27 July 2018

Mr. Brian Murray
Remedial Project Manager
Naval Facilities Engineering Command, Mid Atlantic
9324 Virginia Avenue, Building Z-144
Norfolk, VA 23511-3095

Subject: **US NAVY CONTRACT NO. N40085-16-D-2288**
CONTRACT TASK ORDER NO. 0005
FIRST QUARTER 2018 OPERATIONS REPORT
GWTP GM-38 AREA REMEDIATION
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, BETHPAGE, NY

Dear Mr. Murray:

An electronic copy of the *First Quarter 2018 Operations Report, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York,* has been submitted to your attention via the AMRDEC safe access file exchange system.

Please contact me at sroy@komangs.com or 610.400.0622 if you have any questions or comments regarding this submittal.

Sincerely,
KOMAN Government Solutions, LLC (KGS)

Stephane Roy
Project Manager

Cc: Mr. Greg Pearman (NWIRP Bethpage) – 2 hard copies, 2 CDs
Mr. Jason Pelton (NYSDEC) – 1 hard copy, 1 CD
Mr. Steven Scharf (NYSDEC) – 1 CD
Mr. Lorenzo Thantu (EPA Region II) – 1 CD
Mr. William Cords (NAVAIR) – 1 CD
Mr. Steven Karpinski (NYSDOH) – 1 hard copy, 1 CD
Ms. Monica Marrow (CH2M Hill - NIRIS) – 1 hard copy, 1 CD
Mr. Ed Hannon (Northrop Grumman) – 1 CD
Mr. David Stern (ARCADIS) – 1 CD
Mr. David Brayack (Tetra Tech) – 1 CD
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Quarterly Operations Report
First Quarter 2018

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

Contract No. N40085-16-D-2288
Contract Task Order No. 0005

July 2018

Prepared for:

Naval Facilities Engineering Command Mid-Atlantic
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7/27/2018

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Program Manager

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7/27/2018

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Project Manager

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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
KGS	KOMAN Government Solutions, LLC
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
Navy	U.S. Department of the Navy
NELAC	National Environmental Accreditation Conference
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and Maintenance
ORP	oxidation reduction potential

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

1.0 INTRODUCTION

KOMAN Government Solutions, LLC (KGS) has prepared this Quarterly Operations Report for the GM-38 Area Groundwater Treatment Plant (GWTP) at the Naval Weapons Industrial Reserve Plant (NWIRP) in Bethpage, New York. This report has been prepared for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC), Mid-Atlantic, under Contract No. N40085-16-D-2288, Contract Task Order No. 0005. This First Quarter 2018 Operations Report details activities that occurred from January to March 2018. Data was collected and operational activities were performed by KGS in accordance with the following documents:

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

1.1 Background

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

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

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

1.2 GWTP Overview

Groundwater is extracted from recovery wells RW-1 and RW-3 (though RW-3 has recently been taken off-line, as described below) 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 Requirement (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.

A 2014 evaluation of the GM-38 Area, conducted in order to better determine the capture zone of the recovery wells, recommended that use of recovery well RW-3 be discontinued ("*Capture Zone Evaluation and Path Forward, GM-38 Area Groundwater Treatment Plant*" [Tetra Tech 2014]). The report was sent to NYSDEC in March 2014 and recommended ceasing operation of recovery well RW-3 and increasing the pumping rate of recovery well RW-1. These system modifications would maintain the existing GWTP pumping rate of 1,000 to 1,100 gpm while maintaining the desired capture zone of the GWTP (Tetra Tech 2014). NYSDEC concurred with the implementation of this path forward and associated system modifications on 20 April 2015. On 1 July 2015, in accordance with the approved path forward, recovery well RW-3 was taken off-line. The flowrate of recovery well RW-1 was increased from approximately 800 gpm to approximately 1,000 gpm.

2.0 GWTP OPERATIONS AND MAINTENANCE

While designed to run completely automated, the GWTP requires regular 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 visits. These activities include general site inspections, collection of operational data (water and vapor flowrates, differential pressures across the AS, carbon units, bag filter units and blower discharge pressures, tank levels and totalizer readings), measurement of water levels in the recovery wells, adjustment of pump signal settings, collection of vapor and process water samples, changing out of bag filters, switching of lead/lag pump assignments, and preventive maintenance of system equipment.

In addition, the following maintenance tasks were also performed during this reporting period:

- On 5 February, the annual backflow preventer inspection was performed. Results were submitted to the Bethpage Water District and the New York State Department of Health (NYSDOH), as required.
- On 21 March, the bag filters were changed out.

2.2 Non-routine Maintenance / Site Activities

The following non-routine activities occurred during the First Quarter:

- On 11 January, the GWTP was shutdown at 7:15 am to allow Basin #495 to drain for maintenance.
- On 17 January, the NYSDEC completed a site visit of GM38 accompanied by the Facility Manager and Treatment Plant Operator.
- On 23 January, F&M Mechanical was on site to evaluate two inoperative heaters and replace burned out light bulbs.
- On 25 January, the GWTP was restarted at 11:30 am at a reduced flowrate of approximately 200 gpm. The effluent discharge was diverted into injection well IW-1 while maintenance on Basin #495 was underway.
- On 27 February, F&M Mechanical was on site to replace the two inoperative heaters.
- On 9 March, the GWTP effluent discharge was returned to the Basin #495 at an initial flowrate of 350 gpm while water levels in the basin were monitored.
- On 12 March, the GWTP effluent discharge flowrate was increased to 700 gpm.
- On 15 March, the GWTP was restored to full capacity and the effluent discharge flowrate was increased to 1,000 gpm.

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 semi-annually 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 NYSDEC on a monthly basis in the form of a Discharge Monitoring Report (DMR). A copy of the approved NYSDEC effluent limitation and monitoring constituents and the reporting forms are included in **Appendix A**.

Monthly aqueous samples are collected from the active recovery well, RW-1, and 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). Sampling frequency of now inactive recovery well, RW-3, was reduced from monthly to semi-annually. The analytical results of monthly process water samples collected during the First Quarter are presented in **Table 1**. The data demonstrates that all permitted constituents were in compliance with regulatory requirements during the First Quarter. **Table 1** also summarizes the average monthly flowrates in gallons per minute along with the total volume of water processed during each month of the First Quarter. Monthly DMRs for the First Quarter (January – March 2018) are included in **Appendix A**.

Based on NYSDEC's interest with several non-VOC parameters in groundwater near Bethpage Water District Plant 4, the Navy has agreed to sample and analyze groundwater for 1,4-dioxane (USEPA Method 8270D) on an annual basis from RW-1 and the system's treated effluent. Analytical results for 1,4-dioxane are provided as **Table 1** (March DMR). In addition, groundwater samples are collected and analyzed for radium 226 and radium 228 (USEPA Method 903.1 and 904.0/9320) on an annual basis from RW-1 and the system's treated effluent. Radium analytical results from the March 2018 and previous sampling events are presented in **Table 2**.

3.2 Air Quality Monitoring

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

documentation is included as **Appendix B**.

While only sampling of the stack emissions is required for NYSDEC compliance, process vapor samples are also collected using 6-L summa canisters at various locations to monitor for breakthrough of the VGAC units. The analytical results of monthly influent and effluent vapor samples as well as midfluent samples (VC12 and VC13) collected during the First Quarter are presented in **Table 3**. Air emissions calculations using the stack vapor concentrations along with discharge flowrates are presented in **Table 4**. The calculations demonstrate that all constituents were within the regulatory requirements during the First Quarter based on the calculated emission rates.

3.3 Groundwater Quality Monitoring

The groundwater monitoring well system at the GM-38 Groundwater Remediation Area consists of fourteen monitoring wells, three recovery wells (RW-1, RW-2, RW-3) and one injection well (IW-1). Groundwater level measurement were collected prior to sampling and are summarized in **Table 5**. 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. As mentioned above, RW-3 was taken off-line on 1 July 2015. Well locations are depicted on **Figure 3**.

Depth to water (DTW) measurements are collected from twelve of the monitoring wells on a quarterly basis. Prior to 2014, water quality samples were collected from eight of the monitoring wells on a quarterly basis; beginning in 2014, the sample collection frequency was reduced to semi-annually, with sample collection generally in the March and September time-frame. 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.

Semi-annual groundwater samples are collected from eight monitoring wells (RW1-MW1, RW1-MW3, RW2-MW1, RW3-MW1, RW3-MW2, RW3-MW3, RW3-MW4, and TP-01) and one recovery well (RW-3). Samples are collected from monitoring wells using bladder pumps in accordance with the U.S. Environmental Protection Agency (USEPA) low-flow sampling methodologies. Samples are collected from recovery well RW-3 using the dedicated extraction pump following a 3-well volume purge. Results of the groundwater sampling for the First Quarter are presented in Section 3.3.1 below, and descriptions of monitoring well locations are as follows:

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

Recovery Well 2 (RW-2) Monitoring Wells
The RW-2 cluster consists of three monitoring wells screened between 470 and 510 feet bgs. RW2-MW1 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 RW2-MW1 is monitored for water quality.

Recovery Well 3 (RW-3) Monitoring Wells
The RW-3 cluster consists of four monitoring wells. RW3-MW2 and RW3-MW4 are screened between 475 and 495 feet bgs. RW3-MW1 and RW3-MW3 are screened between 330 and 350 feet bgs and 320 and 340 feet 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

KGS collected groundwater samples for the First Quarter on 5-6 March 2018. Field parameters measured during well purging, which consisted of pH, specific conductance (SC), temperature, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity are summarized in **Table 6**. Following stabilization of field parameters, groundwater samples were collected. Copies of the field logs and chain of custody documentation are presented in **Appendix C**.

Groundwater samples were submitted to a National Environmental Laboratory Accreditation Conference (NELAC), Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) certified, laboratory, Analytical Laboratories Services, located in Middletown, PA. The samples were analyzed for VOCs (including tentatively identified compounds [TICs]) via USEPA Method 624, mercury via USEPA Method 245.1, total suspended solids (TSS) via USEPA Method SM20 2540D, and 1,4-dioxane via USEPA Method 8270D. Validated analytical sampling results collected during the First Quarter monitoring event are summarized in **Table 7.** Data validation reports are presented in **Appendix D**. Raw analytical data is provided under separate cover.

3.3.2 Quality Assurance/Quality Control Sampling

Quality assurance/quality control (QA/QC) samples were collected during the semi-annual groundwater monitoring event in accordance with the *Final Sampling and Analysis Plan* (TtEC 2010a). These samples consisted of blind field duplicates (collected from RW3-MW3 during the First Quarter), matrix spike/matrix spike duplicate (MS/MSD) samples, equipment rinsate blanks (EB) collected at a rate of one

per sampling event, and trip blanks (TB) submitted at a rate of one per sample cooler. No contaminants were detected in the EB or TB submitted for this event. The overall absence of contamination in the blanks indicates that quality control requirements were achieved.

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

3.3.3 Groundwater Concentration Trends

Historical groundwater analytical results through the First Quarter are presented in **Table 8**. Groundwater analytical results of select VOCs (cis-1,2-DCE, PCE, TCE, and VC) for the First Quarter monitoring event are presented graphically as **Figure 4**. Additionally, concentration trends of select VOCs (cis-1,2-DCE, TCE, and PCE, as well as VC for RW-1) over time for each recovery well (RW-1, sampled monthly, and RW-3 now sampled semi-annually) and the eight monitoring wells sampled during the First Quarter monitoring event are presented in **Figures 5 through 14** and discussed below.

Figure 5 presents concentrations measured at recovery well RW-1. Concentrations of TCE have decreased from initial concentrations in early 2010 (747 µg/L detected in April 2010), remaining below 300 µg/L since the latter half of 2012 and decreasing to a low of 76 µg/L in March 2018. 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 6.3 µg/L in January 2018. PCE concentrations have also exhibited decreasing trends over time, with concentrations decreasing from 180 µg/L in February 2010 to a low of 20.0 µg/L in March 2018. 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 1.0 µg/L since June 2013. Vinyl chloride was not detected during the First Quarter 2018.

Figure 6 presents concentrations measured at recovery well RW-3, with the most recent data collected in the First Quarter 2018. Concentrations of TCE have decreased from initial concentrations in February 2010 (660 µg/L), remaining below 300 µg/L from the latter half of 2012 through the Third Quarter 2015. RW-3 was taken off-line on 1 July 2015 and is no longer actively pumping, which may have contributed to the increasing trend in 2016. However, since March 2016, TCE concentrations have decreased from 371 µg/L down to a low of 120 µg/L detected in March 2018. Concentrations of cis-1,2-DCE have remained consistently below 4.0 µg/L, and below 2.0 µg/L since September 2013, though the concentration increased slightly to 2.4 µg/L in March 2016, then decreased again below 2.0 µg/L during September 2016 and March 2017. Cis-1,2-DCE has increased to 3.4 µg/L during the March 2018 sampling event. PCE has only been detected infrequently at this location, with the most recent detection of 0.59 J µg/L in March 2018. Vinyl chloride has not been detected during any sampling event.

Figure 7 presents concentrations measured at RW1-MW1, with the most recent data collected in the First Quarter 2018. Concentrations of TCE at this location have varied widely since first sampled in

May 2005 (53.6 µg/L). The concentration of TCE in March 2018 (170 µg/L) was higher than the concentration reported in May 2005, but slightly less than the highest concentration observed to date (175 µg/L in September 2013). The concentration of cis-1,2-DCE in March 2018 (7.1 µg/L) was below the initial concentration observed in May 2005 (78.6 µg/L) and represents the lowest concentration observed to date. Concentrations of PCE have remained consistently below 1.0 µg/L.

Figure 8 presents concentrations measured at RW1-MW3, with the most recent data collected in the First Quarter 2018. Concentrations of cis-1,2-DCE and PCE have consistently remained below 1.0 µg/L. Concentrations of TCE have also remained consistently low with a reported concentration of 2.2 µg/L in March 2018.

Figure 9 presents concentrations measured at RW2-MW1, with the most recent data collected in the First Quarter 2018. The concentration of TCE in the First Quarter 2018 (7.1 µg/L) was well below the March 2016 concentration (43.9 µg/L), which was the highest TCE concentration observed to date. The concentration of cis-1,2-DCE observed in the First Quarter 2018 (1.2 µg/L) was above initial concentrations observed in May 2005 (non-detect) but below the maximum concentration observed in the March 2016 (15.3 µg/L). PCE has not been detected during any sampling events.

Figure 10 presents concentrations measured at RW3-MW1, with the most recent data collected in the First Quarter 2018. The concentration of TCE in March 2018 (19.0 µg/L) was below initial concentrations observed in January 2010 (35.0 µg/L) and is the lowest concentration to date. Cis-1,2-DCE has not been detected since March 2015. Concentrations of PCE have remained consistently near or below 2.0 µg/L, with a concentration of 1.7 µg/L in March 2018.

Figure 11 presents concentrations measured at RW3-MW2, with the most recent data collected in the First Quarter 2018. The TCE concentration observed in March 2018 (130 µg/L) was below initial concentrations observed in January 2010 (160 µg/L), and below the maximum concentration observed in April 2010 (211 µg/L). Concentrations of cis-1,2-DCE at this location have consistently remained below 2.0 µg/L. PCE has only been detected infrequently at this location, with concentrations ranging from 0.28 J µg/L in August 2012 to 0.66 J µg/L in March 2016.

Figure 12 presents concentrations measured at RW3-MW3, with the most recent data collected in the First Quarter 2018. The TCE concentration observed in March 2018 (150 µg/L) was less than initial concentrations observed in January 2010 (350 µg/L). Concentrations of cis-1,2-DCE have remained near or below 2.0 µg/L since March 2012. PCE has remained below 1.0 µg/L for all events.

Figure 13 presents concentrations measured at RW3-MW4, with the most recent data collected in the First Quarter 2018. TCE concentrations have decreased since the initial sampling event in January 2010 (21 µg/L), with a concentration of 1.5 µg/L observed in the First Quarter 2018. PCE was detected for the first time in the Third Quarter 2015 at a concentration of 0.31 J µg/L but has not been detected since the September 2016 sampling event. Cis-1,2-DCE has been detected once since the initial sampling event in January 2010 (0.46 µg/L) at a concentration of 0.21 J in September 2017 and has not been detected since.

Figure 14 presents concentrations measured at TP-01, with the most recent data collected in the First Quarter 2018. The TCE concentration observed in March 2018 (55 µg/L) was below initial concentrations observed in January 2010 (65 µg/L), which was the maximum concentration observed to date. Concentrations of cis-1,2-DCE have generally decreased from its initial concentration of 190 µg/L in January 2010 to 12 µg/L in March 2018. PCE concentrations have remained below 1.0 µg/L since September 2013.

4.0 CONCLUSIONS AND RECOMMENDATIONS

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

5.0 REFERENCES

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

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

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

TABLES

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
First Quarter 2018

SPDES Parameters	Daily Maximum Goal	Units	January 2018									
Process Stream			RW-1 [2]	RW-3	Combined Influent	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	2/1/2018	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			1/3/18									
Average Flowrate	1100	GPM	325	0.3	325	NR	419	NR	NR	NR	334	NR
Total Flow		gallons	14,257,361	11,400	14,268,761	NR	18,417,705	NR	NR	NR	14,666,879	NR
pH	5.5 - 8.5	SU	4.97	NS	4.97	4.84	4.90	5.92	5.92	5.93	5.94	5.93
Chloroform	5	µg/L	0.39 J	NS	0.39 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.8	NS	1.8	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.25 J	NS	0.25 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.2	NS	1.2	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.3	NS	6.3	ND (1.0) J	ND (1.0)	ND (1.0)	ND (1.0)	0.21 J	ND (1.0)	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	22	NS	22	0.20 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.80 J	NS	0.80 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	5	µg/L	95	NS	95	1.3	1.1	0.47 J	0.65 J	0.45 J	0.52 J	0.55 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	2.5	NS
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	NA	mg/L	ND (1.0)	NS	ND (1.0)	195.0	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
First Quarter 2018

SPDES Parameters	Daily Maximum Goal	Units	February 2018									
Process Stream			RW-1 [2]	RW-3	Combined Influent	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			2/1/18									
Average Flowrate	1100	GPM	74	0.2	74	NR	330	NR	NR	NR	72	NR
Total Flow		gallons	2,980,200	6,800	2,987,000	NR	13,325,200	NR	NR	NR	2,914,400	NR
pH	5.5 - 8.5	SU	5.04	NS	5.04	5.91	5.98	6.00	6.01	6.01	6.03	6.03
Chloroform	5	µg/L	0.40 J	NS	0.40 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.8	NS	1.8	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.31 J	NS	0.31 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.2	NS	1.2	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.7	NS	6.7	ND (1.0)	ND (1.0)	ND (1.0)	0.23 J	ND (1.0)	0.22 J	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0) J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	21	NS	21	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.84 J	NS	0.84 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	5	µg/L	89	NS	89	0.79 J	0.61 J	0.61 J	0.27 J	0.39 J	0.31 J	0.26 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	2.3	2.10
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	NA	mg/L	ND (1.0)	NS	ND (1.0)	10.4	1.8	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
First Quarter 2018

SPDES Parameters	Daily Maximum Goal	Units	March 2018									
Process Stream			RW-1 [2]	RW-3 [3]	Combined Influent [3]	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)	Treated Effluent (TE)	Treated Effluent (TE) Duplicate
Well Depth		ft	445	530	NA	NA	NA	NA	NA	NA	NA	NA
Screened Interval		ft	335-395 410-430	392-412 442-504	NA	NA	NA	NA	NA	NA	NA	NA
Sampling Date			3/7/18									
Average Flowrate	1100	GPM	579	0.0	579	NR	691	NR	NR	NR	593	NR
Total Flow		gallons	26,271,735	0	26,271,735	NR	31,313,839	NR	NR	NR	3,934,920,798	NR
pH	5.5 - 8.5	SU	5.09	NS	5.09	5.84	5.92	5.97	5.98	5.98	5.98	5.98
Chloroform	5	µg/L	0.44 J	NS	0.44 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.9	NS	1.9	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.23 J	NS	0.23 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.1	NS	1.1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	7.1	NS	7.1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	0.23 J	0.22 J	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	20	NS	20	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.78 J	NS	0.78 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethene	5	µg/L	76	NS	76	0.61 J	0.61 J	0.27 J	0.42 J	0.25 J	0.37 J	0.36 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	NS	NS	NS	NS	NS	NS	NS	NS	1.9	1.8
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	NA	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
NA - Not Applicable
NS - Not Sampled. RW-3 sampling frequency has been reduced from monthly to semi-annually.
ND - Not detected above laboratory method detection limit. Limit of detection (LOD) given in parentheses.
NS - Not Sampled
gpm - gallons per minute

(1) Wastewater discharge equivalence permit renewed on 18 August 2017. Discharge limits established for 10 years. Chloroform, 1,4-dioxane and 1,1,2-trichlorotrifluoroethane are now monitored under the new permit.

(2) On 11 January 2018, the GM38 GWTP was shut down to allow Nassau County Basin NC#495 to drain for maintenance activities. On 24 January 2018, the GWTP was placed back on line with a reduced flowrate at RW-1. At the beginning of March 2018, the GWTP continued to operate at a reduced flowrate of approximately 135 gpm with its effluent discharge diverted into injection well IW-1 in order to accommodate rehabilitation of Nassau County Basin #495. On 9 March 2018, the GM38 GWTP effluent discharge was redirected to Nassau County Basin #495 at an initial flowrate of 350 gpm. On 12 March, the flowrate was increased to 700 gpm, and on 15 March, the GM38 GWTP was return to its normal flowrate of 1,000 gpm.

(3) Well RW-3 was turned on for a total of approximately 3 hours this period to collect the Semi-Annual groundwater samples.

Table 2
Summary of Radiochemistry Analytical Results
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
First Quarter 2018

Sample Location ID	Radium 226 (June 2013)			Radium 228 (June 2013)			Radium 226 (March 2017)			Radium 228 (March 2017)			Radium 226 (March 2018)			Radium 228 (March 2018)		
	Result	(+/-)	MDC	Result	(+/-)	MDC	Result	(+/-)	MDC	Result	(+/-)	MDC	Result	(+/-)	MDC	Result	(+/-)	MDC
Monitoring Wells - Quarterly LTM																		
RW1-MW1	**2.43**	0.500	0.305	0.0924 U	0.784	1.26	NA			NA			NA			NA		
RW1-MW3	**1.07**	0.347	0.354	**1.79**	0.873	1.21	NA			NA			NA			NA		
RW2-MW1	**3.99**	0.637	0.391	**2.81**	0.886	0.997	NA			NA			NA			NA		
RW3-MW1	**1.11**	0.350	0.353	0.957 U	0.813	1.30	NA			NA			NA			NA		
RW3-MW1 - Duplicate	**1.02**	0.369	0.403	**1.35**	0.846	1.26	NA			NA			NA			NA		
RW3-MW2	**0.772**	0.309	0.357	0.539 U	0.683	1.16	NA			NA			NA			NA		
RW3-MW3	**1.40**	0.449	0.430	**1.58**	0.784	1.05	NA			NA			NA			NA		
RW3-MW4	**2.17**	0.483	0.385	**2.81**	1.31	1.93	NA			NA			NA			NA		
TP1	**0.452**	0.299	0.429	0.613 U	1.13	1.96	NA			NA			NA			NA		
Equipment/Rinsate Blank	0.101 U	0.222	0.408	1.10 U	1.01	1.66	NA			NA			NA			NA		
Monitoring Wells - Remaining Wells not in Quarterly LTM																		
RW1-MW2	**1.74**	0.495	0.468	0.733 U	0.741	1.22	NA			NA			NA			NA		
RW2-MW2	**0.829**	0.359	0.432	0.296 U	0.774	1.39	NA			NA			NA			NA		
RW2-MW3	**3.49**	0.606	0.255	**1.74**	0.819	1.08	NA			NA			NA			NA		
IW1-MW1	**0.769**	0.349	0.429	0.635 U	0.913	1.57	NA			NA			NA			NA		
Recovery Wells																		
RW1	**1.13**	0.355	0.347	**1.38**	0.804	1.16	**1.19**	0.334	0.216	1.19 U	1.07	1.74	**2.05**	0.594	0.444	**2.38**	1.17	1.63
RW3	**1.22**	0.409	0.428	0.488 U	0.753	1.31	NA			NA			NA			NA		
GWTP Process Samples																		
GWTP Treated Effluent	**0.948**	0.317	0.285	1.40 U	0.965	1.49	**0.833**	0.252	0.145	**2.29**	1.07	1.53	**0.735**	0.439	0.588	0.347 U	1.00	1.80
GWTP Treated Effluent - Duplicate	**1.16**	0.383	0.397	2.00 U	1.30	2.06	NA			NA			**1.95**	0.588	0.406	1.44 U	1.03	1.62

Notes:
GWTP = groundwater treatment plant
LTM = long-term monitoring
MDC = minimum detectable concentration
ug/L = micrograms per liter
All value reported as pCi/L = picoCurie per liter
U = Analyte not detected above associated MDC, MDL, MDA, or LOD.
NA = Not Analyzed

Radium 226 analyzed by EPA 903.1 Modified with a RL of 1.00 pCi/L.
Radium 228 analyzed by EPA 904.0/SW846 9320 Modified with a RL of 3.00 pCi/L.

Bold highlight indicates detected compound.
Uncertainty is calculated at the 95% confidence interval.

Table 3
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
First Quarter 2018

DAR Parameters	Discharge Goal [3]	Units	January 2018					February 2018				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate	Influent (VCI1)	VC12	VC23 [5]	Effluent	Effluent Duplicate
Sampling Date			1/3/18					2/1/18				
Average Flowrate		CFM	NA	NA	NA	9,397	NA	NA	NA	NA	9,659	NA
Total Flow [1]		ft^3	NA	NA	NA	238,286,157	NA	NA	NA	NA	389,444,160	NA
Total Flow [2]		m^3	NA	NA	NA	6,747,513	NA	NA	NA	NA	11,027,831	NA
1,2-Dichloroethane	NA	$\mu g/m^3$	2.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	> 100,000 [4]	$\mu g/m^3$	76	ND	ND	ND	ND	8.6	ND	ND	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	1.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	77	ND	ND	ND	ND	8.6	ND	ND	ND	ND
Toluene	NA	$\mu g/m^3$	2.0 J	1.4 J	ND	ND	ND	4.4	1.8 J	9.8	2.3 J	1.1 J
Xylene	NA	$\mu g/m^3$	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NA	$\mu g/m^3$	1.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	2,600	$\mu g/m^3$	1300	20	3.3 J	3.5 J	1.2 J	180	13	20	2.4 J	ND
Vinyl Chloride	560	$\mu g/m^3$	1.8 J	1.4 J	1.3 J	1.2 J	0.75 J	ND	ND	ND	ND	ND
Tetrachloroethene	5,100	$\mu g/m^3$	250	75	1.2 J	1.3 J	0.51 J	24	32	7.2	ND	ND

Notes:
NA - Not applicable
ND - Not detected
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 concurred by NYSDEC's letter dated 31 October 2013.
(4) Discharge goal is for total 1,2-Dichloroethene.

Table 3
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
First Quarter 2018

DAR Parameters	Discharge Goal [3]	Units	March 2018				
Process Stream			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate
Sampling Date			3/7/18				
Average Flowrate		CFM	NA	NA	NA	9,611	NA
Total Flow [1]		ft^3	NA	NA	NA	428,028,850	NA
Total Flow [2]		m^3	NA	NA	NA	12,120,427	NA
1,2-Dichloroethane	NA	$\mu g/m^3$	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	> 100,000 [4]	$\mu g/m^3$	6.3	17	ND	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	> 100,000	$\mu g/m^3$	6.3	17	ND	ND	ND
Toluene	NA	$\mu g/m^3$	0.52 J	0.56 J	ND	1.6 J	ND
Xylene	NA	$\mu g/m^3$	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NA	$\mu g/m^3$	ND	ND	ND	ND	ND
Trichloroethene	2,600	$\mu g/m^3$	140	11	1.1 J	0.74 J	ND
Vinyl Chloride	560	$\mu g/m^3$	ND	ND	ND	ND	ND
Tetrachloroethene	5,100	$\mu g/m^3$	19	28	0.73 J	ND	ND

Notes:
NA - Not applicable
ND - Not detected
SGC - Short-term Guideline Concentration
$\mu g/m^3$ - micrograms per cubic meter
CFM - cubic feet per minute 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 concurred by NYSDEC's letter dated 31 October 2013.
(4) Discharge goal is for total 1,2-Dichloroethene.

Table 4
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Stack Emissions
First Quarter 2018

DAR Parameters	Discharge Goal [(1)]	Units	January 2018	February 2018	March 2018
Sampling Date			1/3/18	2/1/18	3/7/18
Average Flowrate		CFM	9,397	9,659	9,611
Total Flow		ft^3	238,286,157	389,444,160	428,028,850
Total Flow		m^3	6,747,513	11,027,831	12,120,427
Trichloroethene	0.09	lb/hr	0.00007	0.00009	0.00003
Vinyl Chloride	0.02	lb/hr	0.00002	0.00000	0.00000
1,2 Dichloroethene	11	lb/hr	0.00000	0.00000	0.00000
1,2-Dichloroethane	NA	lb/hr	0.00000	0.00000	0.00000
Toluene	NA	lb/hr	0.00000	0.00008	0.00006
Total Xylene	NA	lb/hr	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	NA	lb/hr	0.00000	0.00000	0.00000
Tetrachloroethene	0.18	lb/hr	0.00003	0.00000	0.00000

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

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

Table 5
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Level Measurements
First Quarter 2018

Monitoring Well ID	Date	Well Elevation (ft amsl)	Total Depth (ft)	Screen Interval (ft)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
RW1-MW1	03/05/18	85.86	435	395-435	35.93	49.93
RW1-MW2	03/05/18	87.35	435	395-435	37.17	50.18
RW1-MW3	03/05/18	80.34	435	395-435	29.75	50.59
RW2-MW1	03/05/18	90.75	510	470-510	39.74	51.01
RW2-MW2	03/05/18	90.15	510	470-510	39.31	50.84
RW2-MW3	03/05/18	89.75	510	470-510	38.93	50.82
RW3-MW1	03/05/18	92.22	350	330-350	39.81	52.41
RW3-MW2	03/05/18	91.98	495	475-495	40.28	51.70
RW3-MW3	03/05/18	92.98	340	320-340	39.93	53.05
RW3-MW4	03/05/18	92.92	495	475-495	41.42	51.50
TP-01	03/05/18	85.91	470	450-470	35.27	50.64
IW1-MW1	03/05/18	89.41	150	20-150	38.45	50.96
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 6
Summary of Final Groundwater Chemistry Data
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Groundwater Chemistry Results
First Quarter 2018

Location	Temp (ºC)	pH (SU)	S.C. (uS/cm^3)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color (Visual)
RW1-MW1	14.40	4.53	168	0.23	198.20	1.18	Clear
RW1-MW3	11.09	4.97	169	0.49	149.50	7.00	Clear
RW2-MW1	12.77	6.47	209	0.12	129.30	2.23	Clear
RW3-MW1	12.46	4.57	130	6.05	199.60	1.70	Clear
RW3-MW2	10.95	4.93	109	0.29	176.10	1.01	Clear
RW3-MW3	14.46	4.93	120	1.78	168.90	5.38	Clear
RW3-MW4	14.29	4.72	134	0.16	166.80	1.65	Clear
TP-01	12.72	5.99	138	6.99	180.10	0.71	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 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Detected Groundwater Analytical Results
First Quarter 2018

Sample ID	RW1-MW1	RW1-MW3	RW2-MW1	RW3-MW1	RW3-MW2	RW3-MW3	RW3-MW3	RW3-MW4	TP-01	RW-1 (3)	RW-3 (2)
Sample Date	**3/5/2018**	**3/5/2018**	**3/5/2018**	**3/6/2018**	**3/6/2018**	**3/6/2018**	**3/6/2018**	**3/6/2018**	**3/5/2018**	**3/7/2018**	**3/5/2018**
Comments							**Duplicate**				
VOCS (EPA 624) ug/L (1)											
Chloroform	0.55 J	0.67 J	1.0	ND	0.23 J	0.33 J	0.37 J	0.47 J	2.0	0.44 J	ND
1,1-dichloroethane	7.5	4.1	6.5	ND	0.29 J	2.0	2.3	3.9	1.2	1.9	1.3
1,2-dichloroethane	0.26 J	ND	0.39 J	ND	ND	ND	ND	ND	0.79 J	0.23 J	ND
1,1-dichloroethene	2.4	0.97 J	1.5	ND	ND	1.1	1.2	0.70 J	0.46 J	1.1	0.84 J
1,4-Dioxane	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.9	4.7
cis-1,2-dichloroethene	7.1	0.36 J	1.2	ND	1.2	0.63 J	0.59 J	ND	12	7.1	3.4
trans-1,2-dichloroethene	0.20 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.50 J	0.23 J	ND	1.7	0.38 J	0.36 J	0.32 J	ND	ND	20	0.59 J
1,1,1-trichloroethane	1.2	0.87 J	0.43 J	ND	0.33 J	0.61 J	0.57 J	0.40 J	0.27 J	0.78 J	ND
1,1,2-trichloroethane	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	0.22 J
Trichloroethene	170	2.2	7.1	19	130	150	160	1.5	55	76	120
Mercury (EPA 245.1) ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	ND	7.1	12.1	1.3	ND	4.7 J	2.8 J	ND	ND	ND	14.0

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

(1) Samples were analyzed for TCL VOCs (including tentatively identified compounds [TICs]). Only those VOCs detected are presented above.
(2) RW-3, previously an active extraction well sampled on a monthly basis, was taken off-line on 7/1/15. RW-3 is now sampled semi-annually, in conjunction with the semi-annual LTM events.
(3) Samples results for RW1 are from the O&M sampling event conducted on 03/07/18.

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	RW1-MW1																														
Sample Date	**5/4/2005**	**7/22/2005**	**5/27/2009**	**1/21/2010**	**4/21/2010**	**7/28/2010**	**11/10/2010**	**3/25/2011**	**6/14/2011[1]**	**6/14/2011**	**9/28/2011**	**11/30/2011**	**3/8/2012**	**6/6/2012**	**6/6/2012**	**8/21/2012**	**12/4/2012**	**3/13/2013**	**6/19/2013[2]**	**9/17/2013**	**12/16/2013**	**3/24/2014**	**3/24/2014**	**9/22/2014**	**3/25/2015**	**9/15/2015**	**3/22/2016**	**9/14/2016**	**3/1/2017**	**9/12/2017**	**3/5/2018**
Comments										**Duplicate**					**Duplicate**								**Duplicate**								
Well Depth (Ft)	**435**																														
Screened Interval (Ft)	**395-435**																														
VOCS (EPA 624) ug/L [4]																															
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	0.32J	ND	ND	ND	0.17J	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	2.0 R	ND	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	ND	0.55 J	0.39 J	ND	ND	0.48 J	0.48 J	0.50 J	0.58 J	0.55 J
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	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	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	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.74J	0.79J	3.3	2.9J	2.8	2.8	3.0	3.6	1.6 J	4.2 J	4.0 J	4.1	5.2	4.8	4.3	5.3	4.9	5.3	4.8 J	4.7 J	5.2	5.3	5.3	4.1 J	5.1	5.1	6.5	7.0	6.6	7.7	7.5
1,2-dichloroethane	ND	ND	0.29J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.26 J
1,1-dichloroethene	1.3	2.8	3.1	1.7J	1.9	1.7	1.7	1.9	0.85 J	2.1 J	2.3 J	2.1	2.7	2.5	2.3	2.8	2.0	2.8	ND	2.5	2.6	2.8	2.7	2.2 J	2.2 J	1.9	2.2	1.8	1.6	2.1	2.4
cis-1,2-dichloroethene	78.6	80.4	180D	130	121	118	108	121	55.8 J	145 J	164	132	179	165	145	167	108	91.7	64	86.2 J	84.4	92.6 J	94.2	49.8	39.5	22.0	20.0	16	11	9.8	7.1
trans-1,2-dichloroethene	2.0	1.3J	2.8	4J	2.9	2.1	1.3	4.2	0.71 J	2.0 J	2.0 J	1.7	3.0	3.7	2.6	2.4	1.8	1.7	ND	ND	1.4	1.4	1.4	1.0	0.79 J	0.50 J	0.51 J	0.42 J	0.26 J	0.35 J	0.20 J
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	1.75J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	0.72J	ND	0.42J	ND	ND	ND	ND	ND	0.36 J	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.67 J	0.33 J	0.37 J	0.76 J	0.30 J	0.62 J	0.67 J	0.45 J	0.46 J	0.59 J	0.50 J
Toluene	ND	0.33J	0.68	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	0.71J	ND	0.52J	0.43J	0.53J	0.79J	ND	0.63 J	1.1 J	0.66 J	0.96 J	0.98 J	0.89 J	0.99 J	0.88 J	1.1	ND	1.2	1.5	ND	ND	ND	ND	ND	ND	ND	1.0	0.94 J	1	1.2
1,1,2-trichloroethane	ND	ND	0.58J	NR	ND	ND	ND	ND	NR	NR	ND	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	53.6	52.7	140.0	79.0	116	95.4	84.2	97.6	26.6 J	73.8 J	129	84.5	115	107	102	126	85	101	78	175	128	101	103	94.3	99.5	98.9	114	110	86	110	170
m,p-xylene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	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	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	1.6	ND	ND	ND	0.17J	ND	ND	0.38 J	0.29 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	ND	0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	2.8	2.8	6.0	4.0	4.0	4.0	ND	6	ND	11	16	9	5	6	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	RW1-MW2				RW1-MW3																								
Sample Date	**5/4/2005**	**7/22/2005**	**5/28/2009**	**6/18/2013[2]**	**1/20/2010**	**4/21/2010**	**7/29/2010**	**11/10/2010**	**3/25/2011**	**6/14/2011**	**9/28/2011**	**11/30/2011**	**3/8/2012**	**6/7/2012**	**8/22/2012**	**12/7/2012**	**3/14/2013**	**6/19/2013[2]**	**9/17/2013**	**12/17/2013**	**3/25/2014**	**9/23/2014**	**3/25/2015**	**9/14/2015**	**3/21/2016**	**9/14/2016**	**3/1/2017**	**9/13/2017**	**3/5/2018**
Comments																													
Well Depth (Ft)	**435**				**435**																								
Screened Interval (Ft)	**395-435**				**395-435**																								
VOCS (EPA 624) ug/L [4]																													
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.41 J	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Chloroform	ND	1.4	ND	ND	0.67J	0.80J	0.47J	0.69J	0.73J	NR	0.97 J	ND	0.73 J	0.64 J	ND	1.2 J	ND	0.82	ND	ND	0.74 J	0.67 J	0.79 J	ND	0.79 J	0.80 J	0.61 J	0.69 J	0.67 J
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	4.6	5.5	3.4	3.9	2.4	4.6	1.5	2.3	2.4	9.3	10.1 J	2.1	8.4	5.7	9.4	9.3	8.5	10	9.7 J	8.1	8.6	6.1 J	8.1	7.7	7.4	7.0	4.5	4.4	4.1
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	3.2	12.3	ND	ND	0.42J	1.10	ND	0.28J	ND	1.8	2.2 J	ND	1.8	0.86 J	2.4	2.2	1.7	1.8	1.6	1.9	2.1	1.6 J	2.3 J	2.3	2.5	1.7	1.1	1.2	0.97 J
cis-1,2-dichloroethene	181.0	47.6	160.0	120	0.54J	0.48J	0.36J	0.55J	0.58J	0.59 J	0.43 J	0.55 J	0.68 J	0.33 J	0.56 J	0.46 J	0.53 J	0.46 J	0.72 J	0.60 J	0.57 J	0.44 J	0.54 J	0.49 J	0.58 J	0.44 J	0.29 J	0.37 J	0.36 J
trans-1,2-dichloroethene	2.5	7.6	2.5	1.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	4.01	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	1.0	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	ND	0.20 J	ND	ND	ND	ND	ND	ND	0.25 J	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	134.0	19.0	5.9	ND	049J	ND	ND	ND	0.33 J	0.62 J	ND	0.65 J	0.30 J	0.97 J	0.40 J	ND	ND	ND	ND	ND	ND	ND	0.50 J	ND	0.35 J	ND	0.22 J	0.23 J
Toluene	0.32J	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	1.3	1.0	ND	ND	0.41J	0.98J	ND	0.26J	0.33J	1.6	2.7 J	ND	ND	1.1 J	1.9	1.7	1.4	1.8	1.5	2.0	1.7	1.2 J	1.5	1.6	2.1	1.6	1	1.1	0.87 J
1,1,2-trichloroethane	ND	0.65J	ND	ND	0.62J	0.60J	0.36J	0.55J	0.41J	NR	0.57 J	0.63 J	0.70 J	0.61 J	0.56 J	0.54 J	0.61 J	0.46 J	ND	0.55 J	0.46 J	0.46 J	0.43 J	0.44 J	0.47 J	0.41 J	0.51 J	0.35 J	0.37 J
Trichloroethene	158.0	198.0	200.0	64	1.2	1.6	0.58J	0.91J	1.0	1.4	1.8 J	1.0 J	2.2	1.3	2.3	1.6	1.9	1.7	2.5	3.2	2.5	1.9	2.0	2.4	4.5	3.5	2.3	2.8	2.2
m,p-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
Trichlorofluoromethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	12.9	187.0	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.20	NR	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	4.0	NR	NR	8.0	<4.0	<4.0	<4.0	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	ND	ND	1.8	2.1	5.6	7.1

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	RW2-MW1																													RW2-MW2		
Sample Date	**5/4/2005**	**7/20/2005**	**5/27/2009**	**1/18/2010**	**4/21/2010**	**7/28/2010**	**11/3/2010**	**3/24/2011**	**6/14/2011**	**9/27/2011**	**11/29/2011**	**3/7/2012**	**6/6/2012**	**8/21/2012**	**12/7/2012**	**3/13/2013**	**6/17/2013[2]**	**9/17/2013**	**12/17/2013**	**12/17/2013**	**3/25/2014**	**9/23/2014**	**3/26/2015**	**9/14/2015**	**3/21/2016**	**3/21/2016**	**9/15/2016**	**3/1/2017**	**9/13/2017**	**3/5/2018**	**5/4/2005**	**7/21/2005**	**6/17/2013[2]**
Comments																				**Duplicate**						**Duplicate**						
Well Depth (Ft)	**510**																													**510**		
Screened Interval (Ft)	**470-510**																													**470-510**		
VOCS (EPA 624) ug/L [4]																																
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND
Benzene	ND	ND	ND	ND	0.15J	0.69J	0.58J	0.30J	NR	0.22 J	0.27 J	0.22 J	ND	ND	0.68 J	0.54 J	ND	0.59 J	ND	ND	0.21 J	0.21 J	0.56 J	ND	ND	0.18 J	ND	0.51 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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	R	R	ND
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.0 J	1.6 J	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	NR	NR	ND
Chloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	2.0 R	2.0 R	ND	ND	ND	ND	ND	ND	ND	NR	ND	NR	NR	NR
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.38 J	ND	ND	ND	2.9	ND	ND	ND	2.8 J	1.5	0.46 J	2.2	3.4	3.5	2.4	0.25 J	2.0	1.0	ND	ND	0.55
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.53J	0.93J	1.2J	0.82J	0.60J	0.58J	0.42J	ND	0.61 J	0.64 J	ND	0.50 J	4.2	4.8	0.58 J	0.52 J	7.0	ND	5.8	6.4	5.1	ND	2.1	6.3	8.7	8.5	6.4	1.7	6.6	6.5	ND	0.78J	4.9
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	1.9 J	1.7 J	1.3	0.69 J	0.41 J	1.4	1.4	1.3	0.93 J	ND	0.71 J	0.39 J	ND	ND	0.32 J
1,1-dichloroethene	ND	0.58J	0.55J	0.63J	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	0.95 J	0.19 J	ND	1.9	ND	2.6	2.6	1.8	1.3 J	0.61 J	2.6	3.7	3.4	1.6	0.27 J	1.3	1.5	ND	0.41J	0.72
cis-1,2-dichloroethene	ND	0.55J	1.9	1.0	0.78J	0.80J	0.55J	0.43J	0.56 J	0.32 J	0.39 J	0.34 J	0.32 J	0.39 J	0.33 J	0.29 J	7.7	0.77 J	11.0 J	11.1 J	8.0	4.0	2.6	13.3	15.3	15.0	6.1	1.3	2.6	1.2	0.33J	0.41J	4.6
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	5.34	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	7.45J	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND
methyl-tert-butyl-ether	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	0.85J	1.0	ND	0.52J	0.49J	0.50J	ND	NR	0.24 J	0.29 J	0.19 J	ND	ND	0.27 J	ND	ND	0.31 J	ND	ND	ND	ND	0.26 J	ND	0.20 J	ND	ND	ND	ND	ND	0.33J	0.53J	ND
1,1,1-trichloroethane	ND	0.37J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND	0.84	ND	0.94 J	0.94 J	ND	0.39 J	ND	ND	ND	ND	0.56 J	ND	0.49 J	0.43 J	ND	ND	0.34 J
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	D	ND	ND
Trichloroethene	37.6	34.6	12.0	15.0	0.42J	ND	ND	1.7	1.6	0.89 J	0.67 J	0.67 J	9.0	20.8	0.73 J	0.67 J	14	1.5	34.6	33.5	23.4	18.3	4.3	27.5	43.9	44.2	18	2.1	8.6	7.1	7.8	13.8	12
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	ND
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	1.4J	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.05J	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR
TSS (SM20 2540D) mg/L	NR	NR	2260.0	NR	58.0	<4.0	<4.0	<4.0	181	5	36	6	25	12	10	ND	13	12	30	24	12	6	17	11	24	26	3.8	13.8	8.7	12.1	NR	NR	NR

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	RW2-MW3				RW3-MW1																											
Sample Date	5/3/2005	7/20/2005	5/28/2009	6/18/2013[2]	1/19/2010	4/22/2010	7/29/2010	11/9/2010	3/25/2011	3/25/2011	6/14/2011	9/27/2011	11/30/2011	11/30/2011	3/7/2012	6/7/2012	8/22/2012	12/6/2012	3/14/2013	6/20/2013[2]	6/20/2013[2]	9/18/2013	12/17/2013	3/25/2014	9/23/2014	3/25/2015	9/15/2015	3/22/2016	9/14/2016	3/2/2017	9/12/2017	3/6/2018
Comments										Duplicate				Duplicate							Duplicate											
Well Depth (Ft)	510				350																											
Screened Interval (Ft)	470-510				330-350																											
VOCS (EPA 624) ug/L [4]																																
Acrolein	NR	NR	30 R	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	0.19J	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	0.20J	ND	ND	NR	ND	ND	ND	ND	ND	ND	0.63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.68J	0.31J	1.4	7.4	1.6	1.5	1.7	1.4	1.3	1.3	1.1	1.0 J	0.96 J	0.93 J	0.90 J	0.80 J	0.87 J	0.98 J	1.2	ND	ND	1.2 J	1.2	1.1	0.69 J	0.64 J	0.76 J	0.40 J	0.33 J	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	0.42J	ND	1.2	1.3	1.2	1.2	1.2	1.1	0.85 J	0.65 J	0.64 J	0.66 J	0.47 J	0.19 J	0.54 J	0.65 J	0.68 J	ND	ND	0.57 J	0.69 J	0.74 J	0.43 J	0.42 J	0.41 J	0.29 J	0.21 J	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	0.38 J	0.30 J	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	7.42J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	NR	NR	ND	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	0.49J	0.81J	0.73J	1.5	1.4	1.6	1.2	1.3 J	1.0	1.1	1.0	0.33 J	ND	0.44 J	1.6	1.8 J	1.7 J	1.2	1.6	1.5	1.6	2.2	1.6	2.5	2.3	1.9	1.6	1.7
Toluene	ND	0.50J	0.39J	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	ND	ND	ND	0.98J	0.84J	1.2	1.1	1.1	0.78 J	1.0 J	0.59 J	0.63 J	0.58 J	0.54 J	0.42 J	0.34 J	0.49 J	ND	ND	0.61 J	0.66 J	0.66 J	0.39 J	0.35 J	0.36 J	0.30 J	0.21 J	ND	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	16.2	20.6	18.0	60	35.0	53.2	52.3	77.6	76.2	77.9	63.1	72.4 J	51.0	55.2	59.0	42.5	37.7	42.8	46.6	49	48	62.7	60.5	60.0	43.4	41.8	45.4	37.6	40	27	22	19
m,p-xylene	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	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	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	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	ND	NR	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04 J	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	14.8	NR	NR	<4.0	<4.0	<4.0	<4.0	<4.0	5160	ND	ND	ND	NR	17	ND	ND	16	ND	9.5 J	ND	15	14	8	12	ND	ND	ND	3.3	2.9	1.3

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	RW3-MW2																															
Sample Date	1/19/2010	1/19/2010	4/22/2010	7/29/2010	11/9/2010	11/9/2010	3/25/2011	6/14/2011	9/27/2011	11/30/2011	3/8/2012	6/7/2012	8/22/2012	8/22/2012	12/4/2012	12/4/2012	3/14/2013	6/20/2013[2]	9/17/2013	12/17/2013	3/25/2014	9/23/2014	9/23/2014	3/25/2015	9/14/2015	3/22/2016	9/14/2016	9/14/2016	3/2/2017	3/2/2017	9/12/2017	3/6/2018
Comments		Duplicate			Duplicate									Duplicate		Duplicate							Duplicate					Duplicate		Duplicate		
Well Depth (Ft)	495																															
Screened Interval (Ft)	475-495																															
VOCS (EPA 624) ug/L [4]																																
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	30 R	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	0.62 J	0.64 J	ND	ND	ND	ND	ND	ND	ND	ND	0.27 J	0.24 J	0.23 J	0.26 J	0.24 J	0.24 J	0.23 J	
Chloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	ND	ND	0.54J	ND	ND	ND	ND	0.52 J	0.37 J	ND	0.41 J	0.66 J	0.74 J	0.73 J	0.69 J	0.71 J	0.68 J	ND	0.65 J	0.59 J	0.62 J	0.51 J	0.51 J	0.56 J	0.47 J	0.52 J	0.39 J	0.34 J	0.39 J	0.47 J	0.36 J	0.29 J	
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	1.2	ND	ND	ND	ND	0.57 J	0.45 J	0.27 J	0.27 J	0.36 J	0.49 J	0.49 J	0.40 J	0.43 J	0.53 J	ND	0.29 J	0.45 J	0.44 J	0.38 J	0.33 J	0.33 J	0.30 J	0.46 J	0.31 J	0.37 J	0.25 J	ND	0.26 J	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	1.7	1.4	1.3	1.5	1.4	1.7	1.5	1.5	1.5	1.3	1.3	1.2
trans-1,2-dichloroethene	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	0.69 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	NR	ND	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	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND
2-hexanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	0.52 J	0.66 J	0.48 J	0.54 J	0.44 J	0.38 J	0.43 J	0.38 J	
Toluene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	0.58J	ND	ND	ND	ND	0.39 J	0.43 J	ND	ND	0.54 J	0.52 J	0.49 J	0.42 J	0.43 J	0.41 J	ND	0.47 J	0.50 J	0.43 J	0.36 J	0.39 J	0.38 J	0.41 J	0.47 J	0.44 J	0.47 J	0.41 J	0.34 J	0.26 J	0.33 J
1,1,2-trichloroethane	ND	ND	ND	ND	0.25 J	0.27J	ND	NR	0.32 J	0.32 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	0.31 J	0.21 J	0.32 J	0.24 J	0.26 J	ND
Trichloroethene	160	170	211	73	58.2	60.9	110	135	151	71.9	96.5	209	198	192	173 J	171	155	140	174	176	164	148	151	159	169	204	190	190	160	150	140	130
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	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	NR	NR	NR	NR	NR	NR	NR	NR	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	5.0	6.0	ND	10.0	10.0	7	6	ND	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	RW3-MW3																													
Sample Date	**1/20/2010**	**4/22/2010**	**4/22/2010**	**7/28/2010**	**11/3/2010 [1]**	**3/25/2011**	**6/15/2011**	**9/28/2011**	**11/29/2011**	**3/7/2012**	**3/7/2012**	**6/7/2012**	**8/22/2012**	**12/4/2012**	**3/14/2013**	**6/21/2013[2]**	**9/18/2013**	**12/17/2013**	**3/26/2014**	**9/23/2014**	**3/25/2015**	**3/25/2015**	**9/15/2015**	**3/21/2016**	**9/15/2016**	**3/2/2017**	**9/12/2017**	**9/12/2017**	**3/6/2018**	**3/6/2018**
Comments			**Duplicate**								**Duplicate**											**Duplicate**						**Duplicate**		**Duplicate**
Well Depth (Ft)	**340**																													
Screened Interval (Ft)	**320-340**																													
VOCS (EPA 624) ug/L [4]																														
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	150 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.0 R	ND	ND	ND	ND	NR	ND	ND	ND	ND
Chloroform	ND	ND	0.40J	0.46J	ND	0.33J	NR	0.48 J	ND	0.42 J	0.42 J	2.3 J	ND	0.88 J	ND	ND	ND	3.4 J	ND	0.27 J	0.40 J	0.33 J	ND	ND	0.48 J	0.45 J	0.35 J	0.27 J	0.33 J	0.37 J
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	ND	1.6	1.6	2.3	1.0	1.5	7.1	3.2 J	1.5	3.3	3.3	2.6 J	ND	4.2	4.5 J	ND	ND	3.7 J	4.9 J	1.3 J	1.8	1.8	1.2	4.0	3.5	2.9	2.5	2.2	2.0	2.3
1,2-dichloroethane	ND	0.52J	0.54J	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30 J	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	1.1	1.3	1.2	ND	0.96J	2.6	1.8 J	0.96 J	1.9	1.9	1.7 J	1.4 J	1.8 J	1.2	ND	ND	ND	2.4 J	0.94 J	1.5 J	1.4 J	1.1	2.4	2.0	1.3	ND	0.78 J	1.1	1.2
cis-1,2-dichloroethene	ND	2.1	2.1	1.7	ND	2.3	1.2	1.9	2.1	2.1	2.1	1.4 J	1.8 J	1.2	ND	ND	ND	ND	ND	1.2	1.3	1.3	1.3	1.1	1.1	0.83 J	0.8 J	0.76 J	0.63 J	0.59 J
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	3.2 J	ND	6.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	0.45J	0.49J	ND	ND	ND	0.40 J	0.50 J	ND	0.72 J	0.69 J	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	0.36 J	0.37 J	0.77 J	0.71 J	0.58 J	0.43 J	0.31 J	0.44 J	0.36 J	0.32 J
Toluene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	0.95J	1.0J	0.72J	ND	0.62J	1.3	1.0 J	0.49 J	0.84 J	0.87 J	ND	ND	0.85 J	ND	ND	ND	ND	ND	0.40 J	0.48 J	0.45 J	0.36 J	1.1	0.75 J	0.69 J	0.46 J	0.38 J	0.61 J	0.57 J
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	350	397	382	297	8.5	288	331	215 J	250	312	325	285	248	291	347	410	322	322	350	147	182	184	138	284	260	200	100	95	150	160
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	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	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	4.0	5.0	<4.0	<4.0	<4.0	ND	ND	ND	ND	ND	13	10	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	2.4	3	1.9	4.7 J	2.8 J

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	RW3-MW4																									
Sample Date	1/20/2010	4/22/2010	7/28/2010	7/28/2010	11/3/2010[1]	3/24/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013	6/21/2013[2]	9/17/2013	12/17/2013	3/26/2014	9/23/2014	3/25/2015	9/15/2015	3/21/2016	9/15/2016	3/2/2017	9/12/2017	3/6/2018
Comments				Duplicate																						
Well Depth (Ft)	495																									
Screened Interval (Ft)	475-495																									
VOCS (EPA 624) ug/L [4]																										
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
Chloroform	ND	ND	ND	ND	0.32J	ND	NR	0.87 J	ND	0.38 J	ND	ND	0.71 J	ND	1.2	ND	ND	1.2 J	0.38 J	1.2	ND	0.64 J	ND	ND	0.21 J	0.47 J
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	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	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	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	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	2.5	0.6	0.54J	0.50J	1.8	0.81	0.78 J	5.4 J	0.84 J	1.8	0.50 J	ND	1.2	3.8	4.6	2.9	4.9	5.5	2.7 J	6.9	0.88 J	4.9	2.0	1.5	2.6	3.9
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	1.0	ND	ND	ND	0.86J	ND	0.20 J	0.53 J	ND	0.21 J	ND	ND	0.19 J	0.38 J	0.42 J	ND	0.39 J	0.95 J	0.37 J	1.3 J	0.21 J	0.85 J	0.40 J	0.27 J	0.41 J	0.70 J
cis-1,2-dichloroethene	0.46J	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21 J	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	ND	ND	ND
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J	ND	ND	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31 J	0.46 J	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	ND	ND	0.67J	ND	ND	0.66 J	ND	ND	ND	ND	ND	ND	0.29 J	ND	0.39 J	0.48 J	ND	0.60 J	ND	0.48 J	0.24 J	ND	0.26 J	0.40 J
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	21	11	7.5	8.0	308	7.7	6.7	3.4 J	5.6	4.6	5.4	5.5	4.5	2.3	1.8	5.0	4.4	3.3	2.5	2.7	4.1	2.9	4.3	4.1	5.4	1.5
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	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	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	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	16.0	<4.0	<4.0	<4.0	<4.0	ND	11	6	5	ND	ND	ND	22	ND	ND	ND	9	5	5	ND	ND	1.4	ND	1.3	ND

Table 8
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through First Quarter 2018

Sample ID	TP-01																									IW-1 MW-1		IW-1	RW-3 [3]					
Sample Date	**1/21/2010**	**6/15/2011**	**9/27/2011**	**9/27/2011**	**11/30/2011**	**3/8/2012**	**6/6/2012**	**8/22/2012**	**12/4/2012**	**3/13/2013**	**3/13/2013**	**6/17/2013[2]**	**9/17/2013**	**9/17/2013**	**12/16/2013**	**3/25/2014**	**9/22/2014**	**3/25/2015**	**9/14/2015**	**9/14/2015**	**3/21/2016**	**9/14/2016**	**3/1/2017**	**9/13/2017**	**3/5/2018**	**5/3/2005**	**6/18/2013[2]**	**5/27/2009**	**9/15/2015**	**3/22/2016**	**9/15/2016**	**3/2/2017**	**9/13/2017**	**3/5/2018**
Comments				**Duplicate**							**Duplicate**			**Duplicate**						**Duplicate**														
Well Depth (Ft)	**470**																									**150**		**230**	**530**					
Screened Interval (Ft)	**450-470**																									**20-150**		**200-230**	**392-412 442-504**					
VOCS (EPA 624) ug/L [4]																																		
Acrolein	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	ND	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	ND	ND	ND	ND	ND	ND
Acetone	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.53 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	R	ND	ND	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	ND	ND	ND	ND	ND	ND	ND	2.0 R	2.0 R	NR	ND	ND	ND	ND	ND	ND	ND	2.0 R	ND	ND	ND	NR	ND	ND	NR	NR	NR	ND	ND	ND	NR	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	6.8 J	1.9	2.6	1.3	1.3	1.7	1.6	1.2	6.3	2.0	0.94J	ND	0.98J	ND	0.46 J	0.26 J	ND	0.28 J	ND
Chloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	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	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	3.6J	5.0	3.7	3.7	2.9	3.7	3.7	3.4	1.1	1.5	1.4	3.2	2.1 J	2.8	1.5	ND	1.3 J	2.5	2.1	2.0	1.8	2.1	0.78 J	1.3	1.2	0.39J	0.51	0.22J	1.9	2.1	1.8	1.4 J	1.5	1.3
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	0.67 J	0.88 J	0.82 J	0.82 J	0.86 J	0.70 J	0.45 J	0.79	0.79 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	1.7	1.1	1.0	1.0	1.2	1.4	1.1	0.23 J	0.44 J	0.42 J	0.77	0.66 J	0.74 J	0.33 J	0.22 J	0.47 J	1.2 J	0.77 J	0.83 J	0.75 J	0.68 J	0.23 J	0.36 J	0.46 J	ND	ND	ND	1.9	2.5	1.5	1.3 J	1.4	0.84 J
cis-1,2-dichloroethene	190	43.4	40.4	40.2	74.9	53.3	29.9	16.1	4.2	5.8	5.8	8.7	14.1 J	14.7	8.0	5.3	7.6	13.4	11.3	11.6	10.8	12	5	11	12	ND	ND	ND	1.6	2.4	1.4	1.6 J	1.9	3.4
trans-1,2-dichloroethene	3.0J	1.1	1.0 J	0.92 J	1.1	0.87 J	0.79 J	0.35 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	ND	ND
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	4.7
Ethylbenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND
2-hexanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	0.64 J	ND	ND	ND	ND
methylcyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
4-methyl-2-pentanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR
methyl-tert-butyl-ether	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.46J	NR	NR	NR	NR	NR	NR
styrene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
Tetrachloroethene	3.4J	3.3	4.4	4.4	3.6	4.7	6.0	4.0	0.42 J	0.34 J	0.32 J	1.6	0.77 J	1.5 J	0.57 J	ND	ND	0.48 J	0.82 J	0.88 J	0.72 J	0.37 J	0.22 J	ND	ND	ND	0.55	ND	0.68 J	0.79 J	0.64 J	0.60 J	0.65 J	0.59 J
Toluene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19J	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	0.63 J	0.73 J	0.76 J	0.29 J	0.57 J	1.1 J	0.86 J	ND	0.35 J	0.35 J	0.62	0.66 J	0.66 J	0.50 J	ND	ND	ND	ND	ND	ND	0.49 J	0.25 J	0.29 J	0.27 J	0.47	0.92	0.49J	0.96 J	1.3	0.95 J	ND	0.83 J	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30 J	0.49 J	0.29 J	ND	0.45 J	0.22 J
Trichloroethene	65	35.3	41.0	39.6	38.0	38.1	40.4	27.9	22.0	25.9	25.4	25	27.0	26.7	29.8	21.7	31.9	52.3	53.0	53.9	61.7	47	21	54	55	ND	ND	0.17J	237	371	230	230	220	120
m,p-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR
Trichlorofluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR
Trichlorotrifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	ND	ND	NR	NR	NR	ND	NR	NR
o-xylene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR
1,1,2-trichloro-1,2,2-trifluoroethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	0.20	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	63	18	NR	ND	7	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	2.4	ND	ND	ND	2.4	8.1	14.0

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.

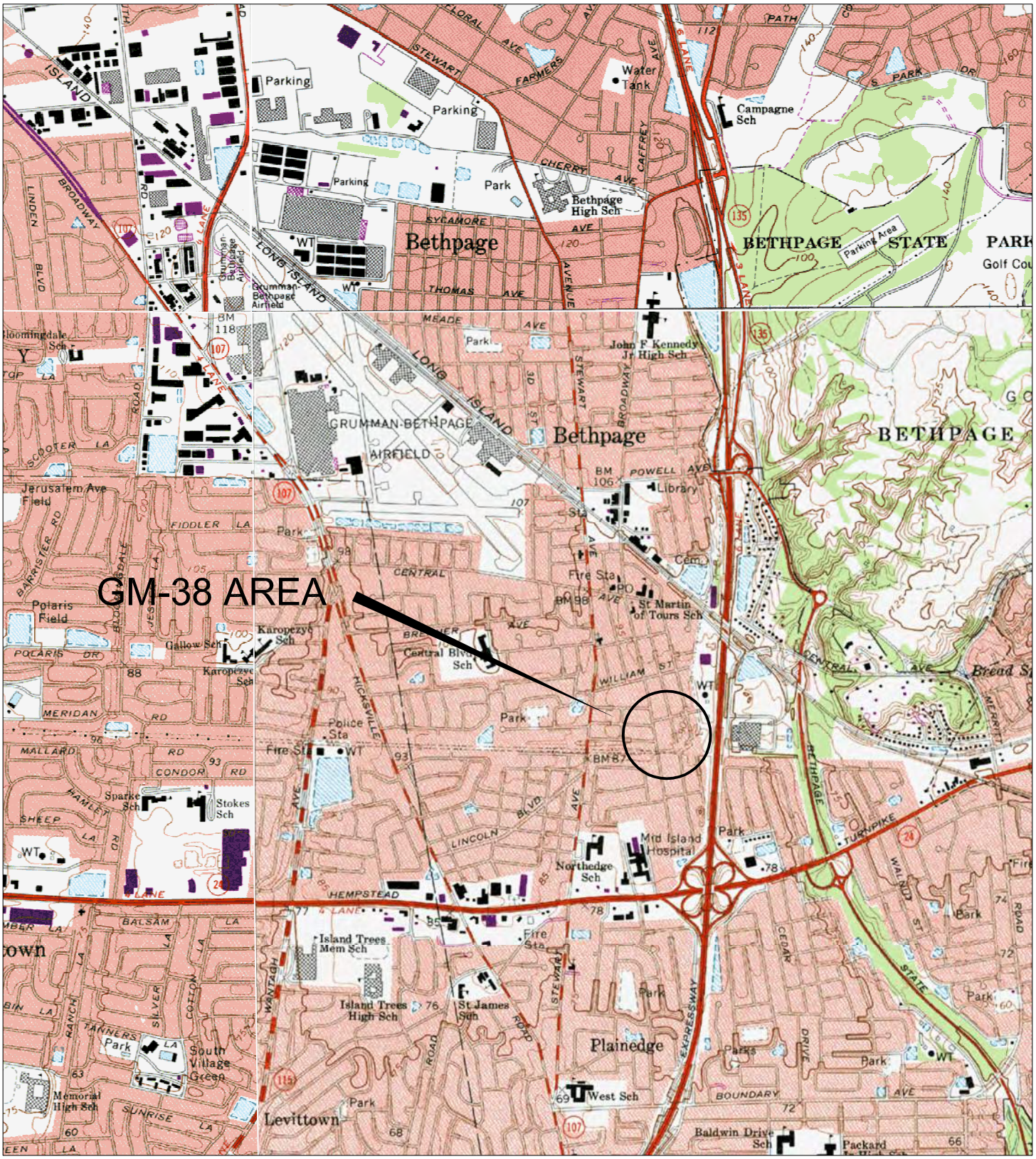
(2) VOCs were analyzed by USEPA Method 524.2 (as opposed to Method 624) in June 2013 to correlate with samples collected under the Bethpage Regional Plume Comprehensive Groundwater Sampling Plan conducted in June 2013.

(3) RW-3, previously an active extraction well sampled on a monthly basis, was taken off-line on 7/1/15. RW-3 is now sampled semi-annually, in conjunction with the semi-annual LTM events.

(4) Samples were analyzed for TCL VOCs, including tentatively identified compounds (TICs), beginning in March 2016. No TICs were detected, unless otherwise indicated.

Data prior to June 2011 were collected by others.

FIGURES



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

U.S. Navy RAC
Engineering Field Activity, Northeast

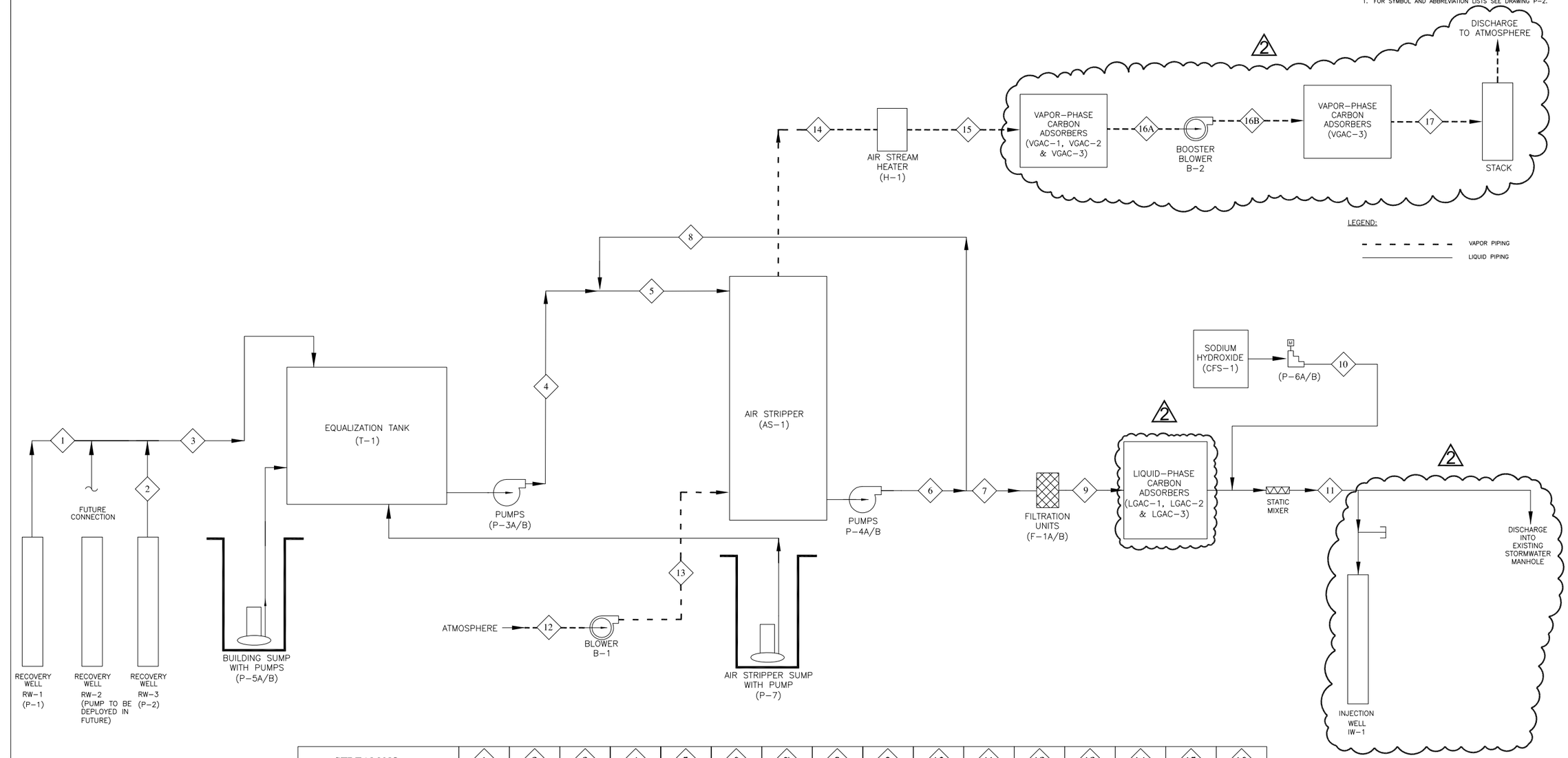
GM-38 Area (Offsite)
NWIRP Bethpage
Bethpage, NY

Figure 1
Site Location Map

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

NOTES:

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



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

TETRA TECH ENGINEERING CORPORATION PC

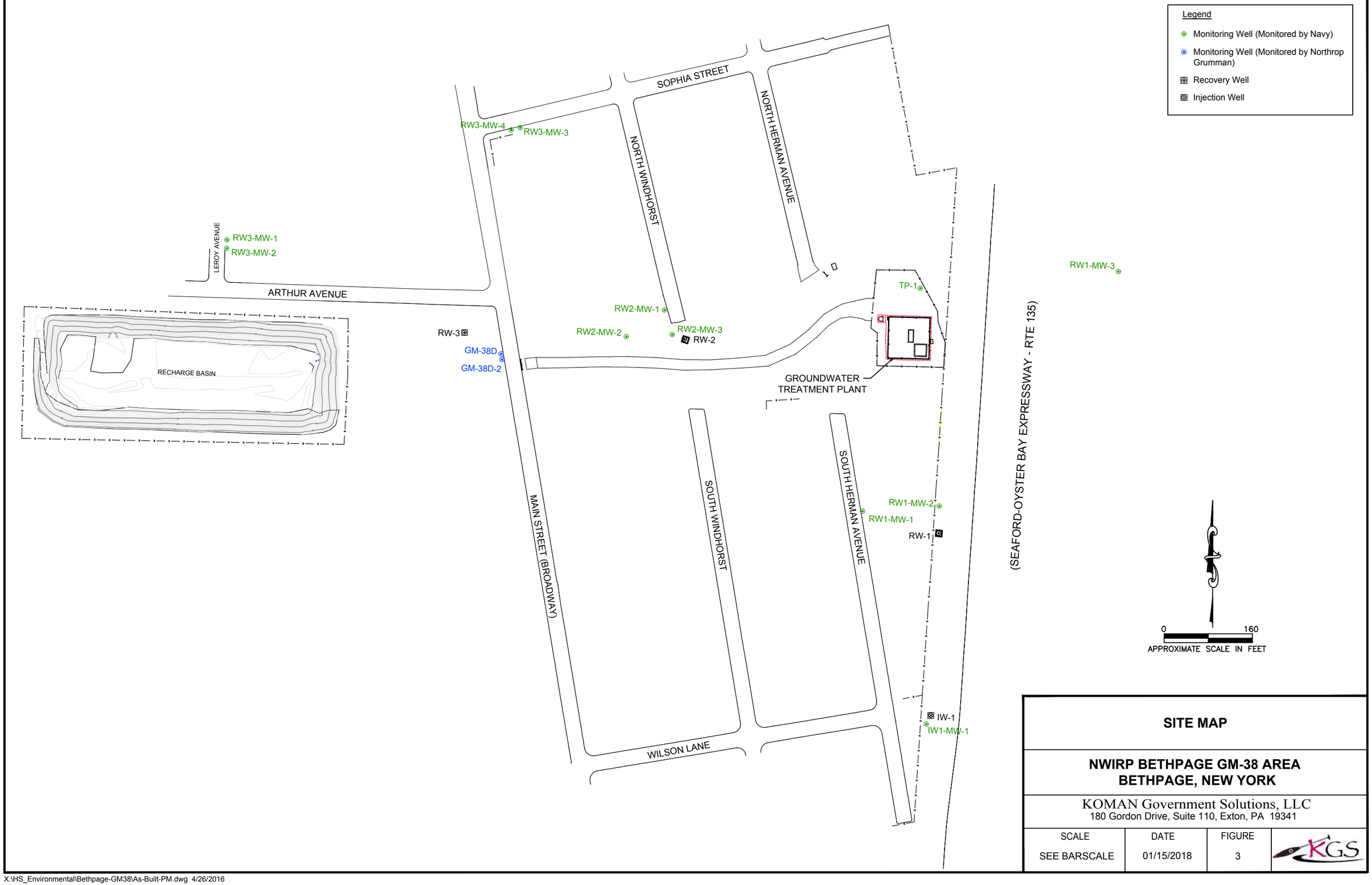
REV	DESCRIPTION	PREP BY	DATE	APPRVD
0	FINAL DESIGN	DL	05/05/06	BKB
1	ADDED RECOVERY WELL RW-3 CHANGED RW-2 TO FUTURE CONNECTION	DLB	03/31/08	BKB
2	REVISED BASED ON VENDOR SUBMITTALS. DRAWING UPDATES FOR CONSTRUCTION	DLB	02/24/09	BKB

DSGN: DR: CHK: CH ENG: SUBMITTED BY: (TRM NUMBER) (TITLE) (DATE) NORTHDIV DIV. HO: HO: DIR: FPC: OFFICER IN CHARGE DATE APPROVED

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY - NORTHEAST — PENNSYLVANIA
LESTER — NAVAL WEAPONS INDUSTRIAL RESERVE PLANT — BETHPAGE, NEW YORK
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



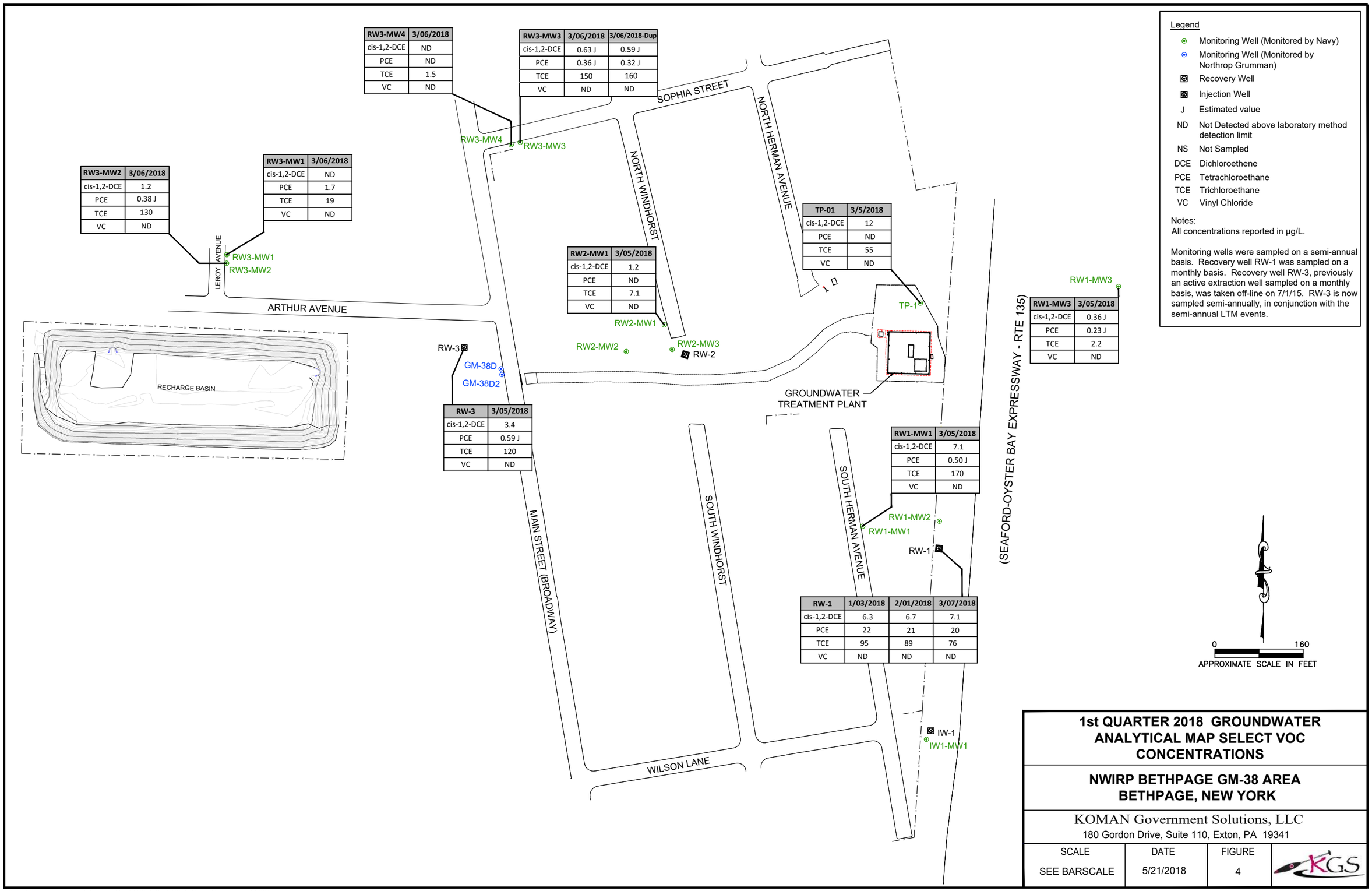
SITE MAP

NWIRP BETHPAGE GM-38 AREA
BETHPAGE, NEW YORK

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110, Exton, PA 19341

SCALE	DATE	FIGURE
SEE BARSCALE	01/15/2018	3

X:\HS_Environmental\Bethpage-GM38\As-Built-PM.dwg 4/26/2016



1st QUARTER 2018 GROUNDWATER ANALYTICAL MAP SELECT VOC CONCENTRATIONS

NWIRP BETHPAGE GM-38 AREA
BETHPAGE, NEW YORK

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110, Exton, PA 19341

SCALE	DATE	FIGURE
SEE BARSCALE	5/21/2018	4

X:\HS_Environmental\Bethpage-GM38\2016\3rdQ2016-GW-VOC.dwg 1/23/2017

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

RW1

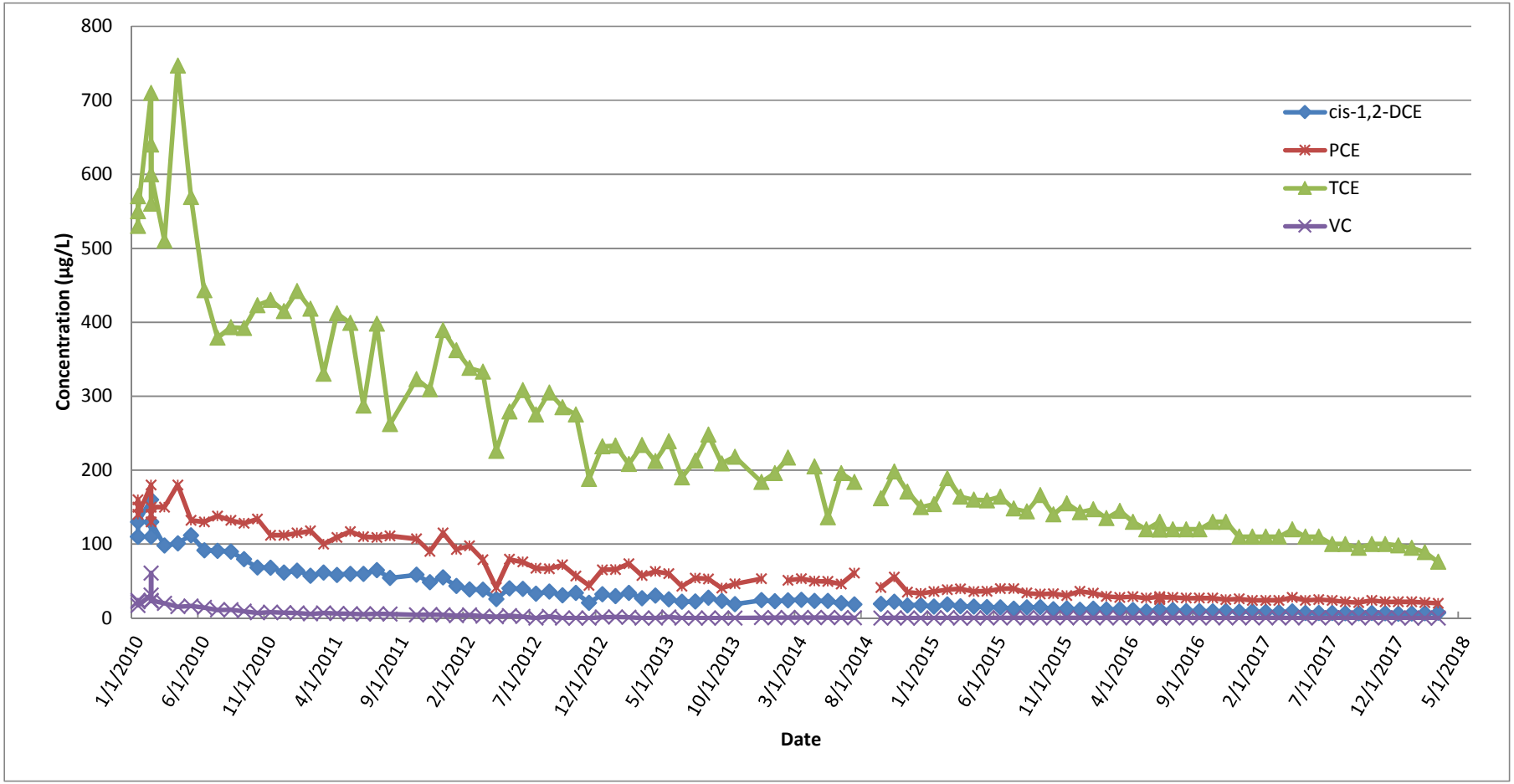


Figure 6
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3

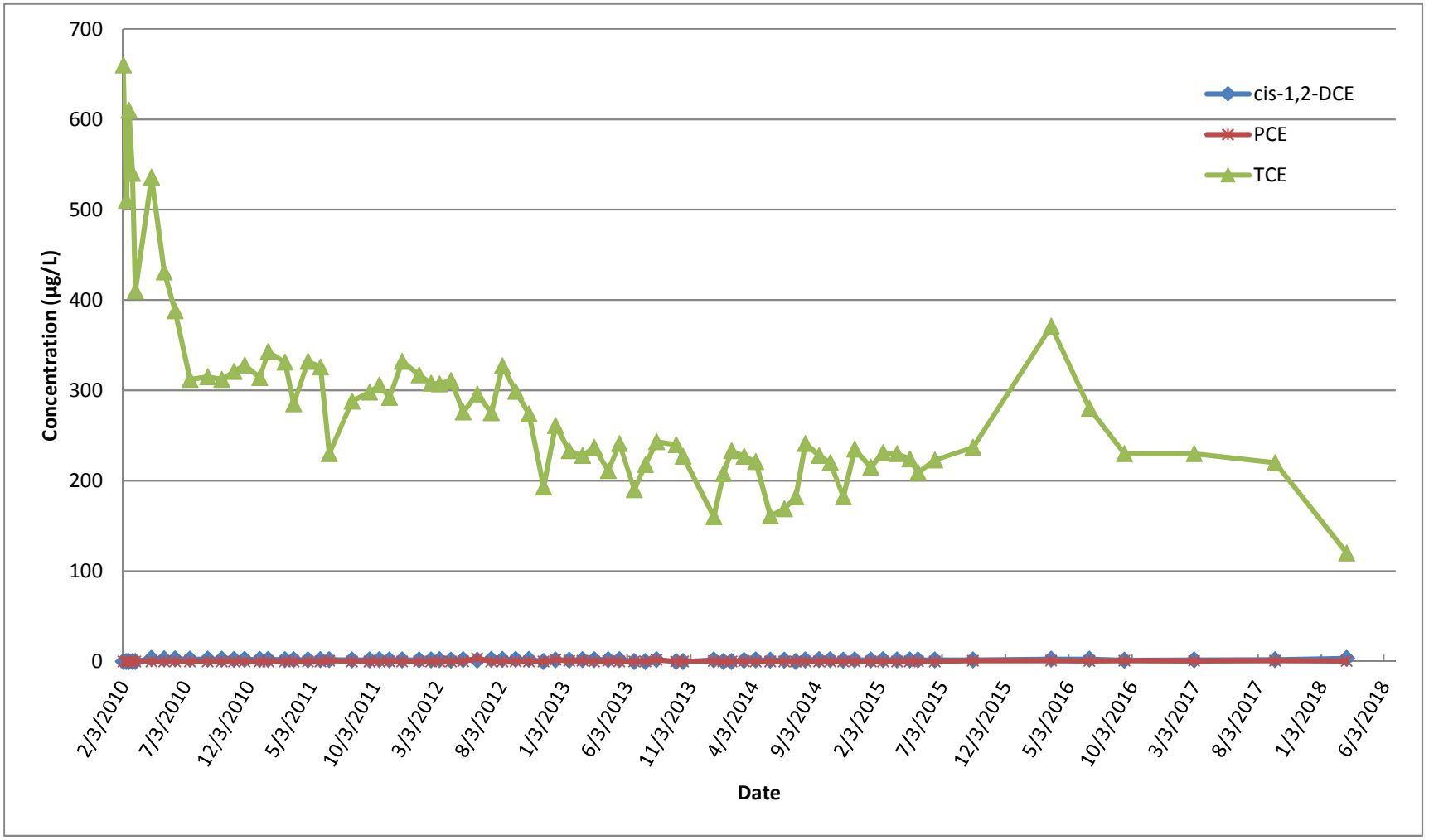


Figure 7
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW1

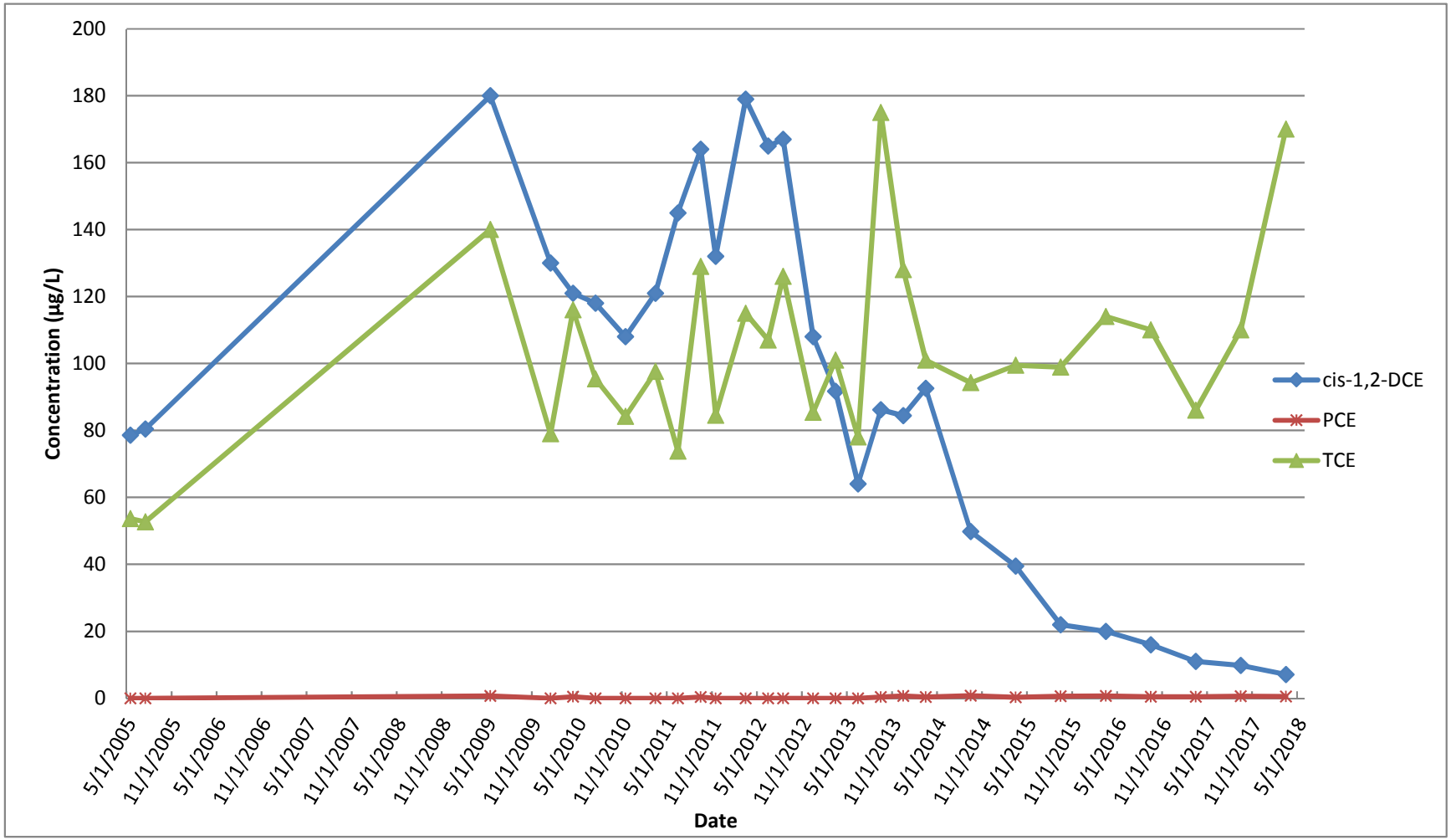


Figure 8
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW3

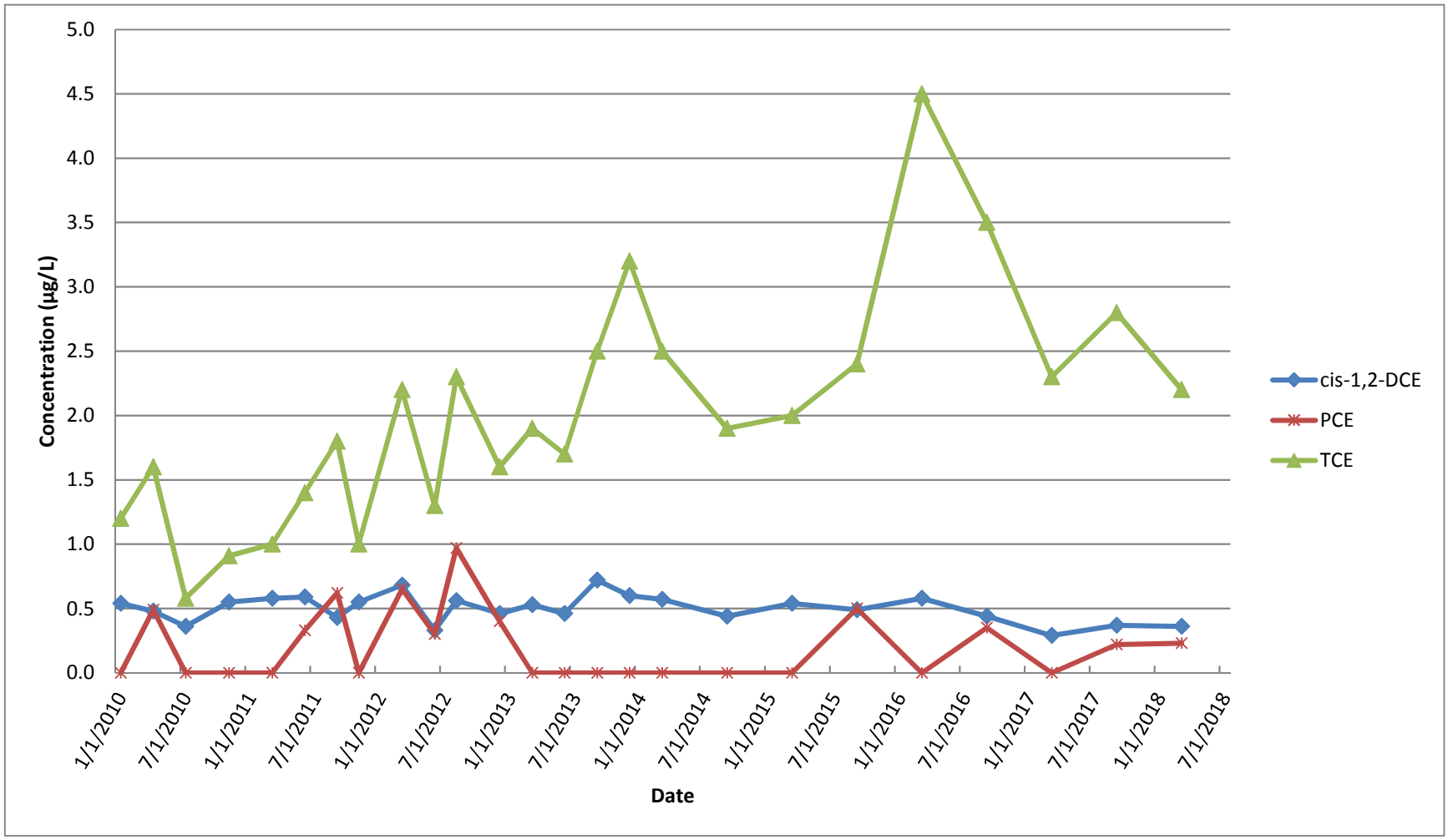


Figure 9
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW2-MW1

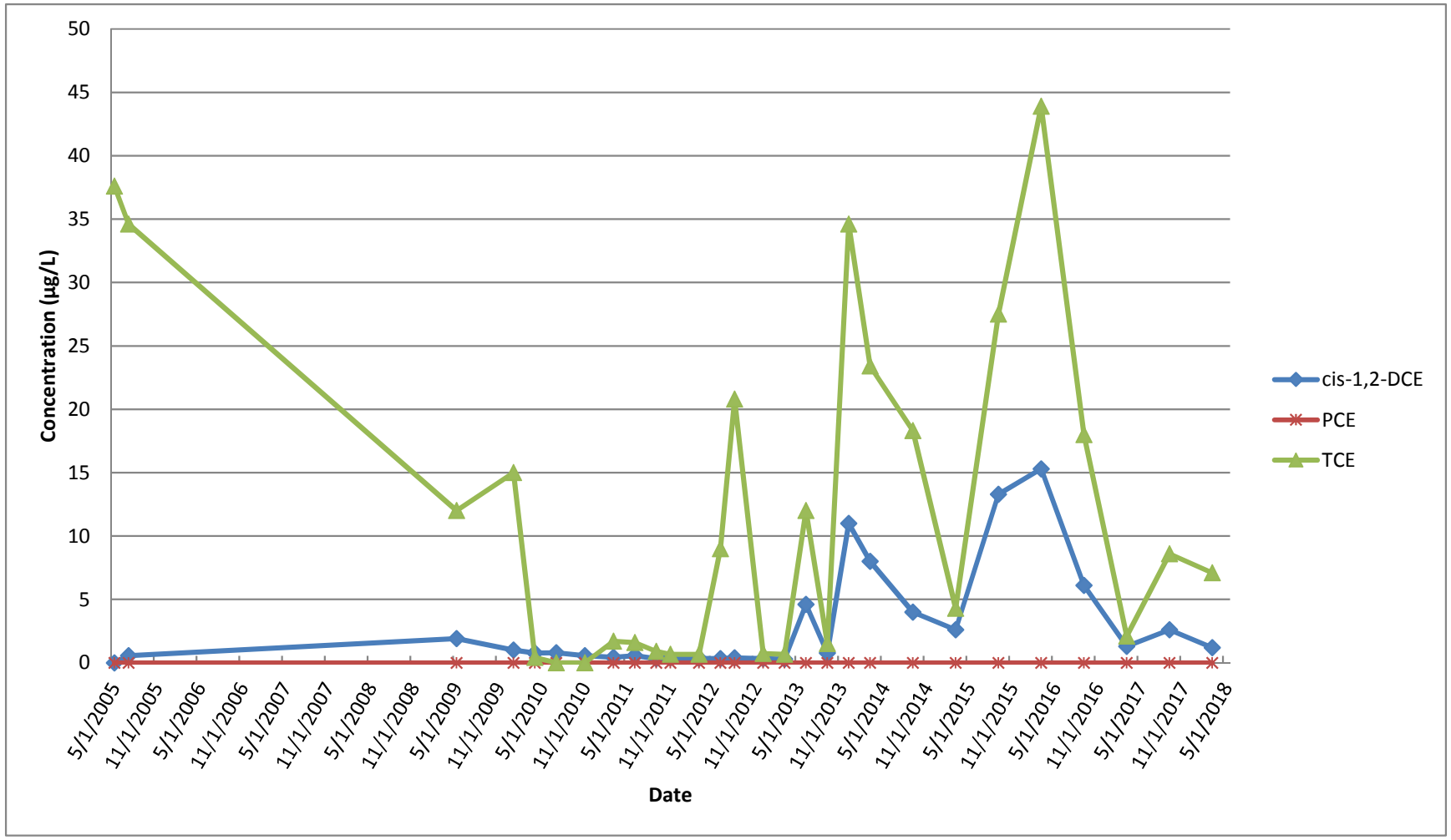


Figure 10
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW1

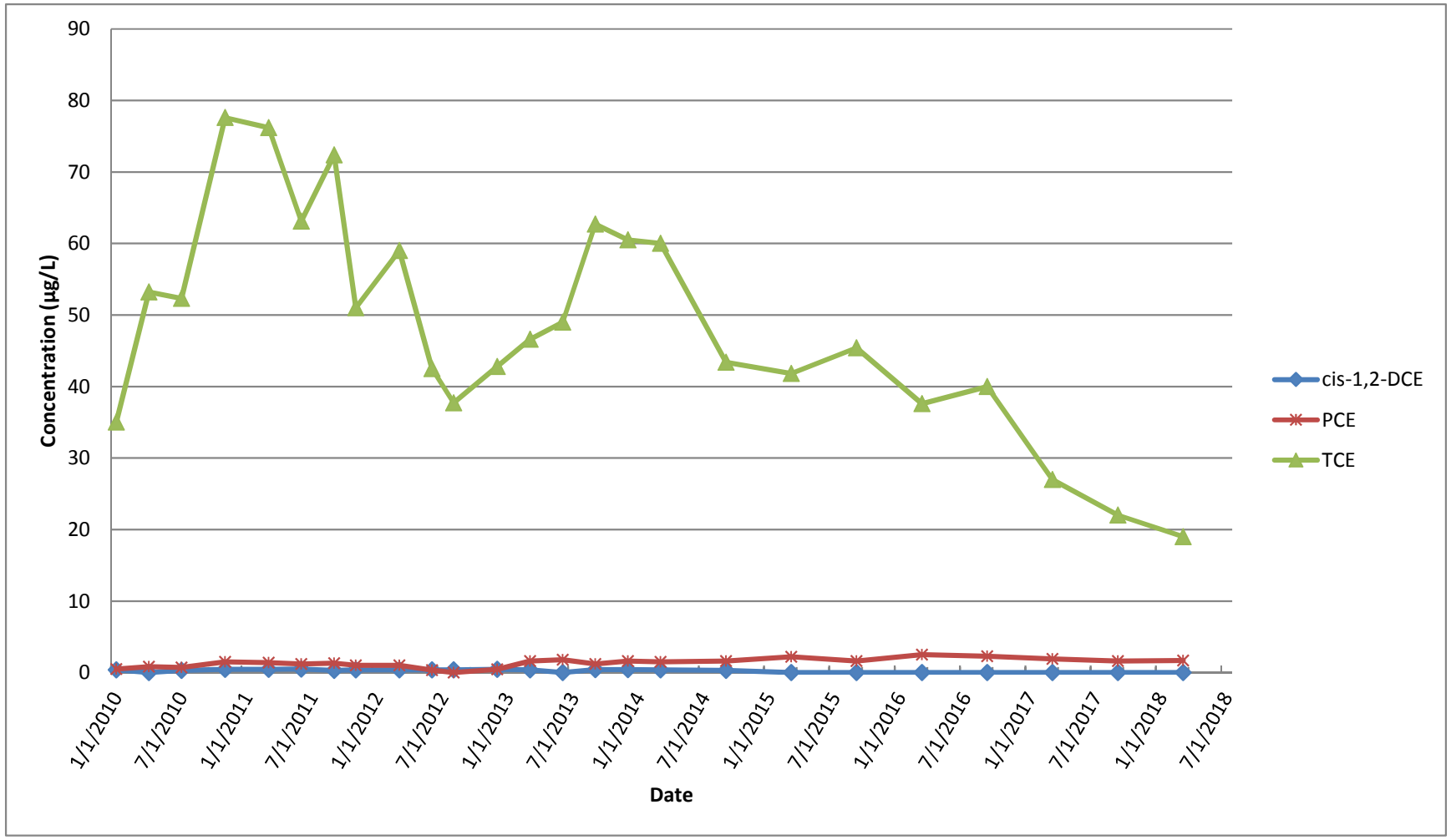


Figure 11
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW2

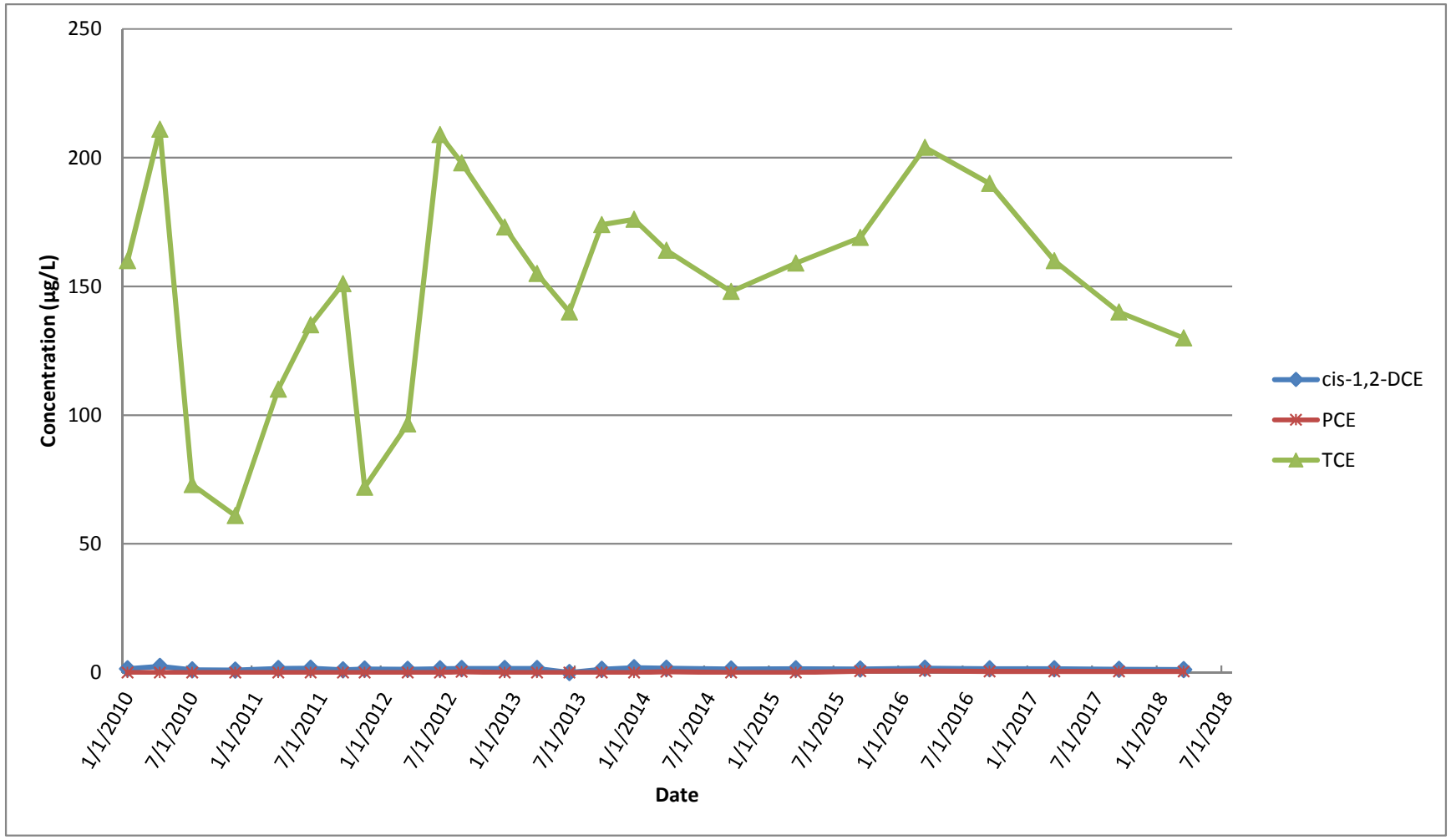


Figure 12
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW3

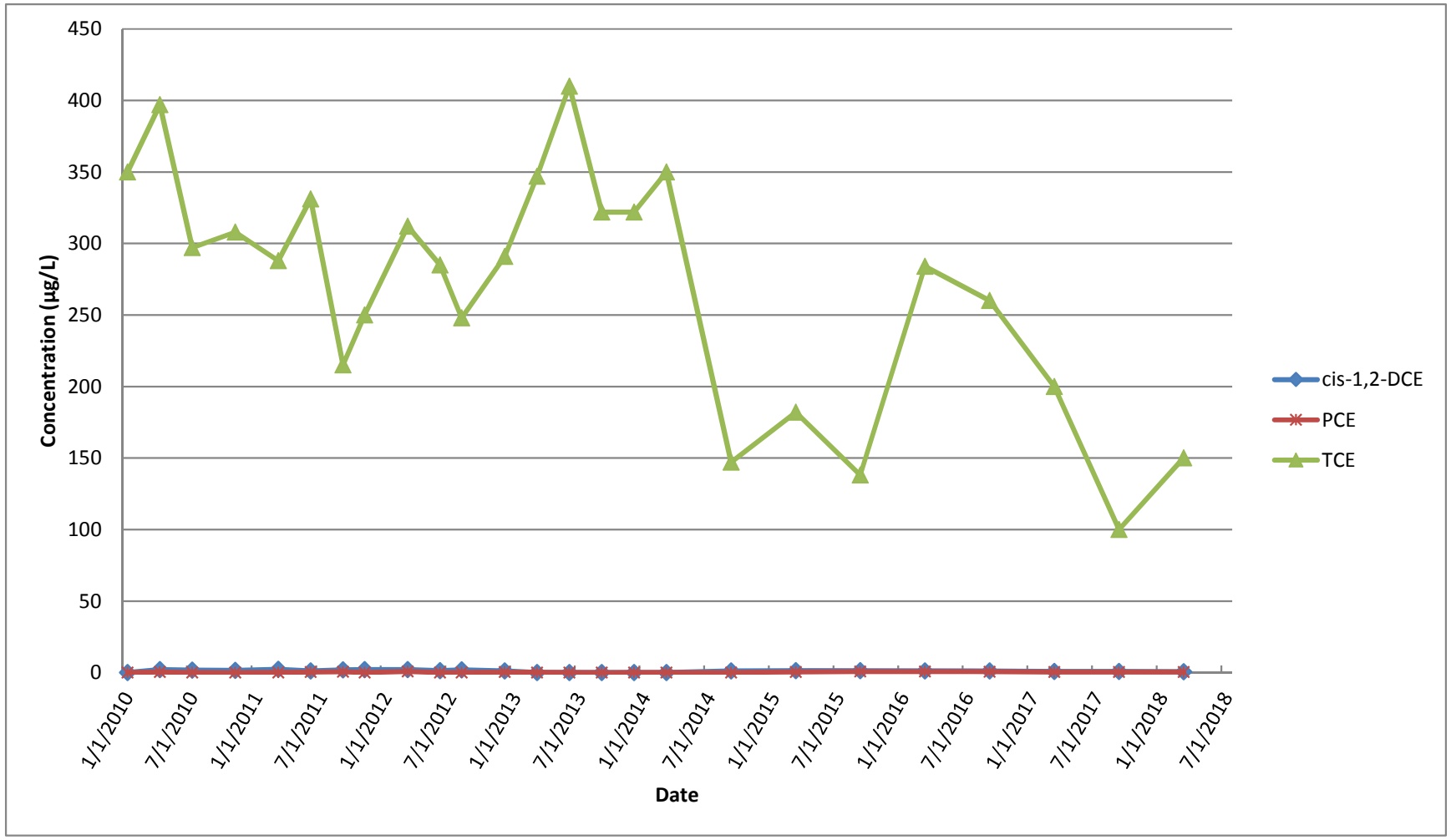


Figure 13
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW4

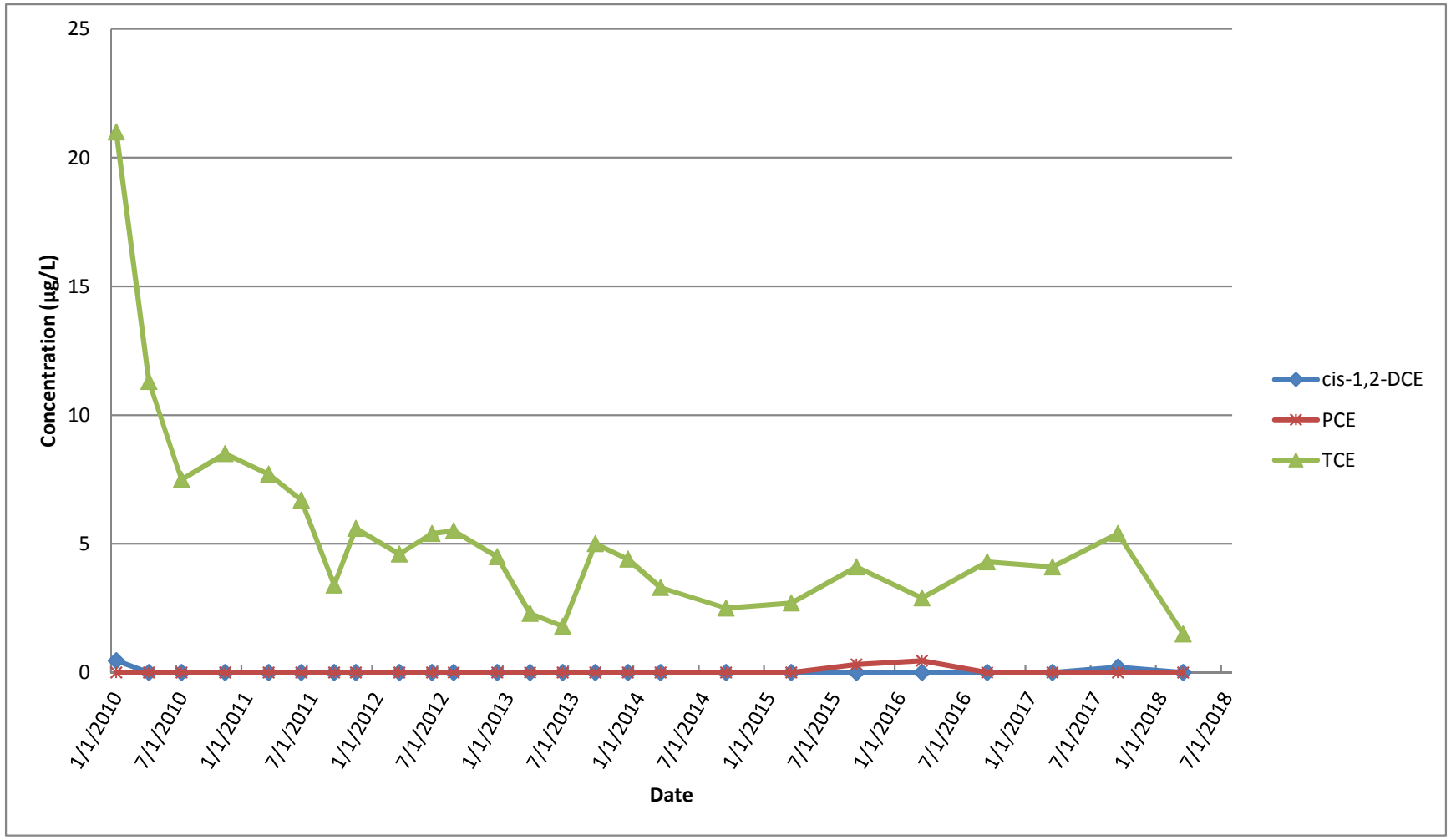
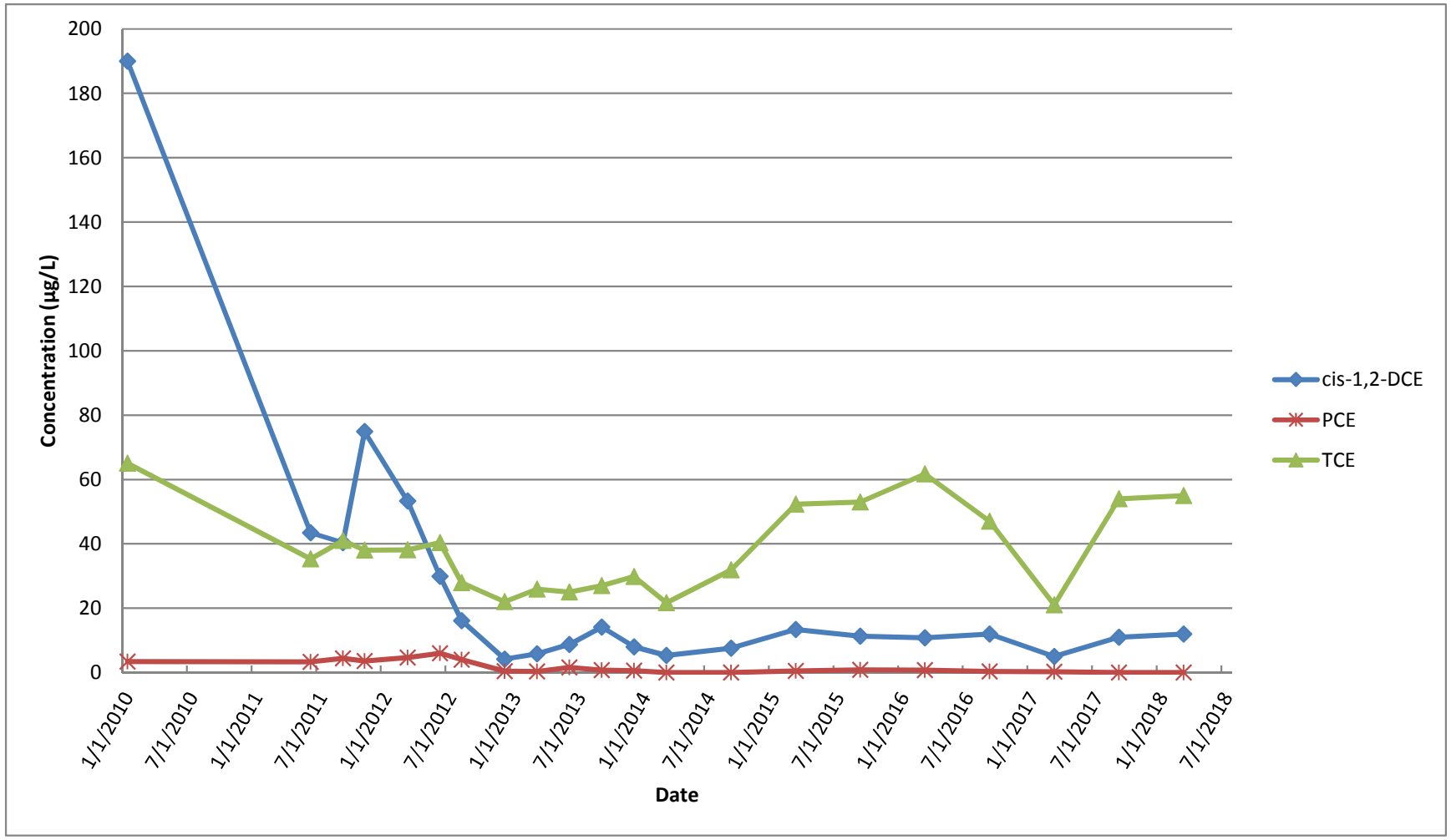


Figure 14
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

TP-01



APPENDIX A

NYSDEC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS AND MONTHLY DMRS

JANUARY 2018

8 February 2018

Mr. Jason Pelton
New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
625 Broadway
Albany, NY 12233-7252

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 JANUARY 2018 REPORTING PERIOD

Dear Mr. Pelton:

KOMAN Government Solutions, LLC (KGS) 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, and the SPDES Permit Equivalent # 13003B.

GWTP operational data from 1 January 2018 to 31 January 2018 are presented in Attachment A. During this reporting period, there was no scheduled or unscheduled downtime for the GWTP.

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

Please contact me at 610-400-0622 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Stephane Roy
Project Manager

Attachment A: Groundwater and Air Sampling Results from January 2018

Cc: S. Edwards, NYSDEC
D. Hesler, NYSDEC
C. Haas, NYSDEC Region 1
W. Parish, NYSDEC Region 1
R. Wither, NYSDEC Division of Water

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110
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S. Karpinski, NYSDOH
J. Lovejoy, NCDH
L. Thantu, USEPA Region 2
G. Ennis, Nassau County Department of Public Works
S. Urban, Nassau County Department of Public Works
T. Licata, Town of Oyster Bay
M. Russo, Town of Oyster Bay
L. Fly, NAVFAC Mid-Atlantic RPM
G. Pearman, NWIRP Bethpage
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

JANUARY 2018

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
January 2018

SPDES Parameters	January 2018 (1)					
Process Stream	**Daily Treated Effluent Maximum(1)**	**Units**	**RW-1 (2)**	**RW-3 (3)**	**Combined Influent (3)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		1/3/18			
Effective Flowrate	1100	GPM	325	0.3	325	334
Total Flow	N/A	gallons	14,257,361	11,400	14,268,761	14,666,879
pH	5.5 - 8.5	SU	4.97	NS	4.97	5.94
Chloroform	5	µg/L	0.39 J	NS	0.39 J	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.8	NS	1.8	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.25 J	NS	0.25 J	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.2	NS	1.2	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.3	NS	6.3	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	22	NS	22	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.80 J	NS	0.80 J	ND (1.0)
Trichloroethene	5	µg/L	95	NS	95	0.52 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	NS	NS	NS	2.5
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)

Notes:

J - Estimated result between laboratory method detection limit and reporting limit

ND - Not detected above laboratory method detection limit. Reporting Limit (RL) given in parentheses.

NR - Not Recorded

N/A - Not Applicable

NS - Not Sampled

(1) Wastewater discharge equivalence permit renewed on 18 August 2017. Discharge limits established for 10 years. Chloroform, 1,4-dioxane and 1,1,2-trichlorotrifluoroethane are now monitored under the new permit.

(2) On 11 January 2018, the GM38 GWTP was shut down to allow Nassau County Basin NC#495 to drain for maintenance activities. On 24 January 2018, the GWTP was placed back on line with a reduced flowrate at RW-1 from ~1,000 gpm to ~200 gpm, with treated water diverted to injection well IW-1. Influent concentrations presented above are from RW-1 concentrations only.

(3) Well RW-3 was turned on for a total of approximately 1 hour this period.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
January 2018

DAR Parameters		**Discharge Goal [1]**	**January 2018**	
Process Stream			**Influent**	**Effluent**
Sampling Date			1/3/18	
Average Flowrate	CFM	N/A	NR	9,397
Total Flow	ft^3	N/A	NR	238,286,157
Total Flow	m^3	N/A	NR	6,747,513
1,2-Dichloroethane	$\mu g/m^3$	N/A	2.9 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 [2]	76	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		1.3 J	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	>100,000	77	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	1.6 J	ND
Trichloroethene	$\mu g/m^3$	2,600	1300	3.5 J
Vinyl Chloride	$\mu g/m^3$	560	1.8 J	1.2 J
Tetrachloroethene	$\mu g/m^3$	5,100	250	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) Discharge goal as approved by NYSDEC's letter dated 31 October 2013.
(2) Discharge goal is for total 1,2-Dichloroethene.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
January 2018

DAR Parameters	Units	Discharge Goal [1]	January 2018
Sampling Date			1/3/18
Average Flowrate	CFM	N/A	9,397
Total Flow	ft^3	N/A	238,286,157
Total Flow	m^3	N/A	6,747,513
Trichloroethene	lb/hr	0.09	0.00007
Vinyl Chloride	lb/hr	0.02	0.00002
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	0.00003

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

FEBRUARY 2018

19 March 2018

Mr. Jason Pelton
New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
625 Broadway
Albany, NY 12233-7252

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 FEBRUARY 2018 REPORTING PERIOD

Dear Mr. Pelton:

KOMAN Government Solutions, LLC (KGS) 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, and the SPDES Permit Equivalent # 13003B.

GWTP operational data from 1 February to 28 February 2018 are presented in Attachment A. On 11 January 2018, the GM38 GWTP was shut down to allow Nassau County Basin NC#495 to drain for maintenance activities. On 24 January 2018, the GWTP was placed back on line with a reduced flowrate at RW-1. During the month, the GWTP continued to operate at a reduced flowrate of approximately 135 gpm with its effluent discharge diverted into injection well IW-1 in order to accommodate rehabilitation of Nassau County Basin #495.

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

Please contact me at 610-400-0622 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Stephane Roy
Project Manager

Attachment A: Groundwater and Air Sampling Results from February 2018

Cc: S. Edwards, NYSDEC

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J. Lovejoy, NCDH
L. Thantu, USEPA Region 2
G. Ennis, Nassau County Department of Public Works
S. Urban, Nassau County Department of Public Works
T. Licata, Town of Oyster Bay
M. Russo, Town of Oyster Bay
L. Fly, NAVFAC Mid-Atlantic RPM
G. Pearman, NWIRP Bethpage
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

FEBRUARY 2018

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
February 2018

SPDES Parameters	February 2018 [1]					
Process Stream	**Daily Treated Effluent Maximum[1]**	**Units**	**RW-1** [2]	**RW-3** [3]	**Combined Influent** [3]	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		2/1/18			
Effective Flowrate	1100	GPM	74	0.2	74	72
Total Flow	N/A	gallons	2,980,200	6,800	2,987,000	2,914,400
pH	5.5 - 8.5	SU	5.04	NS	5.04	6.03
Chloroform	5	µg/L	0.40 J	NS	0.40 J	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.8	NS	1.8	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.31 J	NS	0.31 J	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.2	NS	1.2	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.7	NS	6.7	0.22 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	21	NS	21	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.84 J	NS	0.84 J	ND (1.0)
Trichloroethene	5	µg/L	89	NS	89	0.31 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	NS	NS	NS	2.3
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)

Notes:

J - Estimated result between laboratory method detection limit and reporting limit

ND - Not detected above laboratory method detection limit. Reporting Limit (RL) given in parentheses.

NR - Not Recorded

N/A - Not Applicable

NS - Not Sampled

(1) Wastewater discharge equivalence permit renewed on 18 August 2017. Discharge limits established for 10 years. Chloroform, 1,4-dioxane and 1,1,2-trichlorotrifluoroethane are now monitored under the new permit.

(2) On 11 January 2018, the GM38 GWTP was shut down to allow Nassau County Basin NC#495 to drain for maintenance activities. On 24 January 2018, the GWTP was placed back on line with a reduced flowrate at RW-1 from ~1,000 gpm to ~200 gpm, and further reduced to 135 gpm on 14 February 2018, with treated water diverted to injection well IW-1. Influent concentrations presented above are from RW-1 concentrations only.

(3) Well RW-3 was turned on for a total of approximately 1 hour this period.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
February 2018

DAR Parameters		**Discharge Goal** [(1)]	**February 2018**	
Process Stream			**Influent**	**Effluent**
Sampling Date			2/1/18	
Average Flowrate	CFM	N/A	NR	9,659
Total Flow	ft^3	N/A	NR	389,444,160
Total Flow	m^3	N/A	NR	11,027,831
1,2-Dichloroethane	$\mu g/m^3$	N/A	ND	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 [(2)]	8.6	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		ND	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	>100,000	8.6	ND
Toluene	$\mu g/m^3$	N/A	4.4	2.3 J
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	ND	ND
Trichloroethene	$\mu g/m^3$	2,600	180	2.4 J
Vinyl Chloride	$\mu g/m^3$	560	ND	ND
Tetrachloroethene	$\mu g/m^3$	5,100	24	ND

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

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
February 2018

DAR Parameters	Units	Discharge Goal (1)	February 2018
Sampling Date			2/1/18
Average Flowrate	CFM	N/A	9,659
Total Flow	ft^3	N/A	389,444,160
Total Flow	m^3	N/A	11,027,831
Trichloroethene	lb/hr	0.09	0.00009
Vinyl Chloride	lb/hr	0.02	0.00000
1,2 Dichloroethene	lb/hr	11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00008
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00000

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

MARCH 2018

11 April 2018

Mr. Jason Pelton
New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
625 Broadway
Albany, NY 12233-7252

Subject: GROUNDWATER DISCHARGE MONITORING/AIR EMISSION REPORT GM-38 AREA, NWIRP BETHPAGE, NY; DER SITE # 1-30-003B-OU 2 MARCH 2018 REPORTING PERIOD

Dear Mr. Pelton:

KOMAN Government Solutions, LLC (KGS) 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, and the SPDES Permit Equivalent # 13003B.

GWTP operational data from 1 March to 31 March 2018 are presented in Attachment A. On 11 January 2018, the GM38 GWTP was shut down to allow Nassau County Basin NC#495 to drain for maintenance activities. On 24 January 2018, the GWTP was placed back on line with a reduced flowrate at RW-1. At the beginning of March 2018, the GWTP continued to operate at a reduced flowrate of approximately 135 gpm with its effluent discharge diverted into injection well IW-1 in order to accommodate rehabilitation of Nassau County Basin #495. On 9 March 2018, the GM38 GWTP effluent discharge was redirected to Nassau County Basin #495 at an initial flowrate of 350 gpm. On 12 March, the flowrate was increased to 700 gpm, and on 15 March, the GM38 GWTP was return to its normal flowrate of 1,000 gpm.

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

Please contact me at 610-400-0622 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Stephane Roy
Project Manager

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110
Exton, Pennsylvania 19341

Phone (610) 363-3000
Fax (610) 363-3001
www.komangs.com

Attachment A: Groundwater and Air Sampling Results from March 2018

Cc: S. Edwards, NYSDEC
D. Hesler, NYSDEC
C. Haas, NYSDEC Region 1
W. Parish, NYSDEC Region 1
R. Wither, NYSDEC Division of Water
J. Pilewski, NYSDEC – Region 1 Water Engineer
S. Karpinski, NYSDOH
J. Lovejoy, NCDH
L. Thantu, USEPA Region 2
G. Ennis, Nassau County Department of Public Works
S. Urban, Nassau County Department of Public Works
T. Licata, Town of Oyster Bay
M. Russo, Town of Oyster Bay
L. Fly, NAVFAC Mid-Atlantic RPM
B. Murray, Mid-Atlantic RPM
G. Pearman, NWIRP Bethpage
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

MARCH 2018

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
March 2018

SPDES Parameters	March 2018 (1)					
Process Stream	**Daily Treated Effluent Maximum(1)**	**Units**	**RW-1** (2)	**RW-3** (3)	**Combined Influent** (3)	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		3/7/18			
Effective Flowrate	1100	GPM	579	0.0	579	593
Total Flow	N/A	gallons	26,271,735	0	26,271,735	3,934,920,798
pH	5.5 - 8.5	SU	5.09	NS	5.09	5.98
Chloroform	5	µg/L	0.44 J	NS	0.44 J	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.9	NS	1.9	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.23 J	NS	0.23 J	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.1	NS	1.1	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	7.1	NS	7.1	0.22 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	20	NS	20	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.78 J	NS	0.78 J	ND (1.0)
Trichloroethene	5	µg/L	76	NS	76	0.37 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	NS	NS	NS	1.9
Mercury	0.00025	mg/L	ND (0.00010)	NS	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)

Notes:

J - Estimated result between laboratory method detection limit and reporting limit

ND - Not detected above laboratory method detection limit. Reporting Limit (RL) given in parentheses.

NR - Not Recorded

N/A - Not Applicable

NS - Not Sampled

(1) Wastewater discharge equivalence permit renewed on 18 August 2017. Discharge limits established for 10 years. Chloroform, 1,4-dioxane and 1,1,2-trichlorotrifluoroethane are now monitored under the new permit.

(2) On 11 January 2018, the GM38 GWTP was shut down to allow Nassau County Basin NC#495 to drain for maintenance activities. On 24 January 2018, the GWTP was placed back on line with a reduced flowrate at RW-1 from ~1,000 gpm to ~200 gpm, and further reduced to 135 gpm on 14 February 2018, with treated water diverted to injection well IW-1. Influent concentrations presented above are from RW-1 concentrations only.

(3) Well RW-3 was turned on for a total of approximately 1 hour this period.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
March 2018

DAR Parameters		**Discharge Goal** [1]	**March 2018**	
Process Stream			**Influent**	**Effluent**
Sampling Date			3/7/18	
Average Flowrate	CFM	N/A	NR	9,611
Total Flow	ft^3	N/A	NR	428,028,850
Total Flow	m^3	N/A	NR	12,120,427
1,2-Dichloroethane	$\mu g/m^3$	N/A	ND	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	> 100,000 [2]	6.3	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		ND	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	>100,000	6.3	ND
Toluene	$\mu g/m^3$	N/A	0.52 J	1.6 J
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	ND	ND
Trichloroethene	$\mu g/m^3$	2,600	140	0.74 J
Vinyl Chloride	$\mu g/m^3$	560	ND	ND
Tetrachloroethene	$\mu g/m^3$	5,100	19	ND

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

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
March 2018

DAR Parameters	Units	Discharge Goal (1)	March 2018
Sampling Date			3/7/18
Average Flowrate	CFM	N/A	9,611
Total Flow	ft^3	N/A	428,028,850
Total Flow	m^3	N/A	12,120,427
Trichloroethene	lb/hr	0.09	0.00003
Vinyl Chloride	lb/hr	0.02	0.00000
1,2 Dichloroethene	lb/hr	11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00006
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	0.18	0.00000

Notes:
CFM - cubic feet per minute
DAR - Division of Air Resources
N/A - Not Applicable
(1) Discharge 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
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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
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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

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Section IV - Emission Unit Information (continued)

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

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

Emission Unit Compliance Certification ❑ Continuation Sheet(s)

Rule Citation

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

☒ Applicable Federal Requirement ❑ State Only Requirement ❑ Capping

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

Monitoring Information

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

Description

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

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

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

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

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

DEC ID
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Section IV - Emission Unit Information (continued)

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

Rule Citation

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

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

Description

Rule Citation

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

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

Description

Process Emissions Summary ❑ Continuation Sheet(s)

EMISSION UNIT	0-00EU1				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

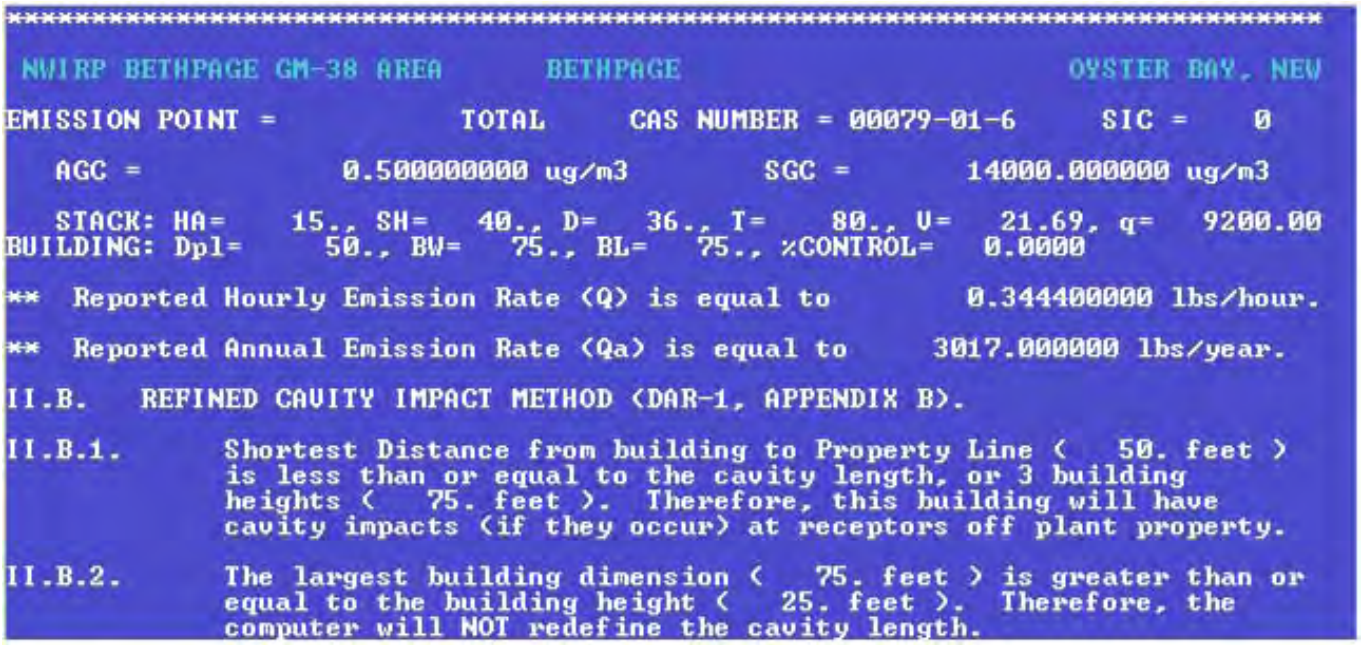
		SHORT-TERM	CAVITY	POINT or AREA SOURCE	
CAS NUMBER	AGC ug/m3	MAXIMUM (Gav,Pt,Area) % OF SGC	ACTUAL ANNUAL % OF AGC	POTENTIAL ANNUAL % OF AGC	ACTUAL ANNUAL % OF AGC
00075-01-4	0.11000000	0.0005	0.0000	13.3889	13.4948
00079-01-6	0.50000000	0.7757	0.0000	390.1734	390.6266
00127-18-4	1.00000000	7.3852	0.0000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

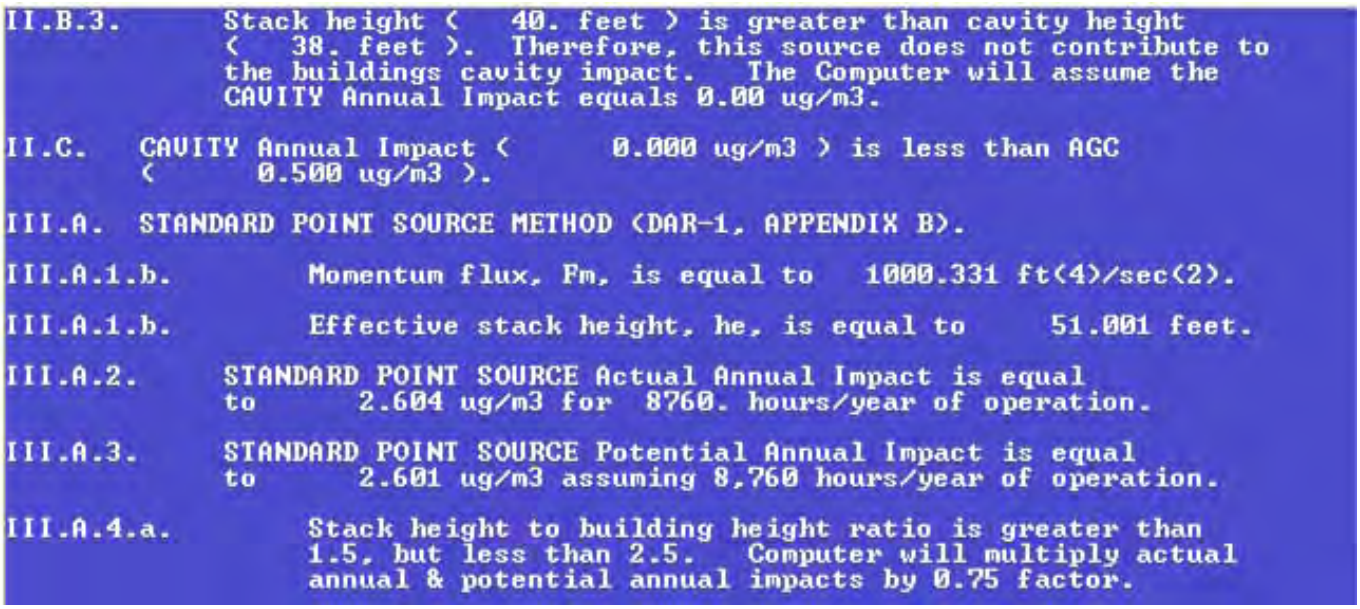
CONTAMINANT IMPACT SUMMARY OF DAR-1 ANALYSIS 9/ 8/11
Page 1

		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:



```
**********************************************************************************
 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 analysis 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:

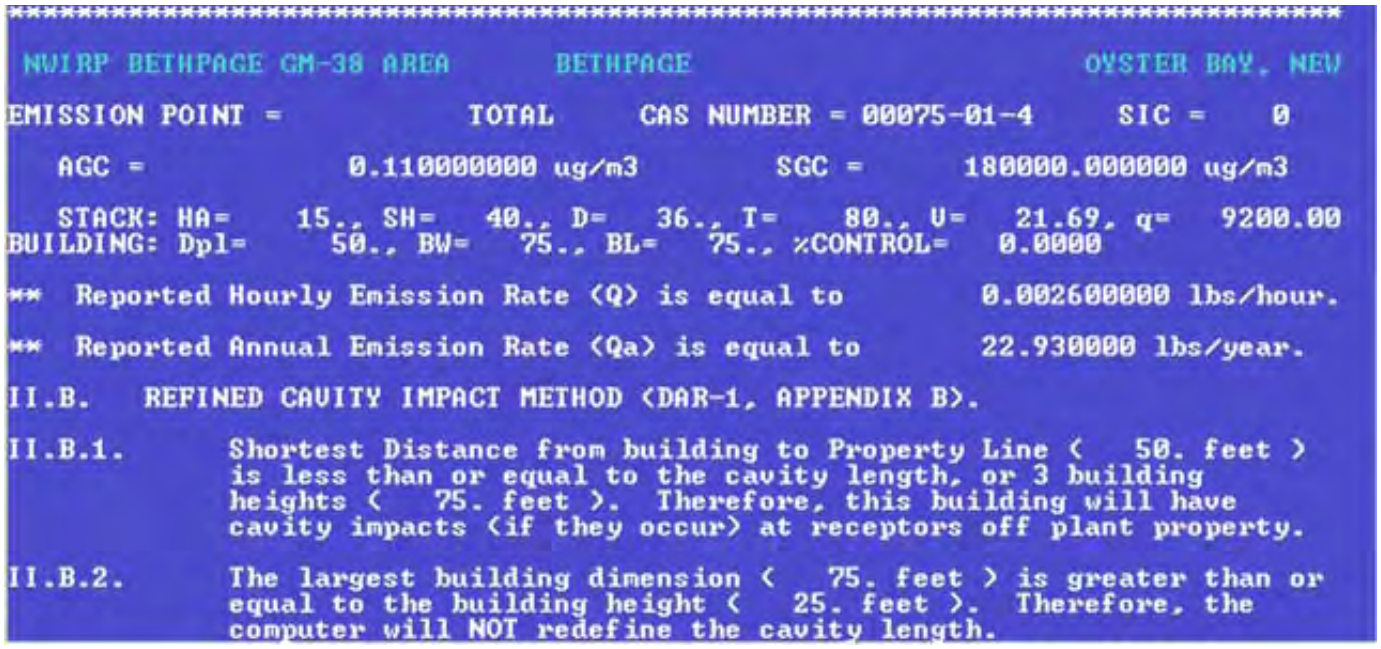
```
**********************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                          OYSTER BAY, NEW
EMISSION POINT =          TOTAL     CAS NUMBER = 00127-18-4     SIC =    0
   AGC =            1.000000000 ug/m3        SGC =         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.
```

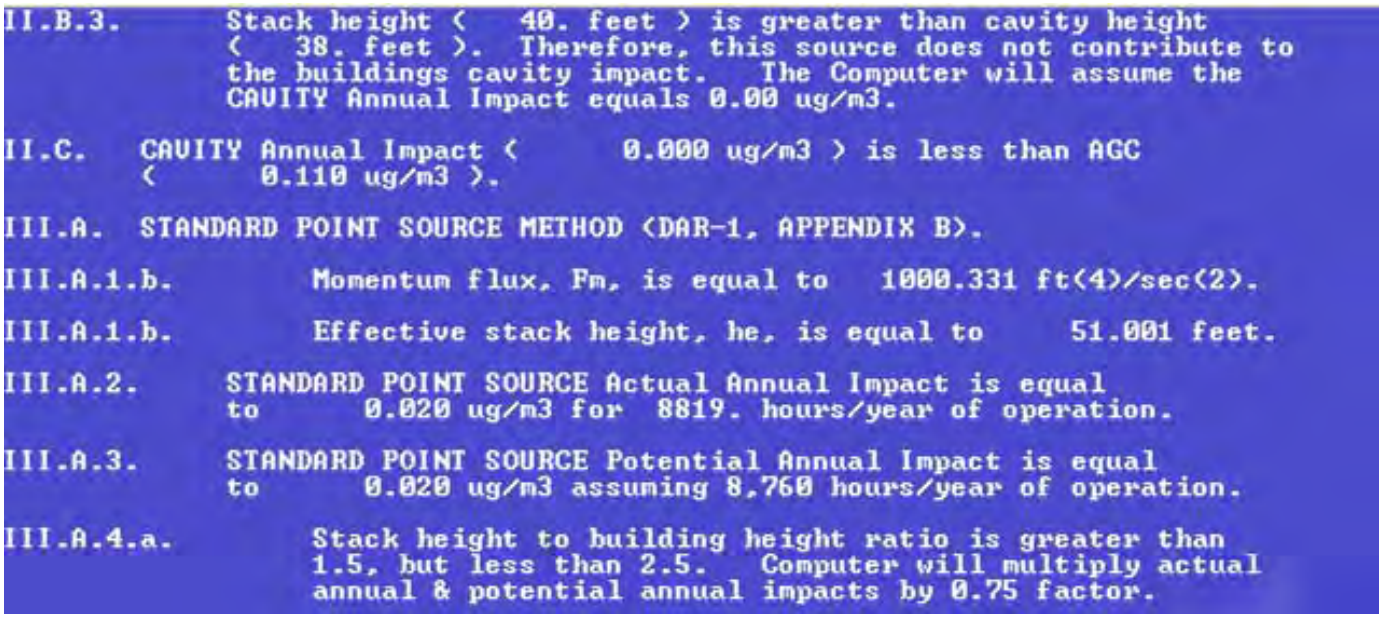
```
III.A.5.      STANDARD POINT SOURCE Short-Term Impact is calculated below
              using the DAR-1 SOFTWARE PROGRAM SHORT-TERM METHOD.

III.B.  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
AGC = 0.500000000 ug/m3 13:17:58

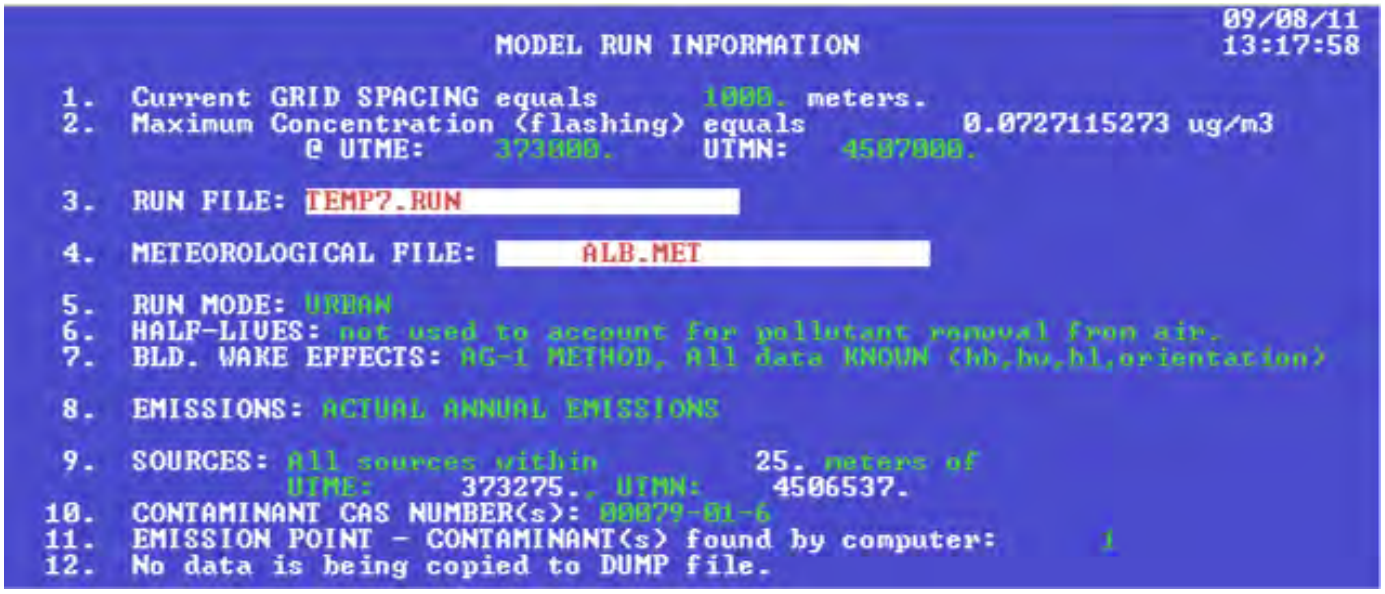
UTMN ▼ / UTME ▶	367000.	368000.	369000.	370000.	371000.	372000.	373000.	374000.	375000.	376000.	377000.	378000.	379000.
4511000.	0.04		0.06		0.08		0.14		0.23		0.32		0.41
4510000.	0.03		0.05		0.08		0.13		0.25		0.43		0.60
4509000.	0.02		0.03		0.06		0.11		0.24		0.58		1.01
4508000.	0.02		0.03		0.04		0.06		0.18		0.62		2.16
4507000.	0.02		0.03		0.04		0.06		0.11		0.26		7.27
4506000.	0.03		0.03		0.05		0.07		0.13		0.33		2.58
4505000.	0.03		0.04		0.05		0.08		0.20		0.45		0.94
4504000.	0.03		0.04		0.07		0.12		0.20		0.22		0.47

0.30	0.14	0.10	0.08	0.06	0.05	
0.40	0.17	0.12	0.09	0.07	0.06	
0.52	0.22	0.14	0.11	0.08	0.06	
0.64	0.31	0.19	0.13	0.11	0.09	
1.43	0.60	0.34	0.22	0.15	0.12	
2.99	1.12	0.51	0.30	0.20	0.14	
0.81	0.60	0.45	0.33	0.23	0.16	
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
@ UTME: 373000. UTMN: 4507000. 13:17:58

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 LOGS AND
CHAIN OF CUSTODY DOCUMENTATION

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW 1 - MW 1

Date: 03/5/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 1110 End Time: 1245
Well Construction: 4"
Depth to Water: 35.93
Well Depth: —
Water Column: —
Total Volume Removed (L): 8.0 L
Dedicated Pump in Well?: no

Field Testing Equipment

Make	Model	Serial #
YSI	556 MPS	10G101446
LaMotte	2020e	1123-2811
Marschalk Bladder Pump	24"	
QED	MP15	

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)	Salinity (ppm)	Color
1140	<	200	35.98	12.81	4.93	0.136	6.77	188.9	1.53		Clear
1145	1.0	200	35.91	14.07	4.73	0.176	1.09	182.5	1.25		Clear
1150	2.0	200	35.84	14.21	4.68	0.170	0.79	177.4	1.48		Clear
1155	3.0	200	35.98	14.23	4.61	0.166	0.42	176.6	1.64		Clear
1200	4.0	200	35.84	14.26	4.47	0.168	0.36	219.9	1.66		Clear
1205	5.0	200	35.92	14.37	4.53	0.168	0.31	201.1	1.85		Clear
1210	6.0	200	35.82	14.39	4.50	0.166	0.27	210.1	1.35		Clear
1215	7.0	200	35.96	14.36	4.56	0.169	0.23	197.4	0.99		Clear
1220	8.0	200	35.85	14.40	4.53	0.168	0.23	198.2	1.18		Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1220	~~NWIRP~~GM-38-GW-RW 1 -MW 1 - 0318				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

ORP jumping ±10 mV

Erich Seiler
Signature

3/5/2018
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW1 - MW3

Date: 03/5/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 1450 End Time: 1620
Well Construction: 4"
Depth to Water: 29.75
Well Depth: ——
Water Column: ——
Total Volume Removed (L): 9.00
Dedicated Pump in Well?: no

Field Testing Equipment

Make	Model	Serial #
YSI	YSI	554MPS
LaMotte	2020e	10G101446
Marschalk Bladder Pump	24"	
QED	MP15	

1133-2811

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)	~~Salinity~~ (ppm)	Color
1505	—	150	29.73	9.68	5.17	0.178	3.87	111.4	7.81		clear
1510	0.75	150	29.73	10.67	4.97	0.173	1.37	169.1	5.92		clear
1515	1.50	150	29.73	10.59	5.01	0.173	1.29	164.3	8.80		clear
* 1520	2.25	150	29.71	10.45	5.02	0.173	1.02	165.0	—		clear
1525	3.00	150	29.71	9.06	4.96	0.175	1.15	168.8	7.81		clear
1530	3.75	150	29.72	10.44	4.97	0.169	0.90	161.6	8.47		clear
1535	5.25	150	29.71	10.81	4.95	0.168	0.71	157.7	8.31		clear
1540	6.00	150	29.71	10.96	4.90	0.169	0.60	158.7	8.20		clear
1545	6.75	150	29.71	10.90	4.93	0.169	0.58	160.3	8.23		clear
1550	7.50	150	29.71	11.07	4.98	0.169	0.52	132.0	7.92		clear
1555	8.25	150	29.70	11.19	4.99	0.169	0.49	152.4	8.35		clear
1600	9.00	150	29.70	11.69	4.97	0.169	0.49	149.5	7.00		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1600	~~NWIRP~~-GM-38-GW-RW1-MW3-0318				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

*change air tank

Signature

3/5/2018
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW2 - MW 1

Date: 03/5/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 1625 End Time: 1735
Well Construction: 4"
Depth to Water: 39.74
Well Depth: ——
Water Column: ——
Total Volume Removed (L): 10.5
Dedicated Pump in Well?: ~~10.5~~ no

Field Testing Equipment

Make	Model	Serial #
YSI	YSI 556 MPS	18G1814460
LaMotte	2020e	1133-2811
Marschalk Bladder Pump	24"	
QED	MP15	

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)	~~Salinity (ppm)~~	Color
1645	—	300	39.76	11.80	7.15	0.166	2.63	45.3	5.62		clear
1650	1.5	300	39.78	12.62	7.55	0.167	0.36	117.5	6.98		clear
1655	3.0	300	39.81	12.74	7.82	0.165	0.21	135.3	5.32		clear
1700	4.5	300	39.80	12.78	7.12	0.175	0.17	131.3	4.48		clear
1705	6.0	300	39.84	12.81	6.66	0.208	0.16	117.5	3.21		clear
1710	7.5	300	39.80	12.81	6.45	0.210	0.13	128.9	2.22		clear
1715	9.0	300	39.80	12.77	6.51	0.210	0.12	125.3	2.63		clear
1720	10.5	300	39.80	12.77	6.47	0.209	0.12	129.3	2.23		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1720	~~NWIRP~~-GM-38-GW-RW2-MW1 - 0318				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Erich Seiler
Signature

3/5/2018
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: ~~RW - MW~~ TP-1

Date: 03/5/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 1250 End Time: 1420
Well Construction: 4"
Depth to Water: 35.27
Well Depth: ---
Water Column: ---
Total Volume Removed (L): 9.0
Dedicated Pump in Well?: NO

Field Testing Equipment

Make	Model	Serial #
YSI	556 MPS	16G-16446
LaMotte	2020e	1133 - 2811
Marschalk Bladder Pump	24"	
QED	MP15	

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)	~~Salinity~~ (ppm)	Color
1310	---	200	35.27	11.50	5.98	0.147	7.70	174.0	0.87		Clear
1315	1.0	200	35.25	12.15	5.91	0.146	7.51	178.7	1.10		Clear
1320	2.0	200	35.25	12.36	5.97	0.140	7.09	201.7	1.14		Clear
1325	3.0	200	35.26	12.40	5.94	0.138	7.22	194.4	1.32		clear
1330	4.0	200	35.25	12.46	5.97	0.138	7.07	169.3	0.90		Clear
1335	5.0	200	35.25	12.49	6.04	0.138	6.99	178.0	1.03		Clear
1340	6.0	200	35.25	12.55	5.96	0.138	7.00	204.9	1.86		Clear
1345	7.0	200	35.23	12.60	6.03	0.138	6.96	177.0	0.77		clear
1350	8.0	200	35.22	12.66	5.97	0.138	6.98	170.5	0.68		Clear
1355	9.0	200	35.22	12.72	5.99	0.138	6.99	180.1	0.71		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1355	~~NWIRP~~-GM-38-GW-~~RW - MW~~ TP-1-0318				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Unavoidable air pockets brought up with water

Erich Seiler
Signature

3/5/2018
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW3 - MW1

Date: 03/6/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 0840 End Time: 0945
Well Construction: 4"
Depth to Water: 39.81
Well Depth: —
Water Column: _____
Total Volume Removed (L): _____
Dedicated Pump in Well?: NO

Field Testing Equipment

Make	Model	Serial #
YSI	556	16G101446
LaMotte	2020e	1133-2811
Marschalk Bladder Pump	24"	
QED	MP15	

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)	~~Salinity (ppm)~~	Color
0850	—	200	39.81	12.24	4.63	0.127	5.40	204.3	2.70		clear
0855	1.0	200	39.83	12.41	4.67	0.129	5.93	196.1	3.57		clear
0900	2.0	200	39.84	12.39	4.63	0.129	6.22	201.7	2.60		clear
0905	3.0	200	39.83	12.39	4.62	0.130	6.22	204.5	1.73		clear
0910	4.0	200	39.84	12.41	4.66	0.130	6.28	185.9	1.77		clear
0915	5.0	200	39.81	12.47	4.61	0.131	6.07	197.3	1.30		clear
0920	6.0	200	39.85	12.47	4.66	0.131	6.15	198.4	2.30		clear
0925	7.0	200	39.83	12.46	4.57	0.130	6.05	199.6	1.70		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
0930	~~NWIRP~~-GM-38-GW-RW3-MW1-0318				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Erich Seiler
Signature

3/6/2018
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW3 - MW32

Date: 03/6/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 0740 End Time: 0900
Well Construction: 4"
Depth to Water: 40.28
Well Depth: ——
Water Column: ——
Total Volume Removed (L): ——
Dedicated Pump in Well?: no

Field Testing Equipment

Make	Model	Serial #
YSI	YSI 556 MPS	16G-1611446
LaMotte	2020e	~~1133~~ - 2811
Marschalk Bladder Pump	24"	1133
QED	MP15	

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)	Salinity (ppm)	Color
0755	—	200	40.47	9.72	5.03	0.090	9.81	85.5	2.28		Clear
0800	1.0	200	40.51	10.22	4.84	0.058	1.50	212.9	0.80		Clear
0805	2.0	200	40.50	10.49	4.82	0.087	0.72	217.7	0.89		Clear
0810	3.0	200	40.51	10.61	4.83	0.084	0.56	207.2	0.76		Clear
0815	4.0	200	40.47	10.60	4.85	0.081	0.45	207.6	1.00		Clear
0820	5.0	200	39.53	10.72	4.85	0.080	0.42	196.3	1.11		Clear
0825	6.0	200	41.55	10.77	4.84	0.079	0.36	193.5	0.90		Clear
0830	7.0	200	40.60	10.83	4.96	0.079	0.30	182.7	0.80		Clear
0835	8.0	200	40.61	10.85	4.85	0.079	0.31	170.1	0.71		Clear
* 0840	9.0	200	40.62	10.95	4.93	0.109	0.29	~~186~~.1	1.61		Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
0845	~~NWIRP~~-GM-38-GW-RW3-MW2-0318				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

*ORP changes based on cycling of pump, hard to obtain consistent reading (range of 169-185)

Ericka Seiler
Signature

3/6/2018
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW3 - MW3

Date: 03/6/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 1110 End Time: 1230
Well Construction: 4"
Depth to Water: 39.93
Well Depth: ——
Water Column: ——
Total Volume Removed (L): 7.50
Dedicated Pump in Well?: no

Field Testing Equipment

Make	Model	Serial #
YSI	556 MPS	16616 1446
LaMotte	2020e	1133-2811
Marschalk Bladder Pump	24"	
QED	MP15	

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)	~~Salinity (ppm)~~	Color
1135	—	250	40.99	14.45	4.96	0.121	7.82	11.2	6.32		clear
1140	1.25	250	41.01	14.49	4.96	0.121	2.22	168.7	6.18		clear
1145	2.50	250	41.00	14.36	4.94	0.121	1.91	178.1	6.38		clear
1150	3.75	250	41.00	14.35	4.94	0.121	1.85	174.7	5.76		clear
1155	5.00	250	41.00	14.46	4.94	0.121	1.81	173.4	4.66		clear
1200	6.25	250	41.00	14.44	4.92	0.121	1.78	174.3	4.49		clear
1205	7.50	250	41.00	14.46	4.93	0.120	1.78	168.9	5.38		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1210	~~NWIRP~~-GM-38-GW-RW3-MW3-0318			+ DUP +	MS/MSD
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Eric Seiler
Signature

3/6/2018
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW3-MW4

Date: 03/6/2018
Sampler: E. Seiler + S. Georges
PID: ------

Start Time: 1215 End Time: 1310
Well Construction: 4"
Depth to Water: 41.42
Well Depth: ←
Water Column: ____
Total Volume Removed (L): 6.0
Dedicated Pump in Well?: no

Field Testing Equipment

Make	Model	Serial #
YSI	556MPS	18G181446
LaMotte	2020e	1133-2811
Marschalk Bladder Pump	24"	
QED	MP15	

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)	~~Salinity~~ (ppm)	Color
1230	—	300	41.42	14.04	4.81	0.130	1.36	175.0	2.37		Clear
1235	1.5	300	41.43	14.25	4.76	0.131	0.24	177.0	2.58		Clear
1240	3.0	300	41.43	14.23	4.76	0.134	0.22	172.1	3.60		Clear
1245	4.5	300	41.41	14.26	4.75	0.134	0.19	175.1	2.20		Clear
1250	6.0	300	41.41	14.29	4.72	0.134	0.16	166.8	1.65		Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

2" Screen Volume = 0.163 gal/ft or 616 ml per foot

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1255	~~NWIRP~~-GM-38-GW-RW3-MW4-0318				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Erich Seiler
Signature

3/6/2017
Date

Instrument Calibration Log

Project/Site Name: GM-356 Bethpage **Date:** 3/5/2018 **Weather:**

Calibrated By: S. Georges **Instrument:** YSI 556 **Serial Number:** 16G101446

Parameters	Morning Calibration Time: 1009	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
Conductivity (µS/cm)	1,392 → 1,413	7.76		Exp: 12/31/2018 Lot# 7GL1004
pH (7)	6.99 → 7.00	6.43		Exp: 12-31-2019 Lot#: 7GL254
pH (4)	3.97 → 4.00	7.48		Exp: 01-31-2020 Lot # BGA190
pH (10)	10.22 → 10.03	6.59		Exp: 12/31/2018 Lot# GGL207
ORP (mV)	331.8 → 241.2	~~8.58~~ 9.36		Exp: 5/31/2021 Lot # 0207
Dissolved Oxygen (%)	131.0 → 103.2	4.86		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mm Hg)	786.1	4.62·C		

Signature: _____ Date: 03/05/2018

Instrument Calibration Log

Project/Site Name: Bethpage GM38 **Date:** 3/5/2018 **Weather:** _____

Calibrated By: E. Seiler **Instrument:** YSI 556 MPS **Serial Number:** 02B0187 AC

Second morning calibration

Parameters	Morning Calibration Time: 1000	Cal. Temperature °C	~~Afternoon Cal. Check~~ Time: 1035	Comments
Conductivity (µS/cm)	1.213 → 2.159	6.86		Lot #7GL100
pH (7)	5.64 → 6.98	6.99	5.16 → 7.24	Lot #~~7GL254~~ 7GL254
pH (4)	8.17 → 4.19 ~~5.66 → 4.01~~	7.12	5.66 → 4.01	Lot #8GA190
pH (10)	8.23 → 10.09	7.06	10.58 → 10.19	Lot #7GL670
ORP (mV)	249.9 → ~~240.~~ 250.0	7.80		Lot # 2062
Dissolved Oxygen (%)	102.4 → 99.9	8.08		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mm Hg)	759.5			

* Did not use this YSI

Signature: Erich Seiler Date: 3/8/2018

Instrument Calibration Log

Project/Site Name: GM-38 BENTPAGE **Date:** 03/06/2018 **Weather:** _____

Calibrated By: S. Georgos **Instrument:** YSI 556 **Serial Number:** 10G1014446

Parameters	Morning Calibration Time: 0650	Cal. Temperature °C	Afternoon Cal. Check Time: _____	Comments
Conductivity (µS/cm°)	~~1.431~~ → 1.415 → 1.413			
pH (7)	6.96 → 7.00	17.95		
pH (4)	4.02 → 4.00	16.90		
pH (10)	10.04 → 10.00	16.75		
ORP (mv)	182.9 → 240.2			
Dissolved Oxygen (%)	105.6 → 103.3	13.25		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	785.6	10.25		
Turbidity (NTU)				

Signature: Erich Seib Date: 3/8/2018

Instrument Calibration Log

Project/Site Name: Bethpage GM38 **Date:** 3/6/2018 **Weather:** _____

Calibrated By: E. Seiler **Instrument:** YSI 556 MPS **Serial Number:** 04L1385 Am

Parameters	Morning Calibration Time: 1005	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
Conductivity (µS/cm°)	0.912 → 1.413	6.83		
pH (7)	6.92 → 7.01	6.25		
pH (4)	3.75 → 4.00	7.15		
pH (10)	9.94 → 10.00	6.32		
ORP (mv)	264.2 → 240.3	6.82		
Dissolved Oxygen (%)	134.4 → 103.2	9.37		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	784.1			
Turbidity (NTU)				

Signature: Erich Seiler Date: 3/8/2018

Instrument Calibration Log

Project/Site Name: Bethpage GM38 **Calibrated By:** E. Seiler + S. Georges

Instrument/Serial Number	Pre-Cal 1-AM (NTU)	Pre-Cal 1-PM (NTU)	Pre-Cal 10-AM (NTU)	Pre-Cal 10-PM (NTU)	Post-Cal 1-AM (NTU)	Post-Cal 1-PM (NTU)	Post-Cal 10-AM (NTU)	Post-Cal 10-PM (NTU)	Date:
LaMotte 2020e / 1133 - 2811	1.58		10.96		1.00		9.89		3/5/2018 Time: 1048 &
1392 - 3811	0.79		10.34		0.94		9.67		3/5/2018 Time: 1055 &
1133 - 2811	1.48		9.09		1.07		9.96		3/6/2018 Time: 0650 &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &

Signature: Erich Seiler Date: 3/8/2018

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

49895

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 2

Project Name: NWIRP Bethpage GM38	Project Number: 2665-006
Project Manager: Stephane Roy	Report CC:
Company/Address: 180 Gordon Dr. Suite 110, Exton PA 19341	
Phone #: 610-314-6600	Email: sroy@komangs.com
Sampler's Signature: Erick Seiler	Sampler's Printed Name: Ericka Seiler

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	SM2540D (TSS)	8270D (1,4 Dioxane)							REMARKS/ ALTERNATE DESCRIPTION
GM-38-GW-RW1-MW1-0318		3/5/2018	1220	GW	5	3					1		1								
GM-38-GW-TP-1-0318		3/5/2018	1355	GW	5	3					1		1								
GM-38-GW-RW1-MW3-0318		3/5/2018	1600	GW	5	3					1		1								
GM-38-GW-RW2-MW1-0318		3/5/2018	1720	GW	5	3					1		1								
~~GM-38-GW-IW1-0318~~	EAS 4/12/18	3/5/2018	1803	GW	2									2							
~~GM-38-GW-IW1-DUP-0318~~	EAS 4/12/18	3/5/2018	1803	GW	2									2							
GM-38-GW-RW1-0318		3/5/2018	1759	GW	2									2							
GM-38-GW-RW3-0318		3/5/2018	1820	GW	7	3					1		1	2							
GM-38-GW-RW3-MW2-0318		3/6/2018	0845	GW	6	3							1	2							
GM-38-GW-RW3-MW1-0318		3/6/2018	0930	GW	6	3							1	2							
GM-38-GW-RW3-MW3-0318		3/6/2018	1210	GW	15	9					3		3								MS/MSD

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS

Metals

Total metals = Hg preserved with HNO_3

GM-38-TE-0318 EAS 4/12/18

GM-38-TE-DUP-0318 EAS 4/12/18

See QAPP ☐

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

_____ 1 day _____ 2 day _____ 3 day

_____ 4 day _____ 5 day

REQUESTED REPORT DATE _____

REPORT REQUIREMENTS

____ I. Results Only

____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

Edata ____Yes ____No

INVOICE INFORMATION

PO #

BILL TO:

STATE WHERE SAMPLES WERE COLLECTED

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature	Signature	Signature	Signature	Signature
Printed Name: STEFANO GEDDES	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: KGS	Firm	Firm	Firm	Firm	Firm
Date/Time: 03/06/18 / 1345	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Lab Copy; Yellow - Return to Originator

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

49894

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 2 OF 2

Project Name: NWIRP Bethpage GM38	Project Number: 2605-006
Project Manager: Stephane Ray	Report CC:
Company/Address: 180 Gordon Drive Suite 110, Exton PA 19341	
Phone #: 610-314-6600	Email: SRay@Komangs.com
Sampler's Signature: Erick Seiler	Sampler's Printed Name: Ericka Seiler

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	SM 2540D (TSS)	8270D (1,4-D. only)	REMARKS/ ALTERNATE DESCRIPTION
GM-38-GW-DUP-0318		3/6/2018	0000	GW	5	3					1		1		
GM-38-GW-RW3-MW4-0318		3/6/2018	1255	GW	5	3					1		1		
GM-38-GW-FB-0318		3/6/2018	1040	FB	5	3					1		1		Field Blank
GM-38-TB-0318		3/6/2018	—	TB	3	3									Trip Blank

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS

Metals Total metals = Hg preserved with HNO_3

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day

REQUESTED REPORT DATE

_____

REPORT REQUIREMENTS

_____ I. Results Only

_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

_____ III. Results + QC and Calibration Summaries

_____ IV. Data Validation Report with Raw Data

Edata _____ Yes _____ No

INVOICE INFORMATION

PO #

BILL TO:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: STEFANO GEORGES	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: KAS	Firm	Firm	Firm	Firm	Firm
Date/Time: 03/06/18 1345	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Lab Copy; Yellow - Return to Originator

Page: 1 of 1
Project #
GEL Quote #:
COC Number [1]:
PO Number:

GEL Laboratories LLC

Chemistry | Radiochemistry | Radiobioassay | Expert Services

Chain of Custody and Analytical Request

GEL Work Order Number:

GEL Project Manager:

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: KOMAN GOVERNMENT SOLUTIONS LLC Phone #

Project/Site Name: NWIRP BETHPAGE GM-38 OU4 Fax #

Address:

Collected By: STEFANO GEORGES Send Results To: STEPHANE ROY

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive (Please supply isotopes and activity)	Should this sample be considered: [7] Known or possible hazards	Total number of containers	Sample Analysis Requested [8] (Fill in the number of containers for each test): 8260 VOC	<-- Preservative Type (6)	Comments Note: extra sample is required for sample specific QC
GM-38-PS-PWI-0318	03/05/18	1754						2	2		
GM-38-PS-TE-0318	03/05/18	1803						2	2		
GM-38-PS-DUP-0318	03/05/18	1803						2	2		

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
			1		
			2		
			3		

TAT Requested: Normal: ____ Rush: ____ Specify: ____ (Subject to Surcharge)

Fax Results: [ ] Yes [ ] No

Select Deliverable: [ ] C of A [ ] QC Summary [ ] Level 1 [ ] Level 2 [ ] Level 3 [ ] Level 4

Additional Remarks:

For Lab Receiving Use Only: Custody Seal Intact? [ ] Yes [ ] No Cooler Temp: ____ °C

For sample shipping and delivery details, see Sample Receipt & Review form (SRR).

Sample Collection Time Zone: [ ] Eastern [ ] Pacific [ ] Central [ ] Mountain [ ] Other: ____

Chain of Custody Number = Client Determined

QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, ML = Misc Liquid, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal

Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B = 3, 6010B/7470A = 1).

Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added - leave field blank.

Are there any known or possible hazards associated with these samples?

RA Metals
= Arsenic Hg = Mercury
= Barium Se = Selenium
= Cadmium Ag = Silver
= Chromium MR = Miscellaneous

Characteristic Hazards
FL = Flammable/Ignitable
CO = Corrosive
RE = Reactive

TSCA Regulated
PCB = Polychlorinated biphenyls

Listed Waste
LW = Listed Waste
(F,K,P and U-listed wastes.)
Waste code(s):

Other
OT = Other / Unknown
(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
Description:

Please provide any additional details below regarding handling and/or disposal concerns. (i.e. Origin of sample(s), type of site collected from, odd matrices, etc.)

APPENDIX D

DATA VALIDATION REPORTS

VOLATILE ORGANIC COMPOUNDS
USEPA Region II –Data Validation

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

Location: 100 Broadway, Bethpage, NY

Project Number: 2055-505

SDG #: R1801927

Client: KOMAM Government Solutions, LLC

Date: 04/20/2018

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for ten (10) water samples, one (1) trip blank and one (1) field blank analyzed for Volatiles by EPA Method 624.

2. The samples were collected on 3/5 thru 3/6/2018. The samples were submitted to ALS Environmental, Middletown, PA on 3/06/2018 for analysis.

3. The USEPA Region II SOP HW-34, Revision No.: 3, Trace Volatile Data Validation; USEPA National Functional Guidelines for Organic Data Review, EPA 540/R-2017-002, January 2017; 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
GM-38-GW-RW1-MW1-0318	R1801927-001	3/05/2018	Water	
GM-38-GW-TP-1-0318	R1801927-002	3/05/2018	Water	
GM-38-GW-RW1-MW3-0318	R1801927-003	3/05/2018	Water	
GM-38-GW-RW2-MW1-0318	R1801927-004	3/05/2018	Water	
GM-38-RW3-0318	R1801927-008	3/05/2018	Water	
GM-38-GW-RW3-MW2-0318	R1801927-009	3/06/2018	Water	
GM-38-GW-RW3-MW1-0318	R1801927-010	3/06/2018	Water	
GM-38-GW-RW3-MW3-0318	R1801927-011	3/06/2018	Water	
GM-38-GW-DUP-0318	R1801927-012	3/06/2018	Water	Field Duplicate of sample GM-38-GW-RW3-MW3-0318
GM-38-GW-RW3-MW4-0318	R1801927-013	3/06/2018	Water	
GM-38-FB-0318	R1801927-014	3/06/2018	Water	Field Blank
GM-38-TB-0318	R1801927-015	3/06/2018	Water	Trip Blank

Sample Conditions/Problems:

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

Holding Times:

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

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

GC/MS Tuning:

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

Initial Calibration:

1. Initial calibration curve analyzed on 2/12/2018 (R-MS-10) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

Continuing Calibration Verification (CCV):

1. CCV analyzed (R-MS-10) exhibited acceptable %Ds (≤20.0%) for all compounds. No qualifications were required.

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 (RQ1802117-04) analyzed on 3/08/2018 was free of contamination. No qualifications were required.

2. Method Blank (RQ1802186-04) analyzed on 3/09/2018 was free of contamination. No qualifications were required.

3. Method Blank (RQ1802192-04) analyzed on 3/10/2018 was free of contamination. No qualifications were required.

4. Field Blank (GM-38-FB-0318) (R1801927-014) analyzed on 3/09/2018 contained chloromethane (0.21 µg/L). Results for chloromethane in the field samples was non-detect. No qualifications were required.

5. Trip Blank (GM-38-TB-0318) (R1801927-015) analyzed on 3/08/2018 was free of contamination. No qualifications were required.

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

1. Laboratory Control Sample (RQ1802117-03) was analyzed on 03/08/2018. All %RECs were within the laboratory control limits. No qualifications were required.

2. Laboratory Control Sample (RQ1802186-03) was analyzed on 03/09/2018. All %RECs were within the laboratory control limits. No qualifications were required.

3. Laboratory Control Sample (RQ1802192-03) was analyzed on 03/10/2018. All %RECs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample GM-38-GW-DUP-0318 (R1801927-012) was collected as field duplicate for sample GM-38-GW-RW3-MW3-0318 (R1801927-011). All RPDs were ≤50.0%. No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
GM-38-GW-RW3-MW3-0318	1,1,1-Trichloroethane	EPA 624	0.61	µg/l	GM-38-GW-DUP-0318	0.57	µg/l	6.8	None
GM-38-GW-RW3-MW3-0318	1,1-Dichloroethane	EPA 624	2.0	µg/l	GM-38-GW-DUP-0318	2.3	µg/l	14.0	None
GM-38-GW-RW3-MW3-0318	1,1-Dichloroethene	EPA 624	1.1	µg/l	GM-38-GW-DUP-0318	1.2	µg/l	8.7	None
GM-38-GW-RW3-MW3-0318	Chloroform	EPA 624	0.33	µg/l	GM-38-GW-DUP-0318	0.37	µg/l	11.4	None
GM-38-GW-RW3-MW3-0318	Cis-1,2-Dichloroethene	EPA 624	0.63	µg/l	GM-38-GW-DUP-0318	0.59	µg/l	11.8	None
GM-38-GW-RW3-MW3-0318	Tetrachloroethene	EPA 624	0.36	µg/l	GM-38-GW-DUP-0318	0.32	µg/l	6.5	None
GM-38-GW-RW3-MW3-0318	Trichloroethene	EPA 624	150	µg/l	GM-38-GW-DUP-0318	160	µg/l	6.6	None

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample GM-38-GW-TP-1-0318 (R1801927-002). All %RECs and RPDs were within the laboratory control limits with the following exception(s):

Compound	%REC/%REC/RPD	Action
Acrylonitrile	A/133/A	None

A=Acceptable

2. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample GM-38-GW-RW3-MW3-0318 (R1801927-011). All %RECs and RPDs were within the laboratory control limits. No qualifications were required.

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: R1801927.

SEMI-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: 2055-505

SDG #: R1801927

Client: KOMAN Government Solutions, LLC.

Date: 04/20/2018

Laboratory: ALS Environmental, Rochester, NY

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for four (4) water samples and one (1) field blank were analyzed for Semi-volatile 1,4-Dioxane by SW-846 Method 8270D.

2. The samples were collected on 10/10-12/2017. The samples were submitted to ALS Environmental, Rochester, NY on 10/12/2017 for analysis.

3. The USEPA Region-II SOP HW-35, Revision 2, Semivolatile Data Validation and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Semi-volatiles data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. 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	Analysis	Matrix	Sample Status
GM-38-TE-0318	R1801927-005	3/05/2018	SVO	Water	
GM-38-TE-DUP-0318	R1801927-006	3/05/2018	SVO	Water	Field Duplicate of sample GM-38-TE-0318
GM-38-RW1-0318	R1801927-007	3/05/2018	SVO	Water	
GM-38-RW3-0318	R1801927-008	3/05/2018	SVO	Water	

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 aqueous samples were extracted within 7 days from sample collection and analyzed within 40 days following sample extraction. No qualifications were required.

GC/MS Tuning:

1. All of the DFTPP 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 02/20/2018 (R-MS-56) exhibited acceptable %RSDs (≤30.0%). No qualifications were required.

Continuing Calibration Verification (CCV):

1. CCV analyzed on 03/12/2018 @ 12:10 (R-MS-56) exhibited acceptable %Ds (≤20.0%). No qualifications were required.

2. CCV analyzed on 03/12/2018 @ 15:35 (R-MS-56) exhibited acceptable %Ds (≤20.0%). No qualifications were required.

3. CCV analyzed on 03/12/2018 @ 17:43 (R-MS-56) exhibited acceptable %Ds (≤20.0%). No qualifications were required.

Surrogates:

1. All surrogate %REC values in the original extracts were within the QC acceptance limits. No qualifications were required.

Internal Standard (IS) Area Performance:

1. All samples exhibited acceptable area count for all 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 (RQ1802147-01) associated with the aqueous samples extracted on 3/12/2018 and analyzed on 3/12/2018 was free of contaminations. No qualifications were required.

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

1. Laboratory Control Sample/Laboratory Control Sample Duplicate (RQ1802147-02/03) were analyzed on 03/12/2018. All %RECs and RPDs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample GM-38-TE-DUP-0318 (R1801927-006) was collected as field duplicate for sample GM-38-TE-0318 (R1801927-005). RPD was ≤50.0%. No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
GM-38-GW-RW3-MW3-0318	1,4-Dioxane	EPA 8270	1.8	µg/l	GM-38-GW-DUP-0318	1.9	µg/l	5.4	None

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample GM-38-TE-0318 (R1801927-005). All %RECs and RPDs were within the laboratory control limits. 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.

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: R1801927.

MERCURY
USEPA Region II – Data Validation

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

Location: 100 Broadway, Bethpage, NY

Project Number: 2055-505

SDG #: R1801927

Client: KOMAM Government Solutions, LLC

Date: 04/20/2018

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for ten (10) water samples and one (1) field blank analyzed for Mercury by EPA Method 7470A.

2. The samples were collected on 3/5 thru 6/2018. The samples were submitted to ALS Environmental, Middletown, PA on 3/06/2018 for analysis.

3. The USEPA Region II SOP No. HW-2C, Revision 15, December 2012, Mercury and Cyanide Data Validation; USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-2017-001, January 2017 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
GM-38-GW-RW1-MW1-0318	R1801927-001	3/05/2018	Water	
GM-38-GW-TP-1-0318	R1801927-002	3/05/2018	Water	
GM-38-GW-RW1-MW3-0318	R1801927-003	3/05/2018	Water	
GM-38-GW-RW2-MW1-0318	R1801927-004	3/05/2018	Water	
GM-38-RW3-0318	R1801927-008	3/05/2018	Water	
GM-38-GW-RW3-MW2-0318	R1801927-009	3/06/2018	Water	
GM-38-GW-RW3-MW1-0318	R1801927-010	3/06/2018	Water	
GM-38-GW-RW3-MW3-0318	R1801927-011	3/06/2018	Water	
GM-38-GW-DUP-0318	R1801927-012	3/06/2018	Water	Field Duplicate of sample GM-38-GW-RW3-MW3-0318
GM-38-GW-RW3-MW4-0318	R1801927-013	3/06/2018	Water	
GM-38-FB-0318	R1801927-014	3/06/2018	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 digested on 3/15/2018 was free of contamination. No qualifications were required.

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

1. Field Blank (GM-38-FB-0318) (R1801927-014) analyzed on 3/15/2018 was free of contamination. No qualifications were required.

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

1. Mercury %REC in Laboratory Control Sample (LCSW) analyzed on 03/15/2018 was within the laboratory control limits. No qualifications were required.

Laboratory Duplicate:

1. Laboratory Duplicate was performed on sample GM-38-GW-RW3-MW3-0318 (R1801927-011). All RPDs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample GM-38-GW-DUP-0318 (R1801927-012) was collected as field duplicate for sample GM-38-GW-RW3-MW3-0318 (R1801927-011). Both samples were reported as non-detects. No qualifications were required.

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample GM-38-GW-RW3-MW3-0318 (R1801927-011). 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: R1801927.

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: 2055-505

SDG #: R1801927

Client: KOMAM Government Solutions, LLC

Date: 04/20/2018

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for ten (10) water samples analyzed for Solids, Total Suspended (TSS) by SM20th 2540D.

2. The samples were collected on 3/5 thru 6/2018. The samples were submitted to ALS Environmental, Middletown, PA on 3/06/2018 for analysis.

3. Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 was 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. No data points were qualified due to nonconformance of 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
GM-38-GW-RW1-MW1-0318	R1801927-001	3/05/2018	Water	
GM-38-GW-TP-1-0318	R1801927-002	3/05/2018	Water	
GM-38-GW-RW1-MW3-0318	R1801927-003	3/05/2018	Water	
GM-38-GW-RW2-MW1-0318	R1801927-004	3/05/2018	Water	
GM-38-RW3-0318	R1801927-008	3/05/2018	Water	
GM-38-GW-RW3-MW2-0318	R1801927-009	3/06/2018	Water	
GM-38-GW-RW3-MW1-0318	R1801927-010	3/06/2018	Water	
GM-38-GW-RW3-MW3-0318	R1801927-011	3/06/2018	Water	
GM-38-GW-DUP-0318	R1801927-012	3/06/2018	Water	Field Duplicate of sample GM-38-GW-RW3-MW3-0318
GM-38-GW-RW3-MW4-0318	R1801927-013	3/06/2018	Water	
GM-38-FB-0318	R1801927-014	3/06/2018	Water	Field Blank

Sample Conditions/Problems:

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

Holding Times:

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

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

1. Method Blank (R1801927-MB1) analyzed on 3/12/2018 was free of contamination. No qualifications were required.

2. Method Blank (R1801927-MB2) analyzed on 3/12/2018 was free of contamination. No qualifications were required.

Field Duplicate:

1. Sample GM-38-GW-DUP-0318 (R1801927-012) was collected as field duplicate for sample GM-38-GW-RW3-MW3-0318 (R1801927-011). RPD was >50.0%

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
GM-38-GW-RW3-MW3-0318	TSS	2540D	4.7	mg/l	GM-38-GW-DUP0128	2.8	mg/l	50.7	J

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

1. Laboratory Control Sample (R1801927-LCS1) was analyzed on 03/12/2018. All %RECs were within the laboratory control limits. No qualifications were required.

2. Laboratory Control Sample (R1801927-LCS2) was analyzed on 03/12/2018. All %RECs were within the laboratory control limits. No qualifications were required.

Laboratory Duplicate:

1. Sample Duplicate was performed on sample GM-38-GW-RW3-MW3-0318 (R1801927-011). All RPDs 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: R1801927.

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DATA SUMMARY TABLE
AQUEOUS
SDG: R1801927

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW1-MW1-0318	R1801927-001	2540D	20180312	1	Solids, Total Suspended (TSS)	1.0	MG_L	U		1
GM-38-GW-TP-1-0318	R1801927-002	2540D	20180312	1	Solids, Total Suspended (TSS)	1.0	MG_L	U		1
GM-38-GW-RW1-MW3-0318	R1801927-003	2540D	20180312	1	Solids, Total Suspended (TSS)	7.1	MG_L			1
GM-38-GW-RW2-MW1-0318	R1801927-004	2540D	20180312	1	Solids, Total Suspended (TSS)	12.1	MG_L			1
GM-38-GW-RW3-0318	R1801927-008	2540D	20180312	1	Solids, Total Suspended (TSS)	14.0	MG_L			1
GM-38-GW-RW3-MW2-0318	R1801927-009	2540D	20180312	1	Solids, Total Suspended (TSS)	1.0	MG_L	U		1
GM-38-GW-RW3-MW1-0318	R1801927-010	2540D	20180312	1	Solids, Total Suspended (TSS)	1.3	MG_L			1
GM-38-GW-RW3-MW3-0318	R1801927-011	2540D	20180312	1	Solids, Total Suspended (TSS)	4.7	MG_L	J		1
GM-38-GW-DUP-0318	R1801927-012	2540D	20180312	1	Solids, Total Suspended (TSS)	2.8	MG_L	J		1
GM-38-GW-RW3-MW4-0318	R1801927-013	2540D	20180312	1	Solids, Total Suspended (TSS)	1.0	MG_L	U		1
GM-38-GW-FB-0318	R1801927-014	2540D	20180312	1	Solids, Total Suspended (TSS)	1.0	MG_L	U		1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,1,1-Trichloroethane (TCA)	1.2	UG_L		1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,1-Dichloroethane (1,1-DCA)	7.5	UG_L		1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,1-Dichloroethene (1,1-DCE)	2.4	UG_L		1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,2-Dichloroethane	0.26	UG_L	J	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Chloroform	0.55	UG_L	J	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Dibromochloromethane	1.0	UG_L	U	1	1

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DATA SUMMARY TABLE
AQUEOUS
SDG: R1801927

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Tetrachloroethene (PCE)	0.50	UG_L	J	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Trichloroethene (TCE)	170	UG_L		1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	cis-1,2-Dichloroethene	7.1	UG_L		1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	trans-1,2-Dichloroethene	0.20	UG_L	J	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW1-0318	R1801927-001	624.1	20180308	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,1,1-Trichloroethane (TCA)	0.27	UG_L	J	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,1-Dichloroethane (1,1-DCA)	1.2	UG_L		1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,1-Dichloroethene (1,1-DCE)	0.46	UG_L	J	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,2-Dichloroethane	0.79	UG_L	J	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Acrolein	10	UG_L	U		10
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Chloroform	2.0	UG_L		1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Chloromethane	1.0	UG_L	U	1	1

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DATA SUMMARY TABLE
AQUEOUS
SDG: R1801927

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Tetrachloroethene (PCE)	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Trichloroethene (TCE)	55	UG_L		1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	cis-1,2-Dichloroethene	12	UG_L		1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-TP-1-0318	R1801927-002	624.1	20180308	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,1,1-Trichloroethane (TCA)	0.87	UG_L	J	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,1,2-Trichloroethane	0.37	UG_L	J	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,1-Dichloroethane (1,1-DCA)	4.1	UG_L		1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,1-Dichloroethene (1,1-DCE)	0.97	UG_L	J	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Chloroform	0.67	UG_L	J	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Tetrachloroethene (PCE)	0.23	UG_L	J	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Trichloroethene (TCE)	2.2	UG_L		1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	cis-1,2-Dichloroethene	0.36	UG_L	J	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW1-MW3-0318	R1801927-003	624.1	20180308	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,1,1-Trichloroethane (TCA)	0.43	UG_L	J	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,1-Dichloroethane (1,1-DCA)	6.5	UG_L		1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,1-Dichloroethene (1,1-DCE)	1.5	UG_L		1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,2-Dichloroethane	0.39	UG_L	J	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Chloroethane	1.0	UG_L	U	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Chloroform	1.0	UG_L		1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Tetrachloroethene (PCE)	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Trichloroethene (TCE)	7.1	UG_L		1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	cis-1,2-Dichloroethene	1.2	UG_L		1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW2-MW1-0318	R1801927-004	624.1	20180308	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,1,1-Trichloroethane (TCA)	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,1,2-Trichloroethane	0.22	UG_L	J	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,1-Dichloroethane (1,1-DCA)	1.3	UG_L		1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,1-Dichloroethene (1,1-DCE)	0.84	UG_L	J	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Chlorobenzene	1.0	UG_L	U	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Chloroform	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Tetrachloroethene (PCE)	0.59	UG_L	J	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Trichloroethene (TCE)	120	UG_L		1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	cis-1,2-Dichloroethene	3.4	UG_L		1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-0318	R1801927-008	624.1	20180309	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,1,1-Trichloroethane (TCA)	0.33	UG_L	J	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,1-Dichloroethane (1,1-DCA)	0.29	UG_L	J	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,1-Dichloroethene (1,1-DCE)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Carbon Tetrachloride	1.0	UG_L	U	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Chloroform	0.23	UG_L	J	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Tetrachloroethene (PCE)	0.38	UG_L	J	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Trichloroethene (TCE)	130	UG_L		1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	cis-1,2-Dichloroethene	1.2	UG_L		1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW2-0318	R1801927-009	624.1	20180309	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,1,1-Trichloroethane (TCA)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,1-Dichloroethane (1,1-DCA)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,1-Dichloroethene (1,1-DCE)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Bromomethane	1.0	UG_L	U	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Chloroform	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Tetrachloroethene (PCE)	1.7	UG_L		1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Trichloroethene (TCE)	19	UG_L		1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	cis-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW1-0318	R1801927-010	624.1	20180309	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,1,1-Trichloroethane (TCA)	0.61	UG_L	J	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,1-Dichloroethane (1,1-DCA)	2.0	UG_L		1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,1-Dichloroethene (1,1-DCE)	1.1	UG_L		1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Bromoform	1.0	UG_L	U	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Chloroform	0.33	UG_L	J	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Tetrachloroethene (PCE)	0.36	UG_L	J	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Trichloroethene (TCE)	150	UG_L		1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	cis-1,2-Dichloroethene	0.63	UG_L	J	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW3-0318	R1801927-011	624.1	20180309	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,1,1-Trichloroethane (TCA)	0.57	UG_L	J	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,1-Dichloroethane (1,1-DCA)	2.3	UG_L		1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,1-Dichloroethene (1,1-DCE)	1.2	UG_L		1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Acrolein	10	UG_L	U		10
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Bromodichloromethane	1.0	UG_L	U	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Chloroform	0.37	UG_L	J	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Tetrachloroethene (PCE)	0.32	UG_L	J	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Trichloroethene (TCE)	160	UG_L		1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	cis-1,2-Dichloroethene	0.59	UG_L	J	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-DUP-0318	R1801927-012	624.1	20180309	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,1,1-Trichloroethane (TCA)	0.40	UG_L	J	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,1-Dichloroethane (1,1-DCA)	3.9	UG_L		1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,1-Dichloroethene (1,1-DCE)	0.70	UG_L	J	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Acrolein	10	UG_L	U		10
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Acrylonitrile	10	UG_L	U		10
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Benzene	1.0	UG_L	U	1	1

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Chloroform	0.47	UG_L	J	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Tetrachloroethene (PCE)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Trichloroethene (TCE)	1.5	UG_L		1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	cis-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-RW3-MW4-0318	R1801927-013	624.1	20180309	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,1,1-Trichloroethane (TCA)	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,1-Dichloroethane (1,1-DCA)	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,1-Dichloroethene (1,1-DCE)	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Acrolein	10	UG_L	U		10
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Acrylonitrile	10	UG_L	U		10

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Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Benzene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Bromoform	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Chloroform	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Chloromethane	0.21	UG_L	J	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Tetrachloroethene (PCE)	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Toluene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Trichloroethene (TCE)	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	cis-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-GW-FB-0318	R1801927-014	624.1	20180309	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,1,1-Trichloroethane (TCA)	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,1,2,2-Tetrachloroethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,1,2-Trichloroethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,1-Dichloroethane (1,1-DCA)	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,1-Dichloroethene (1,1-DCE)	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,2-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,2-Dichloroethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,2-Dichloropropane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,3-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,4-Dichlorobenzene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	2-Chloroethyl Vinyl Ether	1.0	UG_L	U	1	10
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Acrolein	10	UG_L	U		10

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GM-38-TB-0318	R1801927-015	624.1	20180308	1	Acrylonitrile	10	UG_L	U		10
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Benzene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Bromodichloromethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Bromoform	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Bromomethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Carbon Tetrachloride	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Chlorobenzene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Chloroethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Chloroform	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Chloromethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Dibromochloromethane	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Methylene Chloride	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Ethylbenzene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Tetrachloroethene (PCE)	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Toluene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Trichloroethene (TCE)	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Trichlorofluoromethane (CFC 11)	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	Vinyl Chloride	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	cis-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	cis-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	trans-1,2-Dichloroethene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	trans-1,3-Dichloropropene	1.0	UG_L	U	1	1
GM-38-TB-0318	R1801927-015	624.1	20180308	1	1,3-Dichloropropene, Total	2.0	UG_L	U		2
GM-38-GW-IW1-0318	R1801927-005	8270D	20180312	1	1,4-Dioxane	1.8	UG_L		0.027	0.04
GM-38-GW-IW1-DUP-0318	R1801927-006	8270D	20180312	1	1,4-Dioxane	1.9	UG_L		0.027	0.04
GM-38-GW-RW1-0318	R1801927-007	8270D	20180312	1	1,4-Dioxane	1.9	UG_L		0.027	0.04
GM-38-GW-RW3-0318	R1801927-008	8270D	20180312	1	1,4-Dioxane	4.7	UG_L		0.027	0.04
GM-38-GW-RW1-MW1-0318	R1801927-001	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-TP-1-0318	R1801927-002	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-RW1-MW3-0318	R1801927-003	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-RW2-MW1-0318	R1801927-004	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-RW3-0318	R1801927-008	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-RW3-MW2-0318	R1801927-009	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-RW3-MW1-0318	R1801927-010	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2

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GM-38-GW-RW3-MW3-0318	R1801927-011	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-DUP-0318	R1801927-012	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-RW3-MW4-0318	R1801927-013	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2
GM-38-GW-FB-0318	R1801927-014	7470A	20180315	1	Mercury	0.1	UG_L	U	0.1	0.2