2013 Annual Operations Report

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

May 2014

Prepared for:

Naval Facilities Engineering Command Mid-Atlantic
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5/29/14

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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
NYSDOH	New York State Department of Health
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation and Maintenance
ORP	oxidation reduction potential
OU	operable unit

PCE	tetrachloroethene
PID	Proportional, Integral and Derivative
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.
UPS	uninterruptible power supply
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VFD	variable frequency drive
VGAC	vapor–phase granular activated carbon
VOC	volatile organic compound

1.0 INTRODUCTION

H&S Environmental, Inc. (H&S) has prepared this 2013 Annual 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 N40085-10-D-9409, Task Order No. 0002. This 2013 Annual Operations Report summarizes activities that occurred during 2013 and also further details activities that occurred during the Fourth Quarter 2013 (October 2013 through December 2013). 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.

The following quarterly reports, along with data collected during the Fourth Quarter (October through December), are used as a basis for this 2013 Annual Operations Report:

- *Final Quarterly Operations Report, First Quarter 2013, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by H&S in July 2013.
- *Final Quarterly Operations Report, Second Quarter 2013, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by H&S in December 2013.
- *Final Quarterly Operations Report, Third Quarter 2013, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by H&S in February 2014.

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). Historically, the Navy's property totaled approximately 109.5 acres and was a Government Owned Contractor-Operated (GOCO) facility that was operated by the Northrop Grumman (NG) until September 1998. NWIRP Bethpage is 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 NGC 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 contamination in the GM-38 Area groundwater. 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 subsequently 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 routine maintenance tasks were also performed at the GWTP in 2013:

- On 8 January, 8 May, 31 July, and 8 October, the system was shut down in order to backwash the three LGAC units.
- On 21 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.
- On 24 April, the GWTP intake air filters were replaced.
- On 5 June and 20 December, the bag filter housing unit was cleaned and the bag filters changed out.
- On 17-18 December, a carbon changeout was performed on VGAC-1 and VGAC-2.
- On 19 December, a carbon changeout was performed on LGAC-1, LGAC-2, and LGAC-3.

2.2 Non-routine Maintenance Activities

The following non-routine activities were performed at the GWTP in 2013:

- On 15 January, the system was shut down manually at ~1500 because air stripper feed pump 3A was not shutting off properly. An instrumentation contractor evaluated the issue on 16 January and found defective input / output analog cards. Replacement input / output analog cards were procured and installed and the system resumed operation at ~1800.
- On 3 February, the system went down due to a tripped motor control breaker. The plant was restarted upon arrival of the operator.
- On 19 February and 3 March, a high air stripper tower alarm was received. On each occasion, the operator responded to the alarm and the system resumed normal operation.
- On 5 March, the instrumentation contractor was on site to evaluate system flowrates. Proportional, Integral and Derivative (PID) parameters of the air stripper basin level control loop

output, which varies the speed of the effluent pump, were manipulated and equalization tank transfer pump PID parameters were adjusted to maintain a consistent flow through the plant.

- On 28 March and 9 April, Verizon was on site to repair two downed phone lines.

- On 29 March, the system was manually shut down for implementation of a pumping test for the GM-38 Area. Recovery wells RW-1 and RW-3 were operated at various flow rates during the pumping test. The pumping test was completed and the system resumed normal operation on 15 April. Results of the pumping test are provided under separate cover by others.

- On 25 May, 8 June, and 10 June, and 7 October, the system went down due to a high rain gauge alarm. On each occasion, the system was restarted once heavy rainfall subsided.

- On 7 July, 8 July, 26 July, 17 August, 4 September, and 5 September, the system went down due to power interruptions caused by storms and/or loss of power in the area. On each occasion, the system was restarted upon arrival by the operator and/or restoration of power.

- On 12 September, a severe storm caused the system to shut down due to malfunction of the variable frequency drives (VFDs) for recovery wells RW-1 and RW-3. The VFD for RW-1 was replaced on 18 September and the recovery well resumed normal operation. The VFD for RW-3 was replaced on 27 September and the recovery well resumed normal operation.

- On 5 October, multiple alarms were received, and upon arrival, the autodialer was found to no longer be operable. The uninterruptible power supply (UPS) battery back-up was replaced and the autodialer resumed normal operation.

- On 27 October, the system was shut down for scheduled maintenance of the vapor ductwork. Maintenance consisted of replacement of existing duct work with stainless steel duct, installation of vibration dampeners, and installation of additional supports. The system was restarted on 20 December upon completion of ductwork replacement as well as VGAC and LGAC changeouts, noted above.

- On 8-9 November, a section of the air stripper above the roof was welded and four gusset plates were installed.

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**.

3.1.1 Fourth Quarter 2013 Summary

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 Fourth Quarter are presented in **Table 1**. As noted, samples were not collected during November 2013, as the system was off-line for scheduled maintenance. The data demonstrates that all permitted constituents were in compliance with regulatory requirements during the Fourth 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 Fourth Quarter.

Monthly DMRs for the Fourth Quarter (October - December 2013) are included in **Appendix A**. DMRs for January – September 2013 are included in previously submitted quarterly operations reports as indicated in Section 1.0.

3.1.2 2013 Annual Summary

Flow Totals

Annual flow volumes and system operation for 2013 are summarized in **Table 2**. As discussed above, the system was off-line for approximately two months for maintenance activities. The total volume of groundwater treated in 2013 based on effluent flow totals was 393,669,613 gallons. The GWTP operated with an average uptime of 78.5% at an average effluent flowrate of 957 gpm.

Mass Removal

Mass removal was calculated based on monthly influent concentrations combined with monthly influent flow totals. During 2013, approximately 941 lbs of VOCs were removed by the GWTP, for an average monthly mass removal rate of approximately 78 lbs per month. Mass removal calculations are presented in **Table 3**.

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**.

3.2.1 Fourth Quarter 2013 Summary

While 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 Fourth Quarter are presented in **Table 4**. Air emissions calculations using the stack vapor concentrations along with discharge flowrates are presented in **Table 5**. The calculations demonstrate that all constituents were within the regulatory requirements during the quarter based on the emission rates in pounds per hour (lb/hr).

3.2.2 2013 Annual Summary

Table 6 summarizes annual air emissions based on monthly emissions during the 12-month period. During 2013, total annual air emissions of permitted constituents consisted of 9.0 lbs. of TCE, 0.08 lbs. of vinyl chloride, and 4.7 lbs of 1,2-DCE, and 0.65 lbs of PCE, well below the discharge goals approved by NYSDEC in October 2013.

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 7**), 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-1). 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 Fourth 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 Fourth Quarter from 16-17 December 2013. 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 8**. 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 are analyzed for VOCs via USEPA Method 624, mercury via USEPA Method SW846 245.1, and total suspended solids (TSS) via USEPA Method SM20 2540D. Validated analytical results of samples collected during the December 2013 monitoring event are summarized in **Table 9.** Data validation reports and a validated analytical data summary 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 each quarterly groundwater monitoring event in accordance with the *Final Sampling and Analysis Plan* (TtEC 2010a). These samples consisted of blind field duplicates (collected from RW2-MW1 during the Fourth 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 Fourth 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 Fourth Quarter 2013 are presented in **Table 10**. Groundwater analytical results of select VOCs (cis-1,2-DCE, PCE, TCE, and VC) for each of the 2013 quarterly monitoring events 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 2013 quarterly 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 Fourth Quarter 2013, concentrations ranged from 184-218 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 Fourth Quarter 2013, concentrations ranged from 160-227 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 0.46 µg/L in December 2013.

Figure 7 presents concentrations detected at RW1-MW1. The concentration of TCE in the Fourth Quarter 2013 (128 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 Fourth Quarter 2013 (84.4 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 Fourth Quarter 2013 (34.6 µg/L) were slightly 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. Concentrations of cis-1,2-DCE observed in the Fourth Quarter 2013 (11.0 µg/L) are the highest observed to date. PCE has not been detected during any sampling event.

Figure 10 presents concentrations detected at RW3-MW1. Concentrations of TCE in the Fourth Quarter 2013 (60.5 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 Fourth Quarter 2013 (176 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, when a concentration of 0.28 J µg/L was observed.

Figure 12 presents concentrations detected at RW3-MW3. TCE concentrations observed in the Fourth Quarter 2013 (322 µg/L) were slightly less than initial concentrations observed in January 2010 (350 µg/L), and also 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.

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 4.4 µg/L observed in the Fourth Quarter 2013. 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 29.8 µg/L observed in the Fourth Quarter 2013. A similar trend exists for concentrations of cis-1,2-DCE. Concentrations have decreased from an initial value of 190 µg/L to 8.0 µg/L in the Fourth Quarter 2013, with concentrations fluctuating over time. PCE concentrations have ranged from 0.34 µg/L in March 2013 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 annual removal of 941 lbs of VOCs by the GWTP in 2013 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 should be reduced to a semi-annual 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

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TABLES

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Fourth Quarter 2013

SPDES Parameters	Daily Maximum Goal	Units	October 2013									
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			10/16/13									
Average Flowrate [2]	1100	GPM	649	161	810	NR	809	NR	NR	NR	810	NR
Total Flow [2]		gallons	28,985,000	7,189,700	36,174,700	NR	36,111,000	NR	NR	NR	36,145,500	NR
pH	5.5 - 8.5	SU	5.15	5.02	5.12	5.67	6.11	6.10	6.18	6.19	6.13	6.13
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	ND	ND	ND	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	2.5 J	ND	2.0 J	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	19.0	ND	15.2	0.30 J	ND	ND	0.28 J	0.29 J	0.31 J	ND
trans 1,2-Dichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	46.2	ND	37.0	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	1.9 J	ND	1.5 J	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	218	227	220	2.3	2.1	ND	ND	ND	0.54 J	0.74 J
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	0.70 J	0.75 J	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	ND

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Fourth Quarter 2013

SPDES Parameters	Daily Maximum Goal	Units	November 2013 [3]									
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			NA									
Average Flowrate [2]	1100	GPM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Flow [2]		gallons	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	5.5 - 8.5	SU	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbon Tetrachloride	NA	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethane	5	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2-Dichloroethane	0.6	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	5	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
cis 1,2-Dichloroethene	5	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
trans 1,2-Dichloroethene	5	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tetrachloroethene	5	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,1,1-Trichloroethene	5	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trichloroethene	5	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vinyl Chloride	2	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercruy	0.25	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Suspended Solids (TSS)	NA	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Fourth Quarter 2013

SPDES Parameters	Daily Maximum Goal	Units	December 2013									
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			12/29/13									
Average Flowrate [2]	1100	GPM	157	37	194	NR	191	NR	NR	NR	194	NR
Total Flow [2]		gallons	13,778,667	3,222,367	17,001,033	NR	16,809,680	NR	NR	NR	17,013,233	NR
pH	5.5 - 8.5	SU	5.40	5.22	5.37	6.02	6.50	6.74	6.99	7.07	6.78	6.78
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.2	2.8	2.31	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	2.9	1.3	2.6	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/L	24.1	1.6	19.8	0.60 J	0.44 J	ND	ND	ND	ND	ND
trans 1,2-Dichloroethene	5	µg/L	0.29 J	ND	0.24 J	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	53.2	0.46 J	43.2 J	0.30 J	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethene	5	µg/L	2.1	0.86 J	1.9 J	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	184	160	179	2.5	1.4	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	0.69 J	ND	0.6 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	13	5	ND	ND	ND	ND	10

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 system was shut down on 27 October 2013 for scheduled maintenance of the ductwork and carbon units and was restarted on 20 December 2013 once maintenance was complete. This scheduled downtime resulted in lower than average flowrates for October 2013 - December 2013.

(3) The system was off-line during the month of November 2013, as detailed above. Therefore, no samples were collected in November 2013.

Table 2
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
2013 Annual Flow Summary

Monthly Flow Totals		
Month	**Total GWTP Influent Flow (gal)**	**Total GWTP Effluent Flow (gal)**
Jan-13	33,758,240	34,677,580
Feb-13	32,116,113	34,109,600
Mar-13	35,380,788	36,763,900
Apr-13	26,908,900	27,932,000
May-13	41,448,300	43,299,167
Jun-13	42,926,200	43,484,433
Jul-13	44,539,000	44,522,800
Aug-13	43,134,200	42,850,600
Sep-13	32,535,500	32,870,800
Oct-13	36,174,700	36,145,500
Nov-13	0	0
Dec-13	17,001,033	17,013,233
Annual Flow Summary		
	GWTP Influent	**GWTP Effluent**
2013 Total (gal)	385,922,973	393,669,613
2013 Monthly Average (gal)	32,160,248	32,805,801
2013 Effective Flowrate (gpm)	736	751
2013 Average Flowrate (gpm)	938	957

Notes:
gpm = gallons per minute
Effective Flowrate = total flow volume (gal) / total time period (min)
Average Flowrate = total flow volume (gal) / total system run time (min)

Table 3
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
2013 Mass Removal Summary

	Total Flow (gal)			CCl_4			1,1-DCA			1,2-DCA			1,1-DCE			cis-1,2-DCE		
Month	GWTP Effluent	GWTP Influent	2013 Cumulative Influent	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)
Jan-13	34,677,580	33,758,240	33,758,240	0.25	0.0712	0.0712	2.4	0.6805	0.6805	0.36	0.1001	0.1001	3.4	0.9504	0.9504	23.6	6.6599	6.6599
Feb-13	34,109,600	32,116,113	65,874,352	0.26	0.0703	0.1414	2.8	0.7588	1.4393	0.38	0.1013	0.2014	4.4	1.1706	2.1210	26.8	7.1708	13.8307
Mar-13	36,763,900	35,380,788	101,255,140	0.0	0.0000	0.1414	2.7	0.7850	2.2243	0.0	0.0000	0.2014	3.6	1.0761	3.1971	21.7	6.3952	20.2259
Apr-13	27,932,000	26,908,900	128,164,040	0.27	0.0609	0.2023	2.7	0.6017	2.8260	0.36	0.0806	0.2819	3.3	0.7489	3.9460	24.6	5.5244	25.7503
May-13	43,299,167	41,448,300	169,612,340	0.0	0.0000	0.2023	2.7	0.9397	3.7657	0.0	0.0000	0.2819	4.1	1.4044	5.3504	20.6	7.1261	32.8764
Jun-13	43,484,433	42,926,200	212,538,540	0.0	0.0000	0.2023	0.0	0.0000	3.7657	0.0	0.0000	0.2819	0.0	0.0000	5.3504	17.5	6.2546	39.1310
Jul-13	44,522,800	44,539,000	257,077,540	0.0	0.0000	0.2023	2.4	0.8774	4.6432	0.0	0.0000	0.2819	2.7	1.0089	6.3592	17.8	6.6062	45.7372
Aug-13	42,850,600	43,134,200	300,211,740	0.0	0.0000	0.2023	3.0	1.0728	5.7160	0.0	0.0000	0.2819	4.5	1.6059	7.9652	22.2	7.9837	53.7210
Sep-13	32,870,800	32,535,500	332,747,240	0.0	0.0000	0.2023	0.28	0.0761	5.7921	0.0	0.0000	0.2819	2.2	0.5960	8.5612	20.3	5.5075	59.2284
Oct-13	36,145,500	36,174,700	368,921,940	0.0	0.0000	0.2023	0.0	0.0000	5.7921	0.0	0.0000	0.2819	2.0	0.6047	9.1659	15.2	4.5954	63.8239
Nov-13	0	0	368,921,940	NS	0.0000	0.2023	NS	0.0000	5.7921	NS	0.0000	0.2819	NS	0.0000	9.1659	NS	0.0000	63.8239
Dec-13	17,013,233	17,001,033	385,922,973	0.0	0.0000	0.2023	2.3	0.3263	6.1184	0.0	0.0000	0.2819	2.6	0.3688	9.5347	19.8	2.8089	66.6328
2013 Totals	**393,669,613**	**385,922,973**			**0.2023**			**6.1184**			**0.2819**			**9.5347**			**66.6328**	

	Total Flow (gal)			trans-1,2-DCE			PCE			1,1,1-TCA			TCE			VC		
Month	GWTP Effluent	GWTP Influent	2013 Cumulative Influent	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)	Influent Concentration (µg/L)	Mass Removal (lb)	2013 Cumulative Mass Removal (lb)
Jan-13	34,677,580	33,758,240	33,758,240	0.32	0.0890	0.0890	51.8	14.5887	14.5887	2.8	0.7837	0.7837	233	65.6350	65.6350	1.2	0.3336	0.3336
Feb-13	34,109,600	32,116,113	65,874,352	0.54	0.1447	0.2336	56.9	15.2578	29.8465	3.2	0.8467	1.6304	213	56.9685	122.6034	0.8	0.2274	0.5610
Mar-13	36,763,900	35,380,788	101,255,140	0.0	0.0000	0.2336	45.7	13.4866	43.3331	2.5	0.7271	2.3575	235	69.2669	191.8704	0.0	0.0000	0.5610
Apr-13	27,932,000	26,908,900	128,164,040	0.0	0.0000	0.2336	50.2	11.2788	54.6120	2.8	0.6266	2.9841	212	47.5572	239.4275	0.0	0.0000	0.5610
May-13	43,299,167	41,448,300	169,612,340	0.0	0.0000	0.2336	47.7	16.5014	71.1134	2.5	0.8772	3.8613	239	82.8052	322.2327	1.2	0.4112	0.9721
Jun-13	43,484,433	42,926,200	212,538,540	0.0	0.0000	0.2336	34.1	12.2249	83.3382	0.0	0.0000	3.8613	190	68.0574	390.2902	0.0	0.0000	0.9721
Jul-13	44,522,800	44,539,000	257,077,540	0.0	0.0000	0.2336	43.1	16.0268	99.3651	2.2	0.8295	4.6908	214	79.5396	469.8298	0.0	0.0000	0.9721
Aug-13	42,850,600	43,134,200	300,211,740	0.0	0.0000	0.2336	42.7	15.3868	114.7519	2.6	0.9290	5.6198	247	88.9152	558.7450	0.0	0.0000	0.9721
Sep-13	32,870,800	32,535,500	332,747,240	0.0	0.0000	0.2336	35.5	9.6321	124.3840	2.0	0.5484	6.1682	213	57.7671	616.5121	0.0	0.0000	0.9721
Oct-13	36,145,500	36,174,700	368,921,940	0.0	0.0000	0.2336	37.0	11.1742	135.5582	1.5	0.4595	6.6277	220	66.3453	682.8574	0.0	0.0000	0.9721
Nov-13	0	0	368,921,940	NS	0.0000	0.2336	NS	0.0000	135.5582	NS	0.0000	6.6277	NS	0.0000	682.8574	NS	0.0000	0.9721
Dec-13	17,013,233	17,001,033	385,922,973	0.24	0.0340	0.2677	43.2	6.1286	141.6867	1.9	0.2695	6.8972	179	25.3938	708.2512	0.56	0.0794	1.0516
2013 Totals	**393,669,613**	**385,922,973**			**0.2677**			**141.6867**			**6.8972**			**708.2512**			**1.0516**	

2013 Cumulative Mass (VOCs) Removed (lb) **941**

2013 Average Monthly Mass (VOCs) Removed (lb) **78**

Notes:
CCl_4 = carbon tetrachloride
DCA = dichloroethane
DCE = dichloroethene
PCE = tetrachloroethane
TCA = trichloroethane
TCE = trichloroethene
NS = Not Sampled

Mass removal (lb) = Influent Concentration (ug/L) * Influent Flow (gal) * (2.20462 lb/kg) * (3.785 L/gal) * (1 kg/10^9 ug)

Table 4
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
Fourth Quarter 2013

DAR Parameters	Discharge Goal [3]	Units	October 2013					November 2013 [6]				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate	Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate
Sampling Date			10/17/13					NA				
Average Flowrate		CFM	NR	NR	NR	7,992	NR	NA	NA	NA	NA	NA
Total Flow [1] [5]		ft^3	NR	NR	NR	356,774,040	NR	NA	NA	NA	NA	NA
Total Flow [2] [5]		m^3	NR	NR	NR	10,102,716	NR	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	$\mu g/m^3$	3.5 J	ND	5.9	5.6	5.7	NS	NS	NS	NS	NS
cis 1,2-Dichloroethene	> 100,000 [4]	$\mu g/m^3$	200	24	220	46	40	NS	NS	NS	NS	NS
trans 1,2-Dichloroethene		$\mu g/m^3$	4.0 J	ND	3.2	ND	ND	NS	NS	NS	NS	NS
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	210	24	220	46	40	NS	NS	NS	NS	NS
Toluene	NA	$\mu g/m^3$	8.5	200	2.4 J	9.7	30	NS	NS	NS	NS	NS
Xylene	NA	$\mu g/m^3$	4.8 J	250	2.7 J	2.3 J	4.6	NS	NS	NS	NS	NS
1,1,2-Trichloroethane	NA	$\mu g/m^3$	3.2 J	ND	ND	ND	ND	NS	NS	NS	NS	NS
Trichloroethene	2,600	$\mu g/m^3$	2000	490	530	160	160	NS	NS	NS	NS	NS
Vinyl Chloride	560	$\mu g/m^3$	12	3.8	5.8	1.2 J	1.1 J	NS	NS	NS	NS	NS
Tetrachloroethene	5,100	$\mu g/m^3$	530	130	2.6 J	2.9 J	3.2 J	NS	NS	NS	NS	NS

Table 4
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
Fourth Quarter 2013

DAR Parameters	Discharge Goal [3]	Units	December 2013				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate
Sampling Date			12/26/13				
Average Flowrate		CFM	NR	NR	NR	7,408	NR
Total Flow [1] [5]		ft^3	NR	NR	NR	330,693,120	NR
Total Flow [2] [5]		m^3	NR	NR	NR	9,364,186	NR
1,2-Dichloroethane	NA	$\mu g/m^3$	3.7 J	ND	ND	ND	ND
cis 1,2-Dichloroethene	> 100,000 [4]	$\mu g/m^3$	240	0.98 J	0.83 J	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	240	0.98 J	0.83 J	ND	ND
Toluene	NA	$\mu g/m^3$	2.0 J	13	29	ND	ND
Xylene	NA	$\mu g/m^3$	ND	3.0 J	6.1	ND	ND
1,1,2-Trichloroethane	NA	$\mu g/m^3$	4.1 J	ND	ND	ND	ND
Trichloroethene	2,600	$\mu g/m^3$	3000	170	12	6.1	5.1
Vinyl Chloride	560	$\mu g/m^3$	6.7 J	6.2	2.9	0.97 J	0.96 J
Tetrachloroethene	5,100	$\mu g/m^3$	680	120	6.4	1.3 J	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.
(5) The system was shut down on 27 October 2013 for scheduled maintenance of the ductwork and carbon units and was restarted on 20 December 2013 once maintenance was complete. This scheduled downtime resulted in lower than average flowrates for October 2013 - December 2013.
(6) The system was off-line during the month of November 2013, as detailed above. Therefore, no samples were collected in November 2013.

Table 5
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Stack Emissions
Fourth Quarter 2013

DAR Parameters	Discharge Goal [1]	Units	October 2013	November 2013 [3]	December 2013
Sampling Date			10/17/13	NA	12/26/13
Average Flowrate		CFM	7,992	NA	7,408
Total Flow [2]		ft^3	356,774,040	NA	330,693,120
Total Flow [2]		m^3	10,102,716	NA	9,364,186
Trichloroethene	0.09	lb/hr	0.00495	NA	0.00017
Vinyl Chloride	0.02	lb/hr	0.00004	NA	0.00003
1,2 Dichloroethene	11	lb/hr	0.00142	NA	0.00000
1,2-Dichloroethane	NA	lb/hr	0.00017	NA	0.00000
Toluene	NA	lb/hr	0.00030	NA	0.00000
Xylene	NA	lb/hr	0.00007	NA	0.00000
1,1,2-Trichloroethane	NA	lb/hr	0.00000	NA	0.00000
Tetrachloroethene	0.18	lb/hr	0.00009	NA	0.00004

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.
(2) The system was shut down on 27 October 2013 for scheduled maintenance of the ductwork and carbon units and was restarted on 20 December 2013 once maintenance was complete. This scheduled downtime resulted in lower than average flowrates for October 2013 - December 2013.
(3) The system was off-line during the month of November 2013, as detailed above. Therefore, no samples were collected in November 2013.

Table 6
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
2013 Air Emission Summary

	TCE Effluent Emission Rate		VC Effluent Emission Rate		1,2-DCE Effluent Emission Rate		PCE Effluent Emission Rate	
Month	**lb/hr**	**lb/mo**	**lb/hr**	**lb/mo**	**lb/hr**	**lb/mo**	**lb/hr**	**lb/mo**
Jan-13	0.000336	0.224689	0.000000	0.000000	0.000104	0.069449	0.000058	0.038810
Feb-13	0.000414	0.270114	0.000000	0.000000	0.000133	0.086437	0.000083	0.054023
Mar-13	0.000309	0.201131	0.000000	0.000000	0.000148	0.096543	0.000068	0.044249
Apr-13	0.000451	0.246975	0.000008	0.005473	0.000541	0.296370	0.000042	0.023051
May-13	0.000498	0.354813	0.000000	0.000000	0.000498	0.354813	0.000000	0.000000
Jun-13	0.000786	0.555864	0.000000	0.000000	0.000846	0.598623	0.000036	0.025655
Jul-13	0.001600	1.179318	0.000000	0.000000	0.000634	0.467277	0.000302	0.222513
Aug-13	0.001872	1.341926	0.000017	0.012120	0.001258	0.901951	0.000129	0.092395
Sep-13	0.002569	1.513125	0.000025	0.017678	0.001673	0.985291	0.000149	0.087972
Oct-13	0.004949	3.088478	0.000037	0.026616	0.001423	0.887937	0.000090	0.055979
Nov-13	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Dec-13	0.000169	0.046716	0.000027	0.016795	0.000000	0.000000	0.000036	0.009956

	TCE	VC	1,2-DCE	PCE
Discharge Goal (lb/yr) [(1)]	**770**	**170**	**98,000**	**1,500**
2013 Total Emissions (lb/yr)	**9.0**	**0.08**	**4.7**	**0.65**

Notes:
lb/hr = pounds per hour
lb/mo = pounds per month
lb/yr = pounds per year
DCE = dichloroethene
PCE = tetrachloroethane
TCE = trichloroethene
VC = vinyl chloride

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

Stack Emissions (lb/mo) = average flowrate (cfm) * ($0.3048^{\wedge 3}$)m^3/ft^3 * conc.(ug/m^3) * 1 lb/453592370 ug * 60 min/hr * operational time (hr/mo)

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

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Level Measurements
Fourth Quarter 2013

Monitoring Well ID	Date	Well Elevation (ft amsl)	Total Depth (ft)	Screen Interval (ft)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
RW1-MW1	12/16/13	85.86	435	395-435	34.71	51.15
RW1-MW2	12/16/13	87.35	435	395-435	36.15	51.20
RW1-MW3	12/16/13	80.34	435	395-435	28.23	52.11
RW2-MW1	12/16/13	90.75	510	470-510	38.85	51.90
RW2-MW2	12/16/13	90.15	510	470-510	38.37	51.78
RW2-MW3	12/16/13	89.75	510	470-510	37.97	51.78
RW3-MW1	12/16/13	92.22	495	475-495	38.96	53.26
RW3-MW2	12/16/13	91.98	350	330-350	39.76	52.22
RW3-MW3	12/16/13	92.98	340	320-340	39.55	53.43
RW3-MW4	12/16/13	92.92	495	475-495	40.26	52.66
TP-01	12/16/13	85.91	470	450-470	34.26	51.65
IW1-MW1	12/16/13	89.41	150	20-150	37.84	51.57
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 8
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
Fourth Quarter 2013

Location	Temp (ºC)	pH (SU)	S.C. (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color (Visual)
RW1-MW1	10.62	4.07	178	1.13	174.1	0.99	clear
RW1-MW3	12.64	4.93	184	0.64	161.3	3.76	clear
RW2-MW1	12.32	6.23	221	0.22	-53.8	7.12	clear
RW3-MW1	9.08	4.41	140	1.28	207.0	8.92	clear
RW3-MW2	12.11	4.64	90	0.54	178.2	1.02	clear
RW3-MW3	9.96	4.95	150	0.82	165.3	1.13	clear
RW3-MW4	11.79	4.41	167	0.63	176.2	1.20	clear
TP-01	10.18	5.59	184	5.96	94.3	0.87	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 9
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Detected Groundwater Analytical Results
Fourth Quarter 2013

Sample ID	RW1-MW1	RW1-MW3	RW2-MW1		RW3-MW1	RW3-MW2	RW3-MW3	RW3-MW4	TP-01
Sample Date	12/16/2013	12/17/2013	12/17/2013	12/17/2013	12/17/2013	12/17/2013	12/17/2013	12/17/2013	12/16/2013
Comments				Duplicate					
VOCS (EPA 624) ug/L [(1)]									
1,1,1-trichloroethane	1.5	2.0	0.94 J	0.94 J	0.66 J	0.50 J	ND	0.39 J	0.50 J
1,1,2-trichloroethane	ND	0.55 J	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	5.2	8.1	5.8	6.4	1.2	0.59 J	3.7 J	4.9	1.5
1,1-dichloroethene	2.6	1.9	2.6	2.6	0.69 J	0.45 J	ND	0.39 J	0.33 J
1,2-dichloroethane	ND	ND	1.9 J	1.7 J	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	3.4 J	ND	7.4
cis-1,2-dichloroethene	84.4	0.60 J	11.0 J	11.1 J	0.41 J	1.9	ND	ND	8.0
Tetrachloroethene	0.67 J	ND	ND	ND	1.6	ND	ND	ND	0.57 J
trans-1,2-dichloroethene	1.4	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	128	3.2	34.6	33.5	60.5	176	322	4.4	29.8
Mercury (EPA 245.1) ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	11	ND	30	24	15	ND	ND	ND	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 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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
Comments										Duplicate					Duplicate						
Well Depth (Ft)	435																				
Screened Interval (Ft)	395-435																				
VOCS (EPA 624) ug/L																					
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
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
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
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
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
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
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
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	NR	ND	ND
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
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	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	NR	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
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
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
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-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	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
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	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
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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
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
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	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	ND	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	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
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methylcyclohexane	NR	NR	ND	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
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
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
Toluene	ND	0.33J	0.68	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
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
m,p-xylene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	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
o-xylene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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

Table 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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
Comments																				
Well Depth (Ft)	435				435															
Screened Interval (Ft)	395-435				395-435															
VOCS (EPA 624) ug/L																				
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
1,1,2,2-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
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
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
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
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
1,2,4-trichlorobenzene	NR	NR	ND	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
1,2-dibromomethane	ND	ND	ND	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
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
1,2-dichloropropane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	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
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	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
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	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
4-methyl-2-pentanone	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	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
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	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
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	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
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	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
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	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
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
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
cis-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	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
Dibromochloromethane	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
isopropylbenzene	NR	NR	ND	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
methylcyclohexane	NR	NR	ND	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
methyl-tert-butyl-ether	NR	NR	ND	NR	ND	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
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
Toluene	0.32J	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
trans-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
m,p-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	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
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
xylenes (total)	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
o-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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

Table 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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	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																							
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	0.34 J
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
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
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	D	ND	ND
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	ND	0.78J	4.9
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	ND	0.41J	0.72
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
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	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	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	NR	NR	NR
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	ND	ND	0.32 J
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
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	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	NR	NR	NR
1,4-dioxane	5.34	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	7.45J	NR	NR
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	R	R	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	NR	NR	NR
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	ND	ND	ND
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	ND	ND	ND
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	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	NR	NR	NR
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	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
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	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	ND	ND	ND
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	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
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.38 J	ND	ND	ND	2.9	ND	ND	ND	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	ND	ND	ND
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	0.33J	0.41J	4.6
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
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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
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
methylcyclohexane	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	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
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	0.33J	0.53J	ND
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
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
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	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	ND
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	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	ND
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
xylenes (total)	ND	1.4J	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND
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	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	NR	NR	NR

Table 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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
Comments										Duplicate				Duplicate							Duplicate		
Well Depth (Ft)	510				495																		
Screened Interval (Ft)	470-510				475-495																		
VOCS (EPA 624) ug/L																							
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
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
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
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
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-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
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
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	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND
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
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
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
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
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
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
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
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
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
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
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
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	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
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	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
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
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
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	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
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
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	NR	NR	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	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	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
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
methylcyclohexane	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	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
styrene	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	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
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
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
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
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
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
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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
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
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
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
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
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
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

Table 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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
Comments		Duplicate			Duplicate									Duplicate		Duplicate				
Well Depth (Ft)	350																			
Screened Interval (Ft)	330-350																			
VOCS (EPA 624) ug/L																				
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
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
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
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
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
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
1,2,4-trichlorobenzene	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
1,2-dibromomethane	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
1,2-dichloroethane	ND	ND	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
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	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
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-butanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
2-hexanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
Acetone	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	30 R	ND	ND	ND	NR	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	NR	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
Bromoform	NR	NR	ND	ND	ND	ND	ND	NR	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
carbon disulfide	NR	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	ND	NR	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
Chloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	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
Chloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
cis-1,3-dichloropropene	NR	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	NR
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	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	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
isopropylbenzene	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
methylcyclohexane	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
methyl-tert-butyl-ether	ND	ND	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
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	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
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Vinyl chloride	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
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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

Table 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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
Comments			Duplicate								Duplicate							
Well Depth (Ft)	340																	
Screened Interval (Ft)	320-340																	
VOCS (EPA 624) ug/L																		
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
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	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
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
1,2,4-trichlorobenzene	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	ND	ND	ND	ND
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
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	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
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	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
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	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	NR	ND	NR	NR
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	150 R	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
Chloroethane	NR	NR	NR	NR	NR	NR	NR	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
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
cis-1,3-dichloropropene	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
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
methylcyclohexane	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
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
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
Toluene	ND	ND	ND	ND	ND	ND	NR	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
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	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
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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

Table 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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
Comments				Duplicate													
Well Depth (Ft)	495																
Screened Interval (Ft)	475-495																
VOCS (EPA 624) ug/L																	
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
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	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
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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
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
1,2,4-trichlorobenzene	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
1,2-dibromomethane	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
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	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	NR	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	NR	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
Bromoform	NR	ND	ND	ND	ND	ND	NR	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
carbon disulfide	NR	ND	ND	ND	ND	ND	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
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	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
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
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-dichloroethene	0.46J	ND	ND	ND	1.6	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
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	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
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
isopropylbenzene	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
methylcyclohexane	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
methyl-tert-butyl-ether	ND	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
Tetrachloroethene	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
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	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
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
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
Vinyl chloride	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
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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
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

Table 10
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Fourth Quarter 2013

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	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																		
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	0.47	0.92	0.49J
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND
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
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	0.39J	0.51	0.22J
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	ND	ND	ND
1,2,4-trichlorobenzene	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	ND	NR	ND
1,2-dibromomethane	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	NR	NR	ND
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
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	ND
1,4-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-butanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	R	ND	ND
2-chloroethylvinyl ether	NR	NR	ND	ND	ND	ND	ND	ND	ND	2.0 R	2.0 R	NR	ND	ND	ND	NR	NR	NR
2-hexanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	ND	ND	ND
4-methyl-2-pentanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	ND	ND	ND
Acetone	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrolein	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	ND	NR	ND	ND	ND	NR	NR	NR
Acrylonitrile	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	NR
Benzene	ND	NR	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
Bromoform	NR	NR	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
carbon disulfide	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
Chlorobenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
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	0.94J	ND	0.98J
Chloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	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
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Ethylbenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
isopropylbenzene	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	ND
methylcyclohexane	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
methyl-tert-butyl-ether	ND	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	ND	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	0.55	ND
Toluene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19J
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
trans-1,3-dichloropropene	NR	NR	ND	ND	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	ND	ND	0.17J
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND
Trichlorofluoromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND
Vinyl chloride	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	ND	NR	ND
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND	ND
Mercury (EPA 245.1) ug/L	NR	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	NR	NR	2.4

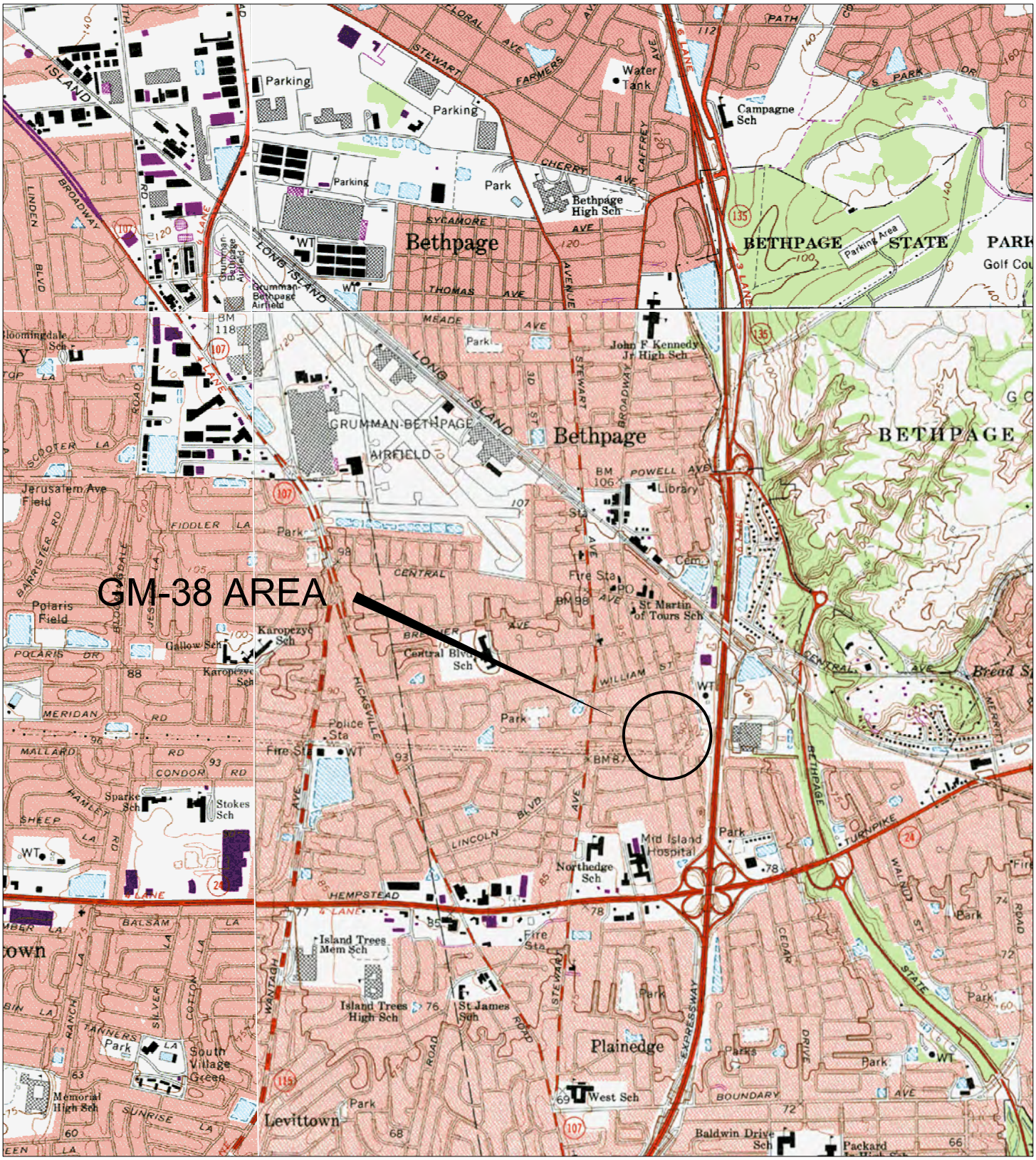
Note:
VOC analysis changed from SW846 8260B to EPA Method 624 in January 2010.
D = Dilution
J = estimated value
ND = not detected
NR = not reported / required
R = rejected
mg/L - milligrams per liter
µg/L - micrograms per liter

(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.

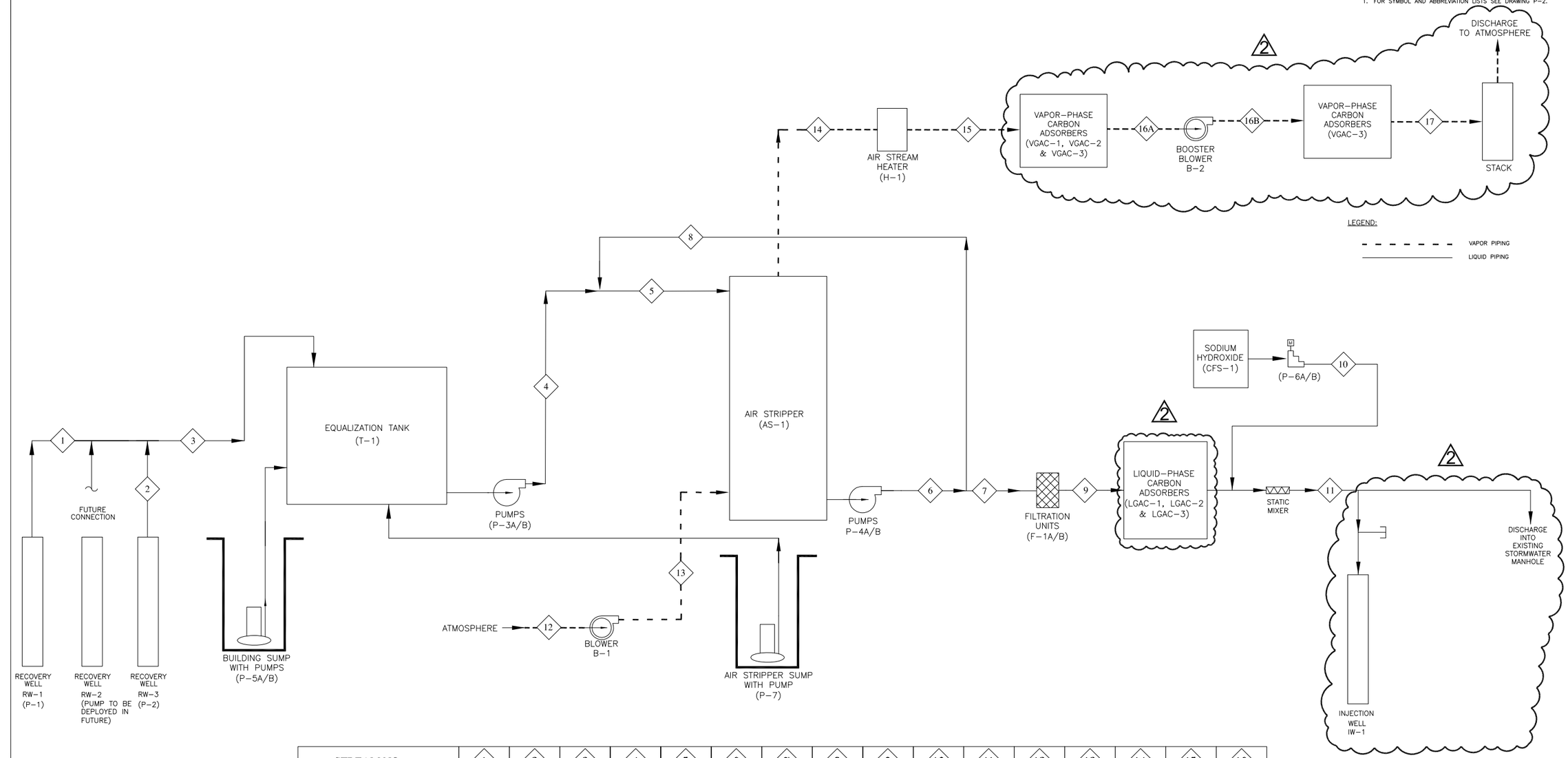
FIGURES



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: CHK:
SCHD: CH ENG: (TITLE)
SUBMITTED BY: (PRIN MEMBER) (DATE)
NORTHDIV DIV: HO: RO: FPC: DIR:
OFFICER IN CHARGE
APPROVED
DATE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVFAC LANTDIV
NAVAL FACILITIES ENGINEERING COMMAND NORTHEAST
LESTER, PENNSYLVANIA
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

ENGINEERING FIELD ACTIVITY - NORTHEAST

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

EFANE FOR COMMANDER, NAVFAC
DATE
APPROVED

THIS DRAWING PRODUCED ON AUTOCAD
DO NOT REVISE MANUALLY

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

Legend

- Monitoring Well (Monitored by Navy)
- Monitoring Well (Monitored by Northrop Grumman)
- Recovery Well
- Injection Well

SOPHIA STREET
NORTH WINDHORST
NORTH HERMAN AVENUE
LEROY AVENUE
ARTHUR AVENUE
RECHARGE BASIN
MAIN STREET (BROADWAY)
SOUTH WINDHORST
SOUTH HERMAN AVENUE
WILSON LANE
(SEAFORD-OYSTER BAY EXPRESSWAY - RTE 135)
GROUNDWATER TREATMENT PLANT

RW3-MW-4
RW3-MW-3
RW3-MW-1
RW3-MW-2
RW-3
GM-38D
GM-38D-2
RW2-MW-1
RW2-MW-2
RW2-MW-3
RW-2
TP-1
RW1-MW-3
RW1-MW-2
RW1-MW-1
RW-1
IW-1
IW1-MW-1

0 160
APPROXIMATE SCALE IN FEET

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	3/14/2013	6/21/2013	9/17/2013	12/17/2013
cis-1,2-DCE	ND	ND	ND	ND
PCE	ND	ND	ND	ND
TCE	2.3	1.8	5.0	4.4
VC	ND	ND	ND	ND

RW3-MW3	3/14/2013	6/21/2013	9/18/2013	12/17/2013
cis-1,2-DCE	ND	ND	ND	ND
PCE	ND	ND	ND	ND
TCE	347	410	322	322
VC	ND	ND	ND	ND

TP-01	3/13/2013	3/13/2013 - DUP	6/17/2013	9/17/2013	9/17/2013 - DUP	12/16/2013
cis-1,2-DCE	5.8	5.8	8.7	14.1 J	14.7	8.0
PCE	0.34 J	0.32 J	1.6	0.77 J	1.5 J	0.57 J
TCE	25.9	25.4	25	27.0	26.7	29.8
VC	ND	ND	ND	ND	ND	ND

RW3-MW2	3/14/2013	6/20/2013	9/17/2013	12/17/2013
cis-1,2-DCE	1.6	ND	1.3 J	1.9
PCE	ND	ND	ND	ND
TCE	155	140	174	176
VC	ND	ND	ND	ND

RW3-MW1	3/14/2013	6/20/2013	6/20/2013 - DUP	9/18/2013	12/17/2013
cis-1,2-DCE	0.38 J	ND	ND	0.43 J	0.41 J
PCE	1.6	1.8 J	1.7 J	1.2	1.6
TCE	46.6	49	48	62.7	60.5
VC	ND	ND	ND	ND	ND

RW1-MW3	3/14/2013	6/19/2013	9/17/2013	12/17/2013
cis-1,2-DCE	0.53 J	0.46 J	0.72 J	0.60 J
PCE	ND	ND	ND	ND
TCE	1.9	1.7	2.5	3.2
VC	ND	ND	ND	ND

RW2-MW1	3/13/2013	6/17/2013	9/17/2013	12/17/2013	12/17/2013 - DUP
cis-1,2-DCE	0.29 J	7.7	0.77 J	11.0 J	11.1 J
PCE	ND	ND	ND	ND	ND
TCE	0.67 J	14	1.5	34.6	33.5
VC	ND	ND	ND	ND	ND

RW-3	3/15/2013	6/20/2013	9/29/2013	12/29/2013
cis-1,2-DCE	1.8 J	ND	ND	1.6
PCE	ND	ND	ND	0.46 J
TCE	237	190	240	160
VC	ND	ND	ND	ND

RW1-MW1	3/13/2013	6/19/2013	9/17/2013	12/16/2013
cis-1,2-DCE	91.7	64	86.2 J	84.4
PCE	ND	ND	0.35 J	0.67 J
TCE	101	78	175	128
VC	ND	ND	ND	ND

RW-1	3/15/2013	6/20/2013	9/29/2013	12/29/2013
cis-1,2-DCE	26.8	22	23.1	24.1
PCE	57.5	43	40.4	53.2
TCE	234	190	209	184
VC	ND	ND	ND	0.69 J

SOPHIA STREET
NORTH WINDHORST
NORTH HERMAN AVENUE
RW3-MW4
RW3-MW3
RW3-MW2
RW3-MW1
RW3-MW-4
RW3-MW-3
RW3-MW-1
RW3-MW-2
LEROY AVENUE
ARTHUR AVENUE
RECHARGE BASIN
RW2-MW1
RW2-MW-1
RW2-MW-2
RW2-MW-3
RW-2
RW-3
GM-38D
GM-38D-2
TP-1
GROUNDWATER TREATMENT PLANT
RW1-MW3
RW1-MW-3
(SEAFORD-OYSTER BAY EXPRESSWAY - RTE 135)
SOUTH WINDHORST
SOUTH HERMAN AVENUE
MAIN STREET (BROADWAY)
WILSON LANE
RW1-MW-2
RW1-MW-1
RW-1
IW-1
IW1-MW-1

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:
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, and those results coinciding with quarterly monitoring events are presented here.

0 160
APPROXIMATE SCALE IN FEET

2013 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	5/19/2014	4

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

RW1

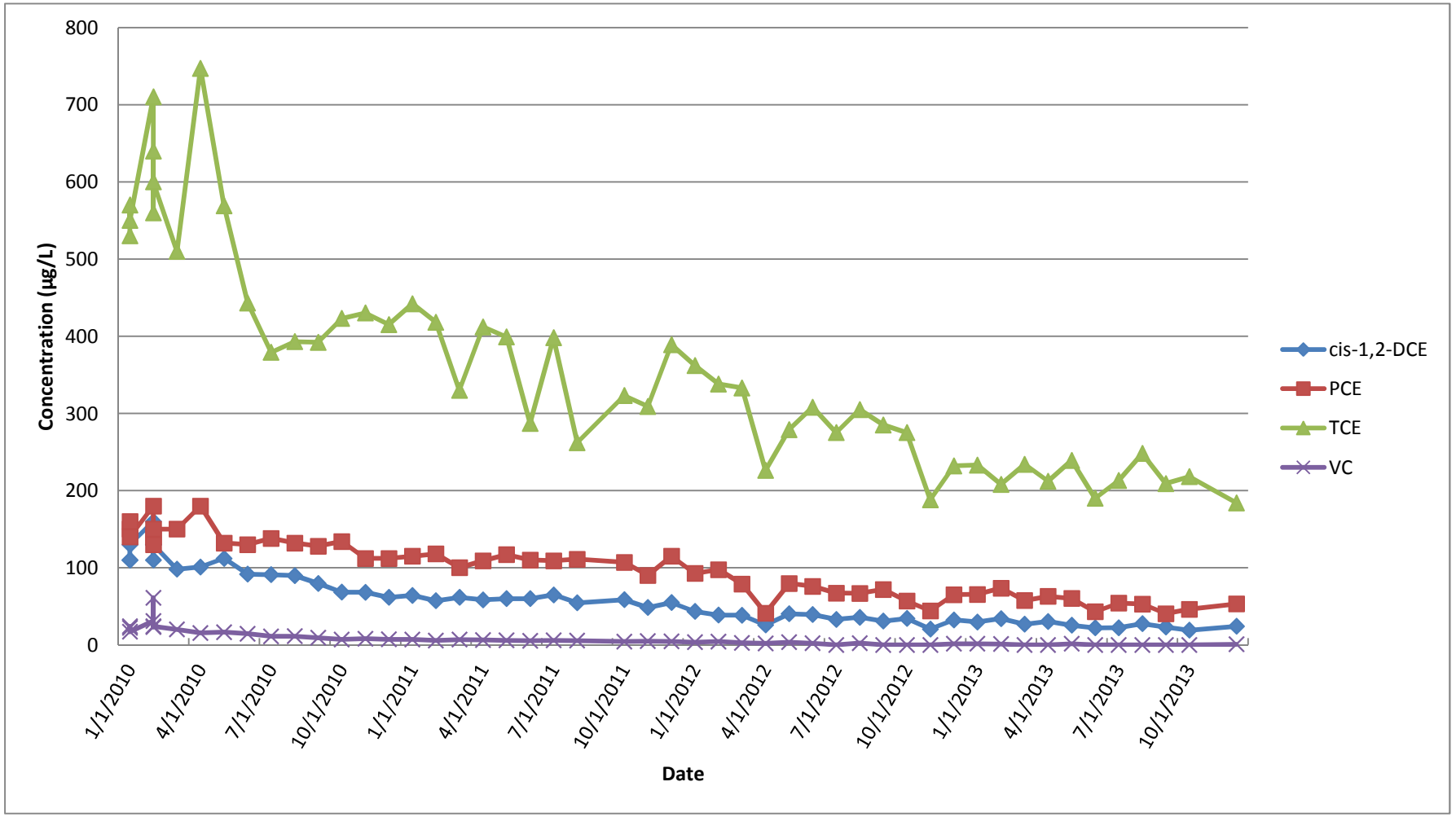


Figure 6
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3

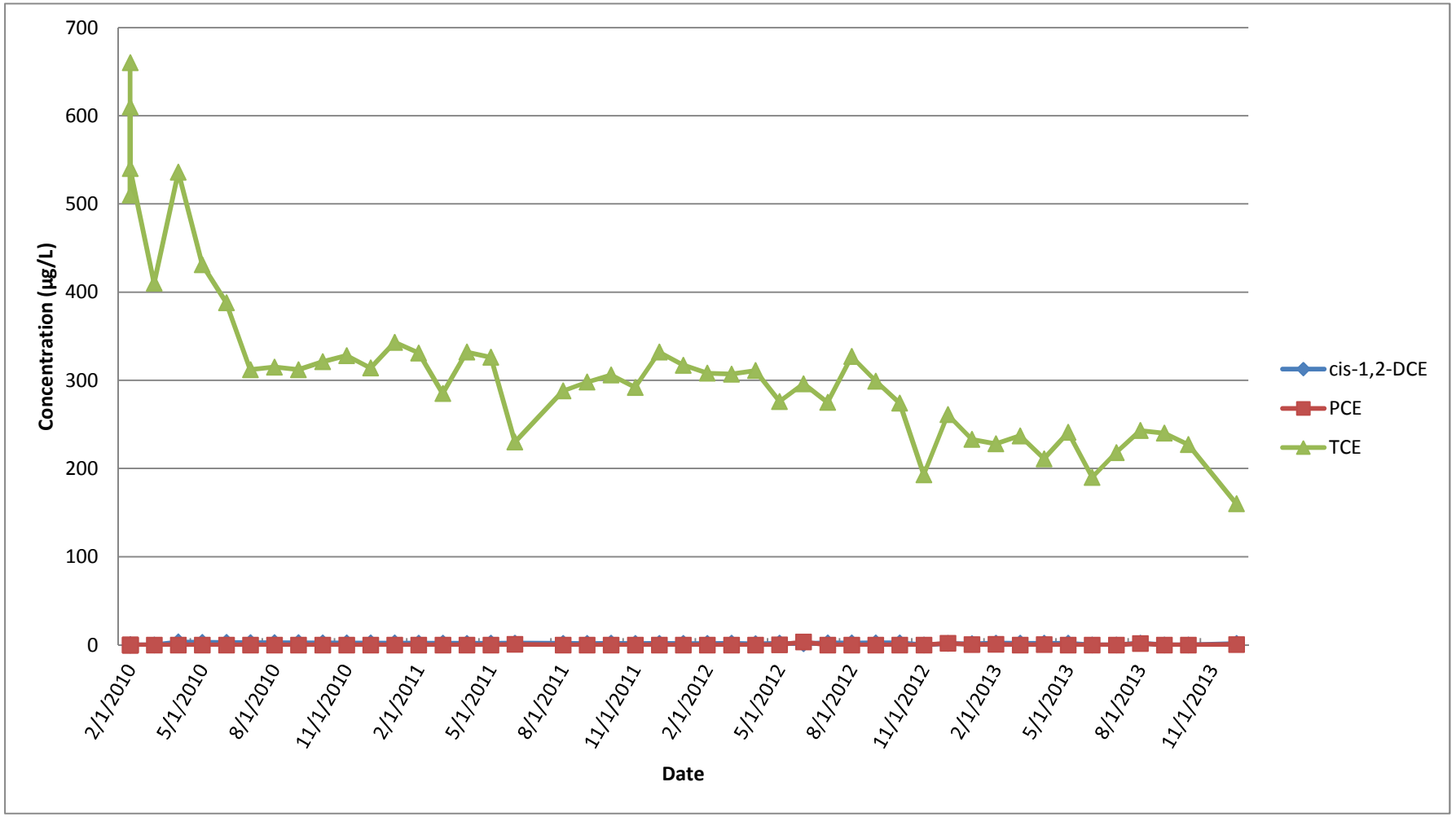


Figure 7
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW1

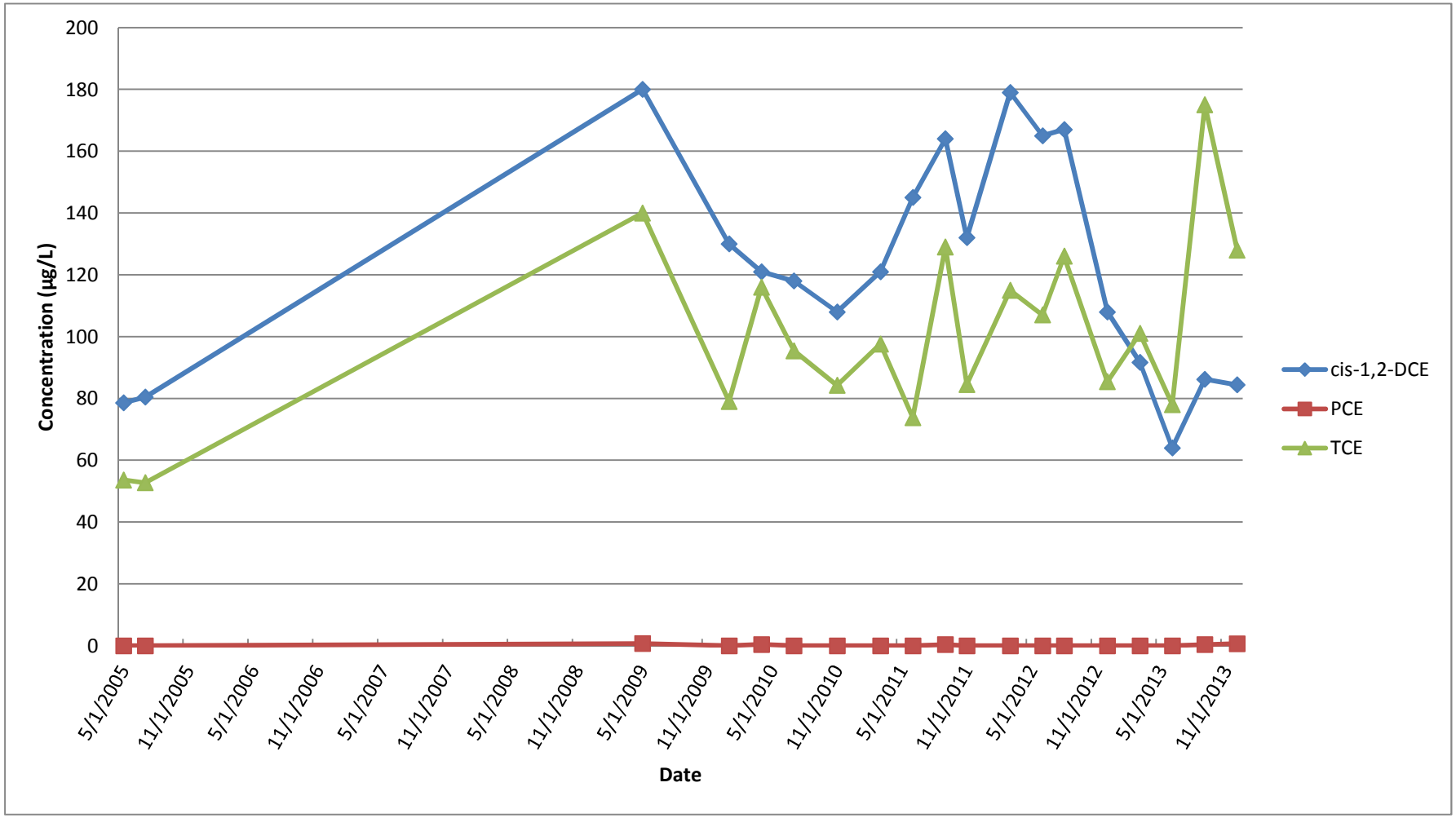


Figure 8
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW3

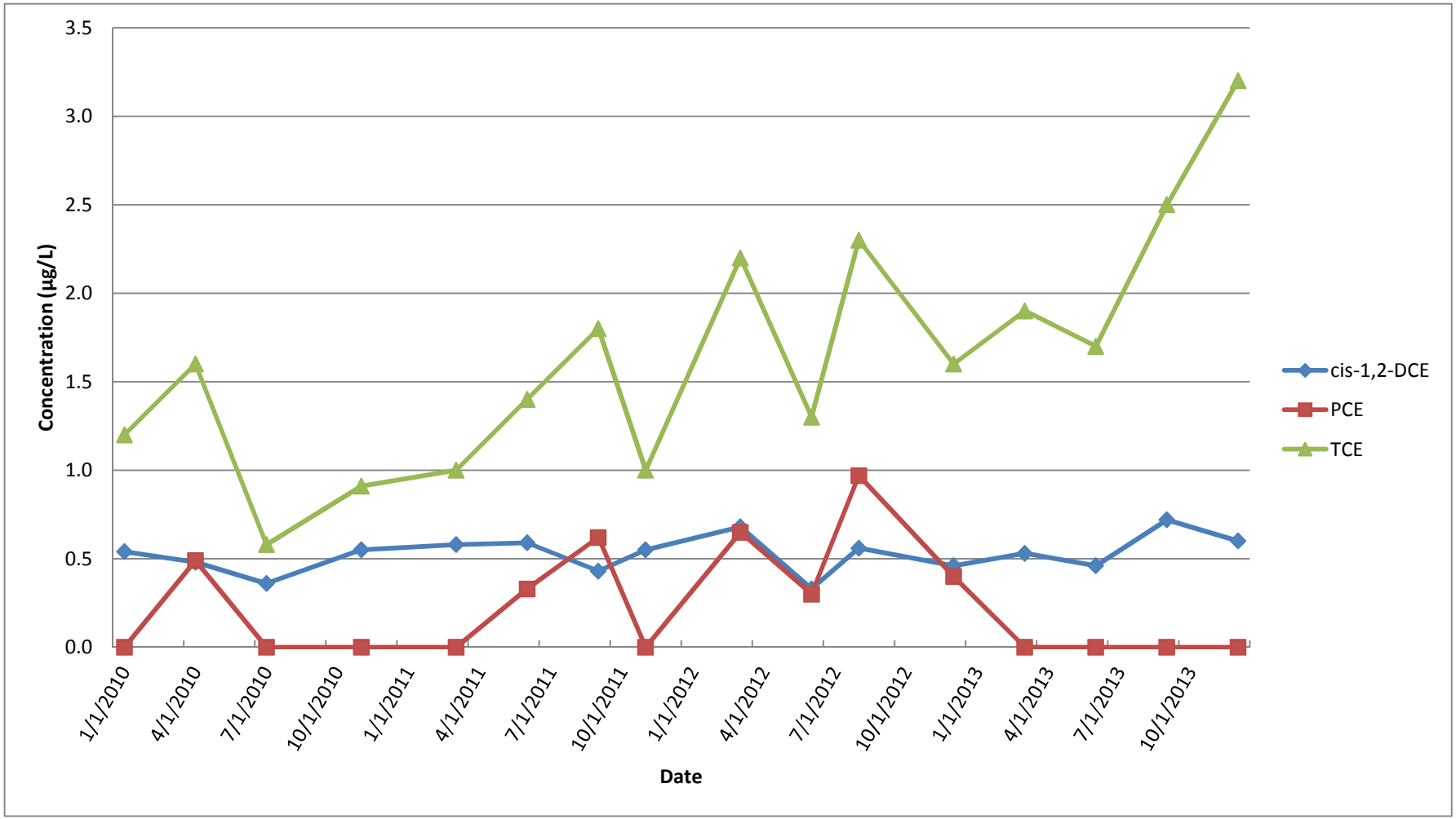


Figure 9
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW2-MW1

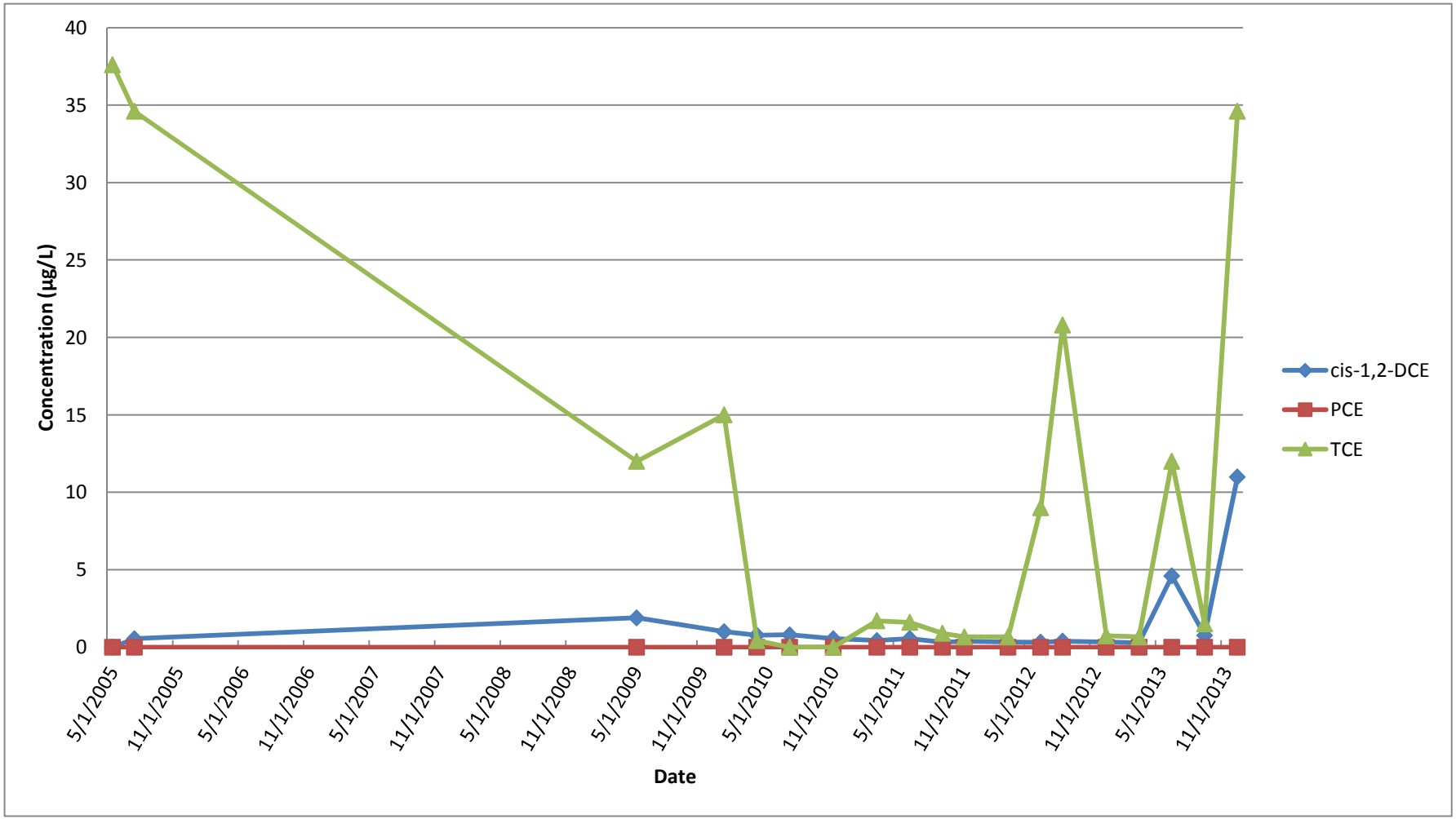


Figure 10
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW1

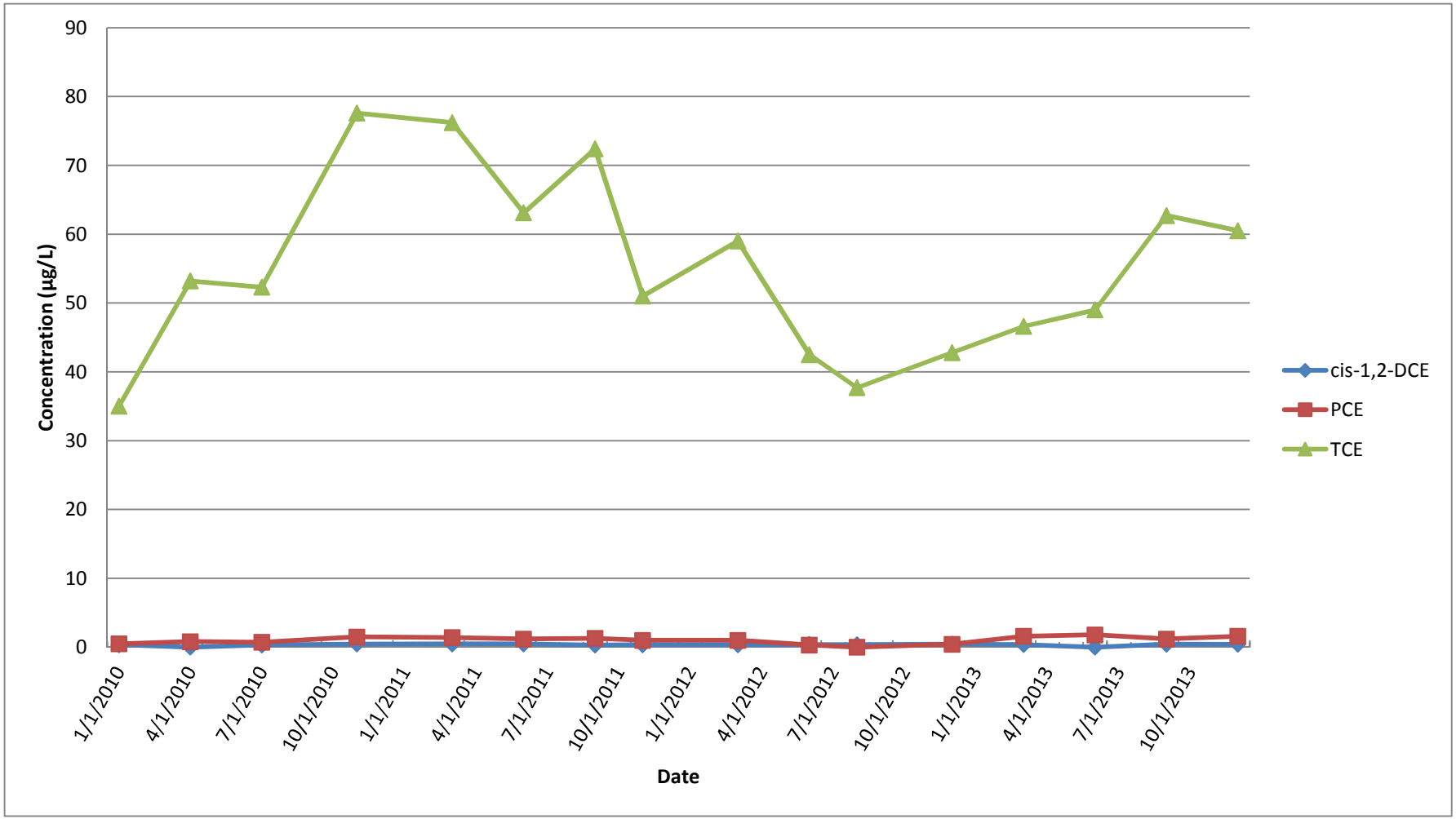


Figure 11
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW2

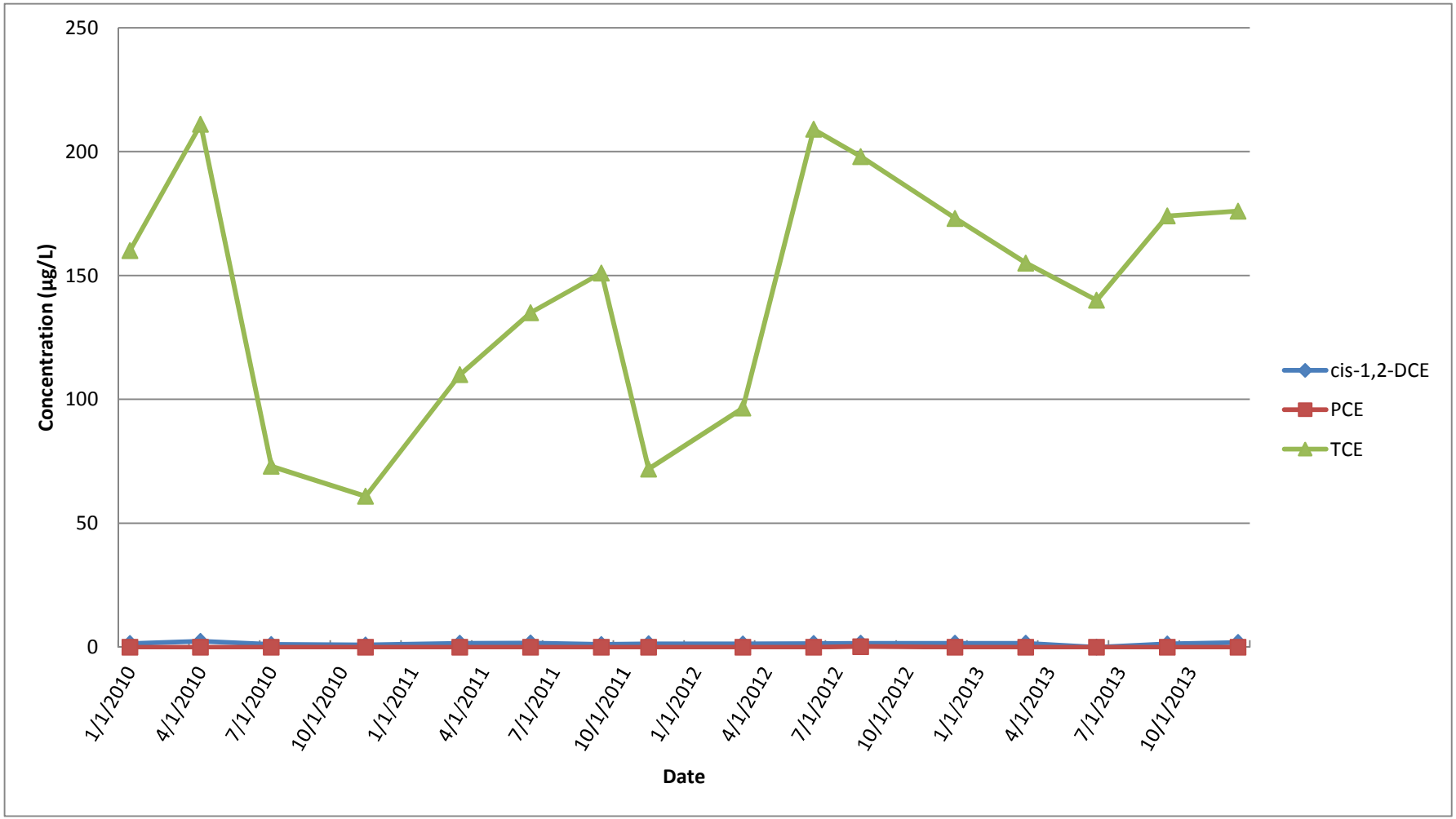


Figure 12
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW3

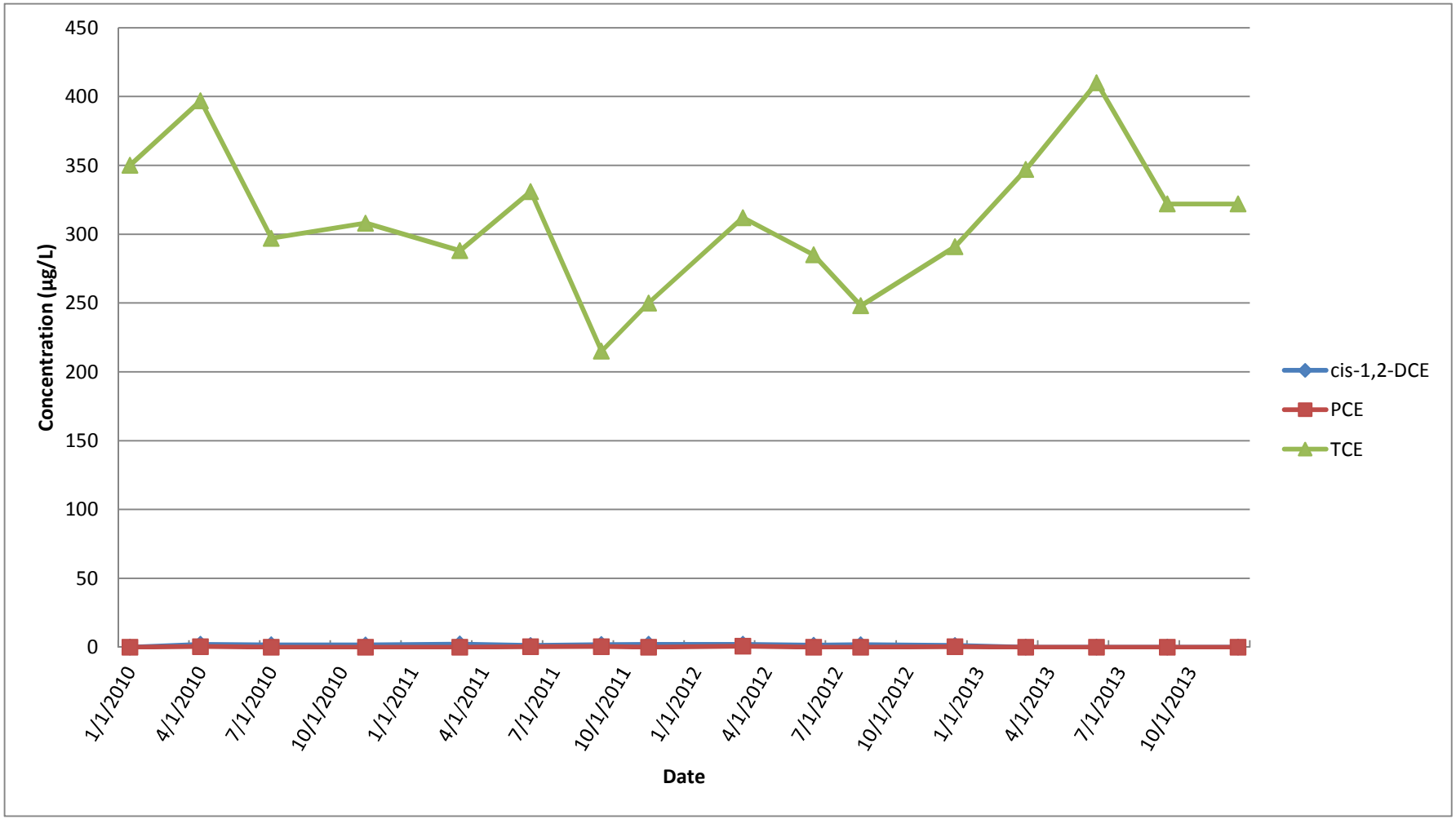


Figure 13
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW4

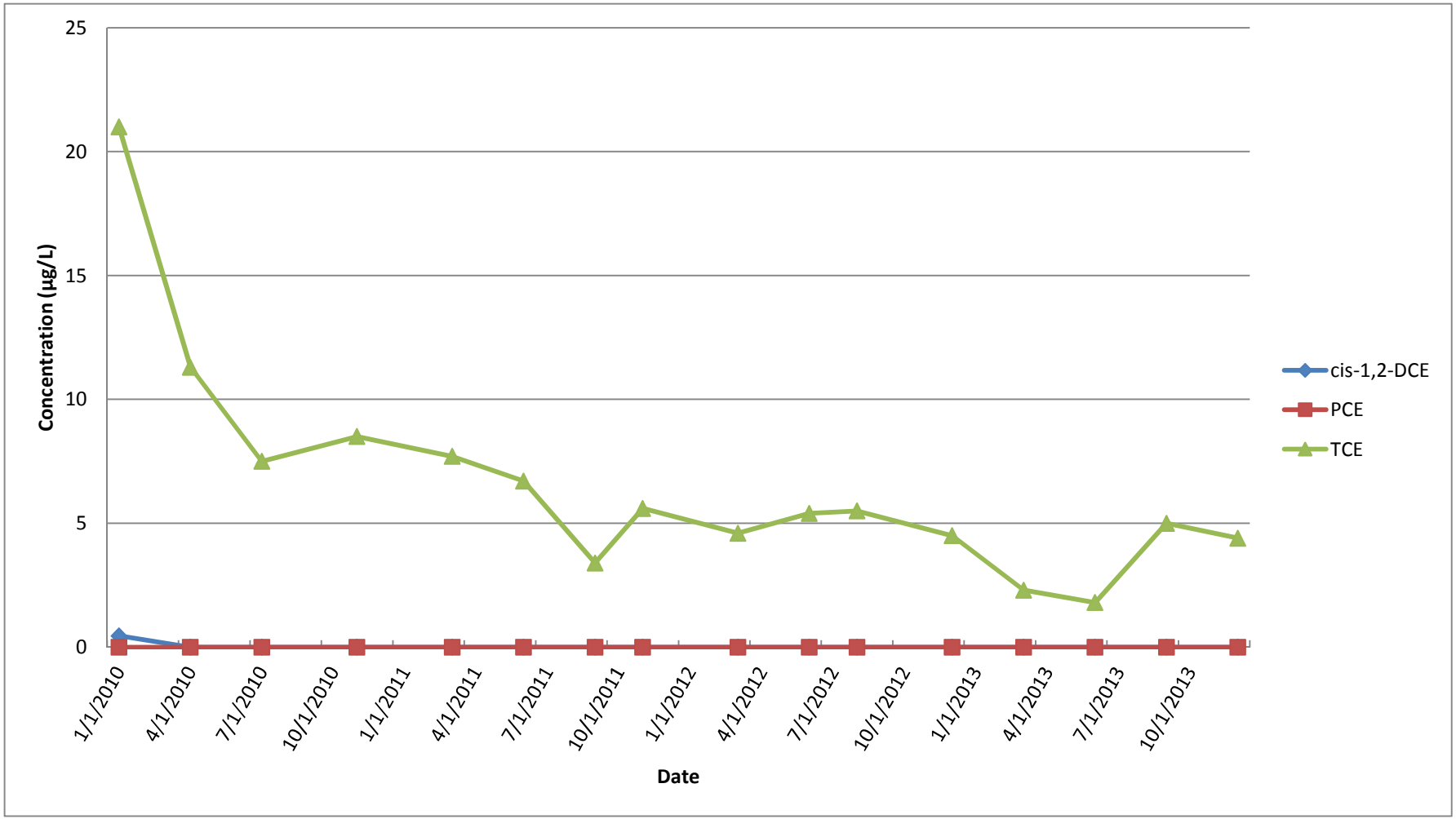
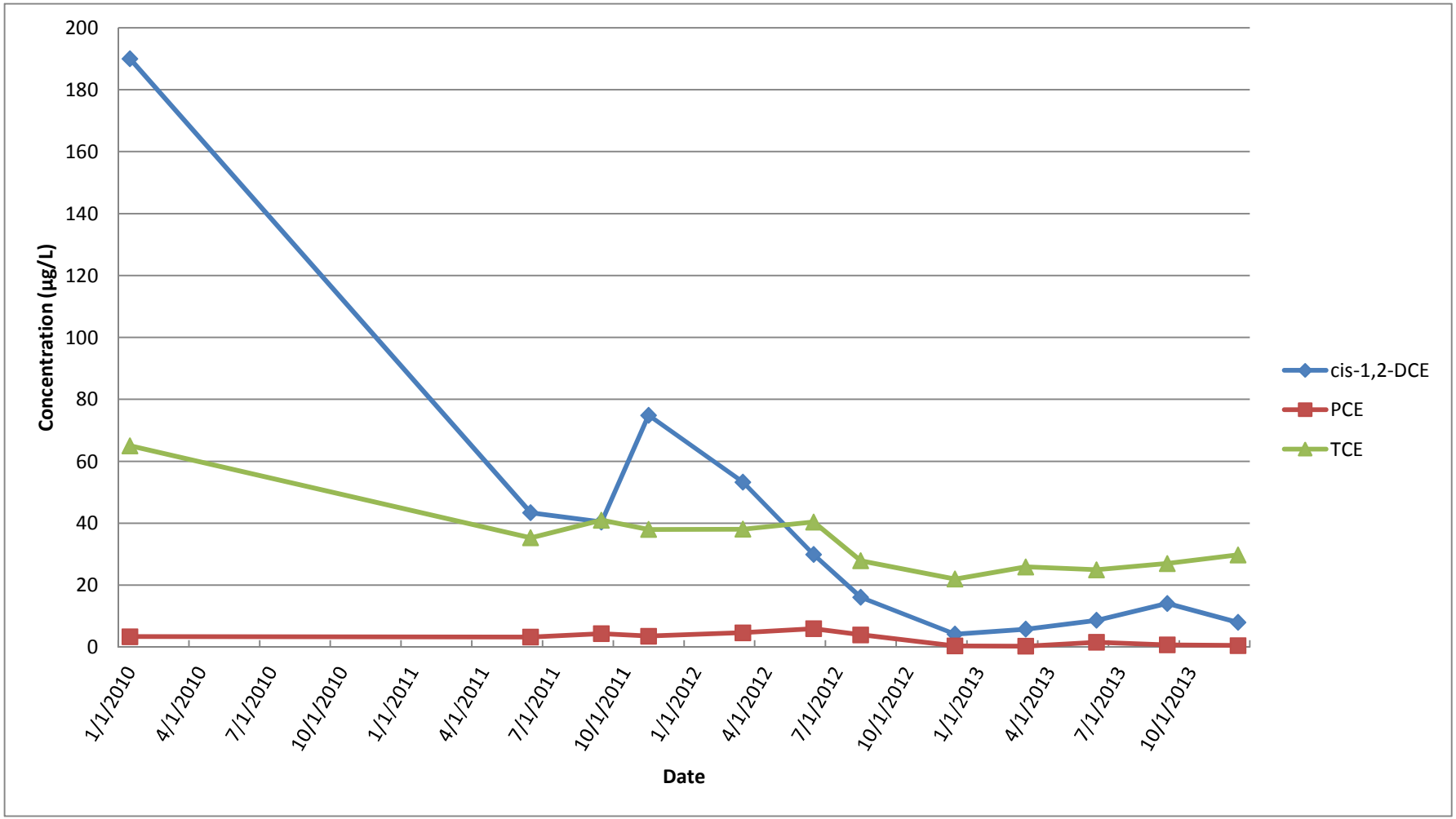


Figure 14
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

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

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

Naval Weapons Industrial Reserve Plant

DER site # 1-01-001
Page 1 of 2

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.

OCTOBER 2013

H&S ENVIRONMENTAL
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18 November 2013

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 OCTOBER 2013 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 October 2013 to 31 October 2013 are presented in Attachment A. During this reporting period, scheduled downtime occurred for various maintenance activities. Maintenance on the LGAC units was performed on 8 October 2013. In addition, on 27 October 2013, the system was shut down for maintenance of the ductwork. Ductwork modifications are ongoing throughout November 2013 and the system currently remains off-line pending completion.

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 October 2013

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

OCTOBER 2013

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
October 2013

SPDES Parameters	October 2013					
Process Stream	**Daily Treated Effluent Maximum**	**Units**	**RW-1 (2)**	**RW-3 (2)**	**Combined Influent (1) (2) (RW-1 + RW-3)**	**Treated Effluent (2)**
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		10/16/13			
Average Flowrate	1100	GPM	649	161	810	810
Total Flow	N/A	gallons	28,985,000	7,189,700	36,174,700	36,145,500
pH	5.5 - 8.5	SU	5.15	5.02	5.12	6.13
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	2.5 J	ND	2.0 J	ND
cis 1,2-Dichloroethene	5	µg/L	19.0	ND	15.2	0.31 J
trans 1,2-Dichloroethene	5	µg/L	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	46.2	ND	37.0	ND
1,1,1-Trichloroethene	5	µg/L	1.9 J	ND	1.5 J	ND
Trichloroethene	5	µg/L	218	227	220	0.54 J
Vinyl Chloride	2	µg/L	ND	ND	ND	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.

(2) The system was shut down on 27 October 2013 for scheduled maintenance of the ductwork. This scheduled downtime at the end of the month resulted in lower than average flowrates for the month.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
October 2013

DAR Parameters	Units	Discharge Goal (1)	October 2013	
Process Stream			Influent	Effluent
Sampling Date	N/A	N/A	10/17/13	
Average Flowrate	CFM	N/A	NR	7,992
Total Flow	ft^3	N/A	NR	356,774,040
Total Flow	m^3	N/A	NR	10,102,716
1,2-Dichloroethane	$\mu g/m^3$	N/A	3.5 J	5.6
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 (2)	200	46
trans 1,2-Dichloroethene	$\mu g/m^3$		4.0 J	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	N/A	210	46
Toluene	$\mu g/m^3$	N/A	8.5	9.7
Total Xylene	$\mu g/m^3$	N/A	4.8 J	2.3 J
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	3.2 J	ND
Trichloroethene	$\mu g/m^3$	2,600	2000	160
Vinyl Chloride	$\mu g/m^3$	560	12	1.2 J
Tetrachloroethene	$\mu g/m^3$	5,100	530	2.9 J

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
October 2013

DAR Parameters	Units	Discharge Goal [(1)]	October 2013
Sampling Date	N/A	N/A	10/17/13
Average Flowrate	CFM	N/A	7,992
Total Flow	ft^3	N/A	356,774,040
Total Flow	m^3	N/A	10,102,716
Trichloroethene	lb/hr	0.09	0.00495
Vinyl Chloride	lb/hr	0.02	0.00004
1,2 Dichloroethene	lb/hr	11	0.00142
1,2-Dichloroethane	lb/hr	N/A	0.00017
Toluene	lb/hr	N/A	0.00030
Total Xylene	lb/hr	N/A	0.00007
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00009

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.

NOVEMBER 2013

H&S ENVIRONMENTAL
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18 December 2013

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 NOVEMBER 2013 REPORTING PERIOD

Dear Mr. Scharf:

H&S Environmental, Inc. (H&S) is submitting this letter regarding the operation of the Groundwater Treatment Plant (GWTP) located at the Former Naval Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY, GM-38 Area during the November 2013 reporting period.

As previously indicated, on 27 October 2013, the GWTP was shut down for maintenance of the ductwork. Ductwork modifications were ongoing throughout November 2013 and the system currently remains off-line pending completion of these modifications as well as routine maintenance of the granular activated carbon (GAC) units. It is anticipated that the system will be brought back on-line in late December 2013.

Because the system was off-line in November 2013, no aqueous or vapor process system samples were collected during this reporting period.

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

Sincerely,
H&S Environmental, Inc.

Jennifer Good, P.G.
Project Manager

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

DECEMBER 2013

21 January 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 DECEMBER 2013 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 December 2013 to 31 December 2013 are presented in Attachment A. During this reporting period, scheduled downtime occurred for various maintenance activities. Ductwork modifications continued throughout the first half of December 2013. In addition, routine maintenance of the granular activated carbon (GAC) units was performed on 17-19 December 2013. Upon completion of the ductwork modifications and GAC maintenance, the system was restarted on 20 December 2013.

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 December 2013

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

DECEMBER 2013

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
December 2013

SPDES Parameters	December 2013					
Process Stream	**Daily Treated Effluent Maximum**	**Units**	**RW-1 (2)**	**RW-3 (2)**	**Combined Influent (1) (2) (RW-1 + RW-3)**	**Treated Effluent (2)**
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		12/29/13			
Average Flowrate	1100	GPM	157	37	194	194
Total Flow	N/A	gallons	13,778,667	3,222,367	17,001,033	17,013,233
pH	5.5 - 8.5	SU	5.40	5.22	5.37	6.78
Carbon Tetrachloride	NA	µg/L	ND	ND	ND	ND
1,1-Dichloroethane	5	µg/L	2.2	2.8	2.3	ND
1,2-Dichloroethane	0.6	µg/L	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/L	2.9	1.3	2.6	ND
cis 1,2-Dichloroethene	5	µg/L	24.1	1.6	19.8	ND
trans 1,2-Dichloroethene	5	µg/L	0.29 J	ND	0.24 J	ND
Tetrachloroethene	5	µg/L	53.2	0.46 J	43.2 J	ND
1,1,1-Trichloroethene	5	µg/L	2.1	0.86 J	1.9 J	ND
Trichloroethene	5	µg/L	184	160	179	ND
Vinyl Chloride	2	µg/L	0.69 J	ND	0.56 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.

(2) The system was shut down on 27 October 2013 for scheduled maintenance of the ductwork and was restarted on 20 December 2013 once maintenance was complete. This scheduled downtime during the first half of the month of December resulted in lower than average flowrates for this reporting period.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
December 2013

DAR Parameters	Units	Discharge Goal [1]	December 2013	
Process Stream			Influent	Effluent
Sampling Date	N/A	N/A	12/26/13	
Average Flowrate	CFM	N/A	NR	7,408
Total Flow	ft^3	N/A	NR	330,693,120
Total Flow	m^3	N/A	NR	9,364,186
1,2-Dichloroethane	$\mu g/m^3$	N/A	3.7 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 [2]	240	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		ND	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	N/A	240	ND
Toluene	$\mu g/m^3$	N/A	2.0 J	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	4.1 J	ND
Trichloroethene	$\mu g/m^3$	2,600	3,000	6.1
Vinyl Chloride	$\mu g/m^3$	560	6.7 J	0.97 J
Tetrachloroethene	$\mu g/m^3$	5,100	680	1.3 J

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
December 2013

DAR Parameters	Units	Discharge Goal (1)	December 2013
Sampling Date	N/A	N/A	12/26/13
Average Flowrate	CFM	N/A	7,408
Total Flow	ft^3	N/A	330,693,120
Total Flow	m^3	N/A	9,364,186
Trichloroethene	lb/hr	0.09	0.00017
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	0.00004

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 ($\mu g/m^3$)[2]	Actual Jan-Mar 2011 Concentration ($\mu g/m^3$)[3]	Actual VOC Loading Pre-Off Gas Treatment (lbs/hour)[4]	Proposed Discharge Loading Rate (lbs/hour)[5]	Equivalent Proposed Discharge Goal ($\mu g/m^3$)[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	State Facility Permit N/A
❑ New ❑ Significant Modification ❑ Administrative Amendment ❑ Renewal ❑ Minor Modification General Permit Title:	❑ 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

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

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

DEC ID
- - - - - - - - - -

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 Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements 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
Air Permit Application

DEC ID
- - -

Section IV - Emission Unit Information

Emission Unit Description

❑ Continuation Sheet(s)

EMISSION UNIT: 0-00EU1

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.: 00ST1

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section	
					Length (in)	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)	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	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	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
Air Permit Application

DEC ID
- -

Section IV - Emission Unit Information (continued)

Process Information

❑ Continuation Sheet(s)

EMISSION UNIT 0-00EU1 PROCESS PR1

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
Air Permit Application

DEC ID
- -

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

DEC ID
- -

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	0-00EU1				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	0-00EU1				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	0-00EU1				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 0-00EU1	Emission Unit Emissions Summary		❑ Continuation Sheet(s)	
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	Reduction 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): _____ (/ /)

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

Name	CAS Number	Toxicity: H/M/L[2]	VOC[3]	HAP[4]	GW Conc.[1] Max ug/L	GW Conc.[1] Avg ug/L	Effluent Conc[1] Max ug/L	Effluent Conc[1] Avg ug/L	Uncontrolled Stripper Exhaust 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	

					Controlled Stripper Exhaust				
Name	CAS Number	Toxicity: H/M/L[2]	VOC[3]	HAP[4]	Control by GAC	Max lb/day	Avg lb/day	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 ($\mu g/m^3$)[(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 ($\mu g/m^3$)[(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

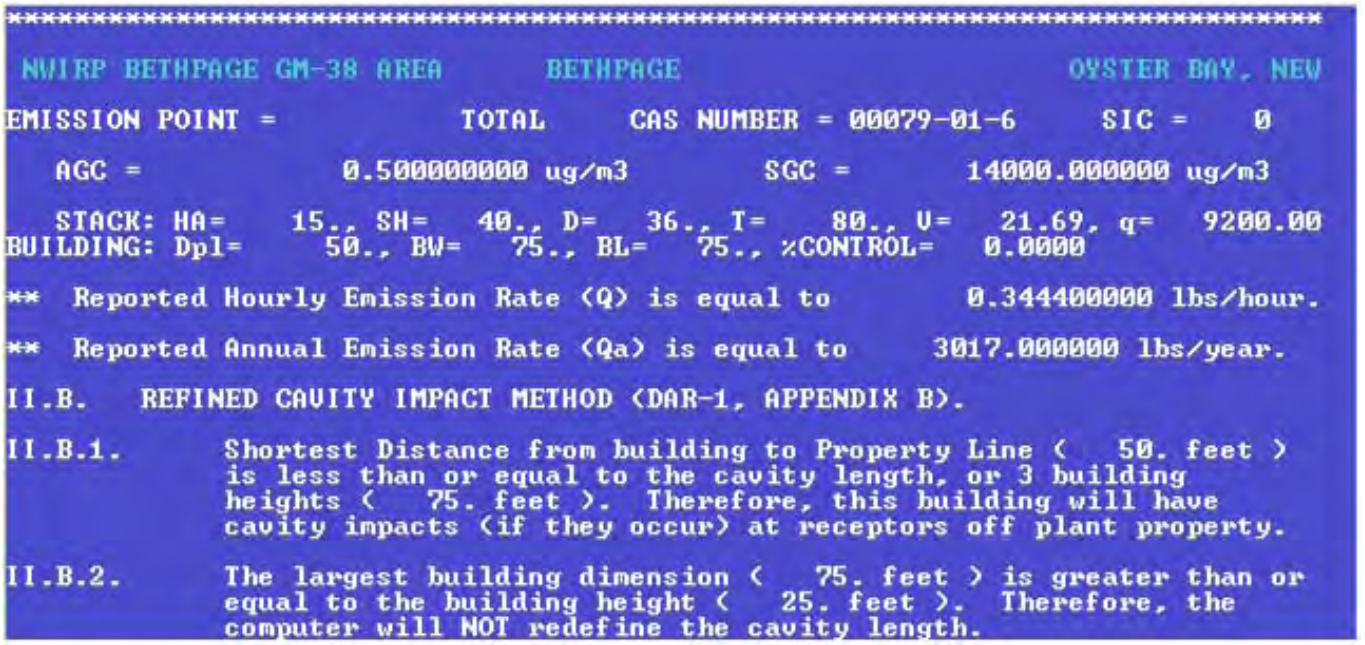
		SHORT-TERM	CAVITY	POINT or AREA SOURCE	
CAS NUMBER	AGC ug/m3	MAXIMUM (Gav,Pt,Area) % OF SGC	ACTUAL ANNUAL % OF AGC	POTENTIAL ANNUAL % OF AGC	ACTUAL ANNUAL % OF AGC
00075-01-4	0.11000000	0.0005	0.0000	13.3889	13.4948
00079-01-6	0.50000000	0.7757	0.0000	390.1734	390.6266
00127-18-4	1.00000000	7.3852	0.0000	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

		SHORT-TERM	CAVITY	POINT or AREA SOURCE	
CAS NUMBER	AGC ug/m3	MAXIMUM (Gav,Pt,Area) ug/m3	ACTUAL ANNUAL ug/m3	POTENTIAL ANNUAL ug/m3	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:



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**********************************************************************************
 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

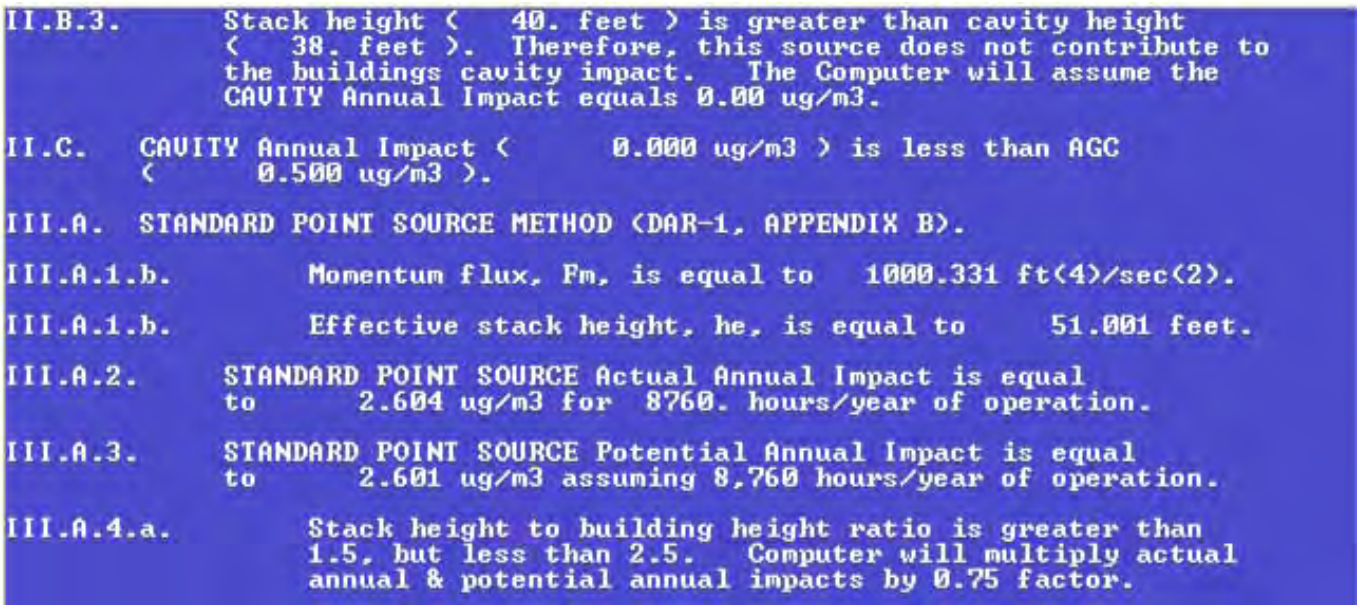
**  Reported Hourly Emission Rate (Q) is equal to         0.344400000 lbs/hour.

**  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 (GSTP) is equal
              to        38.826 ug/m3,  for   hs/hb =   1.60

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

2.6           Adjusted maximum downwash Short-Term (GSTD) 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 (CSTD) is equal
              to        88.340 ug/m3, for:  hs/hb =   1.60 and ESH =   51. feet.

2.6           Adjusted maximum downwash Short-Term (CSTD) 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

CAS NUMBER	CONTAMINANT NAME	SGC ug/m3	HOW	AGC ug/m3	HOW	TOX	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:

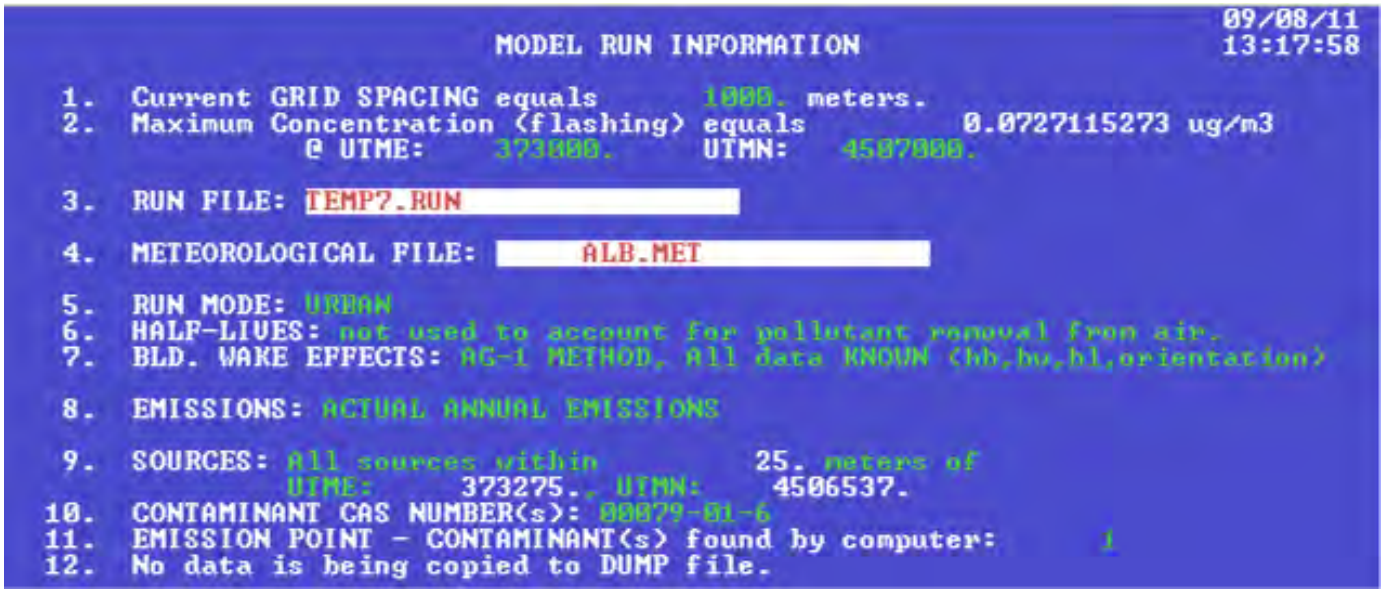
CONCENTRATIONS x 10 (-2) (ug/m3) for 00079-01-6 09/08/11 13:17:58
AGC = 0.500000000 ug/m3

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:



APPENDIX C

FIELD DATA SHEETS AND CHAIN OF CUSTODY DOCUMENTATION

Date: 12/16/13

H&S

Groundwater Level Measurement Sheet

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

Water Level Meter: Solinst
Weather: Clear 36°
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	13:41	34.71	435 / 395-435	N/A	
RW1-MW2	13:35	36.15	435 / 395-435	N/A	
RW1-MW3		28.23	435 / 395-435	N/A	Highway
RW2-MW1	13:51	38.85	510 / 470-510	N/A	larger drop tubing
RW2-MW2	13:46	38.37	510 / 470-510	N/A	
RW2-MW3	13:55	37.97	510 / 470-510	N/A	
RW3-MW1	14:07	38.96	350 / 330-350	N/A	
RW3-MW2	14:08	39.76	495 / 475-495	N/A	
RW3-MW3	14:00	39.55	340 / 320-340	N/A	
RW3-MW4	14:02	40.26	495 / 475-495	N/A	
TP1	13:00	34.26	470 / 450-470	N/A	
IW1-MW1	13:30	37.84	470 / 450-470	N/A	

Signature: [signature]

Date: 12-16-13

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW 1 - MW1

Date: 12/ 10 /13
Sampler: RM/SL
PID: ------

Start Time: 1455 End Time: 1545
Well Construction: 4"
Depth to Water: 34.71
Well Depth: 435.0
Water Column: 400.29
Total Volume Removed (L): 1.375
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10H1009928
LaMotte	2020e	3108-1412
QED	MP15	Pink
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
1505	2.750	275	34.60	12.98	4.57	166	1.66	141.9	1.69	Clear
1510	4.125	275	34.60	12.77	4.41	169	0.67	143.5	1.01	clear
1515	5.5	275	34.60	11.74	4.29	175	0.85	155.4	.96	clear
1520	6.875	"	34.60	10.08	4.18	174	1.01	166.4	.83	clear
1525	8.250	"	34.57	13.18	4.03	179	1.11	170.8	1.21	clear
1530	9.625	"	34.57	12.64	4.19	174	1.11	163.0	1.01	clear
1535	11.0	"	34.57	10.59	4.08	174	1.11	172.6	1.01	Clear
1540	12.375	"	34.57	10.77	4.08	178	1.12	173.9	.97	Clear
1545	13.750	"	34.57	10.62	4.07	178	1.13	174.1	.99	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
1545	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 1 -MW1 -20131210	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

RM
Signature

12-10-13
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW1 - MW3

Date: 12/17/13
Sampler: RM/SL
PID: ------

Start Time: 1310 End Time: 13:40
Well Construction: 4"
Depth to Water: 28.23
Well Depth: 435.0
Water Column: 406.77
Total Volume Removed (L): 6.75
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10H1009928
LaMotte	2020e	3108-1413
QED	MP15	Pine
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
1315	1.125	225	28.24	11.93	5.08	189	1.31	154.0		clear
1320	2.25	"	28.24	12.19	5.10	189	1.10	153.2	4.60	"
1325	3.375	"	28.22	12.43	5.010	187	0.82	155.2	4.43	"
1330	4.5	"	28.20	12.58	4.96	185	0.69	161.7	4.26	Clear
1335	5.625	"	28.20	12.61	4.94	184	0.65	161.7	4.10	Clear
1340	6.75	"	28.20	12.64	4.93	184	0.64	161.3	3.96	"
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
13:40	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 1 -MW3 - 20131217	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

RM
Signature

12-17-13
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: 12/17/13
Sampler: RM | SL
PID: ------

Start Time: 0835 End Time: 0920
Well Construction: 4"
Depth to Water: 38.85
Well Depth: 510.0
Water Column: 471.15
Total Volume Removed (L): 10.125
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10H100825
LaMotte	~~2020e~~	3108-1413
QED	MP15	Pine
Marschalk Bladder Pump	24"	ID# 4982

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	1.125	225	38.72	12.79	6.53	194	0.66	-55.2	9.21	clear
0845	"	225	38.72	12.42	6.81	194	0.66	-57.7	6.43	clear
0850	"	225								clear
0855 ~~0900~~	"	225	38.74	12.14	6.91	193	0.40	-136.0	7.69	clear
0900	"	225	38.75	12.14	6.57	210	0.30	-78.2	9.47	clear
0905	"	225	38.75	12.55	6.38	221	0.28	-63.5	8.72	"
0910	"	225	38.75	12.65	6.26	222	0.24	-56.3	9.25	"
0915	"	225	38.75	12.67	6.26	222	0.23	-55.5	8.36	"
0920	"	225	38.77	12.32	6.23	221	0.22	-53.9	7.12	"
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
0920	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 2 -MW 1 - 20131217	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)
09:20	+ MS/MSD				TCL VOCs & Hg
00:00	+ DUP				TCL VOCs, Hg & TSS

Comments

Signature

12-17-13
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 1

Date: 12/ 17 /13
Sampler: RM SL
PID: ------

Start Time: 1535 End Time: 1640
Well Construction: 4"
Depth to Water: 38.34
Well Depth: 350.0
Water Column: 311.66
Total Volume Removed (L): 11.250
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10 H100928
LaMotte	2020e	3108-1413
QED	MP15	Pine
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
1600	1.25	250	38.34	8.14	4.48	141	1.04	190.3	1.98	Clear
1605	"	250	38.34						1.49	Orange
1610	"	250								
1615	"	250								
1620	"	250	38.34	9.21	4.39	139	1.24	206.3	2.51	Brown
1625	"	"	38.34	9.10	4.43	141	1.29	205.8	10.27	Brown
1630	"	"	38.34	9.11	4.42	141	1.27	206.3	7.87	Clear
1635	"	"	38.34	9.10	4.41	141	1.28	206.4	4.30	Clear
1640	"	"	38.34	9.09	4.41	140	1.28	206.6	0.92	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
1640	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
1640	RW 3 -MW 1 -20131217	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

RM
Signature

12-17-13
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 2

Date: 12/17/13
Sampler: AM/SL
PID: ------

Start Time: 1510 End Time: 1535
Well Construction: 4"
Depth to Water: 39.50
Well Depth: 495.0
Water Column: 455.5
Total Volume Removed (L): 8.125
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	3108-M13
QED	MP15	Pine
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
1520	1.625	325	39.52	11.96	4.70	91	0.71	167.8	1.89	Clear
1525	"	325	39.52	12.17	4.65	89	0.58	172.7	1.56	Clear
1530	"	325	39.52	12.13	4.61	90	0.56	175.0	1.30	Clear
1535	"	325	39.52	12.11	4.64	90	0.54	178.2	1.02	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
1535	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 -MW2 - 2013/12/17	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Signature

12-17-13
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: 12/17/13
Sampler: RM/SL
PID: ----

Start Time: 1150 End Time: 12:20
Well Construction: 4"
Depth to Water: ~~39.37~~ 39.55
Well Depth: 340.0
Water Column: 300.45
Total Volume Removed (L): 5.25
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10H 100928
LaMotte	2020e	3108-1413
QED	MP15	Pink
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
1155	.875	175	~~39.37~~	8.19	4.73	140	3.20	186.3	7.76	Brown
1200	"	"	39.37	9.84	5.21	147	0.90	140.2	9.08	Clear
1205	"	"	39.37	9.66	4.93	149	0.95	162.6	1.38	"
1210	"	"	39.37	9.42	4.92	149	0.89	164.1	2.41	"
1215	"	"	39.37	10.03	4.95	149	0.83	165.9	4.06	"
1220	"	"	39.37	9.96	4.95	150	0.82	165.3	1.13	"
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
1220	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW 3 -MW 3 - 20131217	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

RM
Signature

12-17-13
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
Location: Bethpage, NY
Well ID: RW3 - MW4

Date: 12/17/13
Sampler: RM/SS
PID: ------

Start Time: 1040 End Time: 1125
Well Construction: 4"
Depth to Water: 40.26
Well Depth: 495.0
Water Column: 454.74
Total Volume Removed (L): 9.0
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10H100928
LaMotte	~~2020e~~ 2020we	3105 - 1413
QED	MP15	99+Pre
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
1045	1.0	200	39.84	9.70	5.42	164	7.09	132.8	8.40	Clear
1050	1.0	"	39.84	10.12	5.28	183	5.08	134.3	2.63	Clear
1100	2.0	200	39.84	11.34	4.55	159	0.87	153.4	1.88	"
1105	1.0	200	39.84	11.23	4.53	158	0.81	157.3	1.72	"
1110	1.0	"	39.84	11.39	4.47	158	0.65	168.1	1.56	"
1115	1.0	"	39.84	11.40	4.41	163	0.63	173.9	1.27	"
1120	1.0	"	39.84	11.31	4.41	164	0.63	174.8	1.13	"
1125	1.0	"	39.84	11.79	4.41	167	0.63	176.2	1.20	"
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
1125	NWIRP-GM-38-GW-	40 mL CG	3	HCl	TCL VOCs (624)
	RW3 -MW4 - 20131217	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Signature

12-17-13
Date

H&S Environmental, Inc.

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 12/16/13
Sampler: SL/RM
PID: ------

Start Time: 1315 End Time: 14:05
Well Construction: 4"
Depth to Water: 34.26
Well Depth: 470
Water Column: 435.74
Total Volume Removed (L): 10.125
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10H100928
LaMotte	2020e	3108-1417
QED	MP15	Pink
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
1320	1.125	225	34.27	10.31	5.54	185	7.45	80.0	2.21	clear
1330	~~2.25~~	225	34.27	10.22	5.37	184	6.65	87.4	1.90	clear
1335	3.375	225	34.27	10.36	5.40	184	6.62	87.8	1.46	clear
1340	4.5	225	34.27	10.23	5.47	184	6.49	87.7	1.21	clear
1345	5.625	225	34.27	10.37	5.60	185	6.23	88.0	1.14	"
1350	6.75	225	34.27	10.38	5.59	185	6.18	89.5	1.07	"
1355	7.875	225	34.27	10.43	5.60	184	6.01	92.4	1.03	"
1400	9.0	225	34.27	10.20	5.58	184	5.95	95.3	1.01	clear
1405	10.125	225	34.27	10.18	5.59	184	5.96	94.3	0.87	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)
	~~RW MW~~ TP1-20131216	250 mL PL	1	HNO_3	Hg (245.1)
		500 mL PL	1	---	TSS (SM2540D)

Comments

Signature

12-16-13
Date

ALS Environmental
34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com
NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: CT PH-0224 , DE ID 11 , GA 914 , MA PA0102 , MD 128 , LA 04162 , VA 421 , WY EPA Region 8 , WV 343

Analytical Laboratory Services, Inc.
Environmental • Industrial Hygiene • Field Services
34 Dogwood Lane • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

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: Y
Tracking #: 8943 8011 8340

1064186

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 Qrtly 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.:

	40 mL	500 mL	250 mL
***Container Type	CG	PL	PL
***Container Size			
***Preservative	HCL	HNO3	—

ANALYSES/METHOD REQUESTED: TCL VOCs (Method 624); Mercury (Method 245.1); TSS (SM2540D)

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	TCL VOCs (Method 624)	Mercury (Method 245.1)	TSS (SM2540D)	
1	NWIRP-GM-38-GW-RW1-MW1-20131216		12/16/13	13:45	G	GW	3	1	1	
2	NWIRP-GM-38-GW-RW1-MW3-20131217		12/17/13	13:40	G	GW	3	1	1	
3	NWIRP-GM-38-GW-RW2-MW1-20131217	MS/MSD for VOCs, Hg	12/17/13	09:20	G	GW	9	3	1	
4	NWIRP-GM-38-GW-RW3-MW1-20131217		12/17/13	16:40	G	GW	~~3~~ 2	1	1	Broke in Transit LDW 12/19/13
5	NWIRP-GM-38-GW-RW3-MW2-20131217		12/17/13	15:35	G	GW	3	1	1	
6	NWIRP-GM-38-GW-RW3-MW3-20131217		12/17/13	12:20	G	GW	3	1	1	
7	NWIRP-GM-38-GW-RW3-MW4-20131217		12/17/13	11:25	G	GW	3	1	1	
8	NWIRP-GM-38-GW-TP1-20131216		12/16/13	14:05	G	GW	3	1	1	

Performed by: INITIALS/DATE
Cooler Temp: 1°C
Therm. ID: TH-215
No. of Coolers:
Notes:

Check	Y/N
Correct containers?	Y
Correct sample volume?	Y
Correct preservation?	Y
Headspace/Volatiles?	Y
Circle appropriate Y or N	
Custody seals Present?	(N)
(if present) Seals intact?	
Received on ice?	Y
COC/Labels complete/accurate?	Y
Container in good condition?	Y

SAMPLED BY (Please Print): Rosa Mastrocola / Stacey Lee
LOGGED BY (signature): [signature] DATE 12/19/13 TIME 1355
REVIEWED BY (signature): [signature] DATE 12/20/13 TIME 1430

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	[signature]	12-18-13	08:30	2	[signature]	12/19	1020
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] (other)
EDDs Required? [ ] If yes, format type:
DOD Criteria Required?

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]
State Samples Collected In? MD [ ] NJ [ ] NY [x] PA [ ] Other
PWSID

ALSI FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite
**Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

Rev 08-2008

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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 2 of 2
Courier:
Tracking #:
1064186

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.:

***Container Type	40 mL	500 mL	250 mL
***Container Size	CG	PL	PL
*** Preservative	HCL	HNO3	—

ANALYSES/METHOD REQUESTED: TCL VOCs (Method 624) · Mercury (Method 245.1) · TSS (SM2540D)

Enter Number of Containers Per Analysis

	Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	TCL VOCs (Method 624)	Mercury (Method 245.1)	TSS (SM2540D)
9	1 NWIRP-GM-38-GW-RW2-MW1-DUP-20131217		12/17/13	00:00	G	GW	3	1	1
10	2 NWIRP-GM-38-FB-20131216		12/16/13	16:50	G	GW	3	1	
11	3 NWIRP-GM-38-TB-						2		
	4								
	5								
	6								
	7								
	8								

Receipt Information (completed by Sample Performed by: INITIAL HERE) LDN
Cooler Temp: 1°C
Therm. ID: TH-25
No. of Coolers:
Notes:

Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Circle appropriate Y or N.
Y	Y	Y	Y	

Custody seals Present?	(If present) Seals intact?	Received on ice?	COC/Labels complete/accurate?	Container in good condition?
N		Y	Y	Y

SAMPLED BY (Please Print): Rosa Mastrocola / Stacey Lee
LOGGED BY (signature): [signature] DATE 12/19 TIME 1355
REVIEWED BY (signature): [signature] DATE TIME

	Relinquished By / Company Name	Date	Time		Received By / Company Name	Date	Time
1	[signature]	12/18/13	08:30	2	[signature] ALS	12/19	1020
3				4			
5				6			
7				8			
9				10			

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [ ] (other)
EDDs Required? [ ] If yes, format type:
DOD Criteria Required?

SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ] Other PWSID

State Samples Collected In? MD [ ] NJ [ ] NY [X] PA [ ]

ALSI FIELD SERVICES: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other:

* G=Grab; C=Composite **Matrix: AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY
***Container Type: AG-Amber Glass; CG-Clear Glass, PL-Plastic. Container Size: 250ml, 500ml, 1L, 8oz., etc. Preservative: HCl, HNO3, NaOH, etc.
Rev 08-2008

APPENDIX D

DATA VALIDATION REPORTS AND VALIDATED DATA SUMMARY

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 #: G1064186-HNW-069

Client: H&S Environmental, Inc.

Date: 02/20/2014

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 12/16, 17, and 19/2013. The samples were submitted to ALS Environmental, Middletown, PA on 12/19/2013 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-GM38-GW-RW1-MW1-20131216	1064186001	12/16/2013	Water	
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	12/17/2013	Water	
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	12/17/2013	Water	
NWIRP-GM38-GW-TP1-20131216	1064186008	12/16/2013	Water	
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	12/17/2013	Water	Field Duplicate of sample NWIRP-GM-38-GW-RW2-MW1-20131217
NWIRP-GM-38-FB-20131216	1064186010	12/16/2013	Water	Field Blank
NWIRP-GM38-TB	1064186011	12/19/2013	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 14 days 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 12/18/2013 (ms05.i) exhibited acceptable %RSD and average RRF values for all compounds with the following exception(s):

Compound	RRF	%RSD
Methylene chloride	A	48.62

A= Acceptable

Client Sample ID	Laboratory Sample ID	Compound	Action
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	Methylene Chloride	UJ
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	Methylene Chloride	UJ
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	Methylene Chloride	UJ
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	Methylene Chloride	UJ
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	Methylene Chloride	UJ
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	Methylene Chloride	UJ
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	Methylene Chloride	UJ
NWIRP-GM38-GW-TP1-20131216	1064186008	Methylene Chloride	UJ
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	Methylene Chloride	UJ
NWIRP-GM-38-FB-20131216	1064186010	Methylene Chloride	UJ
NWIRP-GM38-TB	1064186011	Methylene Chloride	UJ

Continuing Calibration Verification (CCV):

1. CCV analyzed on 12/20/2013 @ 11:04 PM (ms05.i) exhibited acceptable %Ds (≤15.0%) for all compounds with the following exception(s):

Compound	%D
Acrolein	-41.1
Bromomethane	-25.8
Chloroethane	-32.0
2-chloroethylvinyl ether	16.2
Chloromethane	-16.1
1,2-dichloroethane	23.8
Trans-1,3-dichloropropene	20.0

Compound	%D
Vinyl Chloride	-16.3

Client Sample ID	Laboratory Sample ID	Compound	Action
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ UJ UJ J
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-GW-TP1-20131216	1064186008	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ UJ UJ J
NWIRP-GM-38-FB-20131216	1064186010	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ
NWIRP-GM38-TB	1064186011	Acrolein, Bromomethane, Chloroethane, 2-chloroethylvinyl ether, Chloromethane, Trans-1,3-dichloropropene, Vinyl Chloride, 1,2-dichloroethane	UJ

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 (1232004) analyzed on 12/21/2013 was free of contamination. No qualifications were required.

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/l)	Sample(s) Affected	Action
1232004	Chloroform	0.65	3.25	NWIRP-GM38-GW-RW1-MW1-20131216	U
				NWIRP-GM38-GW-RW1-MW3-20131217	U
				NWIRP-GM38-GW-RW2-MW1-20131217	U
				NWIRP-GM38-GW-RW3-MW1-20131217	None
				NWIRP-GM38-GW-RW3-MW2-20131217	None
				NWIRP-GM38-GW-RW3-MW3-20131217	None
				NWIRP-GM38-GW-RW3-MW4-20131217	U
				NWIRP-GM38-GW-TP1-20131216	None
				NWIRP-GM38-RW2-MW1DUP-20131217	U
				NWIRP-GM-38-FB-20131216	None
				NWIRP-GM38-TB	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.

2. Field Blank (NWIRP-GM-38-FB-20131216) (1064186010) analyzed on 12/21/2013 was free of contamination. No qualifications were required.

3. Trip Blank (NWIRP-GM38-TB) (1064186011) analyzed on 12/21/2013 was free of contamination. No qualifications were required.

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

1. Laboratory Control Sample (1232005) was analyzed on 12/21/2013. All %RECs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample NWIRP-GM38-RW2-MW1DUP-20131217 (1064186009) was collected as field duplicate for sample NWIRP-GM38-GW-RW2-MW1-20131217 (1064186003). All RPDs were ≤50.0%. No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
MWIRP-GM38-GW-RW2-MW1-20131217	cis-1,2-Dichloroethene	EPA 624	11	µg/l	MWIRP-GM38-RW2-MW1DUP-20131217	11.1	µg/l	0.9	None
MWIRP-GM38-GW-RW2-MW1-20131217	1,1,1-Trichloroethane	EPA 624	0.94	µg/l	MWIRP-GM38-RW2-MW1DUP-20131217	0.94	µg/l	0.0	None
MWIRP-GM38-GW-RW2-MW1-20131217	1,1-Dichloroethane	EPA 624	5.8	µg/l	MWIRP-GM38-RW2-MW1DUP-20131217	6.4	µg/l	9.8	None
MWIRP-GM38-GW-RW2-MW1-20131217	1,1-Dichloroethene	EPA 624	2.6	µg/l	MWIRP-GM38-RW2-MW1DUP-20131217	2.6	µg/l	0.0	None
MWIRP-GM38-GW-RW2-MW1-20131217	1,2-Dichloroethane	EPA 624	1.9	µg/l	MWIRP-GM38-RW2-MW1DUP-20131217	1.7	µg/l	11.1	None
MWIRP-GM38-GW-RW2-MW1-20131217	Trichloroethene	EPA 624	34.6	µg/l	MWIRP-GM38-RW2-MW1DUP-20131217	33.5	µg/l	3.2	None

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample NWIRP-GM38-GW-RW2-MW1-20131217 (1064186003). All %RECs and RPDs were within the laboratory control limits with the following exception(s):

Compound	%REC/%REC/RPD	Action
2-Chloroethylvinyl ether	0/0/NA	R[(1)]

NA= Not Applicable

[(1)]= R qualifier was used due to both MS and MSD were not recovered.

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: G1064186-HNW-069.

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 #: G1064186-HNW-069

Client: H&S Environmental, Inc.

Date: 02/20/2014

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 12/16 and 17/2013. The samples were submitted to ALS Environmental, Middletown, PA on 12/19/2013 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-GM38-GW-RW1-MW1-20131216	1064186001	12/16/2013	Water	
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	12/17/2013	Water	
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	12/17/2013	Water	
NWIRP-GM38-GW-TP1-20131216	1064186008	12/16/2013	Water	
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	12/17/2013	Water	Field Duplicate of sample NWIRP-GM-38-GW-RW2-MW1-20131217
NWIRP-GM-38-FB-20131216	1064186010	12/16/2013	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 (1235507) digested on 1/03/2014 was free of contamination. No qualifications were required.

3. Method Blank (1235513) digested on 1/03/2014 was free of contamination. No qualifications were required.

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

1. Field Blank (NWIRP-GM-38-FB-20131216) (1064186010) analyzed on 1/3/2014 was free of contamination. No qualifications were required.

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

1. Mercury %REC in Laboratory Control Sample (1235508) analyzed on 1/03/2014 was within the laboratory control limits. No qualifications were required.

2. Mercury %REC in Laboratory Control Sample (1235514) analyzed on 1/03/2014 was within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample NWIRP-GM38-RW2-MW1DUP-20131217 (1064186009) was collected as field duplicate for sample NWIRP-GM38-GW-RW2-MW1-20131217 (1064186003). 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-GM38-GW-RW3-MW4-20131217 (1064186007). 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: G1064186-HNW-069.

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 #: G1064186-HNW-069

Client: H&S Environmental, Inc.

Date: 02/20/2014

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 12/16 and 17/2013. The samples were submitted to ALS Environmental, Middletown, PA on 12/19/2013 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-GM38-GW-RW1-MW1-20131216	1064186001	12/16/2013	Water	
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	12/17/2013	Water	
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	12/17/2013	Water	
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	12/17/2013	Water	
NWIRP-GM38-GW-TP1-20131216	1064186008	12/16/2013	Water	
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	12/17/2013	Water	Field Duplicate of sample NWIRP-GM-38-GW-RW2-MW1-20131217

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 (1231422) analyzed on 12/19/2013 was free of contamination. No qualifications were required.

2. Method Blank (1231791) analyzed on 12/20/2013 was free of contamination. No qualifications were required.

Field Duplicate:

1. Sample NWIRP-GM38-RW2-MW1DUP-20131217 (1064186009) was collected as field duplicate for sample NWIRP-GM38-GW-RW2-MW1-20131217 (1064186003). All RPDs were ≤50.0%. No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
MWIRP-GM38-GW-RW2-MW1-20131217	TSS	2540D	30	mg/L	MWIRP-GM38-RW2-MW1DUP-20131217	24	mg/L	22.2	None

Laboratory Duplicate:

1. Laboratory Duplicate source sample was associated with a different SDG.

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: G1064186-HNW-069.

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DECEMBER 2013 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: 1064186, HNW-069

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Tetrachloroethene	0.67	ug/L	J	0.26	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	cis-1,2-Dichloroethene	84.4	ug/L		0.26	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	trans-1,2-Dichloroethene	1.4	ug/L		0.12	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Chloroform	0.52	ug/L	U	0.15	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,1,1-Trichloroethane	1.5	ug/L		0.27	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,1-Dichloroethane	5.2	ug/L		0.19	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,1-Dichloroethene	2.6	ug/L		0.17	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1

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DATA SUMMARY TABLE
AQUEOUS
SDG: 1064186, HNW-069

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	Trichloroethene	128	ug/L		0.21	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	624	16-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	245.1	16-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-RW1-MW1-20131216	1064186001	2540D	16-Dec-13	1	Total Suspended Solids	11	mg/L		5	5
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	cis-1,2-Dichloroethene	0.6	ug/L	J	0.26	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Chloroform	0.8	ug/L	U	0.15	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,1,1-Trichloroethane	2	ug/L		0.27	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,1-Dichloroethane	8.1	ug/L		0.19	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,1-Dichloroethene	1.9	ug/L		0.17	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,1,2-Trichloroethane	0.55	ug/L	J	0.3	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	Trichloroethene	3.2	ug/L		0.21	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	624	17-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	245.1	17-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-RW1-MW3-20131217	1064186002	2540D	17-Dec-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,2-Dichloroethane	1.9	ug/L	J	0.22	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	R	0.28	2
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	cis-1,2-Dichloroethene	11	ug/L		0.26	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Chloroform	2.9	ug/L	U	0.15	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,1,1-Trichloroethane	0.94	ug/L	J	0.27	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,1-Dichloroethane	5.8	ug/L		0.19	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,1-Dichloroethene	2.6	ug/L		0.17	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	Trichloroethene	34.6	ug/L		0.21	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	624	17-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	245.1	17-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-RW2-MW1-20131217	1064186003	2540D	17-Dec-13	1	Total Suspended Solids	30	mg/L		5	5
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Tetrachloroethene	1.6	ug/L		0.26	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	cis-1,2-Dichloroethene	0.41	ug/L	J	0.26	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	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-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,1,1-Trichloroethane	0.66	ug/L	J	0.27	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,1-Dichloroethane	1.2	ug/L		0.19	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,1-Dichloroethene	0.69	ug/L	J	0.17	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	Trichloroethene	60.5	ug/L		0.21	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	624	17-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	245.1	17-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-RW3-MW1-20131217	1064186004	2540D	17-Dec-13	1	Total Suspended Solids	15	mg/L		5	5
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Tetrachloroethene	1	ug/L	U	0.26	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-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	cis-1,2-Dichloroethene	1.9	ug/L		0.26	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,1,1-Trichloroethane	0.5	ug/L	J	0.27	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,1-Dichloroethane	0.59	ug/L	J	0.19	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,1-Dichloroethene	0.45	ug/L	J	0.17	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	Trichloroethene	176	ug/L		0.21	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	624	17-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	245.1	17-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-RW3-MW2-20131217	1064186005	2540D	17-Dec-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Ethylbenzene	5	ug/L	U	0.8	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	cis-1,3-Dichloropropene	5	ug/L	U	0.6	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	trans-1,3-Dichloropropene	5	ug/L	UJ	0.7	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,4-Dichlorobenzene	5	ug/L	U	0.75	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Acrolein	150	ug/L	UJ	12	150
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,2-Dichloroethane	5	ug/L	UJ	1.1	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	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-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Toluene	5	ug/L	U	0.6	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Chlorobenzene	5	ug/L	U	0.55	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	2-Chloroethylvinyl ether	10	ug/L	UJ	1.4	10
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Chlorodibromomethane	5	ug/L	U	1.1	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Tetrachloroethene	5	ug/L	U	1.3	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	cis-1,2-Dichloroethene	5	ug/L	U	1.3	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	trans-1,2-Dichloroethene	5	ug/L	U	0.6	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,3-Dichlorobenzene	5	ug/L	U	0.7	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,3-Dichloropropene, Total	5	ug/L	U	0.95	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Carbon Tetrachloride	5	ug/L	U	1.2	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Chloroform	3.4	ug/L	J	0.75	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Benzene	5	ug/L	U	0.8	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,1,1-Trichloroethane	5	ug/L	U	1.4	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Bromomethane	10	ug/L	UJ	1.4	10
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Chloromethane	5	ug/L	UJ	1.3	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Chloroethane	5	ug/L	UJ	1.2	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Vinyl Chloride	10	ug/L	UJ	1.2	10
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Methylene Chloride	5	ug/L	UJ	1.6	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Bromoform	10	ug/L	U	1.1	10
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Bromodichloromethane	5	ug/L	U	0.65	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,1-Dichloroethane	3.7	ug/L	J	0.95	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,1-Dichloroethene	5	ug/L	U	0.85	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Trichlorofluoromethane	5	ug/L	U	1.1	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,2-Dichloropropane	5	ug/L	U	1.2	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,1,2-Trichloroethane	5	ug/L	U	1.5	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	Trichloroethene	322	ug/L		1.1	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,1,2,2-Tetrachloroethane	5	ug/L	U	1.1	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	624	17-Dec-13	5	1,2-Dichlorobenzene	5	ug/L	U	1	5
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	245.1	17-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-RW3-MW3-20131217	1064186006	2540D	17-Dec-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	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-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Chloroform	0.63	ug/L	U	0.15	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,1,1-Trichloroethane	0.39	ug/L	J	0.27	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,1-Dichloroethane	4.9	ug/L		0.19	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,1-Dichloroethene	0.39	ug/L	J	0.17	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	Trichloroethene	4.4	ug/L		0.21	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	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-GM38-GW-RW3-MW4-20131217	1064186007	624	17-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	245.1	17-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-RW3-MW4-20131217	1064186007	2540D	17-Dec-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Tetrachloroethene	0.57	ug/L	J	0.26	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	cis-1,2-Dichloroethene	8	ug/L		0.26	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Chloroform	7.4	ug/L		0.15	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,1,1-Trichloroethane	0.5	ug/L	J	0.27	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,1-Dichloroethane	1.5	ug/L		0.19	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,1-Dichloroethene	0.33	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-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	Trichloroethene	29.8	ug/L		0.21	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM38-GW-TP1-20131216	1064186008	624	16-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-GW-TP1-20131216	1064186008	245.1	16-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-GW-TP1-20131216	1064186008	2540D	16-Dec-13	1	Total Suspended Solids	5	mg/L	U	5	5
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,2-Dichloroethane	1.7	ug/L	J	0.22	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	cis-1,2-Dichloroethene	11.1	ug/L		0.26	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Chloroform	3.2	ug/L	U	0.15	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,1,1-Trichloroethane	0.94	ug/L	J	0.27	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2

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Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,1-Dichloroethane	6.4	ug/L		0.19	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,1-Dichloroethene	2.6	ug/L		0.17	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	Trichloroethene	33.5	ug/L		0.21	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	624	17-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	245.1	17-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM38-RW2-MW1DUP-20131217	1064186009	2540D	17-Dec-13	1	Total Suspended Solids	24	mg/L		5	5
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Benzene	1	ug/L	U	0.16	1

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DATA SUMMARY TABLE
AQUEOUS
SDG: 1064186, HNW-069

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,1-Dichloroethane	1	ug/L	U	0.19	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,1-Dichloroethene	1	ug/L	U	0.17	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	Trichloroethene	1	ug/L	U	0.21	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-FB-20131216	1064186010	624	16-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1
NWIRP-GM-38-FB-20131216	1064186010	245.1	16-Dec-13	1	Mercury, Total	0.0005	mg/L	U	0.00016	0.0005
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Ethylbenzene	1	ug/L	U	0.16	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	cis-1,3-Dichloropropene	1	ug/L	U	0.12	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	trans-1,3-Dichloropropene	1	ug/L	UJ	0.14	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,4-Dichlorobenzene	1	ug/L	U	0.15	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Acrolein	30	ug/L	UJ	2.4	30
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,2-Dichloroethane	1	ug/L	UJ	0.22	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Acrylonitrile	5	ug/L	U	0.89	5
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Toluene	1	ug/L	U	0.12	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Chlorobenzene	1	ug/L	U	0.11	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	2-Chloroethylvinyl ether	2	ug/L	UJ	0.28	2
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Chlorodibromomethane	1	ug/L	U	0.22	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Tetrachloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	cis-1,2-Dichloroethene	1	ug/L	U	0.26	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	trans-1,2-Dichloroethene	1	ug/L	U	0.12	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,3-Dichlorobenzene	1	ug/L	U	0.14	1

NWIRP BETHPAGE GM-38
DECEMBER 2013 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: 1064186, HNW-069

Sample Name	Lab ID	Analytical Method	Sample Date	Dilution Factor	Analyte	Result	Unit	Qualifier	MDL	RL
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,3-Dichloropropene, Total	1	ug/L	U	0.19	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Carbon Tetrachloride	1	ug/L	U	0.24	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Chloroform	1	ug/L	U	0.15	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Benzene	1	ug/L	U	0.16	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,1,1-Trichloroethane	1	ug/L	U	0.27	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Bromomethane	2	ug/L	UJ	0.27	2
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Chloromethane	1	ug/L	UJ	0.25	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Chloroethane	1	ug/L	UJ	0.24	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Vinyl Chloride	2	ug/L	UJ	0.24	2
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Methylene Chloride	1	ug/L	UJ	0.32	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Bromoform	2	ug/L	U	0.21	2
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Bromodichloromethane	1	ug/L	U	0.13	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,1-Dichloroethane	1	ug/L	U	0.19	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,1-Dichloroethene	1	ug/L	U	0.17	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Trichlorofluoromethane	1	ug/L	U	0.21	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,2-Dichloropropane	1	ug/L	U	0.24	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,1,2-Trichloroethane	1	ug/L	U	0.3	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	Trichloroethene	1	ug/L	U	0.21	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,1,2,2-Tetrachloroethane	1	ug/L	U	0.22	1
NWIRP-GM-38-TB	1064186011	624	19-Dec-13	1	1,2-Dichlorobenzene	1	ug/L	U	0.2	1