoring

Treated off-gas discharged at the stack of the GWTP is subject to emissions limitations. Original discharge goals were derived from calculations submitted by the Navy and approved by the NYSDEC Division of Air Resources (DAR) in July 2009. In November 2011, the Navy submitted an evaluation proposing revised discharge goals, which NYSDEC approved in October 2013. A copy of this documentation is included as **Appendix B**.

While only sampling of the stack emissions is required for NYSDEC compliance, process vapor samples are also collected using 6-L summa canisters at various locations to monitor for breakthrough of the VGAC units. The analytical results of monthly influent and effluent vapor samples as well as midfluent samples (VC12 and VC13) collected during the First Quarter are presented in **Table 2**. Air emissions calculations using the stack vapor concentrations along with discharge flowrates are presented in **Table 3**.

The calculations demonstrate that all constituents were within the regulatory requirements during the First Quarter based on the emission rates in pounds per hour (lb/hr).

3.3 Groundwater Quality Monitoring

The groundwater monitoring well system at the GM-38 Groundwater Remediation Area consists of fourteen monitoring wells (as summarized in **Table 4**), three recovery wells (RW-1, RW-2, RW-3) and one injection well (IW-1). Though RW-2 was installed in 2005, a pump was never installed in this well and the well is not operated as a recovery well due to concerns expressed by the Bethpage Water District. Well locations are depicted on **Figure 3**.

Depth to water (DTW) measurements are collected from twelve of the monitoring wells and water quality samples are collected from eight of the monitoring wells on a quarterly basis. The monitoring network includes well clusters located near the recovery and injection wells as described below and as shown on **Figure 3**. In addition, two wells, GM-38D and GM-38D2, located at the corner of Arthur Avenue and Broadway, are monitored by others.

Quarterly groundwater samples were collected from eight monitoring wells (RW1-MW1, RW1-MW3, RW2-MW1, RW3-MW1, RW3-MW2, RW3-MW3, RW3-MW4, and TP-01). Samples were collected using bladder pumps in accordance with the U.S. Environmental Protection Agency (USEPA) low-flow sampling methodologies. Results of the groundwater sampling for the First Quarter are presented in Section 3.3.1 below, and descriptions of monitoring well locations are as follows:

Recovery Well 1 (RW-1) Monitoring Wells
The RW-1 cluster consists of three monitoring wells screened between 395 and 435 feet below ground surface (bgs). RW1-MW1 is located approximately 140 feet northwest of RW-1 and RW1-MW2 is located approximately 50 feet north of RW-1. RW1-MW3 is located approximately 400 feet northeast of RW-1, on the eastern side of Seaford Oyster Bay Expressway. All three wells are hydraulically monitored while only RW1-MW1 and RW1-MW3 are also monitored for water quality.

Recovery Well 2 (RW-2) Monitoring Wells
The RW-2 cluster consists of three monitoring wells screened between 470 and 510 feet bgs. RW-2 MW-1 is located approximately 60 feet northwest of RW-2, RW2-MW2 is located approximately 20 feet west of RW-2, and RW2-MW3 is located approximately 100 feet west of RW-2. All three wells are hydraulically monitored while only RW-2 MW1 is monitored for water quality.

Recovery Well 3 (RW-3) Monitoring Wells
The RW-3 cluster consists of four monitoring wells. RW3-MW1 and RW3-MW4 are screened between 475 and 495 feet bgs. RW3-MW2 and RW3-MW3 are screened between 330 and 350 ft bgs and 320 and 340 ft bgs, respectively. RW3-MW1 and RW3-MW2 are located approximately 500 feet west of the GM-38 cluster, at the intersection of Arthur Avenue and Leroy Avenue. RW3-MW3 and RW3-MW4 are located approximately 400 feet north of the intersection of Arthur Avenue and Broadway. All four wells are both hydraulically monitored and monitored for water quality.

TP-01
TP-01 is screened between 450 and 470 feet bgs and is located approximately 25 feet north of the GWTP building, inside the fenced area. It is hydraulically monitored to observe the change in water levels due to the influence from the pumping rates at the neighboring public water supply well field near the hot spot area and is also monitored for water quality.

Injection Well 1 (IW-1) Monitoring Well
There is one monitoring well associated with injection well IW-1. IW1-MW1 is screened between 20 and 150 feet bgs, is located approximately 20 feet south of IW-1, and is only hydraulically monitored on a quarterly basis.

3.3.1 Groundwater Quality Results

H&S collected groundwater samples for the First Quarter from 24-26 March 2014. Field parameters measured during well purging, consisting of pH, specific conductance (SC), temperature, oxidation-reduction potential (ORP) and dissolved oxygen (DO), are summarized in **Table 5**. Following stabilization of field parameters, groundwater samples were collected. Copies of the field logs and chain of custody documentation are presented in **Appendix C**.

Groundwater samples were submitted to a National Environmental Laboratory Accreditation Conference (NELAC), Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) certified, laboratory, Analytical Laboratories Services, located in Middletown, PA. The samples were analyzed for VOCs via USEPA Method 624, mercury via USEPA Method 245.1, and total suspended solids (TSS) via USEPA Method SM20 2540D. Validated analytical sampling results collected during the First Quarter monitoring event are summarized in **Table 6.** Data validation reports are presented in **Appendix D**. Raw analytical data is provided under separate cover.

3.3.2 Quality Assurance/Quality Control Sampling

Quality assurance/quality control (QA/QC) samples were collected during the quarterly groundwater monitoring event in accordance with the *Final Sampling and Analysis Plan* (TtEC 2010a). These samples consisted of blind field duplicates (collected from RW1-MW1 during the First Quarter), matrix spike/matrix spike duplicate (MS/MSD) samples, equipment rinsate blanks (EB) collected at a rate of one per sampling event, and trip blanks (TB) submitted at a rate of one per sample cooler. No contaminants were detected in the equipment blank or trip blank submitted for this event. The overall lack of contamination in the blanks indicates that quality control requirements were achieved.

For field duplicate samples, the precision between the original sample and its duplicate is evaluated by calculating the relative percent difference (RPD). RPDs for the First Quarter sampling event are presented in the data validation report in **Appendix D**. As indicated, RPDs for all analytes were well below the guideline of 50%. This overall consistency between the samples and its duplicate verifies that proper sample collection methods were followed.

3.3.3 Groundwater Concentration Trends

Historical groundwater analytical results through the First Quarter are presented in **Table 7**. Groundwater analytical results of select VOCs (cis-1,2-DCE, PCE, TCE, and VC) for the First Quarter monitoring event are presented graphically as **Figure 4**. Additionally, concentration trends of select VOCs (cis-1,2-DCE, TCE, and PCE, as well as VC for RW-1) over time for each recovery well (RW-1 and RW-3 sampled monthly) and the eight monitoring wells sampled during the First Quarter monitoring event are presented in **Figures 5 through 14** and discussed below.

Figure 5 presents concentrations detected at recovery well RW-1. Concentrations of TCE have decreased from initial concentrations in early 2010 (maximum value of 710 µg/L detected in February 2010), remaining around or below 300 µg/L since the latter half of 2012. During the First Quarter 2014, concentrations ranged from 196-217 µg/L. Concentrations of cis-1,2-DCE have followed a similar trend, decreasing from a high of 160 µg/L in February 2010 to a low of 19.0 µg/L in October 2013. PCE concentrations have also exhibited decreasing trends over time, with concentrations decreasing from 180 µg/L in February 2010 to a low of 40.4 µg/L in September 2013. Concentrations of VC have decreased below initial concentrations in 2010. After reaching a maximum concentration of 61 µg/L in February 2010, VC concentrations have remained below 5.0 µg/L since the final quarter of 2011 and below 2.0 µg/L since September 2012.

Figure 6 presents concentrations detected at recovery well RW-3. Concentrations of TCE have decreased from initial concentrations in February 2010 (660 µg/L). During the First Quarter 2014, concentrations ranged from 208-233 µg/L. Concentrations of cis-1,2-DCE have remained consistently below 4.0 µg/L. PCE has been detected at low levels during only a few sampling events, including a detection of 0.28 J µg/L in March 2014.

Figure 7 presents concentrations detected at RW1-MW1. The concentration of TCE in the First Quarter 2014 (101 µg/L) was higher than initial concentrations observed in May 2005 (53.6 µg/L) but less than the highest concentration observed to date (175 µg/L in September 2013). No overall trend is discernible. The concentration of cis-1,2-DCE in the First Quarter 2014 (92.6 µg/L) was above initial concentration observed in May 2005 (78.6 µg/L) but below maximum concentration observed in May 2009 (180 µg/L). Concentrations of PCE have remained consistently below 1.0 µg/L.

Figure 8 presents concentrations detected at RW1-MW3. Concentrations of cis-1,2-DCE and PCE have consistently remained below 1.0 µg/L. Concentrations of TCE ranged between 1.5 -3.2 µg/L but remain below the maximum contaminant level of 5 µg/L.

Figure 9 presents concentrations detected at RW2-MW1. Concentrations of TCE in the First Quarter 2014 (23.4 µg/L) were less than initial concentrations observed in May 2005 (37.6 µg/L), which was also the highest TCE concentration observed to date. No overall trend is discernible. The concentration of cis-1,2-DCE observed in the First Quarter 2014 (8.0 µg/L) was above initial concentrations observed in May 2005 (non-detect) but slightly below the maximum concentration observed in December 2013 (11.0 µg/L). PCE has not been detected during any sampling event.

Figure 10 presents concentrations detected at RW3-MW1. Concentrations of TCE in the First Quarter 2014 (60.0 µg/L) were higher than initial concentrations observed in January 2010 (35.0 µg/L), though remain less than maximum TCE concentrations observed in November 2010 (77.6 µg/L). No overall trend is discernible. Concentrations of cis-1,2-DCE and PCE have exhibited similar trends, increasing slightly from initial concentrations, but remaining consistently below 2.0 µg/L.

Figure 11 presents concentrations detected at RW3-MW2. TCE concentrations observed in the First Quarter 2014 (164 µg/L) were slightly higher than initial concentrations observed in January 2010 (160 µg/L), but less than the maximum concentration observed in April 2010 (211 µg/L). No overall trend is discernible. Concentrations of cis-1,2-DCE at this location have consistently remained between 1.0 – 2.0 µg/L. PCE has not been detected during any sampling event with the exception of August 2012 and March 2013, when concentrations of 0.28 J µg/L and 0.29 J µg/L, respectively, were observed.

Figure 12 presents concentrations detected at RW3-MW3. TCE concentrations observed in the First Quarter 2014 (350 µg/L) were equal to initial concentrations observed in January 2010 (350 µg/L), and less than the maximum concentration observed in June 2013 (410 µg/L). No overall trend is discernible. Concentrations of cis-1,2-DCE have remained near or below 2.0 µg/L and PCE has remained below 1.0 µg/L, with concentrations of both analytes remaining at non-detectable levels throughout 2013 and First Quarter 2014.

Figure 13 presents concentrations detected at RW3-MW4. TCE concentrations have decreased since the initial sampling event in January 2010 (21 µg/L), with a concentration of 3.3 µg/L observed in the First Quarter 2014. PCE had not been detected during any sampling event, and cis-1,2-DCE has not been detected since the initial sampling event in January 2010 (0.46 µg/L).

Figure 14 presents concentrations detected at TP-01. TCE concentrations have decreased since the initial sampling event in January 2010 (65 µg/L), with a concentration of 21.7 µg/L observed in the First Quarter 2014. A similar trend exists for concentrations of cis-1,2-DCE. Concentrations have decreased from an initial value of 190 µg/L to 5.3 µg/L in the First Quarter 2014, with concentrations fluctuating over time. PCE concentrations have ranged from non-detectable levels in March 2014 to 6.0 µg/L in June 2012.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The intent of the groundwater treatment system at GM-38 is to remove mass and reduce elevated VOC concentrations to levels similar to those in the surrounding aquifer, and in doing so minimize the impacts on downgradient water supply wells and currently unaffected portions of the aquifer. Based on the removal of VOCs by the GWTP and decreasing contaminant concentration trends observed in the recovery wells and several of the monitoring wells, progress toward these goals is apparent. Based on the concentrations in the groundwater wells, the GWTP should continue to be operated. In accordance with the OM&M Plan, the groundwater sampling will be reduced to a semiannual basis for the eight monitoring wells beginning in April 2014. Water levels for the 14 monitoring wells will continued to be monitored on a quarterly basis.

An evaluation was conducted at GM-38 to better determine the capture zone. The report entitled "*Capture Zone Evaluation and Path Forward, GM-38 Area Groundwater Treatment Plant*" (Tetra Tech 2014) was submitted to NYSDEC in March 2014. One of the recommendations in this report was to discontinue use of recovery well RW-3. The report stated, "When RW01 and RW03 were pumped together, there was no noticeable additive influence on the drawdown in shallower monitoring wells, indicating that in the shallower portions of the GM-38 Area groundwater, RW01 operation is sufficient."

5.0 REFERENCES

Tetra Tech, Inc. (Tetra Tech). 2014. *Capture Zone Evaluation and Path Forward, GM-38 Area Groundwater Treatment Plant, Naval Weapons Industrial Reserve Plant, Bethpage, New York.* March.

Tetra Tech EC, Inc. (TtEC). 2010. *Final Operation, Maintenance & Monitoring Plan for Groundwater Treatment Plant GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York.* April.

Tetra Tech EC, Inc. (TtEC). 2010a. *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), UFP-SAP for Operations, Maintenance, and Monitoring of the Groundwater Treatment Plant, GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, New York.* September.

TABLES

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
First Quarter 2014

SPDES Parameters	Daily Maximum Goal	Units	January 2014									
Process Stream			RW-1 (2)	RW-3	Combined Influent (1) (RW-1 + RW-3)	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			1/21/14									
Average Flowrate	1100	GPM	779	187	966	NR	966	NR	NR	NR	966	NR
Total Flow		gallons	34,779,400	8,338,400	43,117,800	NR	43,131,380	NR	NR	NR	43,129,200	NR
pH	5.5 - 8.5	SU	5.30	5.50	5.34	6.15	6.47	6.70	6.72	6.80	6.57	6.55
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.5	ND	2.4	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	2.8	ND	2.3	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	23.0	ND	18.6	0.52 J	0.35 J	ND	ND	ND	ND	ND
trans 1,2-Dichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	2.2	ND	1.8	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	196	208	198	3.7	3.4	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	0.53 J	ND	0.43 J	ND	ND	ND	ND	ND	ND	ND
Mercruy	0.25	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids (TSS)	NA	mg/L	ND	11	2.1	ND	ND	ND	ND	ND	ND	ND

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
First Quarter 2014

SPDES Parameters	Daily Maximum Goal	Units	February 2014									
Process Stream			RW-1	RW-3	Combined Influent [1] (RW-1 + RW-3)	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			2/10/14									
Average Flowrate	1100	GPM	804	189	993	NR	987	NR	NR	NR	992	NR
Total Flow		gallons	32,403,733	7,615,493	40,019,227	NR	39,803,240	NR	NR	NR	40,009,047	NR
pH	5.5 - 8.5	SU	5.13	5.23	5.15	7.01	7.10	7.36	7.31	7.30	6.85	7.22
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.8	ND	2.3	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	2.7	ND	2.2	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	23.9	ND	19.4	0.52 J	0.53 J	ND	ND	ND	ND	ND
trans 1,2-Dichloroethene	5	µg/L	0.3 J	ND	0.26 J	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	51.2	ND	41.5	0.30 J	0.45 J	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	2.2	ND	1.8	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	217	233	220	3.7	3.4	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	0.92 J	ND	0.74 J	ND	ND	ND	ND	ND	ND	ND
Mercruy	0.25	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids (TSS)	NA	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	10

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
First Quarter 2014

SPDES Parameters	Daily Maximum Goal	Units	March 2014									
Process Stream			RW-1	RW-3	Combined Influent (1) (3) (RW-1 + RW-3)	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			3/12/14									
Average Flowrate	1100	GPM	760	171	931	NR	928	NR	NR	NR	931	NR
Total Flow		gallons	33,914,900	7,648,490	41,563,390	NR	41,407,100	NR	NR	NR	41,564,320	NR
pH	5.5 - 8.5	SU	5.09	5.11	5.09	6.07	6.34	6.52	6.55	6.57	6.46	6.44
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.6	1.9	2.47	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	3.3	1.2	2.9	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	24.6	1.2	20.3	0.75 J	0.71 J	ND	ND	ND	ND	ND
trans 1,2-Dichloroethene	5	µg/L	0.36 J	ND	0.29 J	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	53.3	0.28 J	43.5	0.41 J	0.37 J	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	2.2	0.71 J	1.9	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	34.6	227	227	3.2	3.0	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	0.78 J	ND	0.64 J	ND	ND	ND	ND	ND	ND	ND
Mercruy	0.25	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Suspended Solids (TSS)	NA	mg/L	ND	18	3.3	ND	5	ND	ND	13	ND	ND

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
NA - Not Applicable
ND - Not detected above laboratory method detection limit
NR - Not Recorded
NS - Not Sampled
gpm - gallons per minute

(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.
(2) The result for tetrachloroethane (PCE) for location RW-1 is not within historical ranges and is assumed to be in error.
(3) The result for trichloroethane (TCE) for location RW-1 is not within historical ranges and is assumed to be in error. Therefore, the TCE concentration for RW-3 is presented as the combined influent concentration for TCE, as opposed to using the weighted average of RW-1 and RW-3.

Table 2
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
First Quarter 2014

DAR Parameters	Discharge Goal [3]	Units	January 2014					February 2014				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate	Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate
Sampling Date			1/21/14					2/10/14				
Average Flowrate		CFM	NR	NR	NR	7,592	NR	NR	NR	NR	7,393	NR
Total Flow [1]		ft^3	NR	NR	NR	338,926,720	NR	NR	NR	NR	298,076,800	NR
Total Flow [2]		m^3	NR	NR	NR	9,597,336	NR	NR	NR	NR	8,440,595	NR
1,2-Dichloroethane	NA	$\mu g/m^3$	4.6 J	ND	ND	ND	ND	4.1 J	ND	ND	ND	ND
cis 1,2-Dichloroethene	> 100,000 [4]	$\mu g/m^3$	260	1.5 J	0.67 J	0.81 J	ND	260	ND	ND	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	260	1.5 J	ND	ND	ND	260	ND	ND	ND	ND
Toluene	NA	$\mu g/m^3$	3.4 J	2.5 J	0.58 J	ND	ND	ND	0.91 J	ND	ND	ND
Xylene	NA	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	0.72 J	0.61 J	ND	ND
1,1,2-Trichloroethane	NA	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	2,600	$\mu g/m^3$	3100	56	4.9	5.6	2.4	3300	35	16	4.4	1.5 J
Vinyl Chloride	560	$\mu g/m^3$	8.9	7.0	9.1	2.3	2.0 J	6.0	6.0	6.3	ND	ND
Tetrachloroethene	5,100	$\mu g/m^3$	650	110	ND	ND	ND	620	110	9.8	ND	ND

Table 2
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
First Quarter 2014

DAR Parameters	Discharge Goal (3)	Units	March 2014				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate
Sampling Date			3/13/14				
Average Flowrate		CFM	NR	NR	NR	7,282	
Total Flow (1)		ft^3	NR	NR	NR	325,074,857	NR
Total Flow (2)		m^3	NR	NR	NR	9,205,095	NR
1,2-Dichloroethane	NA	$\mu g/m^3$	3.6 J	ND	ND	ND	ND
cis 1,2-Dichloroethene	> 100,000 (4)	$\mu g/m^3$	220	ND	ND	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	3.3 J	ND	ND	ND	ND
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	230	ND	ND	ND	ND
Toluene	NA	$\mu g/m^3$	3.9 J	ND	ND	ND	10
Xylene	NA	$\mu g/m^3$	ND	0.60 J	ND	ND	1.1 J
1,1,2-Trichloroethane	NA	$\mu g/m^3$	1.5 J	ND	ND	ND	ND
Trichloroethene	2,600	$\mu g/m^3$	2900	20	14	2.4 J	1.0 J
Vinyl Chloride	560	$\mu g/m^3$	6.3	5.8	5.7	1.2 J	0.60 J
Tetrachloroethene	5,100	$\mu g/m^3$	540	79	13	ND	ND

Notes:
NA - Not applicable
ND - Not detected
NR - Not recorded
SGC - Short-term Guideline Concentration
$\mu g/m^3$ - micrograms per cubic meter
CFM - cubic feet per minute
DAR - Division of Air Rescources
(1) Total Flow (ft^3) = avg flowrate (cfm) * operational time (min)
(2) Total Flow (m^3) = total flow (ft^3) * (0.3048^3)m^3/ft^3
(3) Disharge goal as approved by NYSDEC's letter dated 31 October 2013.
(4) Discharge goal is for total 1,2-Dichloroethene.

Table 3
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Stack Emissions
First Quarter 2014

DAR Parameters	Discharge Goal (1)	Units	January 2014	February 2014	March 2014
Sampling Date			1/21/14	2/10/14	3/13/14
Average Flowrate		CFM	7,592	7,393	7,282
Total Flow		ft^3	338,926,720	298,076,800	325,074,857
Total Flow		m^3	9,597,336	8,440,595	9,205,095
Trichloroethene	0.09	lb/hr	0.00016	0.00012	0.00007
Vinyl Chloride	0.02	lb/hr	0.00007	0.00000	0.00003
1,2 Dichloroethene	11	lb/hr	0.00000	0.00000	0.00000
1,2-Dichloroethane	NA	lb/hr	0.00000	0.00000	0.00000
Toluene	NA	lb/hr	0.00000	0.00000	0.00000
Xylene	NA	lb/hr	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	NA	lb/hr	0.00000	0.00000	0.00000
Tetrachloroethene	0.18	lb/hr	0.00000	0.00000	0.00000

Notes:
NA - Not applicable
lb/hr - pounds per hour
DAR - Divison of Air Resources
CFM - Cubic feet per minute
Stack Emissions (lb/hr) = average flowrate (cfm) * ($0.3048^{\wedge 3}$)m^3/ft^3 * conc.(ug/m^3) * 1 lb/453592370 ug * 60 min/hr

(1) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.

Table 4
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Level Measurements
First Quarter 2014

Monitoring Well ID	Date	Well Elevation (ft amsl)	Total Depth (ft)	Screen Interval (ft)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
RW1-MW1	03/24/14	85.86	435	395-435	37.35	48.51
RW1-MW2	03/24/14	87.35	435	395-435	40.00	47.35
RW1-MW3	03/24/14	80.34	435	395-435	28.61	51.73
RW2-MW1	03/24/14	90.75	510	470-510	40.75	50.00
RW2-MW2	03/24/14	90.15	510	470-510	40.30	49.85
RW2-MW3	03/24/14	89.75	510	470-510	39.91	49.84
RW3-MW1	03/24/14	92.22	495	475-495	39.01	53.21
RW3-MW2	03/24/14	91.98	350	330-350	40.81	51.17
RW3-MW3	03/24/14	92.98	340	320-340	40.35	52.63
RW3-MW4	03/24/14	92.92	495	475-495	41.60	51.32
TP-01	03/24/14	85.91	470	450-470	35.13	50.78
IW1-MW1	03/24/14	89.41	150	20-150	37.35	52.06
GM38D	NA	91.37	340	320-340	NA	NA
GM382D	NA	91.57	495	475-495	NA	NA

Notes:
amsl - above mean sea level
ft - feet
NA - Not Available

Table 5
Summary of Final Groundwater Chemistry Data
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Groundwater Chemistry Results
First Quarter 2014

Location	Temp (ºC)	pH (SU)	S.C. (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color (Visual)
RW1-MW1	12.60	4.35	182	0.92	237.1	1.26	clear
RW1-MW3	12.72	4.83	173	0.72	131.9	1.63	clear
RW2-MW1	12.13	5.91	194	0.31	-14.9	5.73	clear
RW3-MW1	9.19	4.32	128	0.88	146.4	9.70	clear
RW3-MW2	9.98	4.48	79	0.76	144.9	1.69	clear
RW3-MW3	10.90	4.90	153	0.90	139.1	8.29	clear
RW3-MW4	13.08	4.25	179	0.99	220.4	9.32	clear
TP-01	11.97	5.55	197	6.80	165.6	0.54	clear

Notes:
S.C. = Specific Conductance
mS/cm = milliSiemens per centimeter
NTU = nephelometric turbidity units
mg/L = milligrams per liter
ºC = degrees celsius
mV = millivolts
SU = standard units
ORP = oxidation/reduction potential

Table 6
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Detected Groundwater Analytical Results
First Quarter 2014

Sample ID	**RW1-MW1**		**RW1-MW3**	**RW2-MW1**	**RW3-MW1**	**RW3-MW2**	**RW3-MW3**	**RW3-MW4**	**TP-01**
Sample Date	**3/24/2014**	**3/24/2014**	**3/25/2014**	**3/25/2014**	**3/25/2014**	**3/25/2014**	**3/26/2014**	**3/26/2014**	**3/25/2014**
Comments		**Duplicate**							
VOCS (EPA 624) ug/L [(1)]									
1,1,1-trichloroethane	ND	ND	1.7	ND	0.66 J	0.43 J	ND	0.48 J	ND
1,1,2-trichloroethane	ND	ND	0.46 J	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	5.3	5.3	8.6	5.1	1.1	0.62 J	4.9 J	5.5	ND
1,1-dichloroethene	2.8	2.7	2.1	1.8	0.74 J	0.44 J	2.4 J	0.95 J	0.22 J
1,2-dichloroethane	ND	ND	ND	1.3	ND	ND	ND	0.37 J	ND
Benzene	ND	ND	ND	0.21 J	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	1.8 J	ND	ND	ND	ND	ND
Chloroform	ND	0.55 J	0.74 J	2.8 J	ND	ND	ND	1.2 J	6.8 J
Chloromethane	ND	ND	ND	0.68 J	ND	ND	ND	ND	ND
cis-1,2-dichloroethene	92.6 J	94.2	0.57 J	8.0	0.38 J	1.7	ND	ND	5.3
Tetrachloroethene	0.33 J	0.37 J	ND	ND	1.5	0.29 J	ND	ND	ND
trans-1,2-dichloroethene	1.4	1.4	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	101	103	2.5	23.4	60.0	164	350	3.3	21.7
Mercury (EPA 245.1) ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	ND	ND	5	12	14	ND	ND	9	ND

Notes:
J = estimated value
ND - Not detected above laboratory method detection limit
mg/L = milligrams per liter
µg/L = micrograms per liter

Samples were analyzed for TCL VOCs. Only those VOCs detected are presented above.

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	RW1-MW1																						
Sample Date	5/4/2005	7/22/2005	5/27/2009	1/21/2010	4/21/2010	7/28/2010	11/10/2010	3/25/2011	6/14/2011[1]	6/14/2011	9/28/2011	11/30/2011	3/8/2012	6/6/2012	6/6/2012	8/21/2012	12/4/2012	3/13/2013	6/19/2013[2]	9/17/2013	12/16/2013	3/24/2014	3/24/2014
Comments										Duplicate					Duplicate								Duplicate
Well Depth (Ft)	435																						
Screened Interval (Ft)	395-435																						
VOCS (EPA 624) ug/L																							
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	0.32J	ND	ND	ND	0.17J	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	2.0 R	ND
Chloroform	ND	0.7J	1.1	ND	0.70J	0.65J	0.56J	0.55J	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,1-dichloroethane	0.74J	0.79J	3.3	2.9J	2.8	2.8	3.0	3.6	1.6 J	4.2 J	4.0 J	4.1	5.2	4.8	4.3	5.3	4.9	5.3	4.8 J	4.7 J	5.2	5.3	5.3
1,2-dichloroethane	ND	ND	0.29J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	1.3	2.8	3.1	1.7J	1.9	1.7	1.7	1.9	0.85 J	2.1 J	2.3 J	2.1	2.7	2.5	2.3	2.8	2.0	2.8	ND	2.5	2.6	2.8	2.7
cis-1,2-dichloroethene	78.6	80.4	180D	130	121	118	108	121	55.8 J	145 J	164	132	179	165	145	167	108	91.7	64	86.2 J	84.4	92.6 J	94.2
trans-1,2-dichloroethene	2.0	1.3J	2.8	4J	2.9	2.1	1.3	4.2	0.71 J	2.0 J	2.0 J	1.7	3.0	3.7	2.6	2.4	1.8	1.7	ND	ND	1.4	1.4	1.4
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	1.75J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	0.72J	ND	0.42J	ND	ND	ND	ND	ND	0.36 J	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.67 J	0.33 J	0.37 J
Toluene	ND	0.33J	0.68	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	0.71J	ND	0.52J	0.43J	0.53J	0.79J	ND	0.63 J	1.1 J	0.66 J	0.96 J	0.98 J	0.89 J	0.99 J	0.88 J	1.1	ND	1.2	1.5	ND	ND
1,1,2-trichloroethane	ND	ND	0.58J	NR	ND	ND	ND	ND	NR	NR	ND	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	53.6	52.7	140.0	79.0	116	95.4	84.2	97.6	26.6 J	73.8 J	129	84.5	115	107	102	126	85	101	78	175	128	101	103
m,p-xylene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
o-xylene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	1.6	ND	ND	ND	0.17J	ND	ND	0.38 J	0.29 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	ND	0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	2.8	2.8	6.0	4.0	4.0	4.0	ND	6	ND	11	16	9	5	6	ND	ND	ND	ND	11	ND	ND

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	RW1-MW2				RW1-MW3																
Sample Date	5/4/2005	7/22/2005	5/28/2009	6/18/2013[2]	1/20/2010	4/21/2010	7/29/2010	11/10/2010	3/25/2011	6/14/2011	9/28/2011	11/30/2011	3/8/2012	6/7/2012	8/22/2012	12/7/2012	3/14/2013	6/19/2013[2]	9/17/2013	12/17/2013	3/25/2014
Comments																					
Well Depth (Ft)	435				435																
Screened Interval (Ft)	395-435				395-435																
VOCS (EPA 624) ug/L																					
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	1.4	ND	ND	0.67J	0.80J	0.47J	0.69J	0.73J	NR	0.97 J	ND	0.73 J	0.64 J	ND	1.2 J	ND	0.82	ND	ND	0.74 J
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	4.6	5.5	3.4	3.9	2.4	4.6	1.5	2.3	2.4	9.3	10.1 J	2.1	8.4	5.7	9.4	9.3	8.5	10	9.7 J	8.1	8.6
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18 J	ND	ND	ND
1,1-dichloroethene	3.2	12.3	ND	ND	0.42J	1.10	ND	0.28J	ND	1.8	2.2 J	ND	1.8	0.86 J	2.4	2.2	1.7	1.8	1.6	1.9	2.1
cis-1,2-dichloroethene	181.0	47.6	160.0	120	0.54J	0.48J	0.36J	0.55J	0.58J	0.59 J	0.43 J	0.55 J	0.68 J	0.33 J	0.56 J	0.46 J	0.53 J	0.46 J	0.72 J	0.60 J	0.57 J
trans-1,2-dichloroethene	2.5	7.6	2.5	1.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	4.01	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	1.0	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	ND	0.20 J	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	134.0	19.0	5.9	ND	049J	ND	ND	ND	0.33 J	0.62 J	ND	0.65 J	0.30 J	0.97 J	0.40 J	ND	ND	ND	ND	ND
Toluene	0.32J	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	1.3	1.0	ND	ND	0.41J	0.98J	ND	0.26J	0.33J	1.6	2.7 J	ND	ND	1.1 J	1.9	1.7	1.4	1.8	1.5	2.0	1.7
1,1,2-trichloroethane	ND	0.65J	ND	ND	0.62J	0.60J	0.36J	0.55J	0.41J	NR	0.57 J	0.63 J	0.70 J	0.61 J	0.56 J	0.54 J	0.61 J	0.46 J	ND	0.55 J	0.46 J
Trichloroethene	158.0	198.0	200.0	64	1.2	1.6	0.58J	0.91J	1.0	1.4	1.8 J	1.0 J	2.2	1.3	2.3	1.6	1.9	1.7	2.5	3.2	2.5
m,p-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
o-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	12.9	187.0	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.20	NR	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	4.0	NR	NR	8.0	<4.0	<4.0	<4.0	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	5

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	RW2-MW1																					RW2-MW2		
Sample Date	5/4/2005	7/20/2005	5/27/2009	1/18/2010	4/21/2010	7/28/2010	11/3/2010	3/24/2011	6/14/2011	9/27/2011	11/29/2011	3/7/2012	6/6/2012	8/21/2012	12/7/2012	3/13/2013	6/17/2013[2]	9/17/2013	12/17/2013	12/17/2013	3/25/2014	5/4/2005	7/21/2005	6/17/2013[2]
Comments																				Duplicate				
Well Depth (Ft)	510																					510		
Screened Interval (Ft)	470-510																					470-510		
VOCS (EPA 624) ug/L																								
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	ND	ND	ND
Benzene	ND	ND	ND	ND	0.15J	0.69J	0.58J	0.30J	NR	0.22 J	0.27 J	0.22 J	ND	ND	0.68 J	0.54 J	ND	0.59 J	ND	ND	0.21 J	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8 J	ND	ND	ND
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	R	R	ND
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND
Chloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	2.0 R	2.0 R	ND	NR	NR	NR
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.38 J	ND	ND	ND	2.9	ND	ND	ND	2.8 J	ND	ND	0.55
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68 J	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.53J	0.93J	1.2J	0.82J	0.60J	0.58J	0.42J	ND	0.61 J	0.64 J	ND	0.50 J	4.2	4.8	0.58 J	0.52 J	7.0	ND	5.8	6.4	5.1	ND	0.78J	4.9
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	1.9 J	1.7 J	1.3	ND	ND	0.32 J
1,1-dichloroethene	ND	0.58J	0.55J	0.63J	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	0.95 J	0.19 J	ND	1.9	ND	2.6	2.6	1.8	ND	0.41J	0.72
cis-1,2-dichloroethene	ND	0.55J	1.9	1.0	0.78J	0.80J	0.55J	0.43J	0.56 J	0.32 J	0.39 J	0.34 J	0.32 J	0.39 J	0.33 J	0.29 J	7.7	0.77 J	11.0 J	11.1 J	8.0	0.33J	0.41J	4.6
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	5.34	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	7.45J	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND	ND
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND	ND
methyl-tert-butyl-ether	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	0.85J	1.0	ND	0.52J	0.49J	0.50J	ND	NR	0.24 J	0.29 J	0.19 J	ND	ND	0.27 J	ND	ND	0.31 J	ND	ND	ND	0.33J	0.53J	ND
1,1,1-trichloroethane	ND	0.37J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND	0.84	ND	0.94 J	0.94 J	ND	ND	ND	0.34 J
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	D	ND	ND
Trichloroethene	37.6	34.6	12.0	15.0	0.42J	ND	ND	1.7	1.6	0.89 J	0.67 J	0.67 J	9.0	20.8	0.73 J	0.67 J	14	1.5	34.6	33.5	23.4	7.8	13.8	12
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	1.4J	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.05J	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
TSS (SM20 2540D) mg/L	NR	NR	2260.0	NR	58.0	<4.0	<4.0	<4.0	181	5	36	6	25	12	10	ND	13	12	30	24	12	NR	NR	NR

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	RW2-MW3				RW3-MW1																			
Sample Date	5/3/2005	7/20/2005	5/28/2009	6/18/2013[2]	1/19/2010	4/22/2010	7/29/2010	11/9/2010	3/25/2011	3/25/2011	6/14/2011	9/27/2011	11/30/2011	11/30/2011	3/7/2012	6/7/2012	8/22/2012	12/6/2012	3/14/2013	6/20/2013[2]	6/20/2013[2]	9/18/2013	12/17/2013	3/25/2014
Comments										Duplicate				Duplicate							Duplicate			
Well Depth (Ft)	510				495																			
Screened Interval (Ft)	470-510				475-495																			
VOCS (EPA 624) ug/L																								
Acrolein	NR	NR	30 R	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	0.19J	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	0.20J	ND	ND	NR	ND	ND	ND	ND	ND	ND	0.63 J	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.68J	0.31J	1.4	7.4	1.6	1.5	1.7	1.4	1.3	1.3	1.1	1.0 J	0.96 J	0.93 J	0.90 J	0.80 J	0.87 J	0.98 J	1.2	ND	ND	1.2 J	1.2	1.1
1,2-dichloroethane	ND	ND	ND	ND	0.27J	ND	ND	ND	ND	ND	ND	0.57 J	ND	ND	0.43 J	ND	ND	0.50 J	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	0.42J	ND	1.2	1.3	1.2	1.2	1.2	1.1	0.85 J	0.65 J	0.64 J	0.66 J	0.47 J	0.19 J	0.54 J	0.65 J	0.68 J	ND	ND	0.57 J	0.69 J	0.74 J
cis-1,2-dichloroethene	0.40J	0.66J	2.3	ND	0.37J	ND	0.32J	0.45J	0.47J	0.45J	0.48 J	0.31 J	0.36 J	0.43 J	0.37 J	0.39 J	0.36 J	0.44 J	0.38 J	ND	ND	0.43 J	0.41 J	0.38 J
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	7.42J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	0.49J	0.81J	0.73J	1.5	1.4	1.6	1.2	1.3 J	1.0	1.1	1.0	0.33 J	ND	0.44 J	1.6	1.8 J	1.7 J	1.2	1.6	1.5
Toluene	ND	0.50J	0.39J	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	ND	ND	ND	0.98J	0.84J	1.2	1.1	1.1	0.78 J	1.0 J	0.59 J	0.63 J	0.58 J	0.54 J	0.42 J	0.34 J	0.49 J	ND	ND	0.61 J	0.66 J	0.66 J
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	16.2	20.6	18.0	60	35.0	53.2	52.3	77.6	76.2	77.9	63.1	72.4 J	51.0	55.2	59.0	42.5	37.7	42.8	46.6	49	48	62.7	60.5	60.0
m,p-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.80 J	ND	NR	NR	NR
o-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	ND	NR	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	14.8	NR	NR	<4.0	<4.0	<4.0	<4.0	<4.0	5160	ND	ND	ND	NR	17	ND	ND	16	ND	9.5 J	ND	15	14

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	RW3-MW2																				
Sample Date	1/19/2010	1/19/2010	4/22/2010	7/29/2010	11/9/2010	11/9/2010	3/25/2011	6/14/2011	9/27/2011	11/30/2011	3/8/2012	6/7/2012	8/22/2012	8/22/2012	12/4/2012	12/4/2012	3/14/2013	6/20/2013[2]	9/17/2013	12/17/2013	3/25/2014
Comments		Duplicate			Duplicate									Duplicate		Duplicate					
Well Depth (Ft)	350																				
Screened Interval (Ft)	330-350																				
VOCS (EPA 624) ug/L																					
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	30 R	ND	ND	ND	NR	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Acetone	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
carbon disulfide	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	0.62 J	0.64 J	ND	ND	ND	ND	ND
Chloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	ND	ND	0.54J	ND	ND	ND	ND	0.52 J	0.37 J	ND	0.41 J	0.66 J	0.74 J	0.73 J	0.69 J	0.71 J	0.68 J	ND	0.65 J	0.59 J	0.62 J
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	1.2	ND	ND	ND	ND	0.57 J	0.45 J	0.27 J	0.27 J	0.36 J	0.49 J	0.49 J	0.40 J	0.43 J	0.53 J	ND	0.29 J	0.45 J	0.44 J
cis-1,2-dichloroethene	1.5J	1.6J	2.4	1.1	0.92J	0.92J	1.6	1.7	1.1	1.4	1.3	1.5	1.6	1.5	1.6	1.6	1.6	ND	1.3 J	1.9	1.7
trans-1,2-dichloroethene	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	0.69 J	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
methyl-tert-butyl-ether	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND	ND	ND	ND	0.29 J
Toluene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	0.58J	ND	ND	ND	ND	0.39 J	0.43 J	ND	ND	0.54 J	0.52 J	0.49 J	0.42 J	0.43 J	0.41 J	ND	0.47 J	0.50 J	0.43 J
1,1,2-trichloroethane	ND	ND	ND	ND	0.25 J	0.27J	ND	NR	0.32 J	0.32 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	160	170	211	73	58.2	60.9	110	135	151	71.9	96.5	209	198	192	173 J	171	155	140	174	176	164
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	5.0	6.0	ND	10.0	10.0	7	6	ND	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	RW3-MW3																		
Sample Date	1/20/2010	4/22/2010	4/22/2010	7/28/2010	11/3/2010 [1]	3/25/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013	6/21/2013[2]	9/18/2013	12/17/2013	3/26/2014
Comments			Duplicate								Duplicate								
Well Depth (Ft)	340																		
Screened Interval (Ft)	320-340																		
VOCS (EPA 624) ug/L																			
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	150 R	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
carbon disulfide	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	0.40J	0.46J	ND	0.33J	NR	0.48 J	ND	0.42 J	0.42 J	2.3 J	ND	0.88 J	ND	ND	ND	3.4 J	ND
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	ND	1.6	1.6	2.3	1.0	1.5	7.1	3.2 J	1.5	3.3	3.3	2.6 J	ND	4.2	4.5 J	ND	ND	3.7 J	4.9 J
1,2-dichloroethane	ND	0.52J	0.54J	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	1.1	1.3	1.2	ND	0.96J	2.6	1.8 J	0.96 J	1.9	1.9	1.7 J	1.4 J	1.9	2.1 J	ND	ND	ND	2.4 J
cis-1,2-dichloroethene	ND	2.1	2.1	1.7	ND	2.3	1.2	1.9	2.1	2.1	2.1	1.4 J	1.8 J	1.2	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	3.2 J	ND	6.2 J	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	0.45J	0.49J	ND	ND	ND	0.40 J	0.50 J	ND	0.72 J	0.69 J	ND	ND	0.43 J	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	0.95J	1.0J	0.72J	ND	0.62J	1.3	1.0 J	0.49 J	0.84 J	0.87 J	ND	ND	0.85 J	ND	ND	ND	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	350	397	382	297	8.5	288	331	215 J	250	312	325	285	248	291	347	410	322	322	350
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	4.0	5.0	<4.0	<4.0	<4.0	ND	ND	ND	ND	ND	13	10	5	ND	ND	ND	ND	ND

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	RW3-MW4																	
Sample Date	1/20/2010	4/22/2010	7/28/2010	7/28/2010	11/3/2010 (1)	3/24/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013	6/21/2013 (2)	9/17/2013	12/17/2013	3/26/2014
Comments				Duplicate														
Well Depth (Ft)	495																	
Screened Interval (Ft)	475-495																	
VOCS (EPA 624) ug/L																		
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
carbon disulfide	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Chloroform	ND	ND	ND	ND	0.32J	ND	NR	0.87 J	ND	0.38 J	ND	ND	0.71 J	ND	1.2	ND	ND	1.2 J
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	2.5	0.6	0.54J	0.50J	1.8	0.81	0.78 J	5.4 J	0.84 J	1.8	0.50 J	ND	1.2	3.8	4.6	2.9	4.9	5.5
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	0.37 J
1,1-dichloroethene	1.0	ND	ND	ND	0.86J	ND	0.20 J	0.53 J	ND	0.21 J	ND	ND	0.19 J	0.38 J	0.42 J	ND	0.39 J	0.95 J
cis-1,2-dichloroethene	0.46J	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	ND	ND	0.67J	ND	ND	0.66 J	ND	ND	ND	ND	ND	ND	0.29 J	ND	0.39 J	0.48 J
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	21	11	7.5	8.0	308	7.7	6.7	3.4 J	5.6	4.6	5.4	5.5	4.5	2.3	1.8	5.0	4.4	3.3
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	16.0	<4.0	<4.0	<4.0	<4.0	ND	11	6	5	ND	ND	ND	22	ND	ND	ND	9

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2014

Sample ID	TP-01																IW-1 MW-1		IW-1
Sample Date	1/21/2010	6/15/2011	9/27/2011	9/27/2011	11/30/2011	3/8/2012	6/6/2012	8/22/2012	12/4/2012	3/13/2013	3/13/2013	6/17/2013(2)	9/17/2013	9/17/2013	12/16/2013	3/25/2014	5/3/2005	6/18/2013(2)	5/27/2009
Comments				Duplicate							Duplicate			Duplicate					
Well Depth (Ft)	470																150		230
Screened Interval (Ft)	450-470																20-150		200-230
VOCS (EPA 624) ug/L																			
Acrolein	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
Acrylonitrile	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR
Acetone	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	R	ND	ND
carbon disulfide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND
Carbon tetrachloride	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Chloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	ND	ND	ND	ND	ND	ND	ND	2.0 R	2.0 R	NR	ND	ND	ND	ND	NR	NR	NR
Chloroform	ND	NR	0.68 J	0.74 J	ND	0.74 J	0.82 J	ND	2.5 J	1.2	1.1	11	5.2 J	ND	7.4	6.8 J	0.94J	ND	0.98J
Chloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND
1,2-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND
1,3-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND
1,4-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
1,1-dichloroethane	3.6J	5.0	3.7	3.7	2.9	3.7	3.7	3.4	1.1	1.5	1.4	3.2	2.1 J	2.8	1.5	ND	0.39J	0.51	0.22J
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.36 J	0.37 J	0.30 J	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	1.7	1.1	1.0	1.0	1.2	1.4	1.1	0.23 J	0.44 J	0.42 J	0.77	0.66 J	0.74 J	0.33 J	0.22 J	ND	ND	ND
cis-1,2-dichloroethene	190	43.4	40.4	40.2	74.9	53.3	29.9	16.1	4.2	5.8	5.8	8.7	14.1 J	14.7	8.0	5.3	ND	ND	ND
trans-1,2-dichloroethene	3.0J	1.1	1.0 J	0.92 J	1.1	0.87 J	0.79 J	0.35 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND	ND
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
4-methyl-2-pentanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND	ND
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.46J
styrene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Tetrachloroethene	3.4J	3.3	4.4	4.4	3.6	4.7	6.0	4.0	0.42 J	0.34 J	0.32 J	1.6	0.77 J	1.5 J	0.57 J	ND	ND	0.55	ND
Toluene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19J
1,1,1-trichloroethane	ND	0.63 J	0.73 J	0.76 J	0.29 J	0.57 J	1.1 J	0.86 J	ND	0.35 J	0.35 J	0.62	0.66 J	0.66 J	0.50 J	ND	0.47	0.92	0.49J
1,1,2-trichloroethane	ND	NR	0.31 J	0.31 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	65	35.3	41.0	39.6	38.0	38.1	40.4	27.9	22.0	25.9	25.4	25	27.0	26.7	29.8	21.7	ND	ND	0.17J
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	ND	ND
Trichlorofluoromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	ND	ND
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	ND	ND
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	ND	ND
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND
Mercury (EPA 245.1) ug/L	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	0.20
TSS (SM20 2540D) mg/L	NR	63	18	NR	ND	7	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	2.4

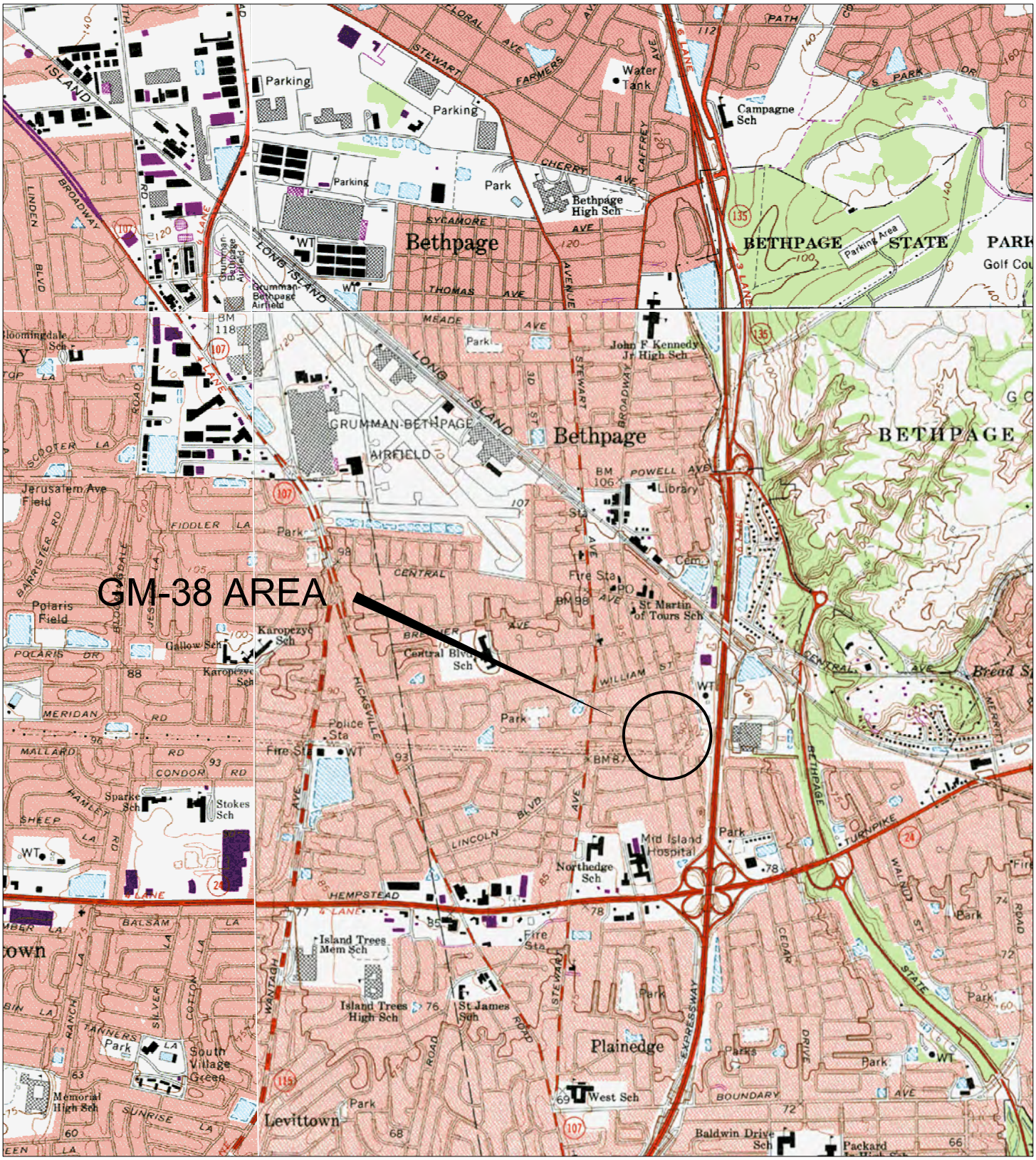
Note:
VOC analysis changed from SW846 8260B to EPA Method 624 in January 2010.
D = Dilution
J = estimated value
ND = not detected
NR = not reported / required
R = rejected
mg/L - milligrams per liter
µg/L - micrograms per liter

(1) Analytical results presented above for samples collected from RW3-MW3 and RW3-MW4 in November 2010 are not consistent with historical trends, indicating samples may have been switched. For trend analysis, concentrations for RW3-MW3 were used for RW3-MW4 for November 2010 and vise versa.

(2) VOCs were analyzed by USEPA Method 524.2 (as opposed to Method 624) in June 2013 to correlate with samples collected under the Bethpage Regional Plume Comprehensive Groundwater Sampling Plan conducted in June 2013.

Data prior to June 2011 were collected by others.

FIGURES



Quadrangle Location Map

0 2000 4000 Feet

N

Source: U.S.G.S. Topographic Maps (7.5 Minute)
Amityville, Freeport, Hicksville, Huntington, NY Quadrangles

U.S. Navy RAC
Engineering Field Activity, Northeast

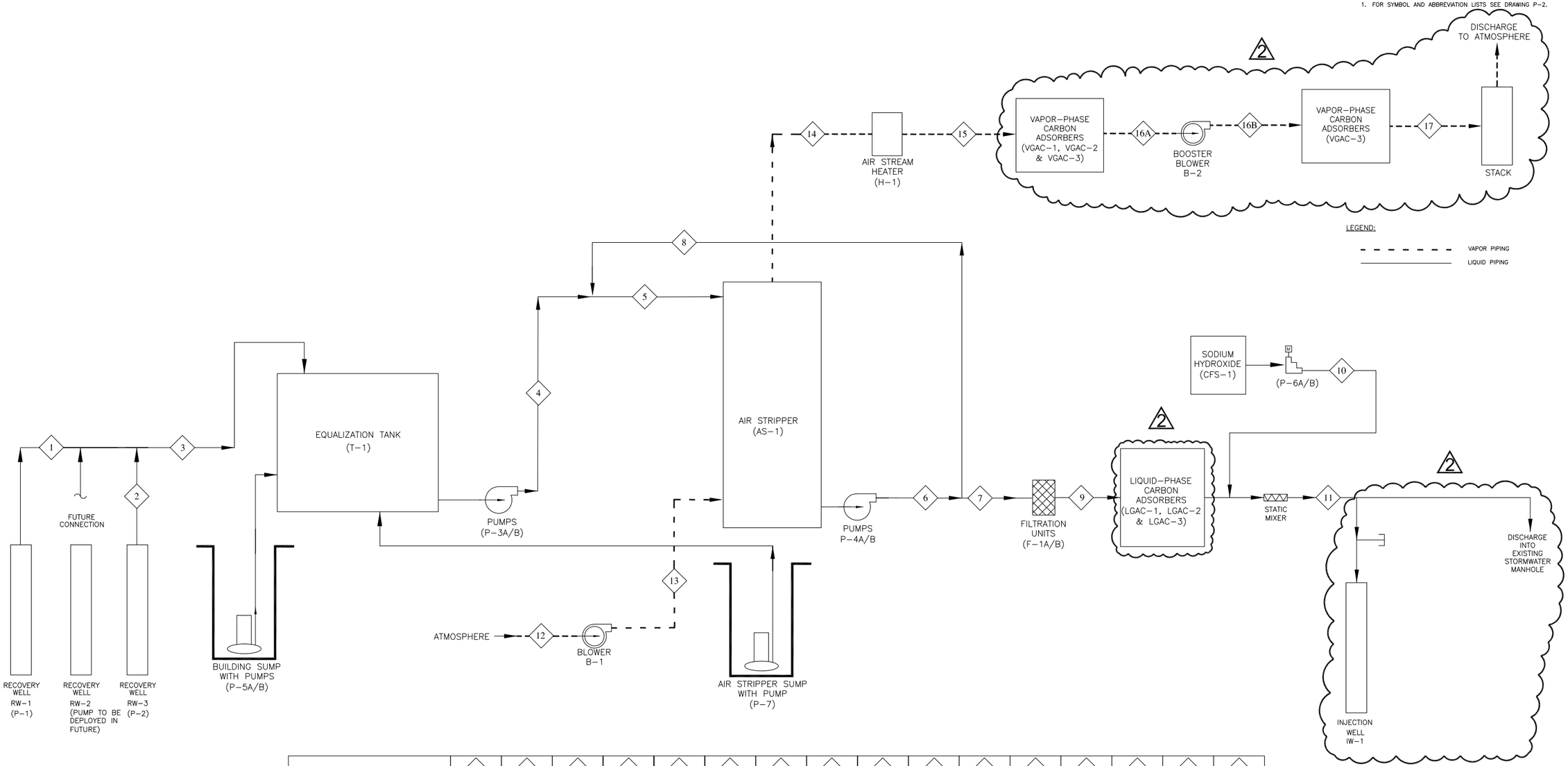
GM-38 Area (Offsite)
NWIRP Bethpage
Bethpage, NY

Figure 1
Site Location Map

P:\LantDiv\Bethpage\CAD - GIS\Dwg\O&M Manual\Site Location Map.dwg, 6/29/2009 3:33:52 PM

NOTES:

1. FOR SYMBOL AND ABBREVIATION LISTS SEE DRAWING P-2.



STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COMPOSITION (UG/L, UNLESS OTHERWISE NOTED)																
BENZENE	4	4	4	4	3	-	-	-	-		-					
TOLUENE	15	15	15	15	12	-	-	-	-		-					
XYLENES, TOTAL	16	16	16	16	12	-	-	-	-		-					
1,2-DICHLOROETHANE	3	3	3	3	2.8						2.7^{E-07}					
cis 1,2-DICHLOROETHENE	1100	1100	1100	1100	1008	0.10	0.10	0.10	0.10		1.0^{E-04}					
VINYL CHLORIDE	300	300	300	300	275	0.03	0.03	0.03	0.03		2.7^{E-05}					
TETRACHLOROETHENE (PCE)	900	900	900	900	825	0.08	0.08	0.08	0.08		8.2^{E-05}					
TRICHLOROETHENE (TCE)	3400	3400	3400	3400	3117	3.12	3.12	3.12	3.12		3.1^{E-03}					
WATER FLOW RATE (GPM)	800	300	1100	1100	1200	1200	1100	100	1100	1.1 gpd	1100					
TEMPERATURE (°F)	55	55	55	55	55	55	55	55	55	60	55					
PRESSURE (PSIG)												-0.27	1.50	1.36	1.18	0.53
DENSITY (lb/ft^3)										95.5		0.077	0.085	0.084	0.082	0.079
MASS FLOW RATE (lb/hr)	400364	150136	550500	550500	600545	600545	550500	50,045	550500	0.59	550500	36,960	40,800	40,320	39,360	37,920
RELATIVE HUMIDITY (%)												50	50	100	50	50
STATIC PRESSURE (PSIA)												0.214	0.214	0.214	0.275	0.275
pH (S.U.)	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	14	7.0					
VAPOR FLOW RATE (CFM)												8000	8000	8000	8000	8000
TOTAL VAPOR VOC (PPMV)												-	-	25.5	25.5	1.2
TOTAL VAPOR VOC (LBS/HR)												-	-	3.18	3.18	0.15

TETRA TECH ENGINEERING CORPORATION PC

REV	DESCRIPTION	PREP BY	DATE	APPRVD
0	FINAL DESIGN	DL	05/05/06	BKB
1	ADDED RECOVERY WELL RW-3. CHANGED RW-2 TO FUTURE CONNECTION	DLB	03/31/08	BKB
2	REVISED BASED ON VENDOR SUBMITTALS. DRAWING UPDATES FOR CONSTRUCTION	DLB	02/24/09	BKB

DSGN: DR: CH ENG: CHK:
SUPV: SUBMITTED BY: (TITLE) (DATE)
(TRM NUMBER) HD: HD: HD:
NORTHDIV DA: DR:
FPC:
OFFICER IN CHARGE
APPROVED DATE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
LESTER PENNSYLVANIA

ENGINEERING FIELD ACTIVITY - NORTHEAST

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NEW YORK

GM-38 AREA
GROUNDWATER TREATMENT PLANT
PROCESS FLOW DIAGRAM - GROUNDWATER AND OFF-GAS TREATMENT

APPROVED EFANE FOR COMMANDER, NAVFAC DATE

THIS DRAWING PRODUCED ON AUTOCAD DO NOT REVISE MANUALLY

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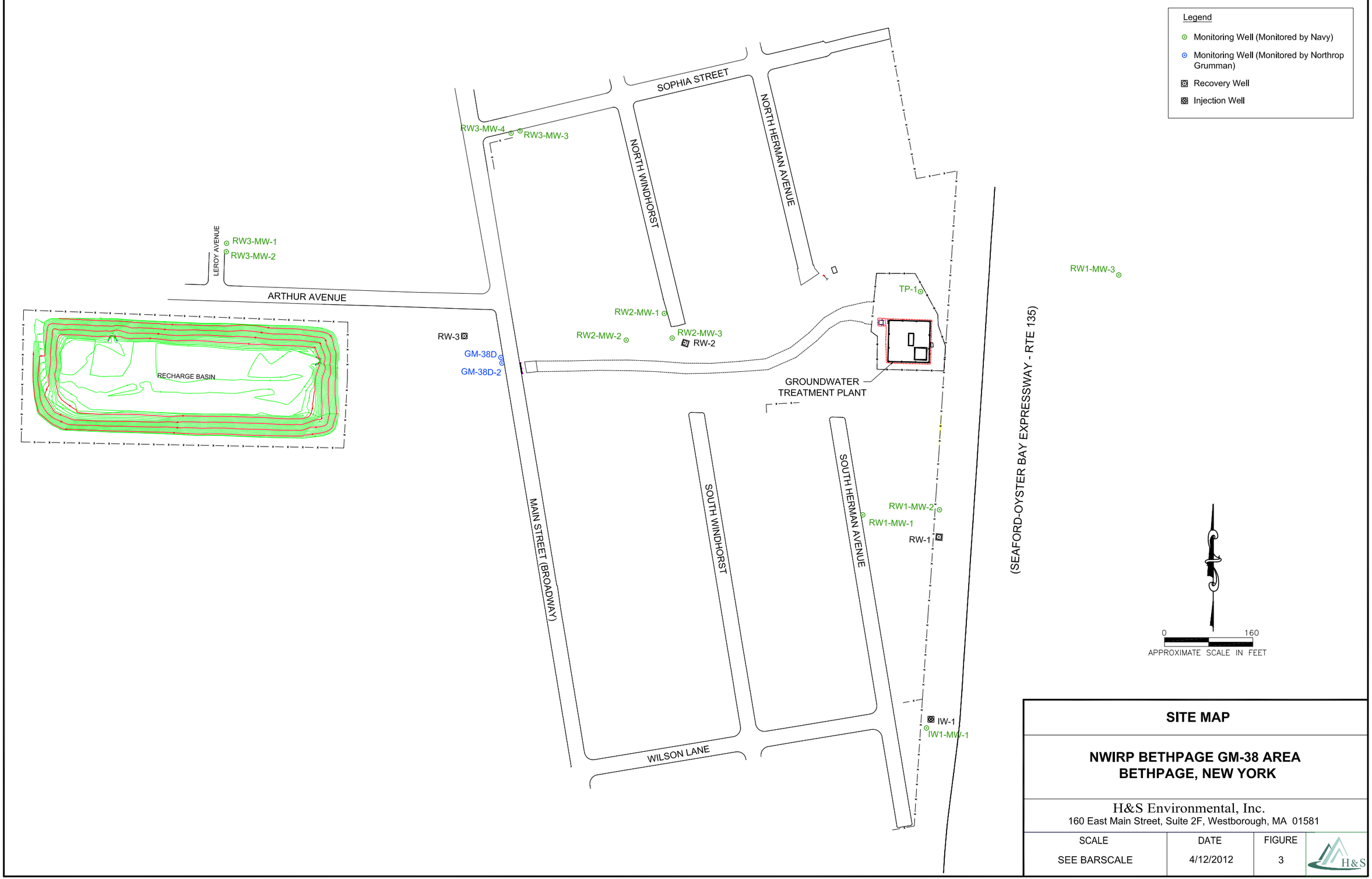
SAT TO DATE 05/05/06
CODE I.D. NO. 80091
SCALE : AS SHOWN
SPEC. NO.
CONSTRN. CONTR. NO. N62472-99-D-0032
NAVFAC DRAWING NO. Figure 2
SHEET OF
SIZE: D DIS. SH. NO. 1-4



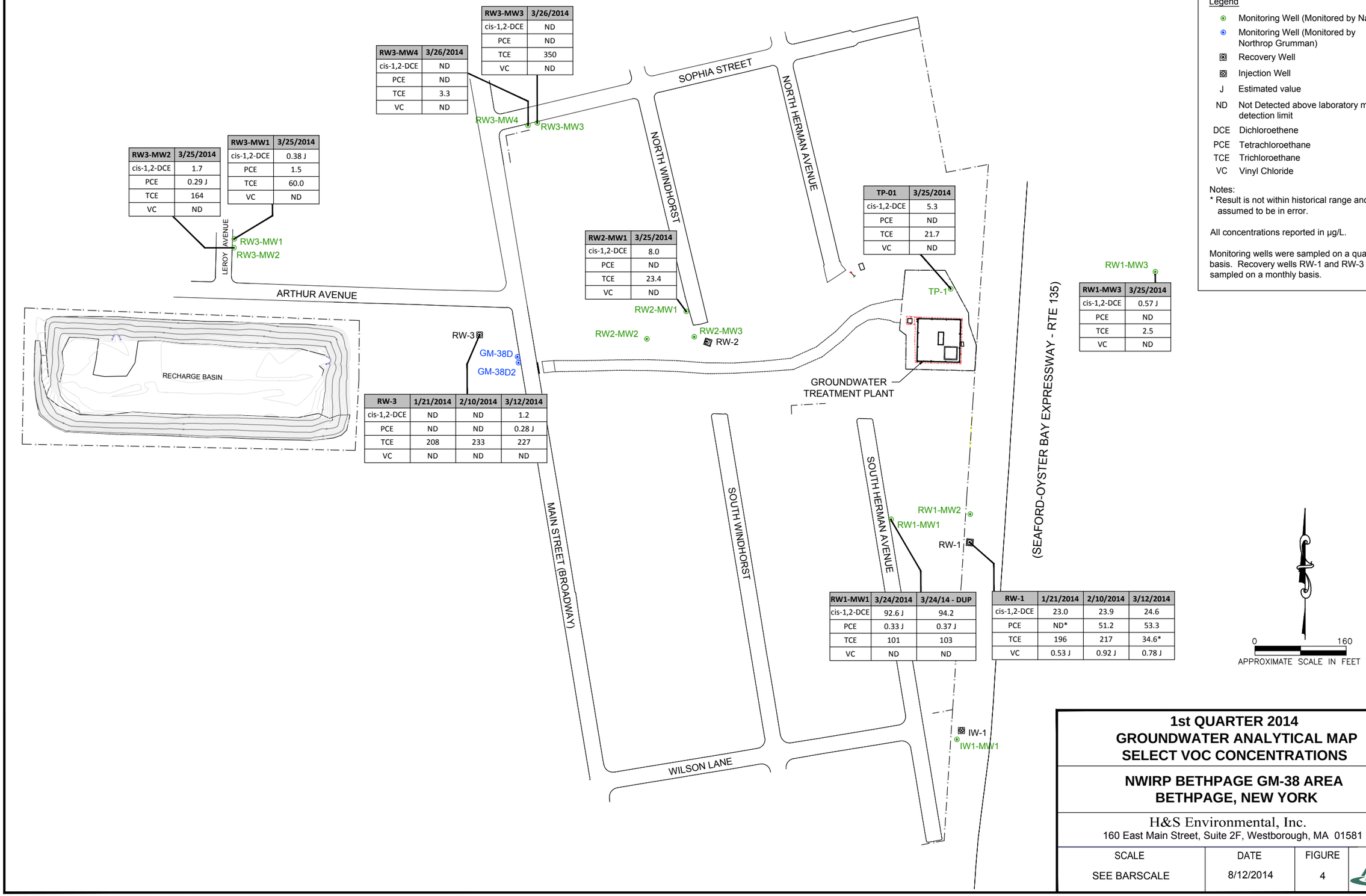
SITE MAP

NWIRP BETHPAGE GM-38 AREA
BETHPAGE, NEW YORK

H&S Environmental, Inc.
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE	DATE	FIGURE
SEE BARSCALE	4/12/2012	3

X:\HS_Environmental\NWIRP-NY\As-Built 2008-PM.dwg 4/12/2012



RW3-MW4	3/26/2014
cis-1,2-DCE	ND
PCE	ND
TCE	3.3
VC	ND

RW3-MW3	3/26/2014
cis-1,2-DCE	ND
PCE	ND
TCE	350
VC	ND

RW3-MW2	3/25/2014
cis-1,2-DCE	1.7
PCE	0.29 J
TCE	164
VC	ND

RW3-MW1	3/25/2014
cis-1,2-DCE	0.38 J
PCE	1.5
TCE	60.0
VC	ND

RW2-MW1	3/25/2014
cis-1,2-DCE	8.0
PCE	ND
TCE	23.4
VC	ND

TP-01	3/25/2014
cis-1,2-DCE	5.3
PCE	ND
TCE	21.7
VC	ND

RW1-MW3	3/25/2014
cis-1,2-DCE	0.57 J
PCE	ND
TCE	2.5
VC	ND

RW-3	1/21/2014	2/10/2014	3/12/2014
cis-1,2-DCE	ND	ND	1.2
PCE	ND	ND	0.28 J
TCE	208	233	227
VC	ND	ND	ND

RW1-MW1	3/24/2014	3/24/14 - DUP
cis-1,2-DCE	92.6 J	94.2
PCE	0.33 J	0.37 J
TCE	101	103
VC	ND	ND

RW-1	1/21/2014	2/10/2014	3/12/2014
cis-1,2-DCE	23.0	23.9	24.6
PCE	ND*	51.2	53.3
TCE	196	217	34.6*
VC	0.53 J	0.92 J	0.78 J

Legend

- Monitoring Well (Monitored by Navy)
- Monitoring Well (Monitored by Northrop Grumman)
- Recovery Well
- Injection Well
- J Estimated value
- ND Not Detected above laboratory method detection limit
- DCE Dichloroethene
- PCE Tetrachloroethane
- TCE Trichloroethane
- VC Vinyl Chloride

Notes:
* Result is not within historical range and is assumed to be in error.

All concentrations reported in µg/L.

Monitoring wells were sampled on a quarterly basis. Recovery wells RW-1 and RW-3 were sampled on a monthly basis.

1st QUARTER 2014
GROUNDWATER ANALYTICAL MAP
SELECT VOC CONCENTRATIONS

NWIRP BETHPAGE GM-38 AREA
BETHPAGE, NEW YORK

H&S Environmental, Inc.
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE	DATE	FIGURE
SEE BARSCALE	8/12/2014	4

X:\HS_Environmental\Bethpage-GM38\2014\1stQ2014-GW-VOC.dwg 8/12/2014

Figure 5
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1

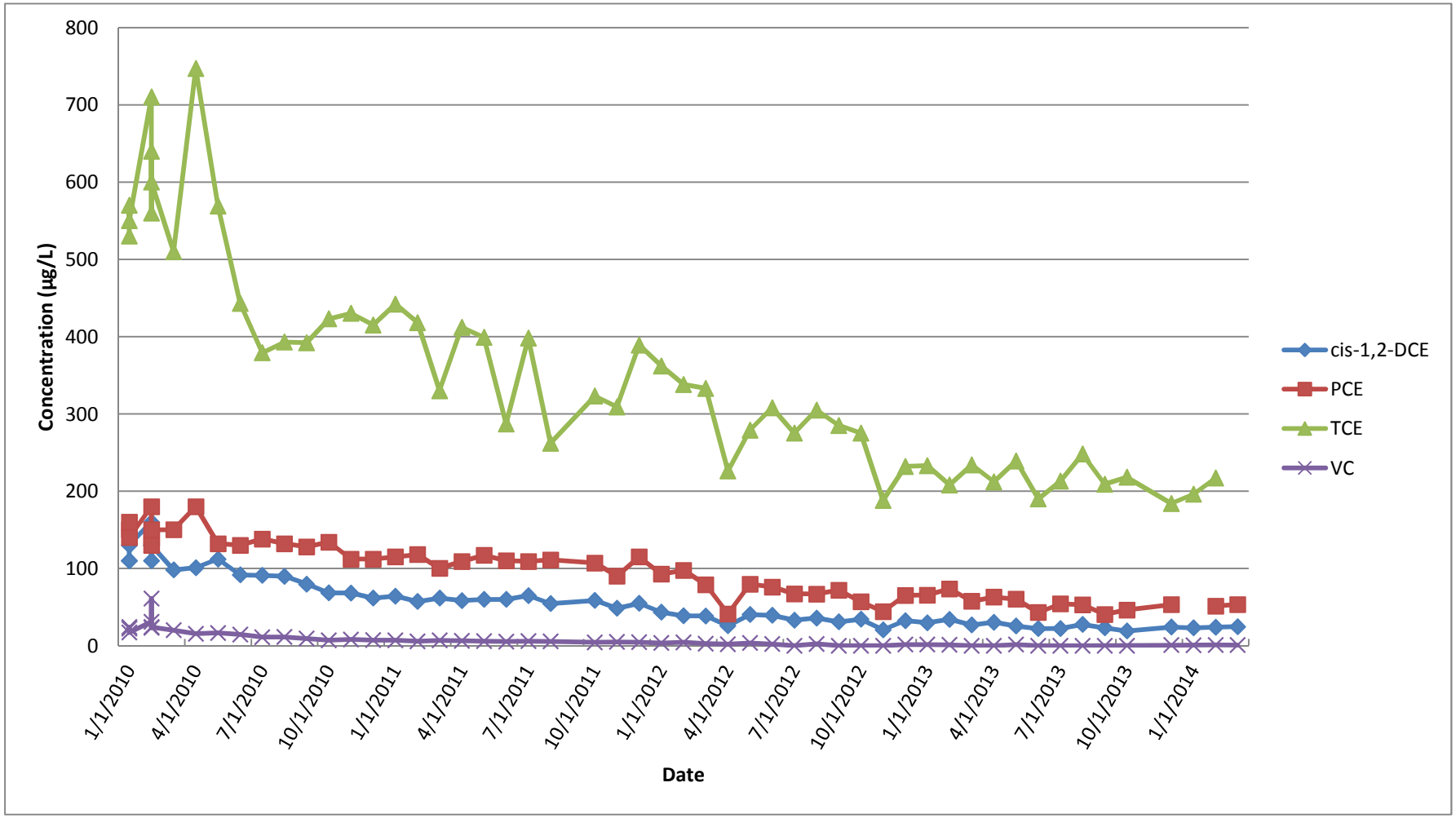


Figure 6
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3

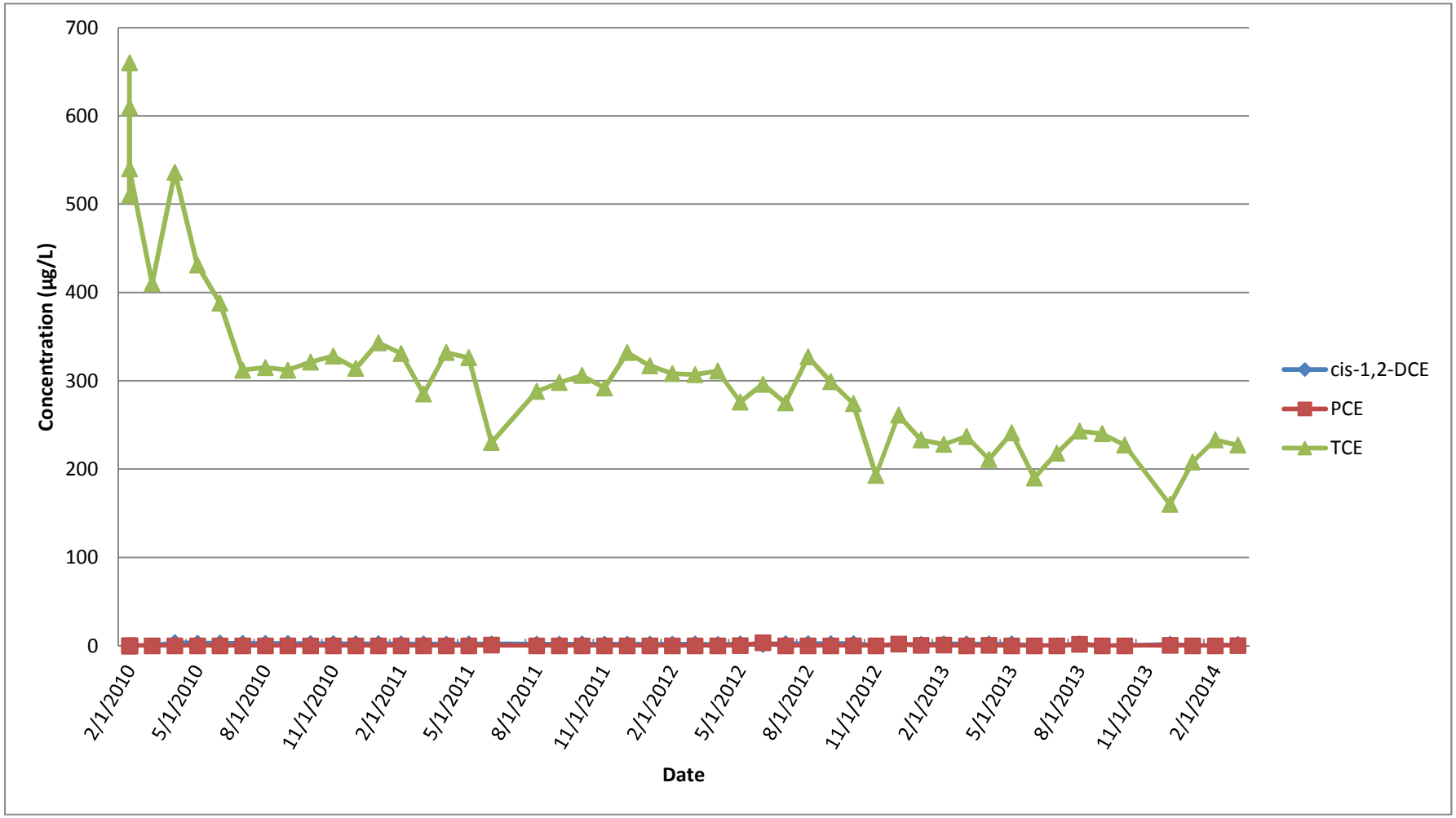


Figure 7
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW1

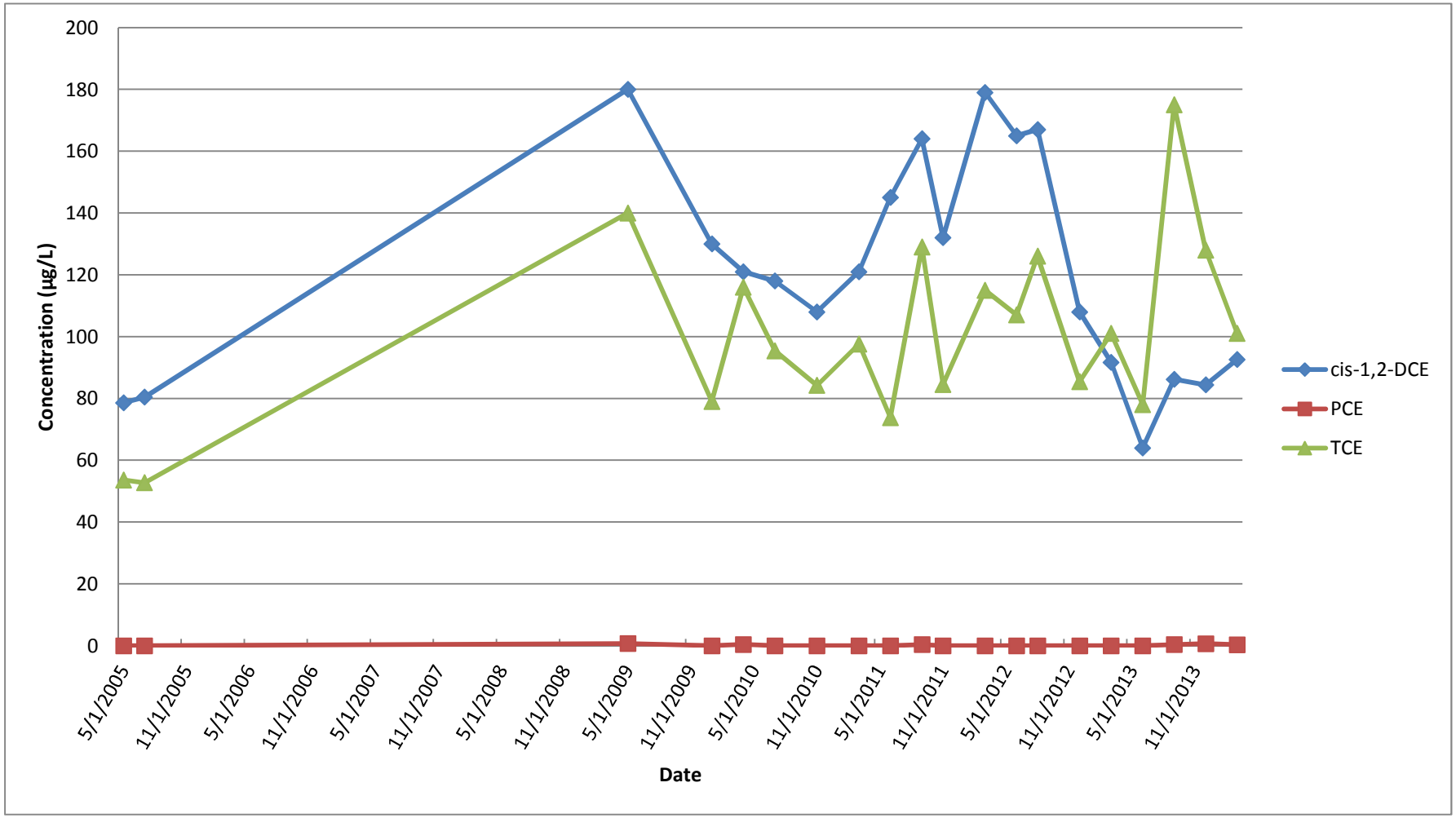


Figure 8
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW3

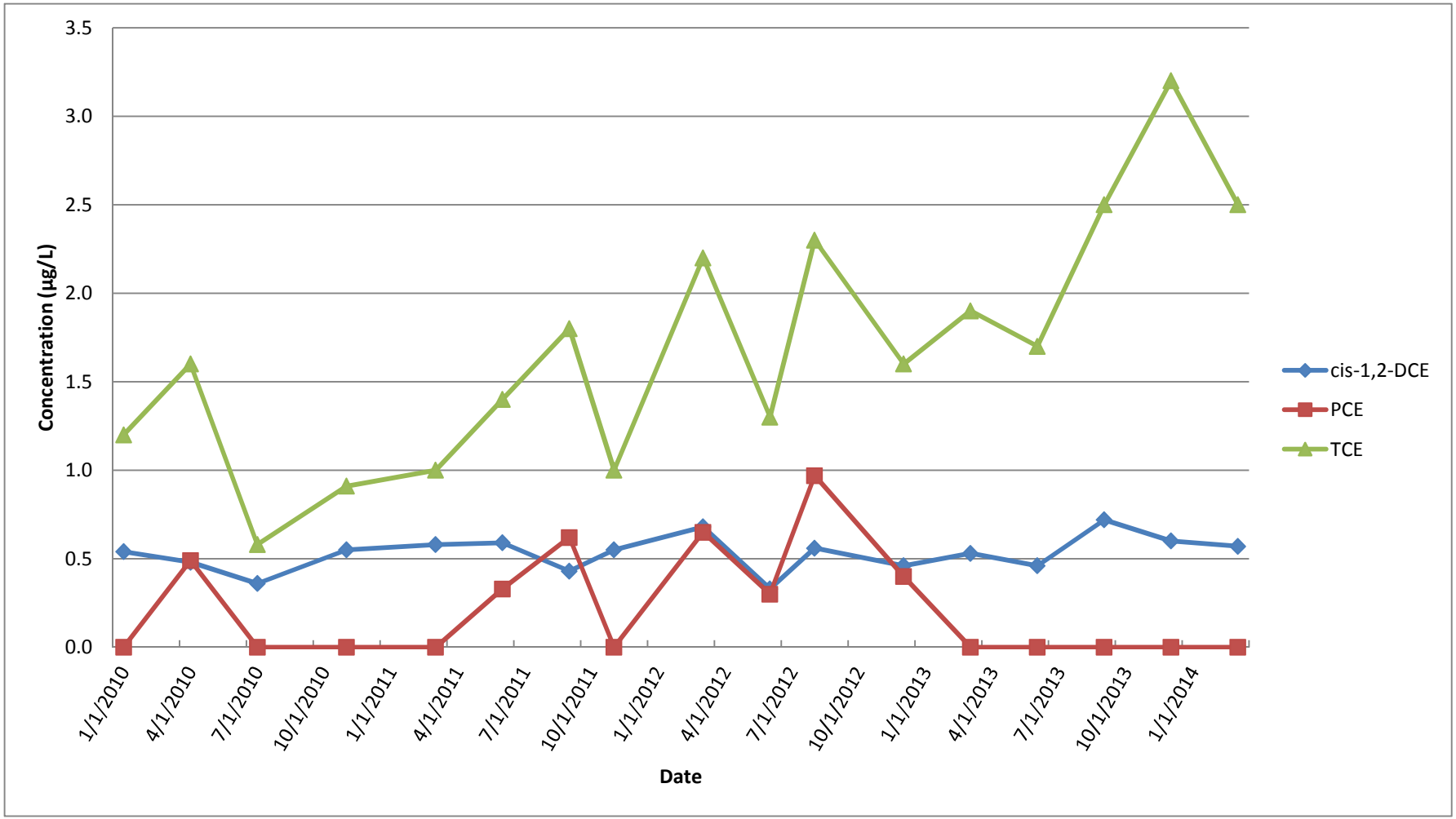


Figure 9
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW2-MW1

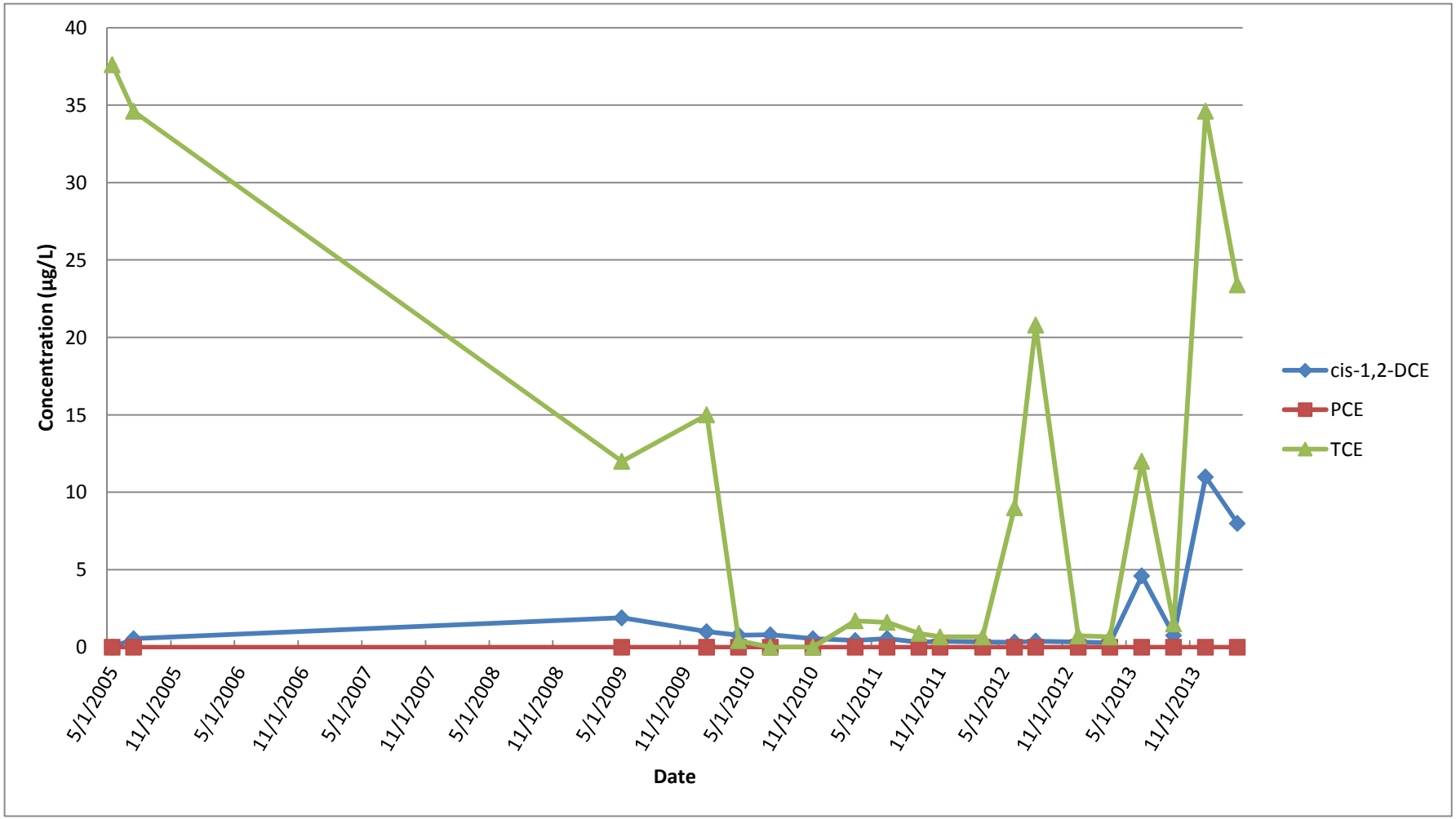


Figure 10
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW1

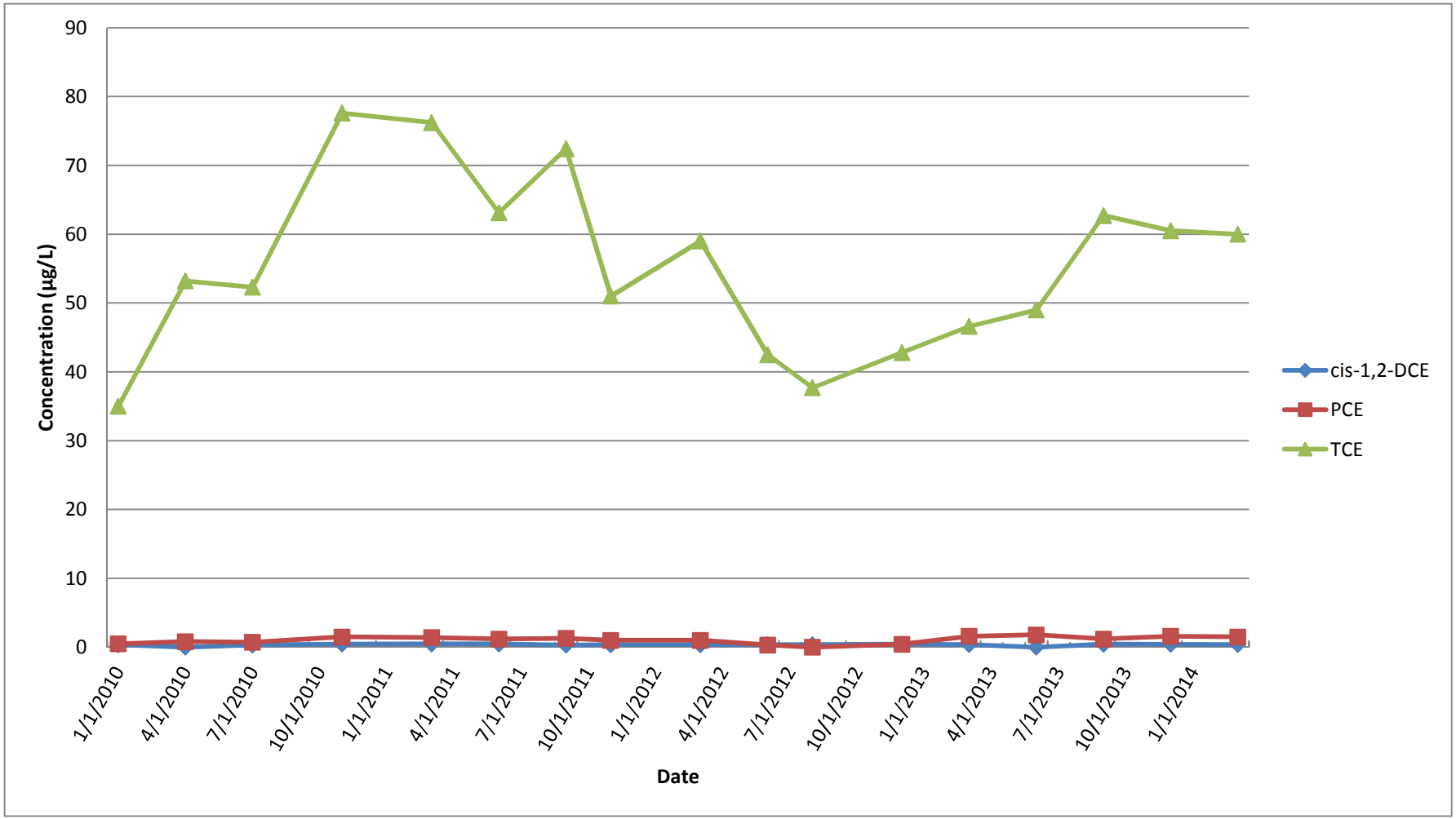


Figure 11
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW2

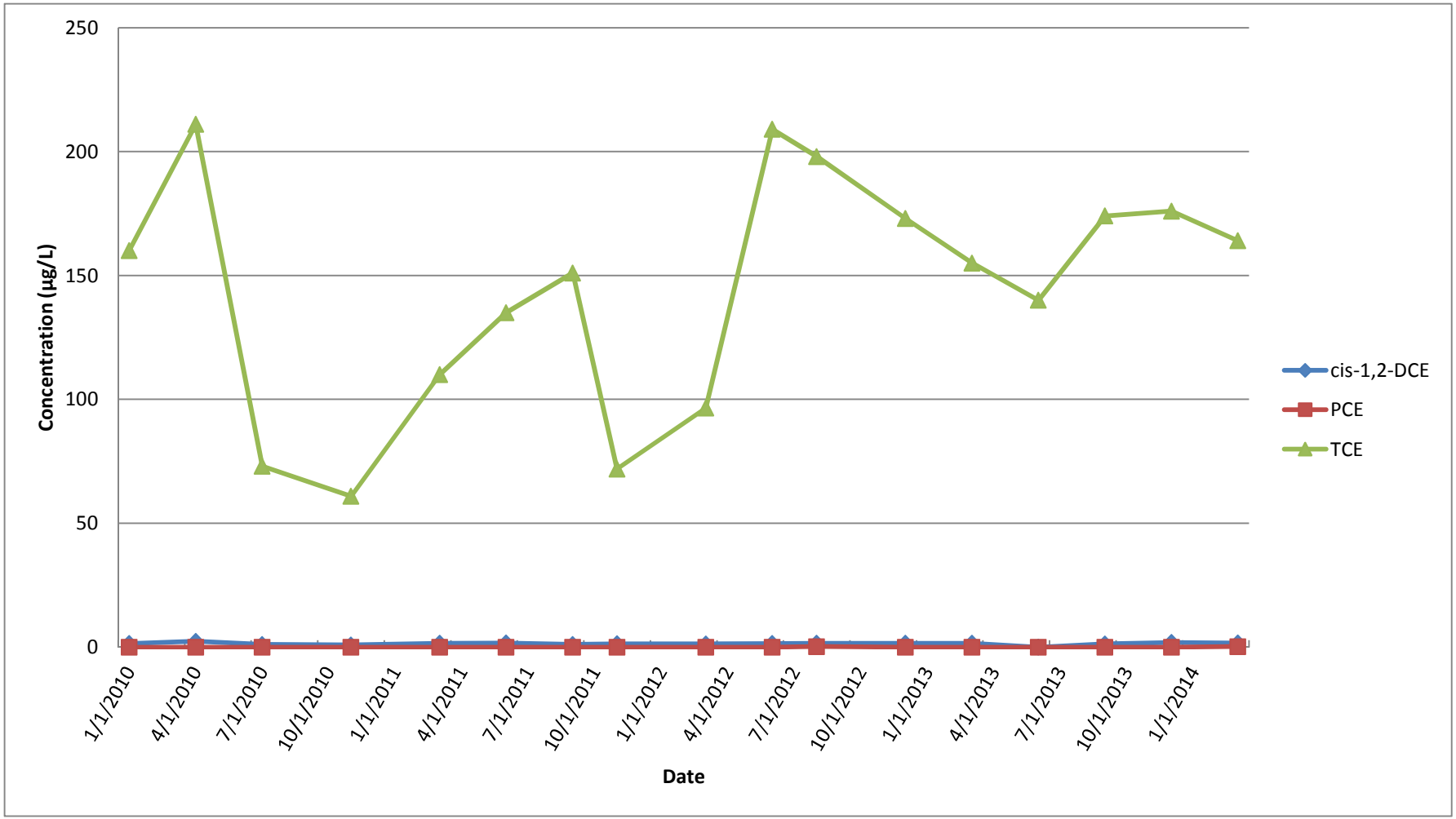


Figure 12
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW3

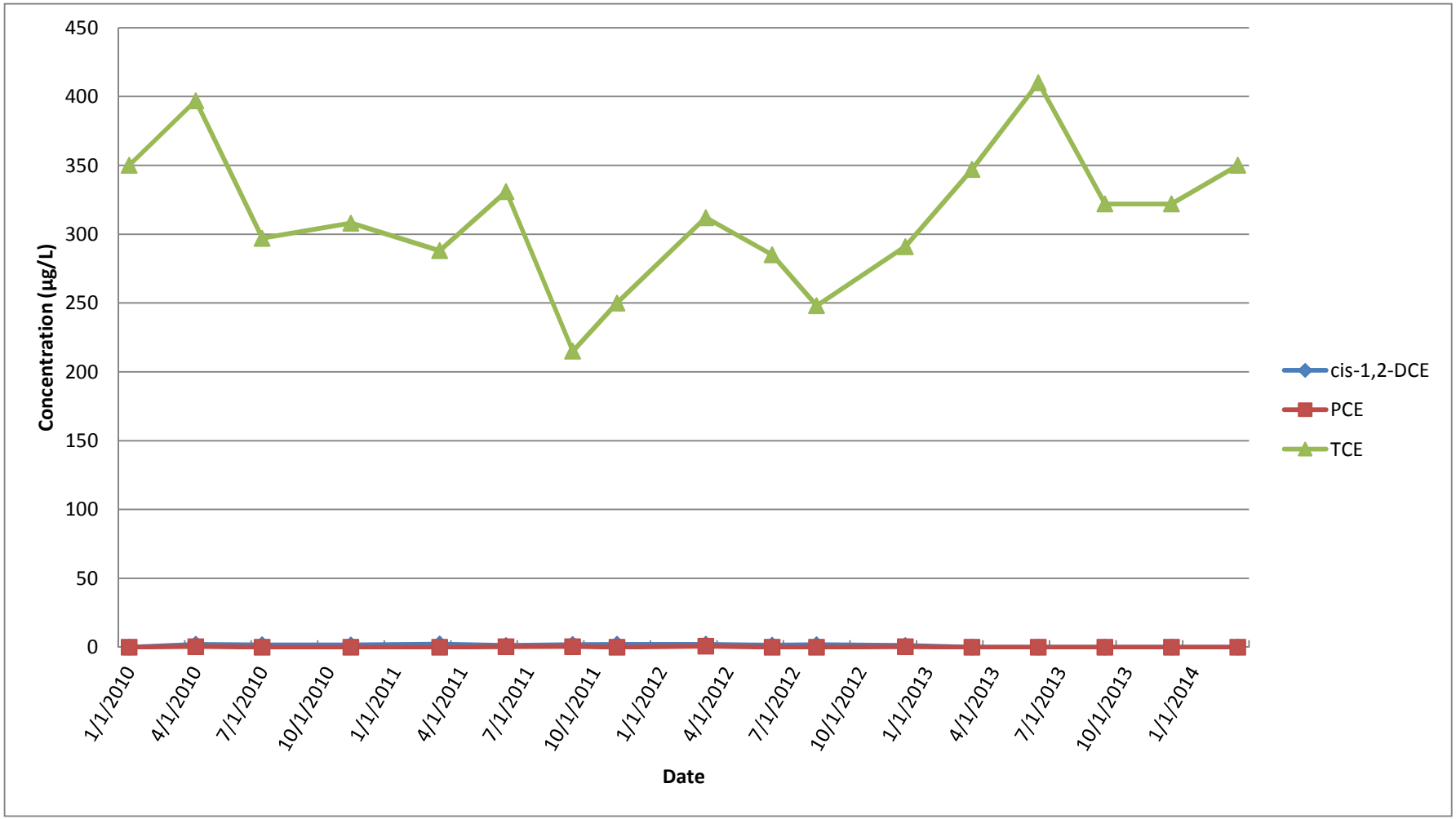


Figure 13
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW4

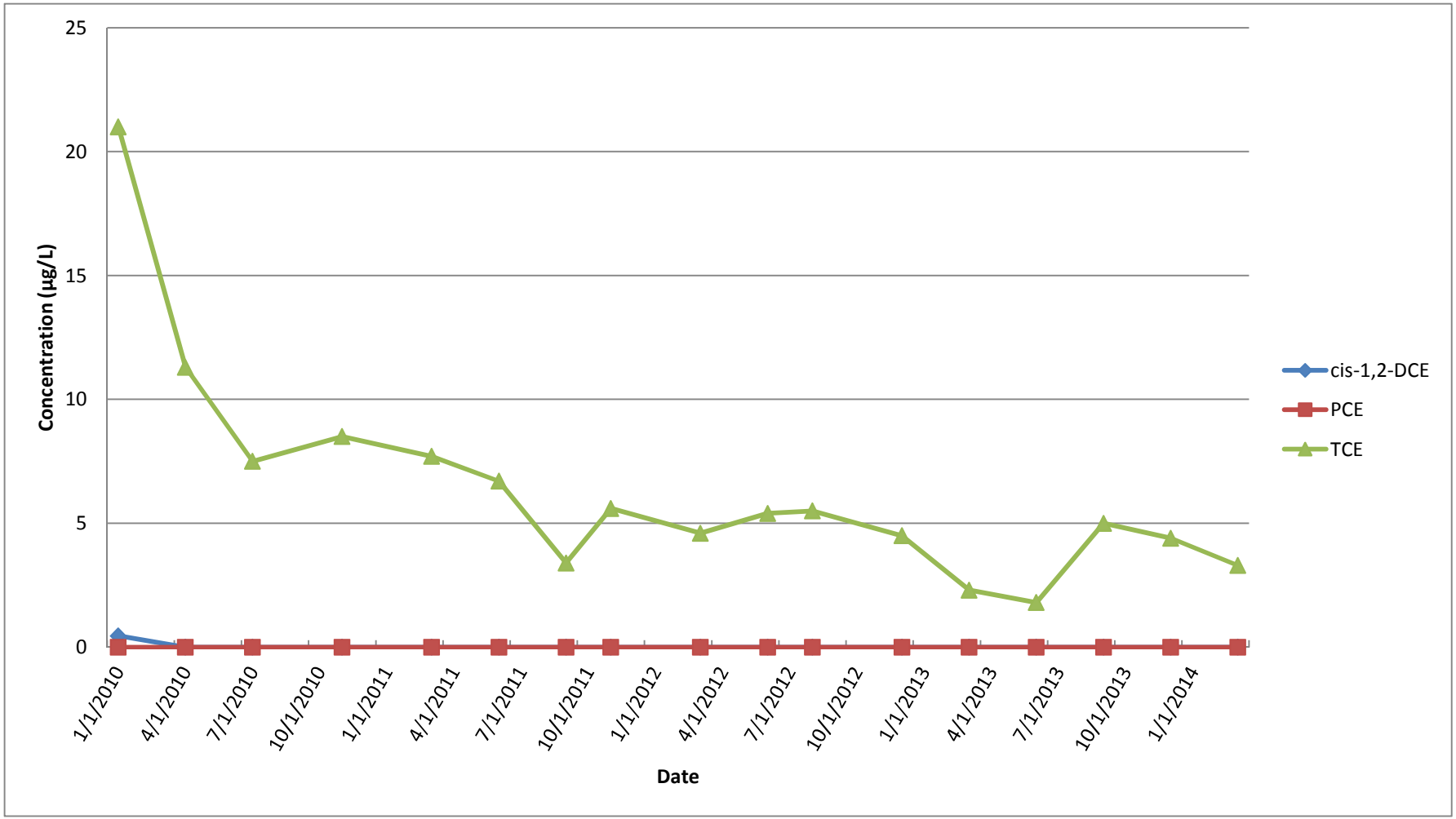
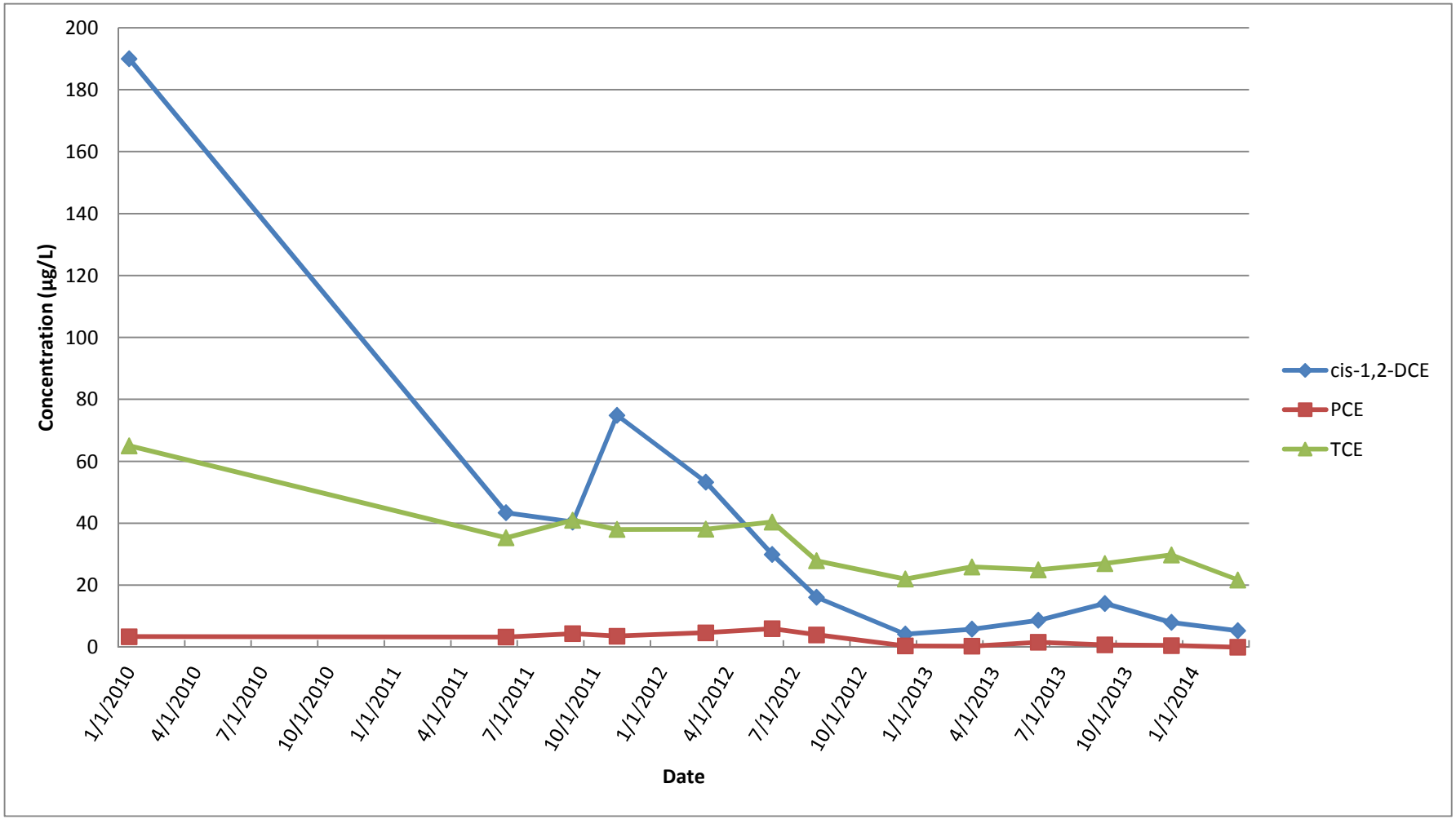


Figure 14
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

TP-01



APPENDIX A

NYSDEC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS AND MONTHLY DMRS

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • **FAX:** (518) 402-9029
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

RECEIVED
JUN - 9 2008
BUREAU OF EASTERN

MEMORANDUM

TO: Steven Scharf, DER

FROM: Jean Occidental, DOW, Bureau of Water Permits JO

SUBJECT: Naval Weapons Industrial Reserve Plant (NWIRP); DER Site # 1-01-001

DRAINAGE BASIN: na

DATE: June 6, 2008

In response to your request and the permittee's SPDES Permit Equivalent Application dated April 27, 2008, attached is the effluent criteria for the above noted groundwater remediation discharge.

The Division of Water does not have any regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. The Division of Environmental Remediation will be responsible for ensuring compliance with the attached effluent criteria and approval of all engineering submissions. Additional Condition (1) identifies the contact to send all effluent results, engineering submissions, and modification requests. The Regional Water Engineer should be kept appraised of the status of these discharges and, in accordance with the attached criteria, receive a copy of the effluent results for informational purposes.

If you have any questions, please call me at (518) 402-8116.

Attachment

cc: (w/att) RWE, Region 1
C. Webber
BWP Permit Coordinator

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning: April 1, 2009

and lasting until: April 1, 2014

the discharges from the treatment facility to Groundwater shall be limited and monitored by the operator as specified below:

Outfall and Parameters	Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max.		Measurement Frequency	Sample Type
Treated Groundwater Remediation Discharge from: Recovery Wells 1, 2, and 3					
Flow	Monitor	1100	GPM	Continuous	Recorder
pH (range)	5.5 - 8.5		SU	Weekly	Grab
1,1-Dichloroethane	NA	5	µg/l	Monthly [1]	Grab
1,2-Dichloroethane	NA	0.6	µg/l	Monthly [1]	Grab
1,1-Dichloroethene	NA	5	µg/l	Monthly [1]	Grab
cis-1,2-Dichloroethene	NA	5	µg/l	Monthly [1]	Grab
trans-1,2-Dichloroethene	NA	5	µg/l	Monthly [1]	Grab
Tetrachloroethene	NA	5	µg/l	Monthly [1]	Grab
1,1,1-Trichloroethane	NA	5	µg/l	Monthly [1]	Grab
Trichloroethene	NA	5	µg/l	Monthly [1]	Grab
Vinyl chloride	NA	2	µg/l	Monthly [1]	Grab
Mercury	NA	0.25	µg/l	Monthly [1]	Grab

Footnotes:

(1) The minimum measurement frequency shall be monthly following a period of 24 consecutive weekly sampling events showing no exceedances of the stated discharge limitations.

Additional Conditions:

(1) Discharge is not authorized until such time as an engineering submission showing the method of treatment is approved by the Department. The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

Steven Scharf
Division of Environmental Remediation
NYSDEC, 625 Broadway
Albany, NY 12233-7015
Phone: (518) 402-9620

With a copy sent to:

Regional Water Engineer
NYSDEC - Region 1
Building 40, SUNY Campus
Stony Brook, New York 11790-2356
Phone: (631) 444-0354

(2) Only site generated wastewater is authorized for treatment and discharge.

(3) Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.

(4) Any use of corrosion/scale inhibitors, biocidal-type compounds, or other water treatment chemicals used in the treatment process must be approved by the department prior to use.

(5) This discharge and administration of this discharge must comply with the substantive requirements of 6NYCRR Part 750.

JANUARY 2014

H&S ENVIRONMENTAL
...an 8(a), SDB, woman-owned company

11 February 2014

Mr. Steven Scharf
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 JANUARY 2014 REPORTING PERIOD

Dear Mr. Scharf:

H&S Environmental, Inc. (H&S) is submitting this monthly monitoring report of the groundwater discharge and air emission results for the Groundwater Treatment Plant (GWTP) located at the Former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, GM-38 Area. This report was prepared in accordance with GWTP operational requirements for DER Site # 1-30-003B-OU 2.

GWTP operational data from 1 January 2014 to 31 January 2014 are presented in Attachment A. During this reporting period, scheduled downtime occurred for various routine maintenance activities including cleanout of the GWTP building sump and changeout of bag filters. Scheduled downtime affected the average flowrates during the January 2014 reporting period.

As indicated in Attachment A, all permitted constituents were in compliance with regulatory guidelines during this reporting period.

Please contact me at 508-366-7442 with any questions or concerns you may have regarding this report.

Sincerely,
H&S Environmental, Inc.

Jennifer Good, P.G.
Project Manager

Attachment A: Groundwater and Air Sampling Results from January 2014

Cc: Jean Occidental - NYSDEC Division of Water
William Spitz - NYSDEC – Region 1 Water Engineer
Gerard Ennis - Nassau County Department of Public Works
Linda Bianculli - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Al Taormina – H&S
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

JANUARY 2014

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
January 2014

SPDES Parameters	January 2014					
Process Stream	**Daily Treated Effluent Maximum**	**Units**	**RW-1**	**RW-3**	**Combined Influent (1) (RW-1 + RW-3)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		1/21/14			
Average Flowrate	1100	GPM	779	187	966	966
Total Flow	N/A	gallons	34,779,400	8,338,400	43,117,800	43,129,200
pH	5.5 - 8.5	SU	5.30	5.50	5.34	6.57
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.5	ND	2.4	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	2.8	ND	2.3	ND
cis 1,2-Dichloroethene	5	µg/L	23.0	ND	18.6	ND
trans 1,2-Dichloroethene	5	µg/L	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	2.2	ND	1.8	ND
Trichloroethene	5	µg/L	196	208	198	ND
Vinyl Chloride	2	µg/L	0.53 J	ND	0.43 J	ND
Mercury	0.25	µg/L	ND	ND	ND	ND
Total Suspended Solids (TSS)	N/A	mg/L	ND	11	2.1	ND

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
ND - Not detected above laboratory method detection limit
N/A - Not Applicable
(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
January 2014

DAR Parameters	**Units**	**Discharge Goal (1)**	**January 2014**	
Process Stream			**Influent**	**Effluent**
Sampling Date	N/A	N/A	1/21/14	
Average Flowrate	CFM	N/A	NR	7,592
Total Flow	ft^3	N/A	NR	338,926,720
Total Flow	m^3	N/A	NR	9,597,336
1,2-Dichloroethane	$\mu g/m^3$	N/A	4.6 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 (2)	260	0.81 J
trans 1,2-Dichloroethene	$\mu g/m^3$		ND	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	N/A	260	ND
Toluene	$\mu g/m^3$	N/A	3.4 J	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	ND	ND
Trichloroethene	$\mu g/m^3$	2,600	3,100	5.6
Vinyl Chloride	$\mu g/m^3$	560	8.9	2.3
Tetrachloroethene	$\mu g/m^3$	5,100	650	ND

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
J - Estimated result between laboratory method detection limit and reporting limit
N/A - Not Applicable
NR - Not recorded
(1) Disharge goal as approved by NYSDEC's letter dated 31 October 2013.
(2) Disharge goal is for total 1,2-Dichloroethene.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
January 2014

DAR Parameters	Units	Discharge Goal (1)	January 2014
Sampling Date	N/A	N/A	1/21/14
Average Flowrate	CFM	N/A	7,592
Total Flow	ft^3	N/A	338,926,720
Total Flow	m^3	N/A	9,597,336
Trichloroethene	lb/hr	0.09	0.00016
Vinyl Chloride	lb/hr	0.02	0.00007
1,2 Dichloroethene	lb/hr	11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00000

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
N/A - Not Applicable
(1) Disharge goal as approved by NYSDEC's letter dated 31 October 2013.

FEBRUARY 2014

H&S ENVIRONMENTAL
...an 8(a), SDB, woman-owned company

13 March 2014

Mr. Steven Scharf
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 FEBRUARY 2014 REPORTING PERIOD

Dear Mr. Scharf:

H&S Environmental, Inc. (H&S) is submitting this monthly monitoring report of the groundwater discharge and air emission results for the Groundwater Treatment Plant (GWTP) located at the Former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, GM-38 Area. This report was prepared in accordance with GWTP operational requirements for DER Site # 1-30-003B-OU 2.

GWTP operational data from 1 February 2014 to 28 February 2014 are presented in Attachment A. There was no scheduled or unscheduled downtime during this reporting period.

As indicated in Attachment A, all permitted constituents were in compliance with regulatory guidelines during this reporting period.

Please contact me at 508-366-7442 with any questions or concerns you may have regarding this report.

Sincerely,
H&S Environmental, Inc.

Jennifer Good, P.G.
Project Manager

Attachment A: Groundwater and Air Sampling Results from February 2014

Cc: Jean Occidental - NYSDEC Division of Water
William Spitz - NYSDEC – Region 1 Water Engineer
Gerard Ennis - Nassau County Department of Public Works
Linda Bianculli - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Al Taormina – H&S
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

FEBRUARY 2014

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
February 2014

SPDES Parameters	February 2014					
Process Stream	**Daily Treated Effluent Maximum**	**Units**	**RW-1**	**RW-3**	**Combined Influent (1) (RW-1 + RW-3)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		2/10/14			
Average Flowrate	1100	GPM	804	189	993	992
Total Flow	N/A	gallons	32,403,733	7,615,493	40,019,227	40,009,047
pH	5.5 - 8.5	SU	5.13	5.23	5.15	6.85
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.8	ND	2.3	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	2.7	ND	2.2	ND
cis 1,2-Dichloroethene	5	µg/L	23.9	ND	19.4	ND
trans 1,2-Dichloroethene	5	µg/L	0.32 J	ND	0.26 J	ND
Tetrachloroethene	5	µg/L	51.2	ND	41.5	ND
1,1,1-Trichloroethene	5	µg/L	2.2	ND	1.8	ND
Trichloroethene	5	µg/L	217	233	220	ND
Vinyl Chloride	2	µg/L	0.92 J	ND	0.74 J	ND
Mercury	0.25	µg/L	ND	ND	ND	ND
Total Suspended Solids (TSS)	N/A	mg/L	ND	ND	ND	ND

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
ND - Not detected above laboratory method detection limit
N/A - Not Applicable
(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
February 2014

DAR Parameters	**Units**	**Discharge Goal (1)**	**February 2014**	
Process Stream			**Influent**	**Effluent**
Sampling Date	N/A	N/A	2/10/14	
Average Flowrate	CFM	N/A	NR	7,393
Total Flow	ft^3	N/A	NR	298,076,800
Total Flow	m^3	N/A	NR	8,440,595
1,2-Dichloroethane	$\mu g/m^3$	N/A	4.1 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 (2)	260	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		ND	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	N/A	260	ND
Toluene	$\mu g/m^3$	N/A	ND	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	ND	ND
Trichloroethene	$\mu g/m^3$	2,600	3,300	4.4
Vinyl Chloride	$\mu g/m^3$	560	6.0	ND
Tetrachloroethene	$\mu g/m^3$	5,100	620	ND

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
J - Estimated result between laboratory method detection limit and reporting limit
N/A - Not Applicable
NR - Not recorded
(1) Disharge goal as approved by NYSDEC's letter dated 31 October 2013.
(2) Disharge goal is for total 1,2-Dichloroethene.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
February 2014

DAR Parameters	Units	Discharge Goal (1)	February 2014
Sampling Date	N/A	N/A	2/10/14
Average Flowrate	CFM	N/A	7,393
Total Flow	ft^3	N/A	298,076,800
Total Flow	m^3	N/A	8,440,595
Trichloroethene	lb/hr	0.09	0.00012
Vinyl Chloride	lb/hr	0.02	0.00000
1,2 Dichloroethene	lb/hr	11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00000

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
N/A - Not Applicable
(1) Disharge goal as approved by NYSDEC's letter dated 31 October 2013.

MARCH 2014

H&S ENVIRONMENTAL
...an 8(a), SDB, woman-owned company

11 April 2014

Mr. Steven Scharf
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 MARCH 2014 REPORTING PERIOD

Dear Mr. Scharf:

H&S Environmental, Inc. (H&S) is submitting this monthly monitoring report of the groundwater discharge and air emission results for the Groundwater Treatment Plant (GWTP) located at the Former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, GM-38 Area. This report was prepared in accordance with GWTP operational requirements for DER Site # 1-30-003B-OU 2.

GWTP operational data from 1 March 2014 to 31 March 2014 are presented in Attachment A. During this reporting period, scheduled downtime occurred for various maintenance activities, including repairs to the ductwork and cleaning of pump strainers. Unscheduled downtime occurred due to a power outage on 15 March 2014. Both scheduled and unscheduled downtime affected the average flowrates during the March 2014 reporting period.

As indicated in Attachment A, all permitted constituents were in compliance with regulatory guidelines during this reporting period.

Please contact me at 508-366-7442 with any questions or concerns you may have regarding this report.

Sincerely,
H&S Environmental, Inc.

Jennifer Good, P.G.
Project Manager

Attachment A: Groundwater and Air Sampling Results from March 2014

Cc: Jean Occidental - NYSDEC Division of Water
William Spitz - NYSDEC – Region 1 Water Engineer
Gerard Ennis - Nassau County Department of Public Works
Linda Bianculli - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Al Taormina – H&S
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

MARCH 2014

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
March 2014

SPDES Parameters	**March 2014**					
Process Stream	**Daily Treated Effluent Maximum**	**Units**	**RW-1**	**RW-3**	**Combined Influent (1) 2) (RW-1 + RW-3)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		3/12/14			
Average Flowrate	1100	GPM	760	171	931	931
Total Flow	N/A	gallons	33,914,900	7,648,490	41,563,390	41,564,320
pH	5.5 - 8.5	SU	5.09	5.11	5.09	6.46
Carbon Tetrachloride	NA	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	2.6	1.9	2.5	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	3.3	1.2	2.9	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	24.6	1.2	20.3	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	0.36 J	ND (1.0)	0.29 J	ND (1.0)
Tetrachloroethene	5	µg/L	53.3	0.28 J	43.5	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	2.2	0.71 J	1.9	ND (1.0)
Trichloroethene (2)	5	µg/L	34.6	227	227	ND (1.0)
Vinyl Chloride	2	µg/L	0.78 J	ND (2.0)	0.64 J	ND (2.0)
Mercury	0.25	µg/L	ND (0.00050)	ND (0.00050)	ND (0.00050)	ND (0.00050)
Total Suspended Solids (TSS)	N/A	mg/L	ND (5)	18	3.3	ND (5)

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
ND - Not detected above laboratory method detection limit. Limit of detection (LOD) given in parentheses.
NR - Not Recorded
N/A - Not Applicable
(1) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.
(2) The result for trichloroethane (TCE) for location RW-1 is not within historical ranges and is assumed to be in error. Therefore, the TCE concentration for RW-3 is presented as the combined influent concentration for TCE, as opposed to using the weighted average of RW-1 and RW-3.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
March 2014

DAR Parameters	**Units**	**Discharge Goal (1)**	**March 2014**	
Process Stream			**Influent**	**Effluent**
Sampling Date	N/A	N/A	3/13/14	
Average Flowrate	CFM	N/A	NR	7,282
Total Flow	ft^3	N/A	NR	325,074,857
Total Flow	m^3	N/A	NR	9,205,095
1,2-Dichloroethane	$\mu g/m^3$	N/A	3.6 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 (2)	220	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		3.3 J	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	>100,000	230	ND
Toluene	$\mu g/m^3$	N/A	3.9 J	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	1.5 J	ND
Trichloroethene	$\mu g/m^3$	2,600	2,900	2.4 J
Vinyl Chloride	$\mu g/m^3$	560	6.3	1.2 J
Tetrachloroethene	$\mu g/m^3$	5,100	540	ND

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
J - Estimated result between laboratory method detection limit and reporting limit
N/A - Not Applicable
NR - Not recorded
(1) Disharge goal as approved by NYSDEC's letter dated 31 October 2013.
(2) Disharge goal is for total 1,2-Dichloroethene.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
March 2014

DAR Parameters	Units	Discharge Goal (1)	March 2014
Sampling Date	N/A	N/A	3/13/14
Average Flowrate	CFM	N/A	7,282
Total Flow	ft^3	N/A	325,074,857
Total Flow	m^3	N/A	9,205,095
Trichloroethene	lb/hr	0.09	0.00007
Vinyl Chloride	lb/hr	0.02	0.00003
1,2 Dichloroethene	lb/hr	11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00000

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
N/A - Not Applicable
(1) Disharge goal as approved by NYSDEC's letter dated 31 October 2013.

APPENDIX B

NYSDEC AIR DISCHARGE LIMIT DOCUMENTATION

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action Bureau A, 12th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9620 FAX: (518) 402-9022

Joseph Martens
Commissioner

October 31, 2013

Lora Fly
Remedial Program Manager
NAVFAC Mid-Atlantic
Northeast IPT
9742 Maryland Avenue
Norfolk, VA, 23511-3095

RE: Northrop Grumman, Naval Weapons Industrial Reserve Plant (NWIRP) and Grumman Steel Los Sites, NYSDEC Site No.'s 1-30-003 A & B.

Dear Ms. Fly:

Tetra Tech NUS Inc., on behalf of the Department of the Navy NAVFAC Midlantic, has submitted an application to remove the GM 38 Area Groundwater Extraction and Treatment system impregnated Xeolite[tm] resin from the air discharge treatment system. Currently, the air treatment system uses a combined activated carbon with permanganate impregnated resin treatment train. The New York State Department of Environmental Conservation (NYSDEC) has reviewed the Department of the Navy application and concurs with the findings presented.

The routine monitoring, as detailed in Table 1, clearly indicates that vinyl chloride, one of the main contaminants of concern, has diminished to almost non-detect, and discharge concentrations have dropped to below the limit to require air treatment for the other contaminants as well. However, NAVFAC Midlantic is still proposing activated carbon to reduce the other discharge contaminant levels. Therefore, the NYSDEC hereby approves the proposed changes to the GM 38 Area air treatment. The Xeolite[tm] resin beds will remain in place should reactivation, based on routine monitoring, be required.

If you have any questions in the interim, please contact me at (518)402-9620.

Sincerely,

Steven M. Scharf, P.E.
Project Engineer
Remedial Action Bureau A
Division of Environmental Remediation

EC: J. Swartwout
S. Scharf
W. Parish, Region 1
S. Karpinski, NYSDOH
E. Hannon, NGC
D. Stern, Arcadis
D. Brayack, TTNUS

NOR-01264

November 21, 2011

Mr. Stephen Scharf
New York Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Remedial Action A
625 Broadway, 11th Floor
Albany, New York 12233-7015

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order WE06

Subject: Proposed Modification to Discharge Limits for Off Gas Volatile Organic Compounds (VOCs) for Air Stripping Tower
GM-38 Offsite Groundwater Treatment Plant,
NWIRP Bethpage, New York

Dear Mr. Scharf:

On behalf of the Navy, please find enclosed a copy of the subject document. This document presents an evaluation of current concentrations of off gas VOCs from the GM-38 groundwater treatment plant air-stripping tower (prior to treatment with granular activated carbon). Maximum emission rates were re-evaluated due to decreasing maximum concentrations of target VOCs in un-treated air stripper AS-1 off gas. In addition, breakthrough of target contaminants (e.g., cis-1,2-dichloroethene) is beginning to occur in the granular activated carbon bed. Maximum emission rates were re-evaluated to provide a determination if breakthrough of contaminants would trigger the need for a replacement of the granular activated carbon bed.

Existing Discharge Goals were established in the "Final Operation, Maintenance and Monitoring Plan for Groundwater Treatment Plant GM-38 Area Groundwater Remediation" prepared by Tetra Tech EC (April 2010). Existing goals were based on emission estimates for a 95% reduction (see Attachment A), instead of being based on the original DAR-1 analysis of air stripper off gas. Emission estimates were calculated using the air stripper design flow rate of 8,000 cubic feet per minute (cfm), and previous contaminant discharge rates in pounds per hour (lb/hr). Original emission estimates are provided in Attachment B.

Proposed Revised Discharge Goals were calculated using an average flow rate of 9,200 cfm, January to March 2011 VOC loading rates (taken from the Quarterly Operations Report First Quarter 2011 from ECOR Federal Services), and the Actual Annual % of Annual Guideline Concentrations (AGCs), taken from the revised DAR-1 Model Output. The revised DAR-1 Model Output is provided in Attachment C. Existing Discharge Goals and Proposed Revised Discharge Goals are compared in tabular format in the first page of the attachment. Proposed Revised Discharge Goals for trichloroethene (TCE) are the same as previous. The proposed limit for tetrachloroethene (PCE) is approximately 10 times the previous limit, and vinyl chloride is approximately 2 times the previous limit. Revised Discharge Goals for 1,2-dichloroethene (goals are the same for cis-1,2-dichloroethene) are 100 times greater than previously established limits. It is recommended that these revised limits replace previous discharge goals, and treatment of air stripper off gas by granular activated carbon is recommended to continue for TCE and PCE, with no treatment required for vinyl chloride and 1,2-dichloroethene.

Tetra Tech NUS, Inc.
5700 Lake Wright Drive, Suite 309, Norfolk, VA 23502
Tel 757.461.3768 Fax 757.461.4148 www.ttnus.com

If you have any questions please contact Ms. Lora Fly, NAVFAC Mid-LANT, at (757) 341-2012.

Sincerely,

David D. Brayack, P.E.
Project Manager

Enclosure: (1) Proposed Modification to Discharge Limits for Off Gas Volatile Organic Compounds (VOCs) for Air Stripping Tower
GM-38 Offsite Groundwater Treatment Plant

Distribution:

Mid-Lant, Lora Fly
NYSDEC (Albany), Henry Wilkie
NYSDOH (Troy), Steve Karpinski
NAVAIR, Richard Smith
USEPA, Carol Stein
NGC, Kent Smith
Tetra Tech NUS, Dave Brayack
ECOR Solutions, Al Taormina
Administrative Record
Public Repository
Project File

Tetra Tech NUS, Inc.
5700 Lake Wright Drive, Suite 309, Norfolk, VA 23502
Tel 757.461.3768 Fax 757.461.4148 www.ttnus.com

TABLE 1
COMPARISON OF EXISTING DISCHARGE GOALS WITH ACTUAL EMISSIONS AND PROPOSED DISCHARGE GOALS
AIR STRIPPING TOWER GM-38 OFFSITE GROUNDWATER TREATMENT PLANT
NWIRP BETHPAGE, NEW YORK

	Existing Discharge Goal		Actual January to March 2011 Values (Pre-Off Gas Treatment)		Proposed Revised Discharge Goals based on DAR-1 Analysis	
Chemical	Existing Discharge Loading Rate (pounds (lbs)/hour)[1]	Equivalent Existing Discharge Goals (µg/m^3)[2]	Actual Jan-Mar 2011 Concentration (µg/m^3)[3]	Actual VOC Loading Pre-Off Gas Treatment (lbs/hour)[4]	Proposed Discharge Loading Rate (lbs/hour)[5]	Equivalent Proposed Discharge Goal (µg/m^3)[5]
TCE	0.09	2,600	10,000	0.345	0.09	2,600
PCE	0.02	580	6,800	0.234	0.18	5,100
Vinyl Chloride	0.01	290	76	0.003	0.02	560
1,2-Dichloroethene (total)	0.03	870	750	0.026	11	greater than 100,000

Notes:

[1]Existing Discharge Goals are based on the design flow rate of 8,000 cfm. Existing Discharge Goals were taken from the Final Operations and Maintenance Plan for GM-38 Area Groundwater Remediation from Tetra Tech EC. Existing goals were based on emission estimates for a 95% reduction, and not the previous DAR-1 Analysis. Attachment B (provided at the end of this package) provides the original emission estimates.

[2]Existing Discharge Goals were calculated using the actual flow rate of 9,200 cfm and the existing discharge loading rate in pounds per hour (lb/hr).

[3]Values were taken from the Quarterly Operations Report First Quarter 2011 from ECOR Federal Services. Values were the maximum effluent concentration in off gas from air stripper stack AS-1 prior to treatment with vapor phase granular activated carbon (GAC), for the months of January, February and March 2011.

[4]Actual VOC Loading was calculated using an average flow rate of 9,200 cfm and the January-March 2011 concentrations. Existing off gas treatment consists of two stage vapor phase GAC followed by potassium permanganate zeolite media to provide additional treatment for vinyl chloride.

[5]Values were calculated using an average flow rate of 9,200 cfm, and the Actual Annual % of the AGCs from the 2011 DAR-1 Model Output to achieve air quality requirements.

ATTACHMENT A

2008 AIR PERMIT SUBMITTAL

New York State Department of Environmental Conservation
Air Permit Application

DEC ID	APPLICATION ID	OFFICE USE ONLY
- -	- /	/ /

Section I - Certification

Title V Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information [required pursuant to 6 NYCRR 201-6.3(d)] I believe the information is, true, accurate and complete I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations

Responsible Official	Title
Signature	Date / /

State Facility Certification

I certify that this facility will be operated in conformance with all provisions of existing regulations.

Responsible Official	Title
Signature	Date / /

Section II - Identification Information

Title V Facility Permit N/A
☐ New ☐ Significant Modification ☐ Administrative Amendment
☐ Renewal ☐ Minor Modification General Permit Title:

State Facility Permit N/A
☐ New ☐ Modification
General Permit Title:

☒ Application involves construction of new facility ☐ Application involves construction of new emission unit(s)

Owner/Firm

Name US Navy/NAVFAC Midlant

Street Address 9742 Maryland Ave, Bldg Z-144

City Norfolk | State VA | Country US | Zip 23511-3095

Owner Classification ☒ Federal ☐ State ☐ Municipal ☐ Corporation/Partnership ☐ Individual

Taxpayer ID

Facility

☐ Confidential

Name Naval Weapons Industrial Reserve Plant (NWIRP) GM-38 Area

Location Address Bethpage

☐ City / ☒ Town / ☐ Village Oyster Bay, New York | Zip 11714

Project Description

☐ Continuation Sheet(s)

Air stripping of groundwater to remove VOCs

Owner/Firm Contact Mailing Address

Name (Last, First, Middle Initial) Fly, Lora		Phone No. (757) 444-0781	
Affiliation Department of the Navy	Title Remedial PM	Fax No. ( )	
Street Address 9742 Maryland Ave. Bldg Z-144			
City Norfolk	State VA	Country US	Zip 23511-3095

Facility Contact Mailing Address

Name (Last, First, Middle Initial) Same		Phone No. ( )	
Affiliation	Title	Fax No. ( )	
Street Address			
City	State	Country	Zip

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Section III - Facility Information

Classification					
❑ Hospital	❑ Residential	❑ Educational/Institutional	❑ Commercial	☒ Industrial	❑ Utility

Affected States (Title V Only) N/A				
❑ Vermont	❑ Massachusetts	❑ Rhode Island	❑ Pennsylvania	Tribal Land:_____
❑ New Hampshire	❑ Connecticut	❑ New Jersey	❑ Ohio	Tribal Land:_____

SIC Codes												
9999												

Facility Description ❑ Continuation Sheet(s)
Groundwater Remediation by Air Stripping followed by Vapor-Phase GAC for emission control

Compliance Statements (Title V Only) N/A

I certify that as of the date of this application the facility is in compliance with all applicable requirements: ❑ YES ❑ NO

If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block on page 8 of this form along with the compliance plan information required. For all emission units at this facility that are operating in compliance with all applicable requirements complete the following:

- ❑ This facility will continue to be operated and maintained in such a manner as to assure compliance for the duration of the permit, except those units referenced in the compliance plan portion of Section IV of this application.
- ❑ For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis.
- ❑ Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine the status.

Facility Applicable Federal Requirements N/A ❑ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
	CERCLA	all substantive requirements							

Facility State Only Requirements ❑ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

New York State Department of Environmental Conservation
Air Permit Application

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Section III - Facility Information (continued)

Facility Compliance Certification N/A ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

❑ Applicable Federal Requirement ❑ State Only Requirement	❑ Capping	CAS No.	Contaminant Name
		- -	

Monitoring Information

❑ Ambient Air Monitoring ❑ Work Practice Involving Specific Operations ❑ Record Keeping/Maintenance Procedures

Description

Work Practice	Process Material		Reference Test Method
Type	Code	Description	

Parameter		Manufacturer Name/Model No.
Code	Description	

Limit		Limit Units	
Upper	Lower	Code	Description

Averaging Method		Monitoring Frequency		Reporting Requirements	
Code	Description	Code	Description	Code	Description

Facility Emissions Summary ❑ Continuation Sheet(s)

CAS No.	Contaminant Name	PTE (lbs/yr)	PTE Range Code	Actual (lbs/yr)
NY075 - 00 - 5	PM-10			
NY075 - 00 - 0	PARTICULATES			
7446 - 09 - 5	SULFUR DIOXIDE			
NY210 - 00 - 0	OXIDES OF NITROGEN			
630 - 08 - 0	CARBON MONOXIDE			
7439 - 92 - 1	LEAD			
NY998 - 00 - 0	VOC	117		
NY100 - 00 - 0	HAP	110		
0079 - 01 - 6	Trichloroethylene	99		
00075 - 01 - 4	Vinyl Chloride	3.7		
00540 - 59 - 0	1,2-Dichloroethylene	7.3		
- -				
- -				

New York State Department of Environmental Conservation
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Section IV - Emission Unit Information

Emission Unit Description

❑ Continuation Sheet(s)

EMISSION UNT	0 - 0 0 E U 1

Air Stripper AS-1 for groundwater remediation, provided with activated carbon for emission control. The emission point is stack 00ST-1. The 2-stage VGAC is followed by a 3rd vessel containing a potassium permanganate zeolite media for increased VC capacity.

Building

❑ Continuation Sheet(s)

Building	Building Name	Length (ft)	Width (ft)	Orientation
BLDG-1	Treatment Plant	75	75	0

Emission Point

❑ Continuation Sheet(s)

EMISSION PT.	0 0 S T 1					
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
90	40	15	36	80		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
19	8020			BLDG-1	50	
EMISSION PT.						
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal

Emission Source/Control

❑ Continuation Sheet(s)

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
AS-1	I				048	Granular Act. Carbon	Air Stripping Column

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

New York State Department of Environmental Conservation
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Section IV - Emission Unit Information (continued)

Process Information

❑ Continuation Sheet(s)

EMISSION UNIT	0 - 0 0 E U 1	PROCESS	P R 1

Description

The remedial system is air stripping, using a packed column at a groundwater flow rate of 1,100 gpm (plus 100 gpm recycle, for a total of 1,200 gpm). Vapor phase treatment includes the use of 3 vessels, a 2-stage GAC unit, followed by a 3rd vessel containing a potassium permanganate impregnated zeolite for increased VC capacity. Prior to entering the vapor-phase GAC adsorption system, the humidity of the air stripper exhaust is reduced to approximately 50 percent or less to optimize the efficiency of the vapor-phase GAC.

Air Stripper AS-1: Existing. Type: Vertical, Cylindrical Construction: Aluminum

Packing: 25-foot Jaeger Tripack. Dimensions: 10.0 ft. Dia x 47 ft. H

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

❑ Confidential ☒ Operating at Maximum Capacity ❑ Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		
	24	365	BLDG-1	Main

Emission Source/Control Identifier(s)

AS-1							

EMISSION UNIT	-	PROCESS

Description

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

❑ Confidential ❑ Operating at Maximum Capacity ❑ Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		

Emission Source/Control Identifier(s)

New York State Department of Environmental Conservation
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Section IV - Emission Unit Information (continued)

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements ❑ Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-													
-													
-													
-													

Emission Unit	Emission Point	Process	Emission Source	Emission Unit State Only Requirements ❑ Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-													
-													
-													
-													

Emission Unit Compliance Certification ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
6	NYCRR	212							

☒ Applicable Federal Requirement ❑ State Only Requirement ❑ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
0-00EU1	00ST1	PR1	AS-1	00079 - 01 - 6	Trichloroethylene

Monitoring Information

❑ Continuous Emission Monitoring
☒ Intermittent Emission Testing
❑ Ambient Air Monitoring
❑ Monitoring of Process or Control Device Parameters as Surrogate
❑ Work Practice Involving Specific Operations
❑ Record Keeping/Maintenance Procedures

Description

Monthly grab samples analyzed for VOCs from the vapor phase treatment system influent, effluent and two intermediate locations.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.
23	Concentration	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
3,125		255	micrograms per cubic meter

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
01	Instantaneous	05	Monthly	10	Upon Request

New York State Department of Environmental Conservation
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Section IV - Emission Unit Information (continued)

Determination of Non-Applicability (Title V Only) N/A ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	❑ Applicable Federal Requirement ❑ State Only Requirement
-				

Description

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	❑ Applicable Federal Requirement ❑ State Only Requirement
-				

Description

Process Emissions Summary ❑ Continuation Sheet(s)

EMISSION UNIT	0 - 0 0 E U 1				PROCESS	P R 1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
0079 - 01 - 6	Trichloroethylene			95	1.87	02

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.09	99			02		

EMISSION UNIT	0 - 0 0 E U 1				PROCESS	P R 1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00075 - 01 - 4	Vinyl Chloride			95	0.17	03

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.01	3.7			02		

EMISSION UNIT	0 - 0 0 E U 1				PROCESS	P R 1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
000540 - 59 - 0	1,2-Dichloroethylene			95	0.6	02

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.03	7.3			02		

DEC ID
- -

Section IV - Emission Unit Information (continued)

EMISSION UNIT	Emission Unit Emissions Summary ❑ Continuation Sheet(s)			
0 - 0 0 E U 1				
CAS No.	Contaminant Name			
00107- 06 - 2	1,2-Dichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
13.4	Below Reporting Threshold BRT			
CAS No.	Contaminant Name			
00108 - 88 - 3	Toluene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
72.7	BRT	BRT		
CAS No.	Contaminant Name			
01330- 20 - 7	Xylene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
77.1	BRT	BRT		
CAS No.	Contaminant Name			
- -	1,1,2-Trichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	BRT		

Compliance Plan

❑ Continuation Sheet(s)

For any emission units which are not in compliance at the time of permit application, the applicant shall complete the following

Consent Order — Certified progress reports are to be submitted every 6 months beginning ____/____/____

Emission Unit	Process	Emission Source	Applicable Federal Requirement									
			Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-												

Remedial Measure / Intermediate Milestones	R/I	Date Scheduled

DEC ID

Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits

❑ Continuation Sheet(s)

EMISSION UNIT

Emission Reduction Description

Contaminant Emission Reduction Data

Baseline Period ____/____/____ to ____/____/____

Reduction	
Date	Method
/ /	

CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
- -			
- -			
- -			

Facility to Use Future Reduction

Name

APPLICATION ID

Location Address

❑ City / ❑ Town / ❑ Village | State | Zip

Use of Emission Reduction Credits

❑ Continuation Sheet(s)

EMISSION UNIT

Proposed Project Description

Contaminant Emissions Increase Data

CAS No.	Contaminant Name	PEP (lbs/yr)
- -		

Statement of Compliance

❑ All facilities under the ownership of this "ownership/firm" are operating in compliance with all applicable requirements and state regulations including any compliance certification requirements under Section 114(a)(3) of the Clean Air Act Amendments of 1990, or are meeting the schedule of a consent order.

Source of Emission Reduction Credit - Facility

Name

PERMIT ID

Location Address

❑ City / ❑ Town / ❑ Village | State | Zip

Emission Unit	CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
-	- -			
-	- -			
-	- -			

DEC ID
- -

Supporting Documentation

- ☒ P.E. Certification (form attached)
- ☐ List of Exempt Activities (form attached)
- ☒ Plot Plan
- ☐ Methods Used to Determine Compliance (form attached)
- ☒ Calculations
- ☐ Air Quality Model (_____ / _____ / _____)
- ☐ Confidentiality Justification
- ☐ Ambient Air Monitoring Plan (_____ / _____ / _____)
- ☐ Stack Test Protocols/Reports (_____ / _____ / _____)
- ☐ Continuous Emissions Monitoring Plans/QA/QC (_____ / _____ / _____)
- ☐ MACT Demonstration (_____ / _____ / _____)
- ☐ Operational Flexibility: Description of Alternative Operating Scenarios and Protocols
- ☐ Title IV: Application/Registration
- ☐ ERC Quantification (form attached)
- ☐ Use of ERC(s) (form attached)
- ☐ Baseline Period Demonstration
- ☐ Analysis of Contemporaneous Emission Increase/Decrease
- ☐ LAER Demonstration (_____ / _____ / _____)
- ☐ BACT Demonstration (_____ / _____ / _____)
- ☐ Other Document(s): _____ (/ /)

_____ (/ /)
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ATTACHMENT B

2008 EMISSION ESTIMATES BASED ON 95% REMOVAL

ATTACHMENT 1
Emission Estimate

POTENTIAL EMISSION ESTIMATES, USED TO DEVELOP 95% REDUCTION OF EMISSION VALUES AS BASED ON INFLUENT GROUNDWATER CONCENTRATIONS (95% REDUCTION OF EMISSION VALUES ARE PROVIDED ON PAGE 7 OF THE 2008 AIR PERMIT APPLICATION PROCESS EMISSIONS SUMMARY)

Feed Water Flow	1,100	gpm: max or normal
	250	m^3/hr
Water Flow Including Recycle	1,200	gpm: max or normal
	273	m^3/hr
Air Flow	8,000	cfm
	13,592	m^3/hr
A/W vol ratio	50	

EXAMPLE EMISSION CALC: Vinyl Chloride
4.8 ug/L x 1000 L/m^3 x 250 m^3 water/13,623 m^3 air = 88 ug/m^3

					GW Conc.[1]		Effluent Conc[1]		Uncontrolled Stripper Exhaust							
Name	CAS Number	Toxicity: H/M/L[2]	VOC[3]	HAP[4]	Max ug/L	Avg ug/L	Max ug/L	Avg ug/L	Max lb/day	Avg lb/day	Max lb/hr	Avg lb/hr	Max gm/sec	Avg gm/sec	Max ug/m^3	Avg ug/m^3
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	L	**No**	Yes	3	3.0			0.04	0.04	0.00	0.00	2.08E-04	2.08E-04	55	55
1,1,2-Trichloroethane	00079-00-5	M	Yes	Yes	3.5	0.3			0.05	0.00	0.00	0.00	2.43E-04	2.08E-05	64	6
1,1-Dichloroethane	00075-34-3	L	Yes	Yes	4	0.7			0.05	0.01	0.00	0.00	2.77E-04	4.85E-05	74	13
1,2-Dichloroethane	00107-06-2	M	Yes	Yes	3	1.0	0.3	0.1	0.04	0.01	0.00	0.00	1.87E-04	6.24E-05	55	18
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	M	Yes	Yes	9	1.6			0.12	0.02	0.00	0.00	6.24E-04	1.11E-04	165	29
1,2-Dichloroethylene	00540-59-0	M	Yes	**No**	1,100	31.5	1.3	0.0	14.51	0.42	0.60	0.02	7.62E-02	2.18E-03	20,219	579
Benzene	00071-43-2	H	Yes	Yes	4	0.1			0.05	0.00	0.00	0.00	2.77E-04	6.94E-06	74	2
Carbon Tetrachloride	00056-23-5	H	Yes	Yes	4	0.1			0.05	0.00	0.00	0.00	2.77E-04	6.94E-06	74	2
Chlorobenzene (Monochlorobenzene)	00108-90-7	M	Yes	Yes	1	0.1			0.01	0.00	0.00	0.00	6.94E-05	6.94E-06	18	2
Chloroform	00067-66-3	M	Yes	Yes	2	0.8			0.03	0.01	0.00	0.00	1.39E-04	5.55E-05	37	15
Methyl Tert Butyl Ether	01634-04-4	M	Yes	Yes	2	0.1			0.03	0.00	0.00	0.00	1.39E-04	6.94E-06	37	2
Tetrachloroethylene	00127-18-4	M	Yes	Yes	900	33.8	0.9	0.0	11.88	0.45	0.49	0.02	6.24E-02	2.34E-03	16,543	621
Toluene	00108-88-3	L	Yes	Yes	15	0.7			0.20	0.01	0.01	0.00	1.04E-03	4.85E-05	276	13
Trichloroethylene	00079-01-6	M	Yes	Yes	3,400	411.5	4.5	0.5	44.86	5.43	1.87	0.23	2.35E-01	2.85E-02	62,494	7,564
Vinyl chloride	00075-01-4	H	Yes	Yes	300	4.8	0.0	0.0	3.96	0.06	0.17	0.00	2.08E-02	3.33E-04	5,514	88
Xylenes	01330-20-7	M	Yes	Yes	16	0.2			0.21	0.00	0.01	0.00	1.11E-03	1.39E-05	294	4
Total VOCs					5,764	487.3	7.0	0.6	76.05	6.43	3.17	0.27				
Total HAPs					4,667	458.8	5.7	0.6	61.57	6.05	2.57	0.25				

Total Uncontrolled VOC	2,347 lb/yr
Total Uncontrolled HAP	2,209 lb/yr

1. Source: "GM-38 Groundwater Remedy Analysis Report", February 2003
2. Source: DAR-1 AGC/SGC Tables, NYSDEC Division of Air Resources, Air Toxics Section, September 10, 2007.
3. Source: 6 NYCRR Part 200 1(cg)
4. Source: 6 NYCRR Part 200.1(ag)

ATTACHMENT 1
Emission Estimate

Feed Water Flow	1,100	gpm: max or normal
	250	m^3/hr
Water Flow Including Recycle	1,200	gpm: max or normal
	273	m^3/hr
Air Flow	8,000	cfm
	13,592	m^3/hr
A/W vol ratio	50	

Name	CAS Number	Toxicity: H/M/L[2]	VOC[3]	HAP[4]	Control by GAC	Max lb/day	Avg lb/day	Controlled Stripper Exhau Max gm/sec	Avg gm/sec
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	L	**No**	Yes	95%	0.00	0.00	1.04E-05	1.04E-05
1,1,2-Trichloroethane	00079-00-5	M	Yes	Yes	95%	0.00	0.00	1.21E-05	1.04E-06
1,1-Dichloroethane	00075-34-3	L	Yes	Yes	95%	0.00	0.00	1.39E-05	2.43E-06
1,2-Dichloroethane	00107-06-2	M	Yes	Yes	95%	0.00	0.00	9.36E-06	3.12E-06
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	M	Yes	Yes	95%	0.01	0.00	3.12E-05	5.55E-06
1,2-Dichloroethylene	00540-59-0	M	Yes	**No**	95%	0.73	0.02	3.81E-03	1.09E-04
Benzene	00071-43-2	H	Yes	Yes	95%	0.00	0.00	1.39E-05	3.47E-07
Carbon Tetrachloride	00056-23-5	H	Yes	Yes	95%	0.00	0.00	1.39E-05	3.47E-07
Chlorobenzene (Monochlorobenzene)	00108-90-7	M	Yes	Yes	95%	0.00	0.00	3.47E-06	3.47E-07
Chloroform	00067-66-3	M	Yes	Yes	95%	0.00	0.00	6.94E-06	2.77E-06
Methyl Tert Butyl Ether	01634-04-4	M	Yes	Yes	95%	0.00	0.00	6.94E-06	3.47E-07
Tetrachloroethylene	00127-18-4	M	Yes	Yes	95%	0.59	0.02	3.12E-03	1.17E-04
Toluene	00108-88-3	L	Yes	Yes	95%	0.01	0.00	5.20E-05	2.43E-06
Trichloroethylene	00079-01-6	M	Yes	Yes	95%	2.24	0.27	1.18E-02	1.43E-03
Vinyl chloride	00075-01-4	H	Yes	Yes	95%	0.20	0.00	1.04E-03	1.66E-05
Xylenes	01330-20-7	M	Yes	Yes	95%	0.01	0.00	5.55E-05	6.94E-07
Total VOCs						3.80	0.32		
Total HAPs						3.08	0.30		

Total Controlled VOC	117	lb/yr
Total Controlled HAP	110	lb/yr

1. Source: "GM-38 Groundwater Remedy Analysis Report", February 2003
2. Source: DAR-1 AGC/SGC Tables, NYSDEC Division of Air Resources, Air Tox
3. Source: 6 NYCRR Part 200.1(cg)
4. Source: 6 NYCRR Part 200.1(ag)

ATTACHMENT C

2011 DISCHARGE GOALS AND 2011 DAR-1 ANALYSIS

Tetra Tech NUS		STANDARD CALCULATION SHEET	
CLIENT: US CLEAN	FILE No:	BY: SK	PAGE: 1 of 1
SUBJECT: Calculation of Current Discharge Goals GM-38 Area NWIRP Bethpage, New York		CHECKED BY:	DATE: 9/7/2011

1. Purpose:
To calculate current discharge goals for Trichloroethene (TCE), Tetrachloroethene (PCE), Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total), for treatment of off-gas from the air stripper stack AS-1.

2. Approach:
From the Contaminant Assessment Summary of the DAR-1 Model output for TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total) (see DAR-1 output for analysis inputs), use the Actual Annual % of the Annual Guideline Concentration (AGC), a current average flow rate of 9,200 cubic feet per minute (cfm), and influent chemical emission rates in pounds per hour (lb/hour) and pounds per year (lb/year) to back calculate current discharge goals.

3. Calculation of Current Discharge Goals:

Chemical	Current Actual Annual % of AGC(1)	Current Maximum Concentration (µg/m^3)(2)	Current Chemical Emission Rate Prior to Treatment (lb/hour)(3)	Current Chemical Emission Rate Prior to Treatment (lb/year)(3)	Calculated Discharge Goal (lb/hr)(4)	Calculated Discharge Goal (lb/year)(4)	Maximum Allowable Concentration (µg/m^3)(4)
TCE	390.6	10,000	0.3446	3,019	0.0882	770	2,600
PCE	132.8	6,800	0.2344	2,053	0.1764	1,500	5,100
Vinyl Chloride	13.49	76	0.0026	22.94	0.0194	170	560
cis 1,2-Dichloroethene	0.2322	750	0.0258	226.4	11.13	98,000	320,000
1,2-Dichloroethene (total)	0.2322	750	0.0258	226.4	11.13	98,000	320,000

Notes:

(1)Actual Annual % of the AGCs is from the attached DAR-1 Model Output.

(2)Values were taken from the Quarterly Operations Report First Quarter 2011 (June 2011) from ECOR Federal Services. Values were the maximum effluent concentration in off gas from air stripper stack AS-1 for the months of January, February, and March 2011.

(3)Chemical Emission Rates were calculated from maximum concentrations and an average flow rate of 9,200 cfm.

(4)Discharge Goals are based on a flow of 9,200 cfm, and calculated from the Actual Annual % of the AGCs from the DAR-1 Model Output to achieve air quality requirements. The summary of additional inputs for this model run is provided in the DAR-1 Model Output. Stack height is 40 feet, and the property line was evaluated at a distance of 50 feet.

BETHPAGE SITE GM-38 OFF-SITE GROUNDWATER AIR STRIPPER STACK EMISSIONS
DAR-1 MODEL OUTPUT, POINT SOURCE (STACK EMISSIONS) TYPE
INCLUDES ISCLT MODELING SUMMARY

I. Summary of Inputs for Model Run to Nearest Property Line (50 feet), worst case scenario (highest contaminant concentrations seen in first quarter 2011 in untreated effluent from Air Stripper AS-1 prior to treatment with granular activated carbon (GAC))

Chemical	CAS No. 00079-01-6 (TCE)	CAS No. 00127-18-4 (PCE)	CAS No. 00075-01-4 (Vinyl Chloride)	CAS No. 00156-59-2 (cis 1,2-Dichloroethene)	CAS No. 00540-59-0 (1,2-Dichloroethene, total)
Emission Rate Prior to Treatment[1] (lb/hour)	0.3444	0.2342	0.0026	0.0258	0.0258
Emission Rate Prior to Treatment[1] (lb/year)	3,017	2,052	22.93	226.0	226.0
Maximum Concentration of Untreated Off Gas ($\mu g/m^3$)[1]	10,000	6,800	76	750	750
Annual Guideline Concentration (AGC) ($\mu g/m^3$)	0.5	1.0	0.11	63	63
Short-term Guideline Concentration (SGC) ($\mu g/m^3$)	14,000	1,000	180,000	--	--

HA	Height Above stack/ maximum height of plume (HA, feet)	15
SH	Stack Height/Treatment Building Air Stack (SH, feet)	40
D	Stack Diameter (D, inches)	36
T	Stack Exit Temperature (T, degrees Fahrenheit)	80
V	Stack Exit Velocity (V, ft/sec)	21.69
Q[2]	Stack Exit Flow Rate [Q, Actual Cubic Feet per Minute (ACFM)]	9,200
Dpl	Shortest Distance from Source Building (Treatment Building) to Property Line (Dpl, feet) for point sources	50
BW	Building Width (BW, feet) of Source Building (Treatment Building) for point sources	75
BL	Building Length (BL, feet) of Source Building (Treatment Building)	75
Q	Actual Hourly Emission Rate (lbs/hour) for source contaminant	Chemical specific, see above
Qa	Actual Annual Emission Rate (lbs/year) for source contaminant	Chemical specific, see above

[1] Emission rates and maximum concentration values were taken from the Quarterly Operations Report First Quarter (June 2011) as provided by ECOR Services, using January, February, and March 2011 maximum rates of untreated off gas from Air Stripper AS-1 in the

GM-38 Treatment Building. Emission rates are based on continuous operation 24 hours per day, 7 days a week, 52 weeks a year, or approximately 8,760 hours of operation.
(2) "Q" is an average value of January and February 2011 monthly flow rates. Effective water and vapor flow rates were reduced during the reporting period of March due to a shutdown of the Treatment Plant on March 23, 2011.

II. Contaminant Assessment Summary of TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):

CONTAMINANT ASSESSMENT SUMMARY OF DAR-1 ANALYSIS 9/ 8/11
Page 1

CAS NUMBER	AGC ug/m3	SHORT-TERM MAXIMUM (Gav,Pt,Area) % OF SGC	CAVITY ACTUAL ANNUAL % OF AGC	POINT or AREA SOURCE POTENTIAL ANNUAL % OF AGC	POINT or AREA SOURCE ACTUAL ANNUAL % OF AGC
00075-01-4	0.11000000	0.0005	0.0000	13.3889	13.4948
00079-01-6	0.50000000	0.7757	0.0000	390.1734	390.6264
00127-18-4	1.00000000	7.3852	0.0000	132.6635	132.8415
00156-59-2	63.00000000	0.0000	0.0000	0.2320	0.2322
00540-59-0	63.00000000	0.0000	0.0000	0.2320	0.2322
SUMMARY TOTALS		8.1614	0.0000	536.6897	537.4274

III. Contaminant Impact Summary of TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):

CONTAMINANT IMPACT SUMMARY OF DAR-1 ANALYSIS 9/ 8/11
Page 1

CAS NUMBER	AGC ug/m3	SHORT-TERM MAXIMUM (Gav,Pt,Area) ug/m3	CAVITY ACTUAL ANNUAL ug/m3	POINT or AREA SOURCE POTENTIAL ANNUAL ug/m3	POINT or AREA SOURCE ACTUAL ANNUAL ug/m3
00075-01-4	0.11000000	0.81988204	0.00000000	0.01472780	0.01484433
00079-01-6	0.50000000	108.60282900	0.00000000	1.95086694	1.95313276
00127-18-4	1.00000000	73.85244750	0.00000000	1.32663476	1.32841504
00156-59-2	63.00000000	8.13575172	0.00000000	0.14614509	0.14630693
00540-59-0	63.00000000	8.13575172	0.00000000	0.14614509	0.14630693

IV. Contaminant Impact Summary Step by Step Menu for TCE:

```
*****************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                          OYSTER BAY, NEW
EMISSION POINT =            TOTAL     CAS NUMBER = 00079-01-6     SIC =    0

   AGC =            0.500000000 ug/m3        SGC =       14000.000000 ug/m3

   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000

**  Reported Hourly Emission Rate (Q) is equal to        0.344400000 lbs/hour.

**  Reported Annual Emission Rate (Qa) is equal to     3017.000000 lbs/year.

II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).

II.B.1.       Shortest Distance from building to Property Line (   50. feet )
              is less than or equal to the cavity length, or 3 building
              heights (   75. feet ).  Therefore, this building will have
              cavity impacts (if they occur) at receptors off plant property.

II.B.2.       The largest building dimension (   75. feet ) is greater than or
              equal to the building height (   25. feet ).  Therefore, the
              computer will NOT redefine the cavity length.
```

```
II.B.3.       Stack height (   40. feet ) is greater than cavity height
              (   38. feet ).  Therefore, this source does not contribute to
              the buildings cavity impact.   The Computer will assume the
              CAVITY Annual Impact equals 0.00 ug/m3.

II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (      0.500 ug/m3 ).

III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).

III.A.1.b.        Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).

III.A.1.b.        Effective stack height, he, is equal to     51.001 feet.

III.A.2.      STANDARD POINT SOURCE Actual Annual Impact is equal
              to      2.604 ug/m3 for  8760. hours/year of operation.

III.A.3.      STANDARD POINT SOURCE Potential Annual Impact is equal
              to      2.601 ug/m3 assuming 8,760 hours/year of operation.

III.A.4.a.        Stack height to building height ratio is greater than
                  1.5, but less than 2.5.   Computer will multiply actual
                  annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (       1.953 ug/m3 ) is
        greater than AGC (         0.500 ug/m3 ).

        **** Refer to DAR-1 Section III.D.1.  A refined site          ****
        **** specific modeling analyis may be required.                  ****

III.D.  STANDARD POINT SOURCE Potential Annual Impact (       1.951 ug/m3 )
        is greater than AGC (         0.500 ug/m3 ).

        **** Potential Annual Impact is based upon 8760 hours/year          ****
        **** operation instead of reported 8760. hours/year.                ****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian,' 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact (       0.000 ug/m3 ) is less
        than SGC (  14000.000 ug/m3 ).
```

```
2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).

2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to        38.826 ug/m3.  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSTD) is equal
              to      129.908 ug/m3. for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) is equal
              to      108.603 ug/m3.  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST:       108.603 ug/m3 ) is
        less than the SGC (    14000.000 ug/m3 ) for the point source.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals       108.603 ug/m3
              and is reported in the ANALYSIS MENU.  This value is less than
              the SGC (    14000.000 ug/m3 ).
```

V. Contaminant Impact Summary Step by Step Menu for PCE:

```
*****************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                          OYSTER BAY, NEW
EMISSION POINT =            TOTAL     CAS NUMBER = 00127-18-4     SIC =    0
   AGC =            1.000000000 ug/m3        SGC =        1000.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000
** Reported Hourly Emission Rate (Q) is equal to        0.234200000 lbs/hour.
** Reported Annual Emission Rate (Qa) is equal to     2052.000000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.       Shortest Distance from building to Property Line (   50. feet )
              is less than or equal to the cavity length, or 3 building
              heights (   75. feet ).  Therefore, this building will have
              cavity impacts (if they occur) at receptors off plant property.
II.B.2.       The largest building dimension (   75. feet ) is greater than or
              equal to the building height (   25. feet ).  Therefore, the
              computer will NOT redefine the cavity length.
```

```
II.B.3.       Stack height (   40. feet ) is greater than cavity height
              (   38. feet ).  Therefore, this source does not contribute to
              the buildings cavity impact.   The Computer will assume the
              CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (      1.000 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.        Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.        Effective stack height, he, is equal to     51.001 feet.
III.A.2.      STANDARD POINT SOURCE Actual Annual Impact is equal
              to      1.771 ug/m3 for  8762. hours/year of operation.
III.A.3.      STANDARD POINT SOURCE Potential Annual Impact is equal
              to      1.769 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.        Stack height to building height ratio is greater than
                  1.5, but less than 2.5.   Computer will multiply actual
                  annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (      1.328 ug/m3 ) is
        greater than AGC (        1.000 ug/m3 ).

        **** Refer to DAR-1 Section III.D.1.  A refined site          ****
        **** specific modeling analyis may be required.                 ****

III.D.  STANDARD POINT SOURCE Potential Annual Impact (      1.327 ug/m3 )
        is greater than AGC (        1.000 ug/m3 ).

        **** Potential Annual Impact is based upon 8760 hours/year          ****
        **** operation instead of reported 8762. hours/year.                ****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian," 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact (      0.000 ug/m3 ) is less
        than SGC (   1000.000 ug/m3 ).
```

```
2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).

2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to        26.403 ug/m3,  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSID) is equal
              to       88.340 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSID) is equal
              to       73.852 ug/m3,  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST:        73.852 ug/m3 ) is
        less than the SGC (     1000.000 ug/m3 ) for the point source.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals       73.852 ug/m3
              and is reported in the ANALYSIS MENU.  This value is less than
              the SGC (     1000.000 ug/m3 ).
```

VI. Contaminant Impact Summary Step by Step Menu for Vinyl Chloride:

```
*****************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                          OYSTER BAY, NEW
EMISSION POINT =            TOTAL     CAS NUMBER = 00075-01-4     SIC =    0
   AGC =            0.110000000 ug/m3        SGC =      180000.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000
** Reported Hourly Emission Rate (Q) is equal to        0.002600000 lbs/hour.
** Reported Annual Emission Rate (Qa) is equal to       22.930000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.      Shortest Distance from building to Property Line (   50. feet )
             is less than or equal to the cavity length, or 3 building
             heights (   75. feet ).  Therefore, this building will have
             cavity impacts (if they occur) at receptors off plant property.
II.B.2.      The largest building dimension (   75. feet ) is greater than or
             equal to the building height (   25. feet ).  Therefore, the
             computer will NOT redefine the cavity length.
```

```
II.B.3.      Stack height (   40. feet ) is greater than cavity height
             (   38. feet ).  Therefore, this source does not contribute to
             the buildings cavity impact.   The Computer will assume the
             CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (      0.110 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.        Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.        Effective stack height, he, is equal to     51.001 feet.
III.A.2.     STANDARD POINT SOURCE Actual Annual Impact is equal
             to      0.020 ug/m3 for  8819. hours/year of operation.
III.A.3.     STANDARD POINT SOURCE Potential Annual Impact is equal
             to      0.020 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.        Stack height to building height ratio is greater than
                  1.5, but less than 2.5.   Computer will multiply actual
                  annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (      0.015 ug/m3 ) is
        less than AGC (        0.110 ug/m3 ).

III.D.  STANDARD POINT SOURCE Potential Annual Impact (      0.015 ug/m3 )
        is less than AGC (        0.110 ug/m3 ).

        **** Potential Annual Impact is based upon 8760 hours/year        ****
        **** operation instead of reported 8819. hours/year.              ****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian,' 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact (      0.000 ug/m3 ) is less
        than SGC ( 180000.000 ug/m3 ).

2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
```

```
2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to         0.293 ug/m3,  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSTD) is equal
              to         0.981 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) is equal
              to         0.820 ug/m3,  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST:         0.820 ug/m3 ) is
        less than the SGC (   180000.000 ug/m3 ) for the point source.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals        0.820 ug/m3
              and is reported in the ANALYSIS MENU.  This value is less than
              the SGC (   180000.000 ug/m3 ).
```

VII. Contaminant Impact Summary Step by Step Menu for cis 1,2-Dichloroethene:

```
*****************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                          OYSTER BAY, NEW
EMISSION POINT =            TOTAL     CAS NUMBER = 00156-59-2     SIC =    0
   AGC =            63.000000000 ug/m3        SGC =            0.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000
** Reported Hourly Emission Rate (Q) is equal to        0.025800000 lbs/hour.
** Reported Annual Emission Rate (Qa) is equal to      226.000000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.      Shortest Distance from building to Property Line (   50. feet )
             is less than or equal to the cavity length, or 3 building
             heights (   75. feet ).  Therefore, this building will have
             cavity impacts (if they occur) at receptors off plant property.
II.B.2.      The largest building dimension (   75. feet ) is greater than or
             equal to the building height (   25. feet ).  Therefore, the
             computer will NOT redefine the cavity length.
```

```
II.B.3.      Stack height (   40. feet ) is greater than cavity height
             (   38. feet ).  Therefore, this source does not contribute to
             the buildings cavity impact.   The Computer will assume the
             CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (     63.000 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.        Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.        Effective stack height, he, is equal to     51.001 feet.
III.A.2.     STANDARD POINT SOURCE Actual Annual Impact is equal
             to      0.195 ug/m3 for  8760. hours/year of operation.
III.A.3.     STANDARD POINT SOURCE Potential Annual Impact is equal
             to      0.195 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.        Stack height to building height ratio is greater than
                  1.5, but less than 2.5.   Computer will multiply actual
                  annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (      0.146 ug/m3 ) is
        less than AGC (       63.000 ug/m3 ).

III.D.  STANDARD POINT SOURCE Potential Annual Impact (      0.146 ug/m3 )
        is less than AGC (       63.000 ug/m3 ).

        **** Potential Annual Impact is based upon 8760 hours/year        ****
        **** operation instead of reported 8760. hours/year.              ****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian,' 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact is equal to       0.000 ug/m3.
        There is no SGC for this contaminant.

2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
```

```
2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to          2.909 ug/m3,  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSTD) is equal
              to        9.732 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) is equal
              to        8.136 ug/m3,  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST) equals        8.136 ug/m3
        for the point source.  There is no SGC for this contaminant.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav.Pt.Area)) equals        8.136 ug/m3
              and is reported in the ANALYSIS MENU.
```

VIII. Contaminant Impact Summary Step by Step Menu for 1,2-Dichloroethene (total):

```
*****************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                        OYSTER BAY, NEW
EMISSION POINT =            TOTAL     CAS NUMBER = 00540-59-0     SIC =    0
   AGC =            63.000000000 ug/m3        SGC =            0.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000
** Reported Hourly Emission Rate (Q) is equal to        0.025800000 lbs/hour.
** Reported Annual Emission Rate (Qa) is equal to      226.000000 lbs/year.
II.B.   REFINED CAVITY IMPACT METHOD (DAR-1, APPENDIX B).
II.B.1.      Shortest Distance from building to Property Line (   50. feet )
             is less than or equal to the cavity length, or 3 building
             heights (   75. feet ).  Therefore, this building will have
             cavity impacts (if they occur) at receptors off plant property.
II.B.2.      The largest building dimension (   75. feet ) is greater than or
             equal to the building height (   25. feet ).  Therefore, the
             computer will NOT redefine the cavity length.
```

```
II.B.3.      Stack height (   40. feet ) is greater than cavity height
             (   38. feet ).  Therefore, this source does not contribute to
             the buildings cavity impact.   The Computer will assume the
             CAVITY Annual Impact equals 0.00 ug/m3.
II.C.   CAVITY Annual Impact (      0.000 ug/m3 ) is less than AGC
        (     63.000 ug/m3 ).
III.A.  STANDARD POINT SOURCE METHOD (DAR-1, APPENDIX B).
III.A.1.b.        Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
III.A.1.b.        Effective stack height, he, is equal to     51.001 feet.
III.A.2.     STANDARD POINT SOURCE Actual Annual Impact is equal
             to      0.195 ug/m3 for  8760. hours/year of operation.
III.A.3.     STANDARD POINT SOURCE Potential Annual Impact is equal
             to      0.195 ug/m3 assuming 8,760 hours/year of operation.
III.A.4.a.        Stack height to building height ratio is greater than
                  1.5, but less than 2.5.   Computer will multiply actual
                  annual & potential annual impacts by 0.75 factor.
```

```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.D.  STANDARD POINT SOURCE Actual Annual Impact (       0.146 ug/m3 ) is
        less than AGC (        63.000 ug/m3 ).

III.D.  STANDARD POINT SOURCE Potential Annual Impact (       0.146 ug/m3 )
        is less than AGC (        63.000 ug/m3 ).

        **** Potential Annual Impact is based upon 8760 hours/year        ****
        **** operation instead of reported 8760. hours/year.              ****

2.0     DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.
        See "Technical Reference for the Screening Procedures of the
        DAR-1 Software Program, Wade/Sedefian,' 1/11/94.

2.2           CAVITY Short-Term Impact is equal to  0.00 ug/m3 as the plume
              escaped the cavity region:  hs(  40. feet) > hc(  26. feet).

II.C.   CAVITY Short-Term Impact is equal to        0.000 ug/m3.
        There is no SGC for this contaminant.

2.3           Momentum flux, Fm, is equal to   1000.331 ft(4)/sec(2).
```

```
2.3           Effective stack height, he, is equal to     51.001 feet.

2.4           Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal
              to          2.909 ug/m3,  for   hs/hb =   1.60

2.5           Maximum downwash Short-Term Impact (CSTD) is equal
              to         9.732 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) is equal
              to         8.136 ug/m3,  for:  RF =   0.84

III.D.  Maximum non-cavity Short-Term Impact (CST) equals        8.136 ug/m3
        for the point source.  There is no SGC for this contaminant.

2.7           Maximum Short-Term cavity, point, or area source impact
              (SHORT-TERM MAXIMUM, (Cav,Pt,Area)) equals        8.136 ug/m3
              and is reported in the ANALYSIS MENU.
```

IX. AGCs and SGCs for TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):

```
                                  AGCs & SGCs                          9/ 8/11
                                                                     Page     1

                                                H                    H I
                                   SGC          O          AGC       O O
CAS NUMBER   CONTAMINANT NAME      ug/m3        W         ug/m3      W X  CODES
********** ******************** ************** * ****************** * * *****
00075-01-4 VINYL CHLORIDE        180000.00000 D        0.110000000 E H  U HA
00079-01-6 TRICHLOROETHYLENE      14000.00000 Z        0.500000000 D M  U HB
00127-18-4 TETRACHLOROETHYLENE     1000.00000 H        1.000000000 H M  U HI
00156-59-2 DICHLOROETHYLENE,cis       0.00000         63.000000000 D M
00540-59-0 DICHLOROETHYLENE, 12       0.00000         63.000000000 D M
```

X. Contaminant Emissions Summary for TCE, PCE, Vinyl Chloride, cis 1,2-Dichloroethene, and 1,2-Dichloroethene (total):'

CONTAMINANT EMISSIONS SUMMARY 9/ 8/11
Page 1

CAS NUMBER	CONTAMINANT NAME	NUM. OF EPs PER CONTAM.	EMISSIONS (lbs/hour)	EMISSIONS (lbs/year)
00075-01-4	VINYL CHLORIDE	1	0.0026000	22.93000
00079-01-6	TRICHLOROETHYLENE	1	0.3444000	3017.00000
00127-18-4	TETRACHLOROETHYLENE	1	0.2342000	2052.00000
00156-59-2	DICHLOROETHYLENE,cis	1	0.0258000	226.00000
00540-59-0	DICHLOROETHYLENE, 12	1	0.0258000	226.00000
SUMMARY TOTALS		5	0.6328000	5543.93000

XI. Meter Grid Modeling Results for Maximum Annual Concentrations of TCE, within 25 meters:

CONCENTRATIONS x 10 (-2) (ug/m3) for 00079-01-6 09/08/11 13:17:58
AGC = 0.500000000 ug/m3

UTMN ▼ / UTME ▶	367000.	368000.	369000.	370000.	371000.	372000.	373000.	374000.	375000.	376000.	377000.	378000.	379000.
4511000.	0.04	0.06	0.08	0.14	0.23	0.32	0.41	0.30	0.14	0.10	0.08	0.06	0.05
4510000.	0.03	0.05	0.08	0.13	0.25	0.43	0.60	0.40	0.17	0.12	0.09	0.07	0.06
4509000.	0.02	0.03	0.06	0.11	0.24	0.58	1.01	0.52	0.22	0.14	0.11	0.08	0.06
4508000.	0.02	0.03	0.04	0.06	0.18	0.62	2.16	0.64	0.31	0.19	0.13	0.11	0.09
4507000.	0.02	0.03	0.04	0.06	0.11	0.26	7.27	1.43	0.60	0.34	0.22	0.15	0.12
4506000.	0.03	0.03	0.05	0.07	0.13	0.33	2.58	2.99	1.12	0.51	0.30	0.20	0.14
4505000.	0.03	0.04	0.05	0.08	0.20	0.45	0.94	0.81	0.60	0.45	0.33	0.23	0.16
4504000.	0.03	0.04	0.07	0.12	0.20	0.22	0.47	0.43	0.33	0.27	0.24	0.20	0.16

TOP 100 CONTRIBUTORS TO MAXIMUM CONCENTRATION FOR 00079-01-6 09/08/11 13:17:58
@ UTME: 373000. UTMN: 4507000.

Emission Point	Facility Name (shortened)	EP DIR	Distance to Max.(m)	CONC. ug/m3	Percent of Max.
TOTAL	NWIRP BETHPAGE GM-38 AREA	SSE	539.	0.727E-01	100.000
TOTAL OF ALL 1 CONTRIBUTORS				0.727E-01	100.000

XII. ISCLT Model Run Information, within 25 meters:

```
                                                                    09/08/11
                          MODEL RUN INFORMATION                     13:17:58

 1.  Current GRID SPACING equals        1000. meters.
 2.  Maximum Concentration (flashing) equals          0.0727115273 ug/m3
              @ UTME:    373000.     UTMN:    4507000.

 3.  RUN FILE: TEMP7.RUN

 4.  METEOROLOGICAL FILE:       ALB.MET

 5.  RUN MODE: URBAN
 6.  HALF-LIVES: not used to account for pollutant removal from air.
 7.  BLD. WAKE EFFECTS: AG-1 METHOD, All data KNOWN (hb,hw,hl,orientation)

 8.  EMISSIONS: ACTUAL ANNUAL EMISSIONS

 9.  SOURCES: All sources within          25. meters of
             UTME:     373275., UTMN:     4506537.
10.  CONTAMINANT CAS NUMBER(s): 00079-01-6
11.  EMISSION POINT - CONTAMINANT(s) found by computer:      1
12.  No data is being copied to DUMP file.
```

APPENDIX C

FIELD DATA SHEETS AND CHAIN OF CUSTODY DOCUMENTATION

Date: 03/24/14

H&S

Groundwater Level Measurement Sheet

Project Site: NWIRP Bethpage – GM-38
Location: Bethpage, NY
Field Crew: RM/SL

Water Level Meter: Solinst
Weather: partly cloudy 21°F
Time of Low Tide: N/A
Time of High Tide: N/A

Well ID	Time	Depth to Water (ft.)	Total Depth of Well / Screed Interval (ft.)	PID (ppm)	Comments
RW1-MW1	16:35	37.35	435 / 395-435	---	
RW1-MW2	16:04	40.00	435 / 395-435	---	water in casing
RW1-MW3	17:15	28.61	435 / 395-435	---	
RW2-MW1	16:25	40.75	510 / 470-510	---	
RW2-MW2	16:30	40.30	510 / 470-510	---	
RW2-MW3	16:20	39.91	510 / 470-510	---	
RW3-MW1	16:43	39.01	350 / 330-350	---	
RW3-MW2	16:40	40.81	495 / 475-495	---	
RW3-MW3	16:56	40.35	340 / 320-340	---	
RW3-MW4	16:58	41.60	495 / 475-495	---	
TP1	16:00	35.13	470 / 450-470	---	
IW1-MW1	16:10	37.35	470 / 450-470	---	

Signature: [illegible]

Date: 3-24-14

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 1 - MW 1

Date: 03/24 /14
Sampler: RM/SL
PID: ----

Start Time: 1755 End Time: 1905
Well Construction: 4"
Depth to Water: 37.00
Well Depth: 435.00
Water Column: 398.00
Total Volume Removed (L): 8.75
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J15531
LaMotte	2020e	15044
QED	MP15	~~ECOR~~ Rental
Marschalk Bladder Pump	24"	ID# 9982

Time (hh:mm)	Volume Removed L ~~Liter~~	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1825	3.75	125	37.06	6.99	4.64	211	8.35	235.4	1.92	clear
1830	.625	"	37.08	9.39	4.47	202	6.21	240.4	1.63	Clear
1835	.625	"	37.08	10.21	4.39	198	5.30	241.9	1.56	Clear
1840	"	"	37.08	11.78	4.49	199	3.50	234.7	2.01	Clear
1845	"	"	37.10	12.57	4.41	188	1.01	237.4	1.62	clear
1850	"	"	37.10	12.56	4.35	185	0.95	233.1	1.53	Clear
1855	"	"	37.10	12.54	4.32	184	0.96	234.9	1.46	Clear
1900	"	"	37.10	12.54	4.34	183	0.93	237.4	1.30	Clear
1905	"	"	37.10	12.60	4.35	182	0.92	237.1	1.24	clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1905	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 1 -MW 1 - 20140324	250 mL PL	1	HNO_3	Hg (245.1)
	+MS/MSD	500 mL PL	1	---	TSS (SM2540D)
	+ DUP				

Comments

Signature

3-24-14
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 1 - MW 3

Date: 03/25/14
Sampler: RM/SL
PID: ------

Start Time: 11:40 End Time: 12:30
Well Construction: 4"
Depth to Water: 28.61
Well Depth: 435.0
Water Column: 406.39
Total Volume Removed (L): 8.5
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J15531
LaMotte	2020e	2367
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID# 9982

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
11:50	.50	50	28.48	11.00	5.75	170	8.00	80.3	1.46	Clear
11:55	1.0	200	28.47	12.01	5.25	170	4.50	110.9	0.51	clear
12:00	1.0	200	28.46	12.54	5.04	171	2.62	128.0	0.53	"
12:05	1.0	200	28.40	12.78	4.93	173	0.95	131.9	1.11	"
12:10	1.0	200	28.39	12.68	4.81	174	0.90	133.4	1.56	"
12:15	1.0	200	28.39	12.54	4.87	174	0.79	133.5	1.34	"
12:20	1.0	200	28.39	12.72	4.85	173	0.74	131.6	1.87	"
12:25	1.0	200	28.46	12.74	4.84	173	0.73	131.1	1.71	"
12:30	1.0	200	28.60	12.72	4.83	173	0.72	131.9	1.63	"
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
12:30	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 1 -MW 3 - 20140325	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

RM
Signature

3-25-14
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 2 - MW 1

Date: 03/ 25 /14
Sampler: DM/SL
PID: ------

Start Time: 13:10 End Time: 14:05
Well Construction: 4"
Depth to Water: 38.83
Well Depth: 510.0
Water Column: 471.17
Total Volume Removed (L): 13.75
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J15531
LaMotte	2020e	1367
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID# 9982

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
13.15	1.25	250	38.90	11.49	6.17	168	168	-25.8	5.05	Clear
1320	1.25	250	38.82	11.65	6.47	172	1.24	-94.7	4.33	clear
1325	1.25	250	38.86	11.50	6.56	172	0.78	-126.8	4.83	clear
1330	1.25	250	38.81	11.76	6.70	172	0.51	-121.7	3.68	clear
1335	1.25	250	38.85	11.98	6.77	171	0.40	-108.2	3.93	clear
1340	1.25	250	38.85	11.89	6.54	168	0.35	-92.8	4.25	clear
1345	1.25	250	38.83	11.68	6.64	163	0.32	-83.0	6.12	clear
1350	1.25	250	38.80	11.97	6.02	182	0.30	-17.1	5.37	clear
1355	1.25	250	38.80	12.04	5.96	188	0.31	-16.5	6.95	clear
1400	1.25	250	38.81	12.11	5.93	193	0.32	-15.8	6.96	clear
1405	1.25	250	38.81	12.13	5.91	194	0.31	-14.9	5.73	Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1405	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW2 -MW1 - 20140325	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Signature

3-25-14
Date

P 1/2

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW3 - MW1

Date: 03/25/14
Sampler: RM / SL
PID: ------

Start Time: 1525 End Time: 1810
Well Construction: 4"
Depth to Water: 38.45
Well Depth: 350'
Water Column: 311.55
Total Volume Removed (L): 10.5
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J15531
LaMotte	2020e	R 13607
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID# 9982

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
~~1530~~				~~8.70~~	~~4.00~~	~~-1~~	~~12.03~~	~~168.5~~		~~clear~~ pu
~~1535~~				~~8.60~~	~~4.00~~	~~-1~~	~~12.04~~	~~167.4~~		~~clear~~ pu
~~1540~~										pu
1545	4.0	200	38.48	10.98	3.78	123	7.29	180.2	9.52	clear
1550	1.0	200	38.48	7.94	3.74	123	4.80	186.2		clear
1555	1.0	200	38.49	8.52	4.35	125	1.64	146.8		clear
~~1600~~	~~1.0~~	~~200~~								
~~1605~~	~~1.0~~	~~200~~								
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
18:10	RW3 -MW1 - 20140325	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Turbidity @ 95 @ 1550. Stopped pumping @ 1555. no water. pulled tubing. appeared clogged discharge tubing ok. changed pump. Reset tubing + pump in well @ 1630. began pumping again. much sediment in water line. stopped pumping. pulled pump & ~~tubing~~. Removed →

Signature

Date

P2/2

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 3 - MW 1

Date: 03/25/14
Sampler: DM/SL
PID: ------

Start Time: 17:00 End Time: 18:10
Well Construction: 4"
Depth to Water: 38.45
Well Depth: 350.00'
Water Column: 311.55
Total Volume Removed (L): 10.5
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J1553J
LaMotte	2020e	13607
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID# 9979

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1705									100.7	
1730	4.5	150	38.52	8.78	4.47	128	2.97	149.2	15.3	Orange debris
1735	.75	150	38.52	8.79	4.47	128	2.78	152.6	11.2	clear
1740	.75	150	38.51	8.93	4.40	128	1.78	147.7	11.05	clear
1745	.75	150	38.51	9.01	4.31	128	1.33	146.7	10.11	clear
1750	.75	150	38.50	9.19	4.38	128	1.01	148.2	10.53	clear
1755	.75	150	38.50	9.19	4.39	129	1.29	144.1	10.74	clear
1800	.75	150	38.51	9.18	4.36	128	0.92	144.8	9.88	clear
1805	.75	150	38.50	9.19	4.38	129	0.88	144.1	9.58	clear
1810	.75	150	38.50	9.09	4.32	128	0.88	146.4	9.70	clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
18:10	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 -MW 1 - 20140325	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Signature

3-25-14
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW3 - MW 2

Date: 03/25 /14
Sampler: RM/SL
PID: ------

Start Time: 1440 End Time: 1515
Well Construction: 4"
Depth to Water: 39.73
Well Depth: 495
Water Column: 455.27
Total Volume Removed (L): 7.0
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J15531
LaMotte	2020e	R 1367
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1450	2.0	200	40.04	9.79	4.70	81	3.94	137.0	3.16	Clear
1455	1.0	200	40.07	9.72	4.53	81	2.43	146.7	1.41	Clear
1500	1.0	200	40.09	9.77	4.45	81	1.08	149.5	0.82	"
1505	1.0	200	40.12	9.86	4.46	80	0.80	148.0	0.87	"
1510	1.0	200	40.12	9.99	4.46	79	0.78	146.3	1.06	"
1515	1.0	200	40.12	9.98	4.48	79	0.76	144.9	1.69	"
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
15:15	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 -MW 2-20140325	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Signature

3-25-14
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 3 - MW 3

Date: 03/26 /14
Sampler: RM /SL
PID: ------

Start Time: 09:05 End Time: 1005
Well Construction: 4"
Depth to Water: 39.81'
Well Depth: 340'
Water Column: 300.19
Total Volume Removed (L): 8.25
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J15531
LaMotte	2020e	13607
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0925	3.0	150	~~39.84~~	~~9.91~~	~~-~~					
0930	0.75	150	39.84	9.91	4.87	150	3.01	151.2	12.8	clear
0935	0.75	150	39.84	9.96	4.92	151	2.70	149.3	14.7	clear
0940	0.75	150	39.89	10.31	4.39	152	1.29	146.7	11.3	clear
0945	0.75	150	39.90	10.75	4.91	152	0.99	145.8	8.45	Clear
0955	0.75	150	39.89	10.82	4.90	153	0.93	142.6	8.12	clear
1000	0.75	150	39.89	10.83	4.89	153	0.91	141.0	8.22	clear
1005	0.75	150	39.89	10.90	4.90	153	0.90	139.1	8.29	clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1005	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 -MW3 - 20140326	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	—	TSS (SM2540D)

Comments

pump @ 80'

Signature

3-26-14
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW3 - MW 4

Date: 03/26 /14
Sampler: RM/SL
PID: ------

Start Time: 8:00 End Time: _____
Well Construction: 4"
Depth to Water: 40.85
Well Depth: 495
Water Column: 454.15
Total Volume Removed (L): 10.13
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J1553 1
LaMotte	2020e	13607
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
815	3.375	225	40.91	9.78	3.45	170	9.39	316.4	4.64	clear
820	1.125	225	40.90	12.22	4.24	173	5.00	253.1	3.33	clear
825	1.125	225	40.91	12.57	4.29	169	3.16	239.0	5.93	clear
830	1.125	225	40.93	12.84	4.33	147	1.30	229.5	4.60	clear
835	1.125	225	40.91	12.81	4.27	167	1.02	225.8	6.50	clear
0840	1.125	225	40.92	12.89	4.24	170	1.00	222.3	5.72	clear
845	1.125	225	40.93	13.08	4.25	179	0.99	220.4	9.32	clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
845	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 -MW4 20140326	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

pump @ 85'

Signature

3-26-14
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: TP1

Date: 03 / 25 /14
Sampler: RM/SL
PID: ------

Start Time: 0825 End Time: 0925
Well Construction: 4"
Depth to Water: 35.13
Well Depth: 470.0
Water Column: 434.87
Total Volume Removed (L): 8.25
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	04J15531
LaMotte	2020e	13467
QED	MP15	Rental
Marschalk Bladder Pump	24"	ID# 9980

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0840	2.25	150	35.04	10.03	4.54	203	8.80	227.3	4.05	clear
0845	.75	"	35.04	11.17	4.70	201	7.80	222.1	5.22	clear
0855	.75	"	35.07	11.76	5.43	1.97	6.98	192.0	1.52	clear
0900	"	"	35.08	11.84	5.50	196	6.98	183.3	0.91	clear
0905	"	"	35.18	11.87	5.53	197	6.79	176.2	1.23	clear
0910	"	"	35.18	11.81	5.51	197	6.83	173.7	0.77	clear
0915	"	"	35.19	11.93	5.52	197	6.81	169.0	0.72	clear
0920	"	"	35.19	11.96	5.54	197	6.82	167.1	0.63	clear
0925	"	"	35.18	11.97	5.55	197	6.80	165.6	0.54	clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%	

2" Screen Volume = 0.16 gal/ft
4" Screen Volume = 0.64 gal/ft
6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
0925	NWIRP-GM-38-GW-TP1-20140325	40 mL CG	3	HCl	TCL VOCs (624)
		250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Signature

3-25-14
Date

H&S

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38 **Date:** 03/24/14 **Weather:** 35°F sunny

Calibrated By: S.Lee **Instrument:** YSI 556 **Serial Number:** 04J 15531

Parameters	Morning Calibration Time: 1500	Cal. Temperature °C	Afternoon Cal. Check Time: 1930	Comments
Conductivity 1413 (µS/cm°)	1473 /1413	7.42	1465	Standard 1413 exp 2/2014
pH (7)	7.04 /7.02	8.37	6.98	exp 11/2015
pH (4)	3.96 / 4.01	9.38	4.00	exp 11/2015
pH (10)	9.94 /9.95	10.18	10.07	exp 12/2015
ORP 240 (mv)	265.6 / 240.0	9.56	229.2	Standard 240mV exp 2/2018
Dissolved Oxygen (%)	97.9 / 101.1	—	105.2	
Zero Dissolved Oxygen (mg/L)	—	—	—	
Barometric Pressure (mmHg)	761.2	—	761.1	

pH Check (Every 3 hrs): (NJ only)

Time:	Time:	Time:
Standard: NA	Standard: NA	Standard: NA
Reading:	Reading:	Reading:

Signature: Slaughter Date: 3/24/14

H&S

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38 **Date:** 03/25/14 **Weather:** 35 °F Sunny

Calibrated By: S. Lee **Instrument:** YSI 556 **Serial Number:** 10H 100 928

Parameters	Morning Calibration Time: 0730	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
Conductivity 1413 (µS/cm°)	1498 / 1413	7.89		standard exp 2/2014 1413 µS/cm°
pH (7)	6.94 / 7.00	8.49		exp. 11/2015
pH (4)	4.31 / 4.02	9.41		exp. 11/2015
pH (10)	10.54 / 10.08	9.95		exp. 12/2015
ORP 240 (mv)	225.0 / 240.0	10.26		Standard 240mV Exp 2/2018
Dissolved Oxygen (%)	106.0 / 101.7	—		
Zero Dissolved Oxygen (mg/L)	—	—		
Barometric Pressure (mmHg)	772.6	—		

pH Check (Every 3 hrs): (NJ only)

Time:	Time:	Time:
Standard: NA	Standard: NA	Standard: NA
Reading:	Reading:	Reading:

Signature: _____ Date: _____

H&S

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38 **Date:** 03/26 /14 **Weather:** 19 °F overcast

Calibrated By: S. Lee **Instrument:** YSI 556 **Serial Number:** 04J19531

Parameters	Morning Calibration Time: 0730	Cal. Temperature °C	Afternoon Cal. Check Time: 1030	Comments
Conductivity 1413 (µS/cm°)	1288 / 1413	20.31	1509	standard 1413 µS/cm exp 2/2014
pH (7)	6.86 / 7.00	20.10	6.80	exp 11/2015
pH (4)	3.92 / 3.98	19.45	3.95	exp 11/2015
pH (10)	10.33 / 10.00	20.55	9.45	exp 12/2015
ORP 240 (mv)	227.1 / 240.0	19.49	249.0	Standard 240mV exp 2/2016
Dissolved Oxygen (%)	84.2 / 99.4	—	88.3 %	
Zero Dissolved Oxygen (mg/L)	—	—		
Barometric Pressure (mmHg)	751.0	—	753.7	

pH Check (Every 3 hrs): (NJ only)

Time:	Time:	Time:
Standard: NA	Standard: NA	Standard: NA
Reading:	Reading:	Reading:

Signature: Jill Leyher Date: 3/26/14

H&S

Instrument Calibration Log

Project/Site Name: NWIRP Bethpage GM-38

Calibrated By: S.Lee

Instrument/Serial Number	Pre-Cal 1-AM (NTU)	Pre-Cal 1-PM (NTU)	Pre-Cal 10-AM (NTU)	Pre-Cal 10-PM (NTU)	Post-Cal 1-AM (NTU)	Post-Cal 1-PM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-PM (NTU)	Date
LaMotte 2020e SN-ME 15044	1.73	0.32	10.04	6.46	0.99	1.17	10.15	10.08	Time: 3/24 & 1500
Lamotte 2020 we SN 1367-3811	0.88	1.04	11.51	9.48	0.95	0.99	9.98	9.99	Time: 3/24 & 1506
Lamotte 2020e SN-ME 15044	0.32	0.78	6.46	10.17	1.17	1.09	10.08	10.31	Time: 3/25 & 0715
Lamotte 2020we SN 1367-3811	1.04	1.00	9.48	10.00	0.99	1.00	9.99	10.00	Time: 3/25 & 0715
Lamotte 2020we SN 1367-3811	1.00		10.00		1.00	10.00			Time: 3/26 & 0715
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &

Signature: Stacey Lee

Date: 3/26/14

Analytical Laboratory Services, Inc.
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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 2
Courier: FedEx
Tracking #: 870446449760
1078397

Co. Name: H&S Environmental, Inc.
Contact (Report to): Jen Good Phone: 508.366.7442
Address: 160 E. Main St., Suite 2F, Westborough, MA 01581

Bill to (if different than Report to): Same PO#: 2031-307
Project Name/#: NWIRP Bethpage GM-38 Qtrly LTM ALSI Quote #:
TAT: [x] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALSI approval and surcharges. Date Required: Approved By:
Email? [x] -Y jgood@hsenv.com
Fax? [ ] -Y No.:

| | | |

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Page 2 of 2
Courier: FedEx
Tracking #: 870441644978 0
1078397

Co. Name: H&S Environmental, Inc.
Contact (Report to): Jen Good Phone: 508.366.7442
Address: 160 E. Main St., Suite 2F
Westborough, MA 01581

Bill to (if different than Report to): Same
PO#: 2031-307
Project Name/#: NWIRP Bethpage GM-38 Qtrly LTM
ALSI Quote #:
TAT: [x] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALSI approval and surcharges.
Date Required:
Approved By:
Email? [x] Y jgood@hsenv.com
Fax? [ ] Y No.:

APPENDIX D

DATA VALIDATION REPORTS

VOLATILE ORGANIC COMPOUNDS
USEPA Region II –Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM

Location: 100 Broadway, Bethpage, NY

Project Number: 2031-308

SDG #: G1078397-HNW-074

Client: H&S Environmental, Inc.

Date: 6/11/2014

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for nine (9) water samples, one (1) trip blank and one (1) field blank analyzed for Volatiles by EPA Method 624.

2. The samples were collected on 3/24 thru 27/2014. The samples were submitted to ALS Environmental, Middletown, PA on 3/27/2014 for analysis.

3. The USEPA Region II SOP HW-24, Revision No.: 2, August 2008, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B; USEPA National Functional Guidelines for Organic Data Review, EPA 540/R-99/008, October 1999; EPA Method 624 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Volatiles data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
NWIRP-GM-38-GW-RW1-MW1-20140324	1078397001	3/24/2014	Water	
NWIRP-GM-38-GW-RW1-MW3-20140325	1078397002	3/25/2014	Water	
NWIRP-GM-38-GW-RW2-MW1-20140325	1078397003	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW1-20140325	1078397004	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW2-20140325	1078397005	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW3-20140326	1078397006	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW4-20140326	1078397007	3/26/2014	Water	
NWIRP-GM-38-GW-TP1-20140325	1078397008	3/25/2014	Water	
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	3/24/2014	Water	Field Duplicate of sample NWIRP-GM-38-GW-RW1-MW1-20140324
NWIRP-GM-38-FB-20140325	1078397010	3/25/2014	Water	Field Blank
NWIRP-GM-38-TB-20140324	1078397011	3/27/2014	Water	Trip Blank

Sample Conditions/Problems:

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

Holding Times:

1. All water samples were analyzed within 14days from sample collection. No qualifications were required.

2. All water samples were properly preserved (pH<2.0). No qualifications were required.

GC/MS Tuning:

1. All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration:

1. Initial calibration curve analyzed on 3/28/2014 (ms03.i) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

Compound	%D
Methylene chloride	39.6
Chloroform	40.9
Bromodichloromethane	17.4
Chlorodibromomethane	26.8
Bromoform	29.3

Client Sample ID	Laboratory Sample ID	Compound	Action
NWIRP-GM-38-GW-RW1-MW1-20140324	1078397001	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ UJ UJ UJ UJ
NWIRP-GM-38-GW-RW1-MW3-20140325	1078397002	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ J UJ UJ UJ
NWIRP-GM-38-GW-RW2-MW1-20140325	1078397003	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ J UJ UJ UJ
NWIRP-GM-38-GW-RW3-MW1-20140325	1078397004	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ UJ UJ UJ UJ
NWIRP-GM-38-GW-RW3-MW2-20140325	1078397005	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ UJ UJ UJ UJ
NWIRP-GM-38-GW-RW3-MW3-	1078397006	Methylene chloride Chloroform	UJ UJ

Client Sample ID	Laboratory Sample ID	Compound	Action
20140326		Bromodichloromethane Chlorodibromomethane Bromoform	UJ UJ UJ
NWIRP-GM-38-GW-RW3-MW4-20140326	1078397007	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ J UJ UJ UJ
NWIRP-GM-38-GW-TP1-20140325	1078397008	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ J UJ UJ UJ
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ J UJ UJ UJ
NWIRP-GM-38-FB-20140325	1078397010	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ UJ UJ UJ UJ
NWIRP-GM-38-TB-20140324	1078397011	Methylene chloride Chloroform Bromodichloromethane Chlorodibromomethane Bromoform	UJ UJ UJ UJ UJ

Continuing Calibration Verification (CCV):

1. CCV analyzed on 3/28/2014 @ 18:05 (ms03.i) exhibited acceptable %Ds (≤15.0%) for all compounds with the following exception(s):

Compound	%D
Methylene chloride	16.7

Client Sample ID	Laboratory Sample ID	Compound	Action
NWIRP-GM-38-GW-RW1-MW1-20140324	1078397001	Methylene chloride	UJ
NWIRP-GM-38-GW-RW1-MW3-20140325	1078397002	Methylene chloride	UJ

Client Sample ID	Laboratory Sample ID	Compound	Action
NWIRP-GM-38-GW-RW2-MW1-20140325	1078397003	Methylene chloride	UJ(1)
NWIRP-GM-38-GW-RW3-MW1-20140325	1078397004	Methylene chloride	UJ(1)
NWIRP-GM-38-GW-RW3-MW2-20140325	1078397005	Methylene chloride	UJ(10
NWIRP-GM-38-GW-RW3-MW3-20140326	1078397006	Methylene chloride	UJ(1)
NWIRP-GM-38-GW-RW3-MW4-20140326	1078397007	Methylene chloride	UJ(1)
NWIRP-GM-38-GW-TP1-20140325	1078397008	Methylene chloride	UJ(1)
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	Methylene chloride	UJ(1)
NWIRP-GM-38-FB-20140325	1078397010	Methylene chloride	UJ(1)
NWIRP-GM-38-TB-20140324	1078397011	Methylene chloride	UJ(1)

(1) Result was previously qualified due to ICV criteria.

Surrogates:

1. All surrogates %REC values for all water samples and associated QC were within the laboratory control limits. No qualifications were required.

Internal Standard (IS) Area Performance:

1. All samples exhibited acceptable area count for all three internal standards. No qualifications were required.

Method Blank (MB), Storage Blank (SB), Trip Blank (TB), Field Blank (FB), Rinsate Blank (RB) and Equipment Blank (EB):

1. Method Blank (1268581) analyzed on 3/28/2014 was free of contamination with the exception of the following:

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/l)	Sample(s) Affected	Action
1268581	Bromomethane	0.28	1.4	NWIRP-GM-38-GW-RW2-MW1-20140325 NWIRP-GM-38-GW-RW3-MW1-20140325 NWIRP-GM-38-GW-RW3-MW4-20140326 NWIRP-GM-38-GW-RW1-MW1-20140324 NWIRP-GM-38-GW-RW1-MW3-20140325 NWIRP-GM-38-GW-RW3-MW2-20140325	None U U None None U

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/l)	Sample(s) Affected	Action
				NWIRP-GM-38-GW-RW3-MW3-20140326 NWIRP-GM-38-GW-TP1-20140325 NWIRP-GM-38-GW-RW1-MW1-DUP NWIRP-GM-38-FB-20140325 NWIRP-GM-38-TB-20140324	None None None None None

*= If sample concentration less than the Action Level (AL), then sample result qualified as non-detect (U). If sample concentration greater than the Action Level (AL) or sample result was not detected, no qualifications/action required.

3. Field Blank (NWIRP-GM-38-FB-20140325) (1078397010) analyzed on 3/28/2014 was free of contamination with the exception of the following:

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/l)	Sample(s) Affected	Action
1048933011	Toluene	0.27	1.35	NWIRP-GM-38-GW-RW1-MW1-20140324 NWIRP-GM-38-GW-RW1-MW3-20140325 NWIRP-GM-38-GW-RW2-MW1-20140325 NWIRP-GM-38-GW-RW3-MW1-20140325 NWIRP-GM-38-GW-RW3-MW2-20140325 NWIRP-GM-38-GW-RW3-MW3-20140325 NWIRP-GM-38-GW-RW3-MW4-20140326 NWIRP-GM-38-GW-TP1-20140325 NWIRP-GM-38-GW-RW1-MW1-DUP	None None U None None None None None None

*= If sample concentration less than the Action Level (AL), then sample result qualified as non-detect (U). If sample concentration greater than the Action Level (AL) or sample result was not detected, no qualifications/action required.

3. Trip Blank (NWIRP-GM-38-TB-20140324) (1078397011) analyzed on 3/28/2014 was free of contamination. No qualifications were required.

<u>Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)</u>:

1. Laboratory Control Sample (1268582) was analyzed on 03/28/2014. All %RECs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample NWIRP-GM-38-GW-RW1-MW1-DUP (1078397009) was collected as field duplicate for sample NWIRP-GM-38-GW-RW1-MW1-20140324 (1078397001). All RPDs were ≤50.0%. Chloroform was detected in the field duplicate sample but was not detected in the field sample.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
NWIRP-GM-38-GW-RW1-MW1-20140324	Tetrachloroethene	EPA 624	0.33	µg/l	NWIRP-GM-38-GW-RW1-MW1-DUP	0.37	µg/l	11.4	None
NWIRP-GM-38-GW-RW1-MW1-20140324	Cis-1,2-Dichloroethene	EPA 624	92.6	µg/l	NWIRP-GM-38-GW-RW1-MW1-DUP	94.2	µg/l	1.7	None
NWIRP-GM-38-GW-RW1-MW1-20140324	Trans-1,2-Dichloroethene	EPA 624	1.4	µg/l	NWIRP-GM-38-GW-RW1-MW1-DUP	1.4	µg/l	0.0	None
NWIRP-GM-38-GW-RW1-MW1-20140324	Chloroform	EPA 624		µg/l	NWIRP-GM-38-GW-RW1-MW1-DUP	0.55	µg/l	NC	UJ/J
NWIRP-GM-38-GW-RW1-MW1-20140324	1,1-Dichloroethane	EPA 624	5.3	µg/l	NWIRP-GM-38-GW-RW1-MW1-DUP	5.3	µg/l	0.0	None
NWIRP-GM-38-GW-RW1-MW1-20140324	1,1-Dichloroethene	EPA 624	2.8	µg/l	NWIRP-GM-38-GW-RW1-MW1-DUP	2.7	µg/l	3.6	None
NWIRP-GM-38-GW-RW1-MW1-20140324	Trichloroethene	EPA 624	101	µg/l	NWIRP-GM-38-GW-RW1-MW1-DUP	103	µg/l	2.0	None

Matrix Spike (MS)/ Matrix Spike Duplicate (MSD):

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample NWIRP-GM-38-GW-RW1-MW1-20140324 (1078397001). All %RECs and RPDs were within the laboratory control limits with the following exception(s):

Compound	%REC/%REC/RPD	Action
Cis-1,2-Dichloroethene	139/A/A	J
2-Chloroethylvinyl ether	0/0/NA	R

NA= Not Applicable; A=Acceptable

Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs):

1. All results were within the linear calibration range. No qualifications were required.

Target Compound Identification:

1. All Relative Retention Times (RRTs) of the reported compounds were within ± 0.06 RRT units of the standard (opening CCV).

2. Sample compound spectra were compared against the laboratory standard spectra.

3. No QC deviations were observed.

Comments:

1. Validation qualifiers (if required) were entered into the EDD for SDG: G1078397-HNW-074.

MERCURY
USEPA Region II – Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM

Location: 100 Broadway, Bethpage, NY

Project Number: 2031-308

SDG #: G1078397-HNW-074

Client: H&S Environmental, Inc.

Date: 6/11/2014

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for nine (9) water samples and one (1) field blank analyzed for Mercury by EPA Method 245.1.

2. The samples were collected on 3/24 thru 27/2014. The samples were submitted to ALS Environmental, Middletown, PA on 3/27/2014 for analysis.

3. The USEPA Region II SOP No. HW-2, Revision 13, September 2006, Validation of Metals for Contract Laboratory Program (CLP), SOW-ILM05.3 (SOP Revision 13); USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004, October 2004 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Mercury data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
NWIRP-GM-38-GW-RW1-MW1-20140324	1078397001	3/24/2014	Water	
NWIRP-GM-38-GW-RW1-MW3-20140325	1078397002	3/25/2014	Water	
NWIRP-GM-38-GW-RW2-MW1-20140325	1078397003	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW1-20140325	1078397004	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW2-20140325	1078397005	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW3-20140326	1078397006	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW4-20140326	1078397007	3/26/2014	Water	
NWIRP-GM-38-GW-TP1-20140325	1078397008	3/25/2014	Water	
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	3/24/2014	Water	Field Duplicate of sample NWIRP-GM-38-GW-RW1-MW1-20140324
NWIRP-GM-38-FB-20140325	1078397010	3/25/2014	Water	Field Blank

Sample Conditions/Problems:

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

Holding Times:

1. All water samples were digested and analyzed within the 28 days holding times for Mercury. No qualifications were required.

Initial and Continuing Calibration Verification (ICV and CCV):

1 The correlation coefficient for Mercury calibration curve analyzed was ≥0.995. No qualifications were required.

2. All ICVs and CCVs %REC values were within the QC limits (80-120%). No qualifications were required.

Blanks (Method Blank, ICB and CCB):

1. All ICBs and CCBs were free of contamination. No qualifications were required.

2. Method Blank (1272451) digested on 4/07/2014 was free of contamination. No qualifications were required.

Field Blank (FB) and Equipment Blank (EB):

1. Field Blank (NWIRP-GM-38-FB-20140325) (1078397010) analyzed on 4/07/2014 was free of contamination. No qualifications were required.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):

1. Mercury %REC in Laboratory Control Sample (1272452) analyzed on 4/07/2014 was within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample NWIRP-GM-38-GW-RW1-MW1-DUP (1078397009) was collected as field duplicate for sample NWIRP-GM-38-GW-RW1-MW1-20140324 (1078397001). Both samples were reported as non-detects. No qualifications were required.

Matrix Spike (MS)/ Matrix Spike Duplicate (MSD):

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample NWIRP-GM-38-GW-RW1-MW1-20140324 (1078397001). All %RECs and RPD were within the laboratory control limits. No qualifications were required.

Compound Quantitation and Reported Detection Limits:

1. All sample results were reported within the linear calibration range.

Comments:

1. Validation qualifiers (if required) were entered into the EDD for SDG: G1078397-HNW-074.

GENERAL CHEMISTRY
USEPA Region II – Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM

Location: 100 Broadway, Bethpage, NY

Project Number: 2031-308

SDG #: G1078397-HNW-074

Client: H&S Environmental, Inc.

Date: 6/11/2014

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for nine (9) water samples analyzed for Solids, Total Suspended (TSS) by SM20th 2540D.

2. The samples were collected on 3/24 thru 27/2014. The samples were submitted to ALS Environmental, Middletown, PA on 3/27/2014 for analysis.

3. The USEPA Region II SOP No. HW-2, Revision 13, September 2006, Validation of Metals for Contract Laboratory Program (CLP), SOW-ILM05.3 (SOP Revision 13); USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004, October 2004 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Solids, Total Suspended data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
NWIRP-GM-38-GW-RW1-MW1-20140324	1078397001	3/24/2014	Water	
NWIRP-GM-38-GW-RW1-MW3-20140325	1078397002	3/25/2014	Water	
NWIRP-GM-38-GW-RW2-MW1-20140325	1078397003	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW1-20140325	1078397004	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW2-20140325	1078397005	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW3-20140326	1078397006	3/25/2014	Water	
NWIRP-GM-38-GW-RW3-MW4-20140326	1078397007	3/26/2014	Water	
NWIRP-GM-38-GW-TP1-20140325	1078397008	3/25/2014	Water	
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	3/24/2014	Water	Field Duplicate of sample NWIRP-GM-38-GW-RW1-MW1-20140324
NWIRP-GM-38-FB-20140325	1078397010	3/25/2014	Water	Field Blank

Sample Conditions/Problems:

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

Holding Times:

1. All water samples were analyzed within the 7 days holding times for Solids, Total Suspended. No qualifications were required.

Method Blank (MB), Storage Blank (SB), Field Blank (FB), Rinsate Blank (RB) and Equipment Blank (EB):

1. Method Blank (1268896) analyzed on 3/29/2014 was free of contamination. No qualifications were required.

2. Method Blank (1268901) analyzed on 3/29/2014 was free of contamination. No qualifications were required.

Field Duplicate:

1. Sample NWIRP-GM-38-GW-RW1-MW1-DUP (1078397009) was collected as field duplicate for sample NWIRP-GM-38-GW-RW1-MW1-20140324 (1078397001). Both samples were reported as non-detects. No qualifications were required.

Laboratory Duplicate:

1. Laboratory Duplicate was performed on sample NWIRP-GM-38-GW-RW3-MW4-20140326 (1078397007). RPD was inside the laboratory control limit (<20%). No qualifications were required.

Compound Quantitation and Reported Detection Limits:

1. All sample results were reported within the linear calibration range.

Comments:

1. Validation qualifiers (if required) were entered into the EDD for SDG: G1078397-HNW-074.

NWIRP BETHPAGE GM-38
MARCH 2014 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: 1078397, HNW-074

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	R	0.28	2
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Tetrachloroethene	0.33	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	cis-1,2-Dichloroethene	92.6	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	trans-1,2-Dichloroethene	1.4	ug/L		0.12	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Chloroform	1	ug/L	UJ	0.15	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,1-Dichloroethane	5.3	ug/L		0.19	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,1-Dichloroethene	2.8	ug/L		0.17	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1

NWIRP BETHPAGE GM-38
MARCH 2014 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: 1078397, HNW-074

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	Trichloroethene	101	ug/L		0.21	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	624	24-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	245.1	24-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW1-MW1-2014032	1078397001	2540D	24-Mar-14	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	cis-1,2-Dichloroethene	0.57	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Chloroform	0.74	ug/L	J	0.15	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,1,1-Trichloroethane	1.7	ug/L		0.27	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1

NWIRP BETHPAGE GM-38
MARCH 2014 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: 1078397, HNW-074

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,1-Dichloroethane	8.6	ug/L		0.19	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,1-Dichloroethene	2.1	ug/L		0.17	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,1,2-Trichloroethane	0.46	ug/L	J	0.3	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	Trichloroethene	2.5	ug/L		0.21	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	624	25-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	245.1	25-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW1-MW3-2014032	1078397002	2540D	25-Mar-14	1	Total Suspended Solids	5	mg/L		5	5
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,2-Dichloroethane	1.3	ug/L		0.22	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Toluene	0.2	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	cis-1,2-Dichloroethene	8	ug/L		0.26	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Chloroform	2.8	ug/L	J	0.15	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Benzene	0.21	ug/L	J	0.16	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Bromomethane	1.8	ug/L	J	0.27	2
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Chloromethane	0.68	ug/L	J	0.25	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,1-Dichloroethane	5.1	ug/L		0.19	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,1-Dichloroethene	1.8	ug/L		0.17	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	Trichloroethene	23.4	ug/L		0.21	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	624	25-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	245.1	25-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW2-MW1-2014032	1078397003	2540D	25-Mar-14	1	Total Suspended Solids	12	mg/L		5	5
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Tetrachloroethene	1.5	ug/L		0.26	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	cis-1,2-Dichloroethene	0.38	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Chloroform	1	ug/L	UJ	0.15	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,1,1-Trichloroethane	0.66	ug/L	J	0.27	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Bromomethane	0.29	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,1-Dichloroethane	1.1	ug/L		0.19	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,1-Dichloroethene	0.74	ug/L	J	0.17	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	Trichloroethene	60	ug/L		0.21	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	624	25-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	245.1	25-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW1-2014032	1078397004	2540D	25-Mar-14	1	Total Suspended Solids	14	mg/L		5	5
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Tetrachloroethene	0.29	ug/L	J	0.26	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	cis-1,2-Dichloroethene	1.7	ug/L		0.26	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Chloroform	1	ug/L	UJ	0.15	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,1,1-Trichloroethane	0.43	ug/L	J	0.27	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Bromomethane	0.36	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,1-Dichloroethane	0.62	ug/L	J	0.19	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,1-Dichloroethene	0.44	ug/L	J	0.17	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	Trichloroethene	164	ug/L		0.21	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	624	25-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	245.1	25-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW2-2014032	1078397005	2540D	25-Mar-14	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Ethylbenzene	5	ug/L	U	0.8	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	cis-1,3-Dichloropropene	5	ug/L	U	0.6	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	trans-1,3-Dichloropropene	5	ug/L	U	0.7	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,4-Dichlorobenzene	5	ug/L	U	0.75	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Acrolein	150	ug/L	U	12	150
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,2-Dichloroethane	5	ug/L	U	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Acrylonitrile	25	ug/L	U	4.5	25

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Toluene	5	ug/L	U	0.6	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Chlorobenzene	5	ug/L	U	0.55	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	2-Chloroethylvinyl ether	10	ug/L	U	1.4	10
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Chlorodibromomethane	5	ug/L	UJ	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Tetrachloroethene	5	ug/L	U	1.3	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	cis-1,2-Dichloroethene	5	ug/L	U	1.3	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	trans-1,2-Dichloroethene	5	ug/L	U	0.6	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,3-Dichlorobenzene	5	ug/L	U	0.7	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,3-Dichloropropene, Total	5	ug/L	U	0.95	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Carbon Tetrachloride	5	ug/L	U	1.2	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Chloroform	5	ug/L	UJ	0.75	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Benzene	5	ug/L	U	0.8	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,1,1-Trichloroethane	5	ug/L	U	1.4	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Bromomethane	10	ug/L	U	1.4	10
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Chloromethane	5	ug/L	U	1.3	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Chloroethane	5	ug/L	U	1.2	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Vinyl Chloride	10	ug/L	U	1.2	10
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Methylene Chloride	5	ug/L	UJ	1.6	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Bromoform	10	ug/L	UJ	1.1	10
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Bromodichloromethane	5	ug/L	UJ	0.65	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,1-Dichloroethane	4.9	ug/L	J	0.95	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,1-Dichloroethene	2.4	ug/L	J	0.85	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Trichlorofluoromethane	5	ug/L	U	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,2-Dichloropropane	5	ug/L	U	1.2	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,1,2-Trichloroethane	5	ug/L	U	1.5	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	Trichloroethene	350	ug/L		1.1	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,1,2,2-Tetrachloroethane	5	ug/L	U	1.1	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	624	25-Mar-14	5	1,2-Dichlorobenzene	5	ug/L	U	1	5
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	245.1	25-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW3-2014032	1078397006	2540D	25-Mar-14	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,2-Dichloroethane	0.37	ug/L	J	0.22	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Chloroform	1.2	ug/L	J	0.15	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,1,1-Trichloroethane	0.48	ug/L	J	0.27	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Bromomethane	0.28	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,1-Dichloroethane	5.5	ug/L		0.19	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,1-Dichloroethene	0.95	ug/L	J	0.17	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	Trichloroethene	3.3	ug/L		0.21	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	624	26-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	245.1	26-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW3-MW4-2014032	1078397007	2540D	26-Mar-14	1	Total Suspended Solids	9	mg/L		5	5
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	cis-1,2-Dichloroethene	5.3	ug/L		0.26	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Chloroform	6.8	ug/L	J	0.15	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,1-Dichloroethane	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,1-Dichloroethene	0.22	ug/L	J	0.17	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	Trichloroethene	21.7	ug/L		0.21	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	624	25-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-TP1-20140325	1078397008	245.1	25-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-TP1-20140325	1078397008	2540D	25-Mar-14	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Tetrachloroethene	0.37	ug/L	J	0.26	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	cis-1,2-Dichloroethene	94.2	ug/L		0.26	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	trans-1,2-Dichloroethene	1.4	ug/L		0.12	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Chloroform	0.55	ug/L	J	0.15	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,1-Dichloroethane	5.3	ug/L		0.19	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,1-Dichloroethene	2.7	ug/L		0.17	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	Trichloroethene	103	ug/L		0.21	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	624	24-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	245.1	24-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-GW-RW1-MW1-DUP	1078397009	2540D	24-Mar-14	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Toluene	0.27	ug/L	J	0.12	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Chloroform	1	ug/L	UJ	0.15	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Benzene	1	ug/L	U	0.16	1

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DATA SUMMARY TABLE
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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,1-Dichloroethane	1	ug/L	U	0.19	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,1-Dichloroethene	1	ug/L	U	0.17	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	Trichloroethene	1	ug/L	U	0.21	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-FB-20140325	1078397010	624	25-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-FB-20140325	1078397010	245.1	25-Mar-14	1	Mercury, Total	0.0005	mg/L	U	0.0002	0.0005
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	trans-1,3-Dichloropropene	1	ug/L	U	0.14	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Acrolein	30	ug/L	U	2.4	30
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,2-Dichloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	2-Chloroethylvinyl ether	2	ug/L	U	0.28	2
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Chlorodibromomethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1

NWIRP BETHPAGE GM-38
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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Chloroform	1	ug/L	UJ	0.15	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Bromomethane	2	ug/L	U	0.27	2
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Chloromethane	1	ug/L	U	0.25	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Chloroethane	1	ug/L	U	0.24	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Vinyl Chloride	2	ug/L	U	0.24	2
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Bromoform	2	ug/L	UJ	0.21	2
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Bromodichloromethane	1	ug/L	UJ	0.13	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,1-Dichloroethane	1	ug/L	U	0.19	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,1-Dichloroethene	1	ug/L	U	0.17	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	Trichloroethene	1	ug/L	U	0.21	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-TB-20140324	1078397011	624	27-Mar-14	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1