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**Subject: US NAVY CONTRACT NO. N40085-10-D-9409
CONTRACT TASK ORDER NO. 0002
THIRD QUARTER 2017 GWTP OPERATIONS SUMMARY –
GM-38 AREA
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, BETHPAGE, NY**

Dear Ms. Fly:

Enclosed please find one hard copy and one electronic copy of the *Quarterly Operations Report, Third Quarter 2017, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York.*

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
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**Quarterly Operations Report
Third Quarter 2017**

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

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

December 2017

Prepared for:



Naval Facilities Engineering Command Mid-Atlantic
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TABLE OF CONTENTS

1.0	INTRODUCTION.....	1-1
1.1	Background.....	1-1
1.2	GWTP Overview	1-2
2.0	GWTP OPERATIONS AND MAINTENANCE.....	2-1
2.1	Routine Maintenance Activities	2-1
2.2	Non-routine Maintenance / Site Activities	2-1
3.0	GWTP MONITORING.....	3-1
3.1	Process Water Quality Monitoring.....	3-1
3.2	Air Quality Monitoring.....	3-1
3.3	Groundwater Quality Monitoring.....	3-2
3.3.1	Groundwater Quality Results	3-3
3.3.2	Quality Assurance/Quality Control Sampling.....	3-3
3.3.3	Groundwater Concentration Trends	3-4
4.0	CONCLUSIONS AND RECOMMENDATIONS.....	4-1
5.0	REFERENCES.....	5-1

FIGURES

FIGURE 1	Site Map
FIGURE 2	Process Flow Diagram
FIGURE 3	GM-38 Area Site Map
FIGURE 4	Third Quarter 2017 Groundwater Analytical Map – Select VOC Concentrations
FIGURE 5	Groundwater Concentrations Trends of Select VOCs – RW-1
FIGURE 6	Groundwater Concentrations Trends of Select VOCs – RW-3
FIGURE 7	Groundwater Concentrations Trends of Select VOCs – RW1-MW1
FIGURE 8	Groundwater Concentrations Trends of Select VOCs – RW1-MW3
FIGURE 9	Groundwater Concentrations Trends of Select VOCs – RW2-MW1
FIGURE 10	Groundwater Concentrations Trends of Select VOCs – RW3-MW1
FIGURE 11	Groundwater Concentrations Trends of Select VOCs – RW3-MW2
FIGURE 12	Groundwater Concentrations Trends of Select VOCs – RW3-MW3
FIGURE 13	Groundwater Concentrations Trends of Select VOCs – RW3-MW4
FIGURE 14	Groundwater Concentrations Trends of Select VOCs – TP-01

TABLES

TABLE 1	Discharge Monitoring Results – Third Quarter 2017
TABLE 2	Air Sampling Results – Third Quarter 2017
TABLE 3	Stack Emissions – Third Quarter 2017
TABLE 4	Groundwater Level Measurements – Third Quarter 2017
TABLE 5	Summary of Groundwater Chemistry Results – Third Quarter 2017
TABLE 6	Summary of Groundwater Analytical Results – Third Quarter 2017
TABLE 7	Summary of Historical Groundwater Analytical Results through Third Quarter 2017

APPENDICES

APPENDIX A	NYSDEC Effluent Limitations and Monitoring Requirements and July 2017 – September 2017 DMRs
APPENDIX B	NYSDEC Air Discharge Limit Documentation
APPENDIX C	Field Logs – Third Quarter 2017
APPENDIX D	Data Validation Reports – Third Quarter 2017

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
L	liter
lb	pound
LGAC	liquid-phase granular activated carbon
LTM	Long-Term Monitoring
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. N40085-10-D-9409, Contract Task Order No. 0002. This Third Quarter 2017 Operations Report details activities that occurred from July to September 2017. 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 “Operation and Maintenance (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

Currently, groundwater is extracted from recovery well RW-1 (RW-3 was taken off-line in July of 2015, 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) Equivalent 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 VC, are removed via two 20,000-lb vapor phase granular activated carbon (VGAC) units (VGAC-1 and VGAC-2). VC is oxidized by a 20,000-pound (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. To date, no water has been discharged to the injection well for a sustained duration.

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, 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 1 August, the motors for the air stripper pumps and LGAC feed pumps were rotated.
- On 13 July and 11 September, the bag filters were changed out.

2.2 Non-routine Maintenance / Site Activities

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

- On 12 July, the system went off-line, for approximately 1.5 hours, due to power outage caused by a thunderstorm. A blown fuse was replaced in the Verbatim electronic communication system.
- On 6 August, the system went off-line due to an apparent lightning strike which also damaged the level transducer at well RW1 resulting in inaccurate water level measurements. The GWTP remained off-line for 9 hours until it was restarted in the morning on 7 August. Well RW1 was placed in "manual" mode at a reduced flow rate of 800 gpm until a replacement level transducer could be fabricated and subsequently installed on 17 August.
- On 30 August, Wire-to-Water was on site to troubleshoot a discrepancy in the measurements reported by the plant instrumentation and those shown on the HMI output screen which were thought to be caused by a communication malfunction. Wire-to-Water diagnosed the problem as a defective analog input card on the programmable logic controller (PLC) and three damaged intrinsic safety barriers in the control panel. The necessary replacement parts were ordered while the GWTP continued to operate.
- On 12-13 September, the Fall Semi-Annual Long-Term Monitoring (LTM) sampling event was conducted at eight monitoring wells and one recovery well (RW3).
- On 19 September, Wire-to-Water was on site to install the replacement PLC analog input card and the three intrinsic safety barriers. The system was off-line for approximately 5 hours.

- On 22 September, recovery well RW-3 was operated for 3 hours to maintain the integrity of the well for potential future use.

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 documented in the NYSDEC Water Division SPDES Equivalent Application 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 NYSDEC's 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 discharge line. In addition, various intermediary process system samples are collected monthly, that include the air stripper effluent (ASE), bag filter effluent (BFE), and effluent of each of the three LGAC units (LC1, LC2, and LC3). Sampling frequency of the inactive recovery well, RW-3, was reduced from monthly to semi-annually. The analytical results of monthly process water samples collected during the Third Quarter are presented in **Table 1**. The data demonstrates that the listed constituents in the SPDES Equivalent Application were below the daily maximum goal for the treated effluent during the Third 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 Third Quarter. Monthly DMRs for the Third Quarter (July – September 2017) are included in **Appendix A**.

Based on NYSDEC's request for the Navy to sample and analyze non site related constituents in groundwater near Bethpage Water District Plant 4, the Navy has added 1,4-dioxane (USEPA Method 8270D) on an annual basis from RW-1 and the Treated Effluent location. 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 Treated Effluent. Results of the annual non-VOC parameters were provided in the First Quarterly 2017 Operations Report March.

On 18 August 2017, NYSDEC renew the SPDES Equivalence Application that is effective for 10 years. NYSDEC requested that three additional constituents be monitored monthly: Chloroform, 1,4-Dioxane and trichlorofluoroethane.

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 documented in the NYSDEC Division of Air Resources (DAR) Equivalent Application in July 2009. In November 2011, the Navy submitted an evaluation proposing revised discharge goals, which NYSDEC concurred with 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-liter (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 VC23) collected during the Third Quarter are presented in **Table 2**. Air emissions calculations using the stack vapor concentrations along with discharge flowrates are presented in **Table 3**. The calculations demonstrate that all constituents were within the emission parameters during the Third 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 measurements were collected prior to sampling and are summarized in **Table 4**. 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**.

Depths 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 Third 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 level measurements of the twelve monitoring wells on 13 September. Groundwater samples for the Third Quarter were collected on 12-13 September 2017. Field parameters measured during well purging, which consisted of pH, specific conductance (SC), temperature, oxidation-reduction potential (ORP) and dissolved oxygen (DO), are summarized in **Table 5**. Following stabilization of field parameters, groundwater samples were collected. Copies of the field logs and chain of custody documentation are presented in **Appendix C**.

Groundwater samples were submitted to a National Environmental Laboratory Accreditation Conference (NELAC), Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) certified, laboratory, Analytical Laboratories Services, located in Rochester, NY. 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 Third Quarter monitoring event are summarized in **Table 6**. Data validation reports are presented in **Appendix D**.

3.3.2 Quality Assurance/Quality Control Sampling

Quality assurance/quality control (QA/QC) samples were collected during the 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 Third Quarter), matrix spike/matrix spike duplicate (MS/MSD) samples, equipment rinsate blanks (EB) collected at a rate of one per sampling event, and trip blanks (TB) submitted at a rate of one per sample cooler. No contaminants were detected in the equipment blank or trip blank submitted for this event. The overall 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 Third Quarter sampling event are presented in the data validation report in **Appendix D**. As indicated, RPDs for all analytes were well below the guideline of 50%. This overall consistency between the samples and its duplicate verifies that proper sample collection methods were followed.

3.3.3 Groundwater Concentration Trends

Historical groundwater analytical results through the Third Quarter are presented in **Table 7**. Groundwater analytical results of select VOCs (cis-1,2-DCE, PCE, TCE, and VC) for the Third 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 Third Quarter monitoring event are presented in **Figures 5 through 14** and discussed below.

Figure 5 presents concentrations detected at recovery well RW-1. Concentrations of TCE have decreased from initial concentrations in early 2010 (maximum value of 747 µg/L detected in April 2010), remaining below 300 µg/L since the latter half of 2012 and decreasing to a low of 95 µg/L during September 2017 sampling event. 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 6.5 µg/L in August 2017. PCE concentrations have also exhibited decreasing trends over time, with concentrations decreasing from 180 µg/L in April 2010 to a low of 21 µg/L during the September 2017 sampling event. 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.

Figure 6 presents concentrations detected at recovery well RW-3, including the most recent data collected in the Third Quarter 2017. 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, with a low of 160 µg/L detected in December 2013. In March 2016, the TCE concentration increased to 371 µg/L; however, in June 2016, the TCE concentrations decreased to 210 µg/L. TCE concentrations have since remained stable as indicated by the September 2017 result (220 µg/L). Concentrations of cis-1,2-DCE have remained consistently below 3.0 µg/L since September 2013. PCE has been detected at low levels during only a few sampling events, with concentrations consistently below 1.0 µg/L since September 2009. Vinyl chloride has not been detected during any sampling event.

Figure 7 presents concentrations detected at RW1-MW1, including the most recent data collected in the Third Quarter 2017. The concentration of TCE in the Third Quarter 2017 (110 µg/L) was higher than initial concentrations observed in May 2005 (53.6 µg/L) but less than the highest concentration observed to date (175 µg/L in September 2013). The concentration of cis-1,2-DCE in the Third Quarter 2017 (9.8 µg/L) was below the initial concentration observed in May 2005 (78.6 µg/L), below the maximum concentration observed in May 2009 (180 µg/L), and the lowest concentration observed to date. Concentrations of PCE in the Third Quarter 2017 (0.59 µg/L) has remained below 1.0 µg/L since initial concentrations observed in May 2005.

Figure 8 presents concentrations detected at RW1-MW3, including the most recent data collected in the Third Quarter 2017. Concentrations of cis-1,2-DCE and PCE in the Third Quarter 2017 have consistently remained below 1.0 µg/L with concentrations of 0.37 µg/L and 0.20 µg/L respectively. Concentrations of TCE in the Third Quarter 2017 (2.8 µg/L) have also remained low, and ranged from 0.58 µg/L in July 2010 to a maximum of 4.5 µg/L in March 2016.

Figure 9 presents concentrations detected at RW2-MW1, including the most recent data collected in the Third Quarter 2017. Concentrations of TCE in the Third Quarter 2017 (8.6 µg/L) were less than initial concentrations observed in May 2005 (37.6 µg/L) and also below the maximum TCE concentration observed in March 2016 (43.9 µg/L). The concentration of cis-1,2-DCE observed in the Third Quarter 2017 (2.6 µg/L) was above initial concentrations observed in May 2005 (non-detect), but below the maximum observed to date (15.3 µg/L in March 2016). PCE has not been detected during any sampling event.

Figure 10 presents concentrations detected at RW3-MW1, including the most recent data collected in the Third Quarter 2017. The concentration of TCE in the Third Quarter 2017 (22 µg/L) represents the lowest concentration observed to date at this location. Concentrations of cis-1,2-DCE have remained consistently below 1.0 µg/L and have not been detected since March 2015. Concentrations of PCE have remained consistently near or below 2.0 µg/L, with a concentration of 1.6 µg/L in the Third Quarter 2017.

Figure 11 presents concentrations detected at RW3-MW2, including the most recent data collected in the Third Quarter 2017. The TCE concentration observed in the Third Quarter 2017 (140 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 in the Third Quarter 2017 (1.3 µg/L) have consistently remained below 2.0 µg/L. PCE detection in the Third Quarter 2017 (0.43 µg/L) has only been detected during a few sampling events, with concentrations ranging from 0.28 µg/L in August 2012 to 0.66 µg/L in March 2016.

Figure 12 presents concentrations detected at RW3-MW3, including the most recent data collected in the Third Quarter 2017. The TCE concentration observed in the Third Quarter 2017 (100 µg/L) represents the lowest concentration detected to date at this location. Concentrations of cis-1,2-DCE in the Third Quarter 2017 (0.76 µg/L) have remained near or below 2.0 µg/L and PCE (0.44 µg/L) has remained below 1.0 µg/L since concentrations were first observed in May 2005.

Figure 13 presents concentrations detected at RW3-MW4, including the most recent data collected in the Third Quarter 2017. TCE concentrations have decreased since the initial sampling event in January 2010 (21 µg/L), with a concentration of 5.4 µg/L observed in the Third Quarter 2017. PCE has only been detected during two sampling events: in September 2015 at a concentration of 0.31 J µg/L and March 2016 at a concentration of 0.46 J µg/L. Cis-1,2-DCE has been detected during the initial sampling event in January 2010 (0.46 µg/L) and during the most recent Third Quarter 2017 event (0.21 µg/L).

Figure 14 presents concentrations detected at TP-01, including the most recent data collected in the Third Quarter 2017. The TCE concentration observed in the Third Quarter 2017 (54 µg/L) was less than initial concentrations observed in January 2010 (65 µg/L) and below the maximum concentration observed in March 2016 (62 µg/L). Concentrations of cis-1,2-DCE have generally decreased over time, from an initial value of 190 µg/L to 11 µg/L in the Third Quarter 2017. PCE concentrations have ranged from 6.0 µg/L in June 2012 to non-detectable levels in the Third Quarter 2017.

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. The groundwater sampling frequency for the eight monitoring wells has been reduced to semi-annually in accordance with the O&M Manual. Water levels for the 14 monitoring wells will continue to be monitored on a quarterly basis.

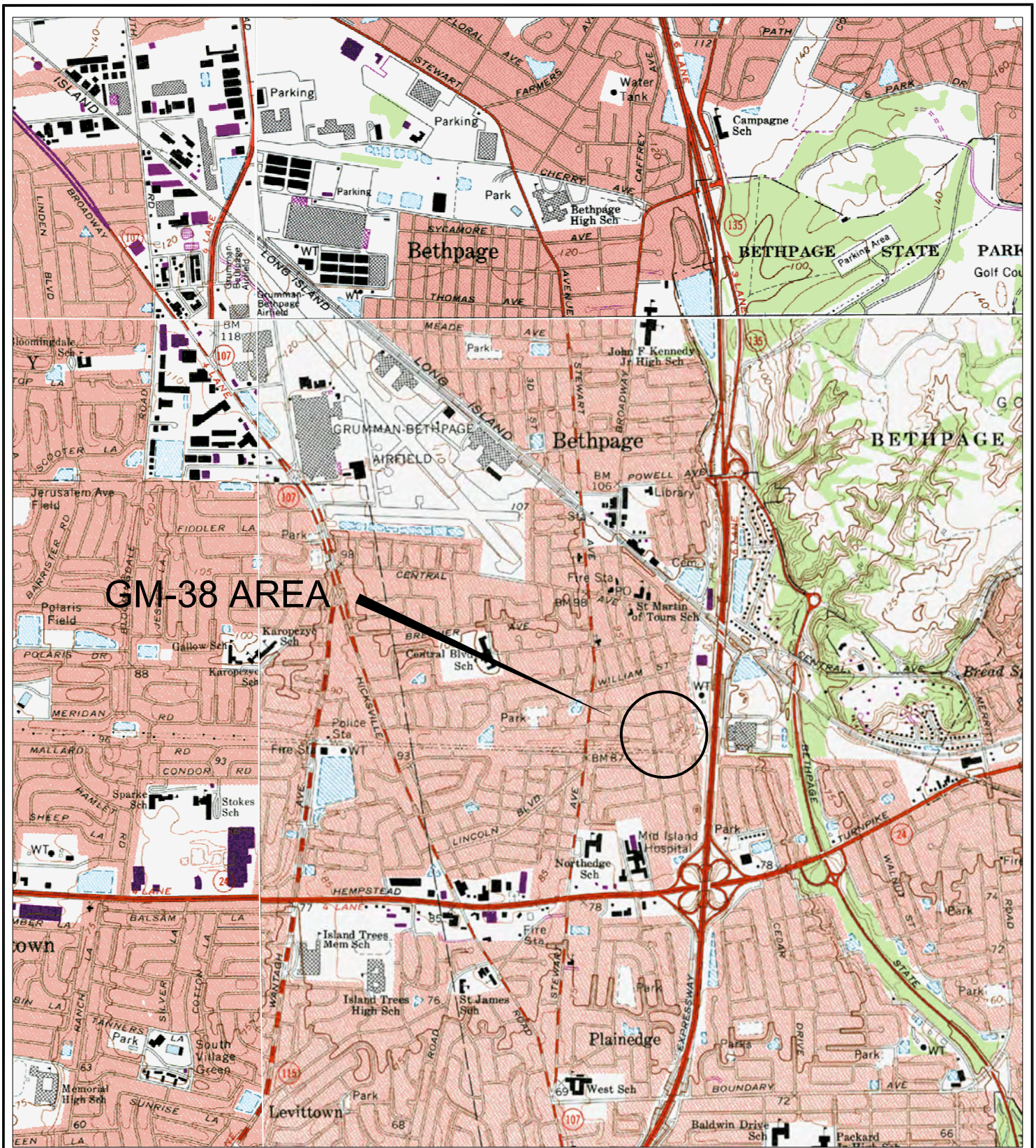
5.0 REFERENCES

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.

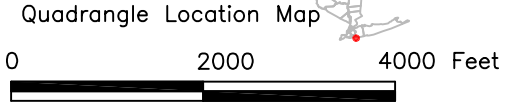
Tetra Tech EC, Inc. (TtEC). 2010. *Final Operation, Maintenance & Monitoring Plan for Groundwater Treatment Plant GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York*. April.

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.

FIGURES



GM-38 AREA



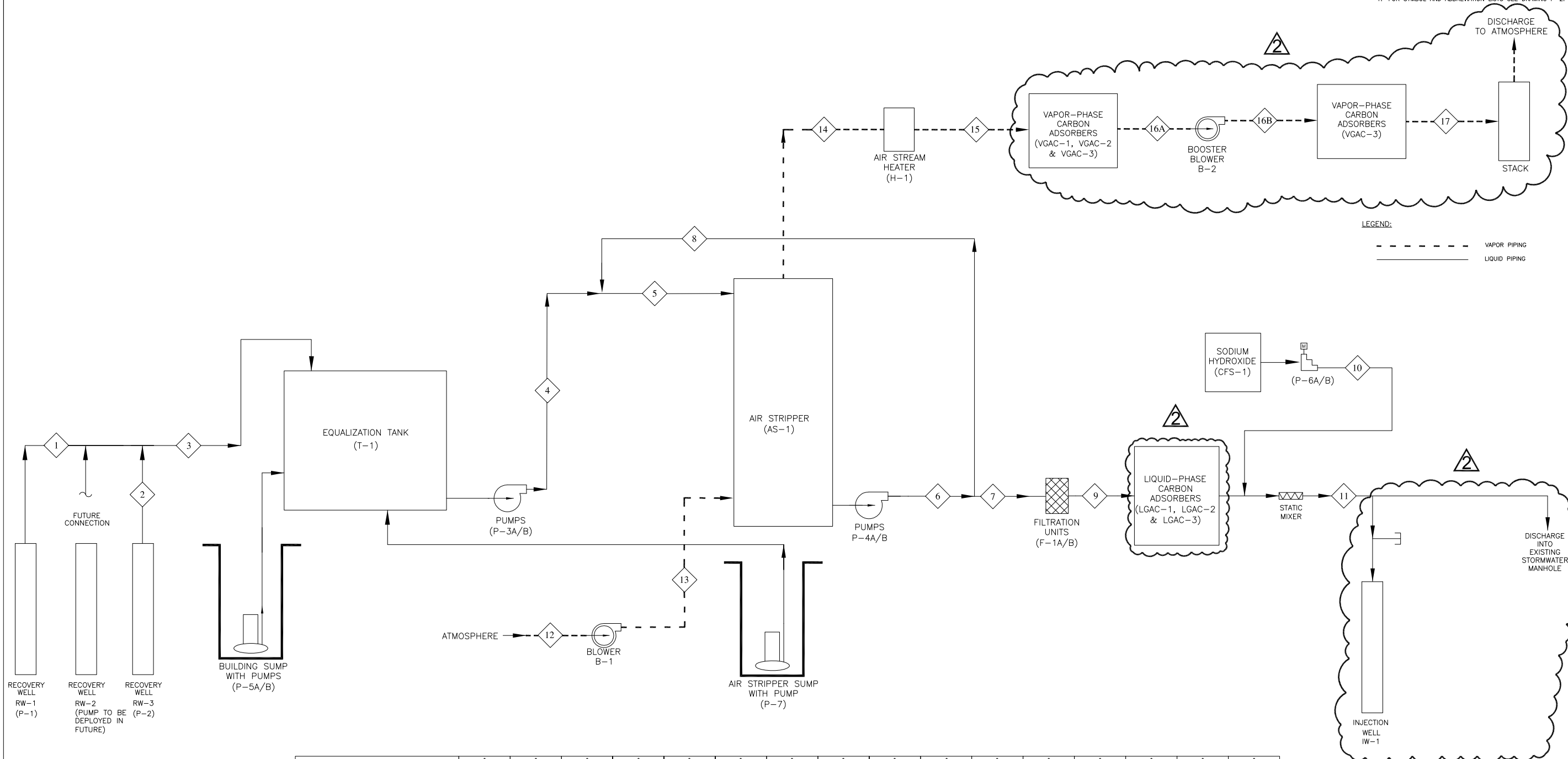
U.S. Navy RAC
 Engineering Field Activity, Northeast
 GM-38 Area (Offsite)
 NWIRP Bethpage
 Bethpage, NY

Figure 1
 Site Location Map

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

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.



LEGEND:
- - - - - VAPOR PIPING
_____ LIQUID PIPING

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	-

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DEPARTMENT OF THE NAVY
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
LESTER

ENGINEERING FIELD ACTIVITY - NORTHEAST
PENNSYLVANIA
BETHPAGE, NEW YORK
GM-38 AREA
GROUNDWATER TREATMENT PLANT
PROCESS FLOW DIAGRAM - GROUNDWATER AND OFF-GAS TREATMENT

APPROVED: _____ DATE: _____
OFFICER IN CHARGE: _____
DATE: _____

APPROVED: _____ DATE: _____
ENGINEER FOR COMMANDER, NAVFAC: _____
DATE: _____

PREP BY: DLB DATE: 05/05/06
DLB 03/31/08
DLB 02/24/09

APPROVED: _____ DATE: _____
CHK: _____
DATE: _____

DESCRIPTION: _____
REV: _____

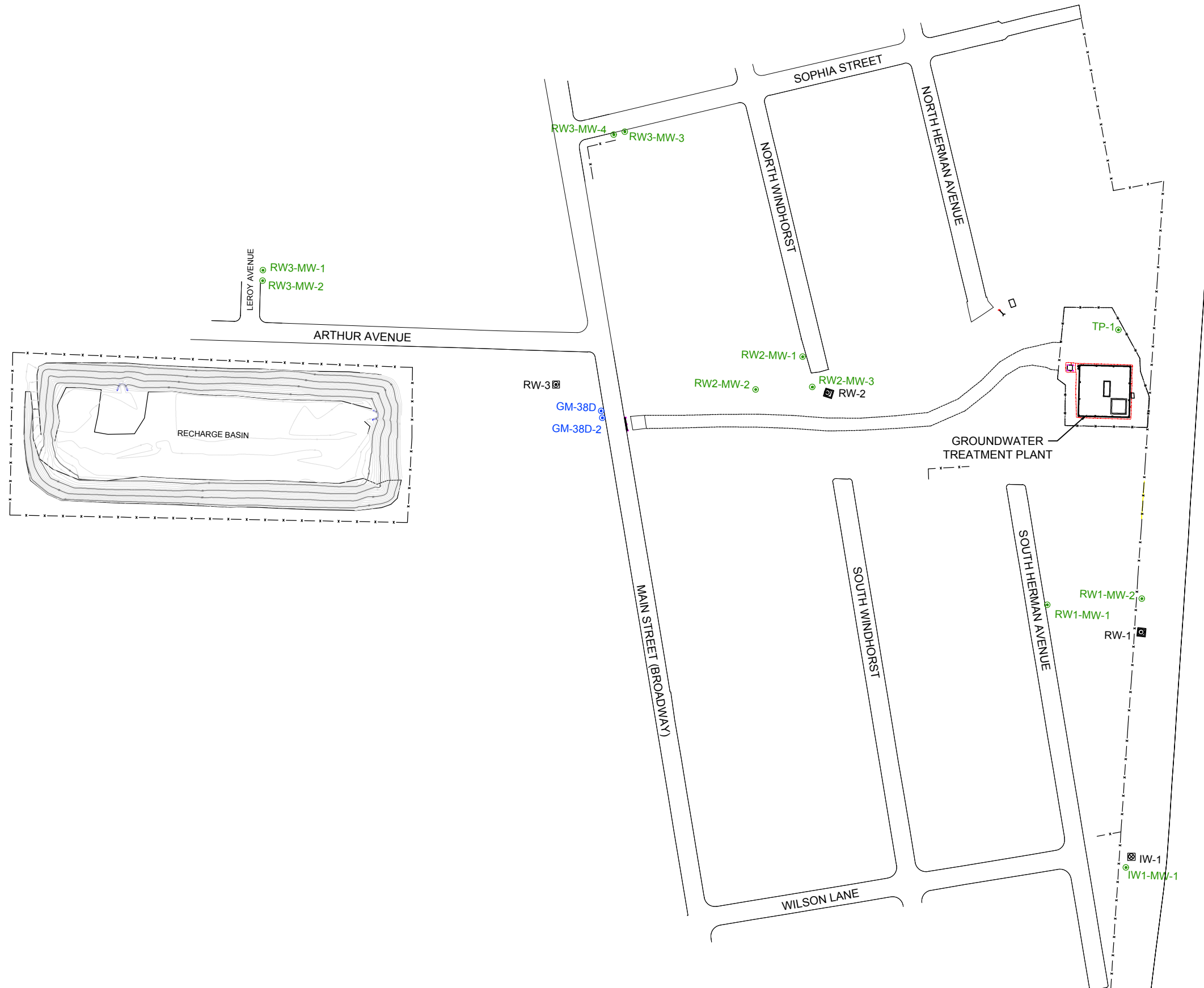
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CODE LD. NO.: 80091
SCALE: AS SHOWN
SPEC. NO.: _____
CONSTR. CONTR. NO.: N62472-99-D-0032
NAVFAC DRAWING NO.: _____
Figure 2

SHEET _____ OF _____
DIS. SH. NO.: 1-4

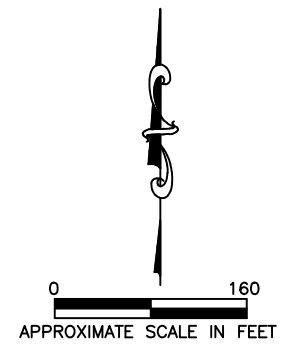
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Legend

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



(SEAFORD-OYSTER BAY EXPRESSWAY - RTE 135)



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	10/26/2017	3	

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

Notes:
 All concentrations reported in µg/L.

Monitoring wells were sampled on a semi-annual basis. Recovery well RW-1 was sampled on a monthly basis. Recovery well 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.

RW3-MW2	9/12/2017
cis-1,2-DCE	1.3
PCE	0.43 J
TCE	140
VC	ND

RW3-MW1	9/12/2017
cis-1,2-DCE	ND
PCE	1.6
TCE	22
VC	ND

RW3-MW4	9/12/2017
cis-1,2-DCE	0.21 J
PCE	ND
TCE	5.4
VC	ND

RW3-MW3	9/12/2017	9/12/2017-Dup
cis-1,2-DCE	0.80 J	0.76 J
PCE	0.31 J	0.44 J
TCE	100	95
VC	ND	ND

RW2-MW1	9/13/2017
cis-1,2-DCE	2.6
PCE	ND
TCE	8.6
VC	ND

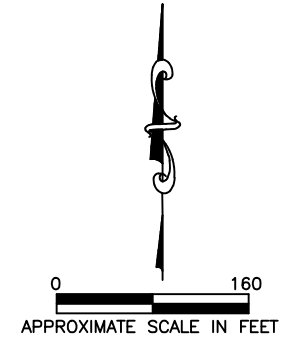
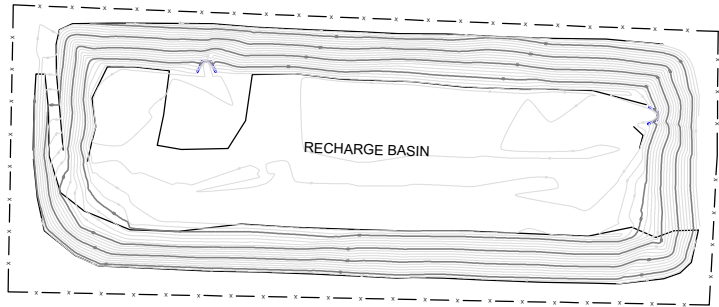
TP-01	9/13/2017
cis-1,2-DCE	11
PCE	ND
TCE	54
VC	ND

RW1-MW3	9/13/2017
cis-1,2-DCE	0.37 J
PCE	0.22 J
TCE	2.8
VC	ND

RW1-MW1	9/12/2017
cis-1,2-DCE	9.8
PCE	0.59 J
TCE	110
VC	ND

RW-1	7/10/2017	8/1/2017	9/5/2017
cis-1,2-DCE	6.9	6.5	6.7
PCE	24	22	21
TCE	100	100	95
VC	0.23 J	0.24 J	0.24 J

RW-3	9/13/2017
cis-1,2-DCE	1.9
PCE	0.65 J
TCE	220
VC	ND



**3rd QUARTER 2017
 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	10/26/2017	4	

Figure 5
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW1

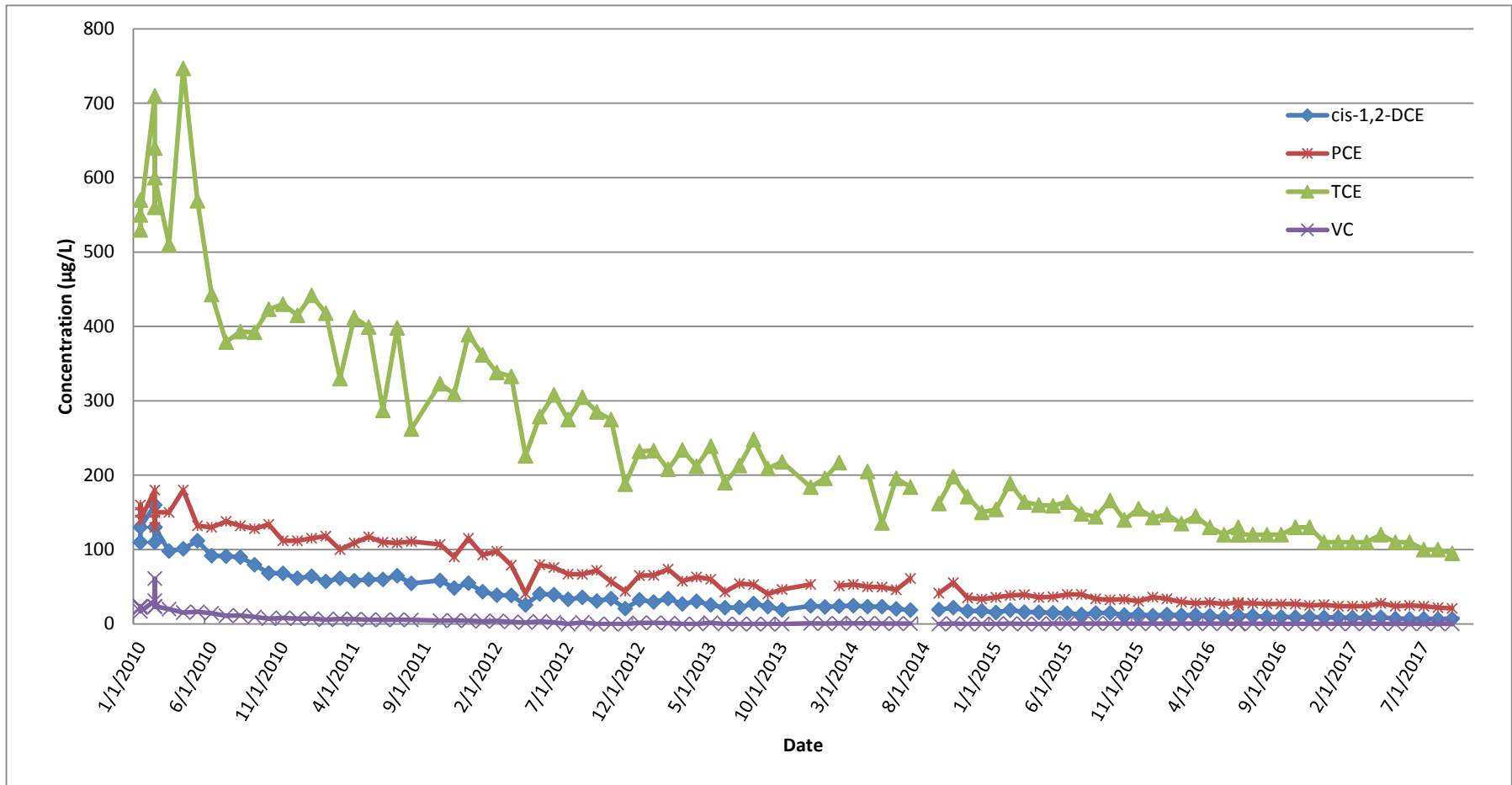


Figure 6
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW3

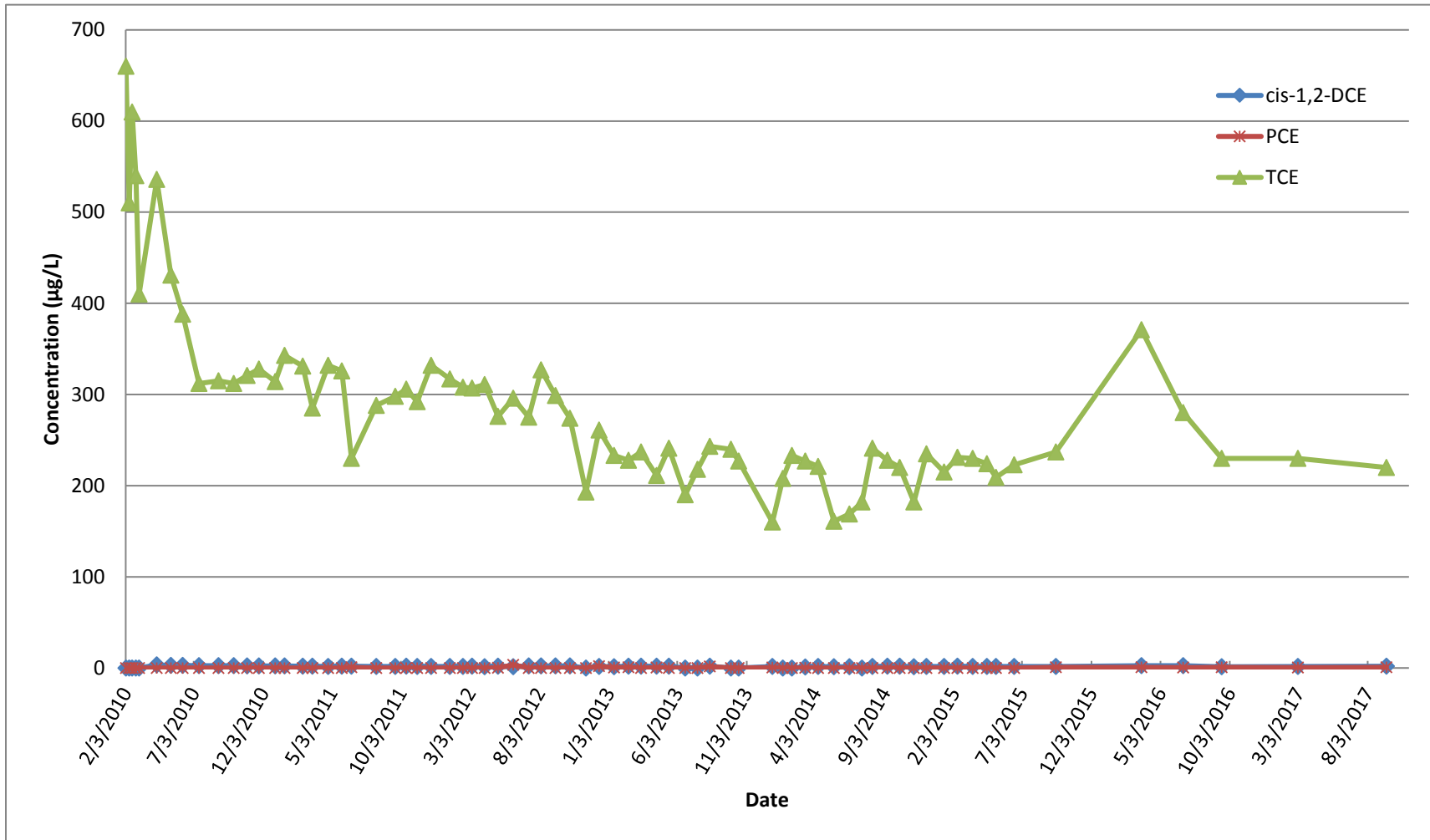


Figure 7
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW1-MW1

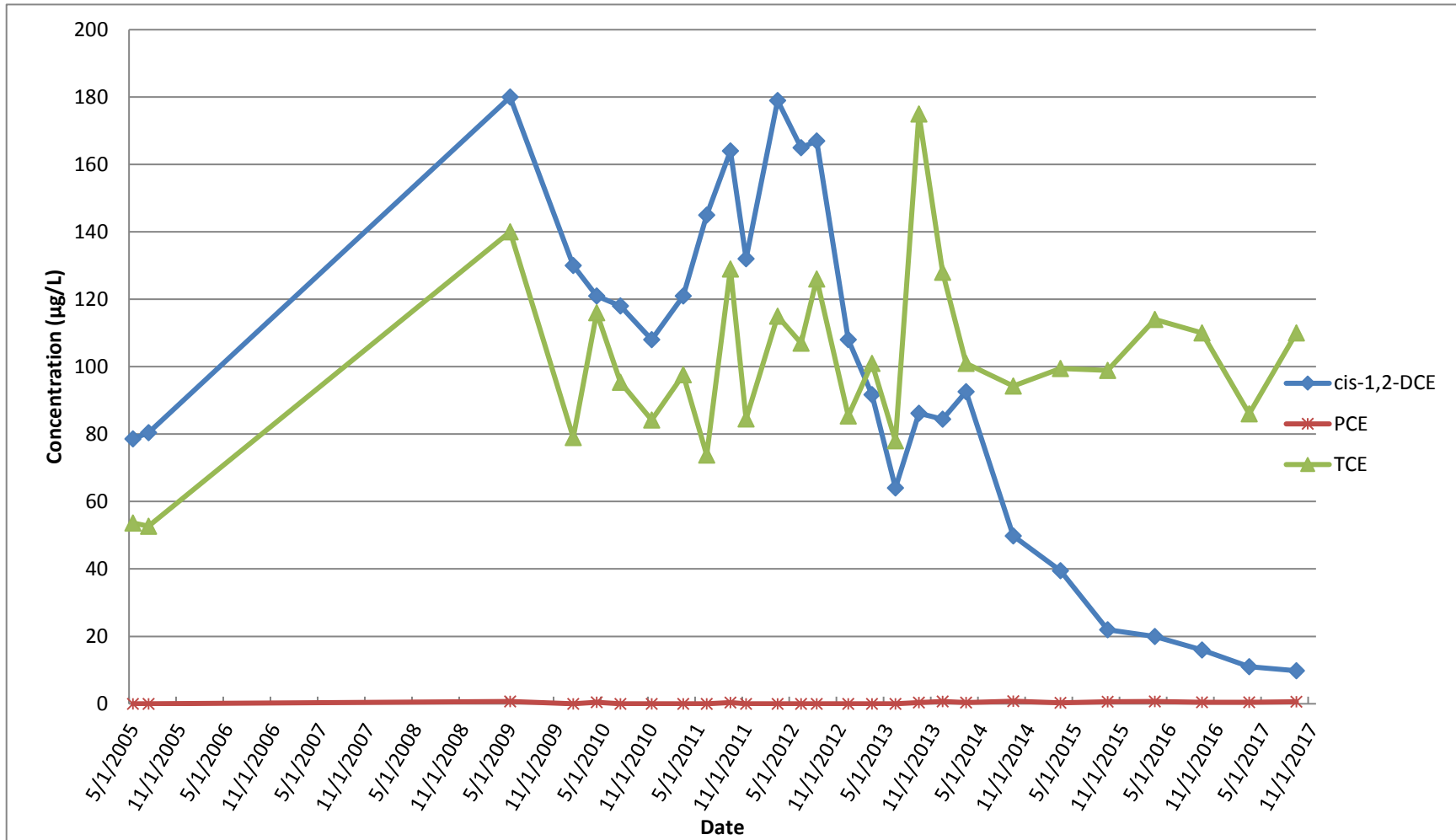


Figure 8
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW1-MW3

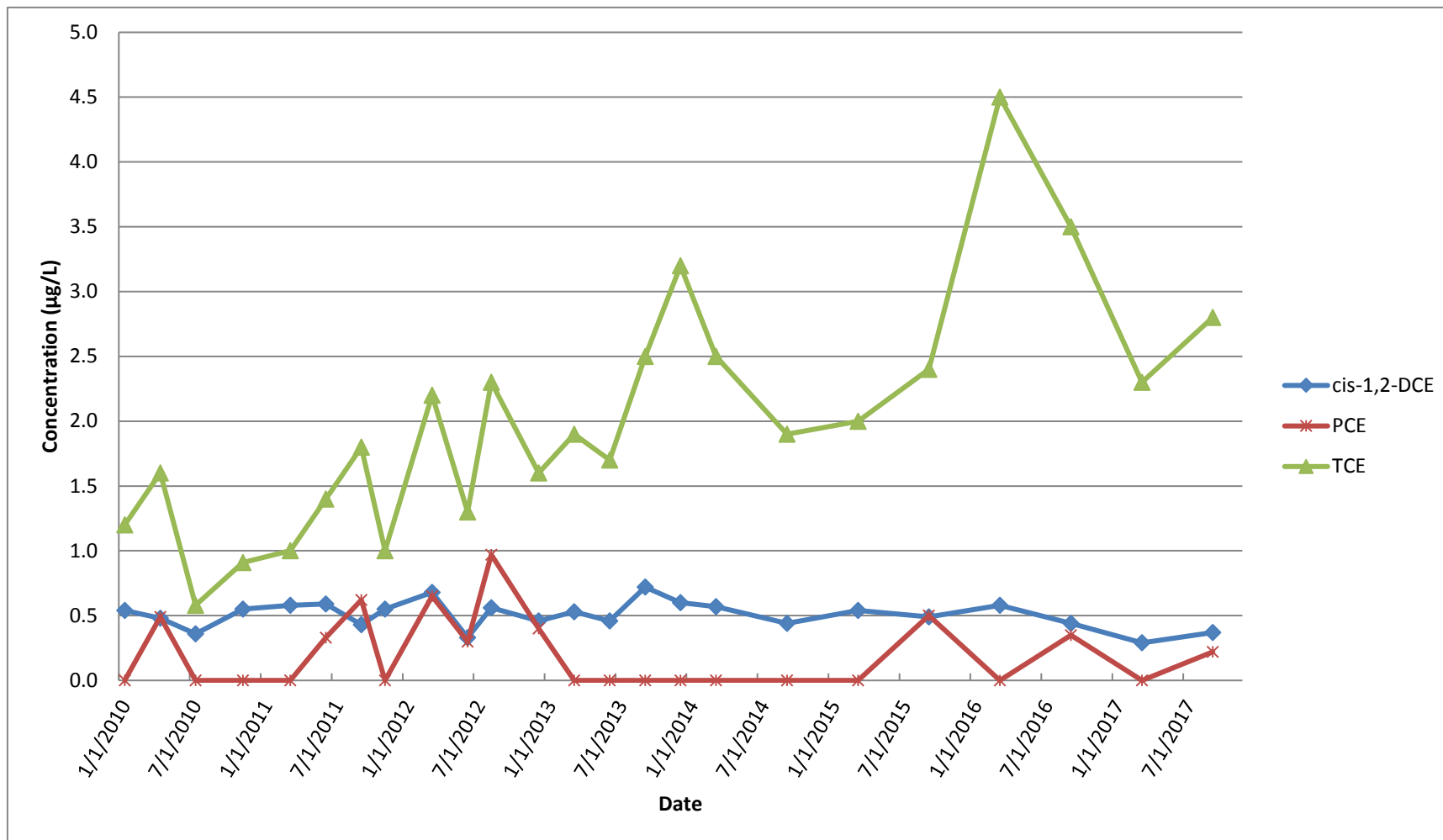


Figure 9
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW2-MW1

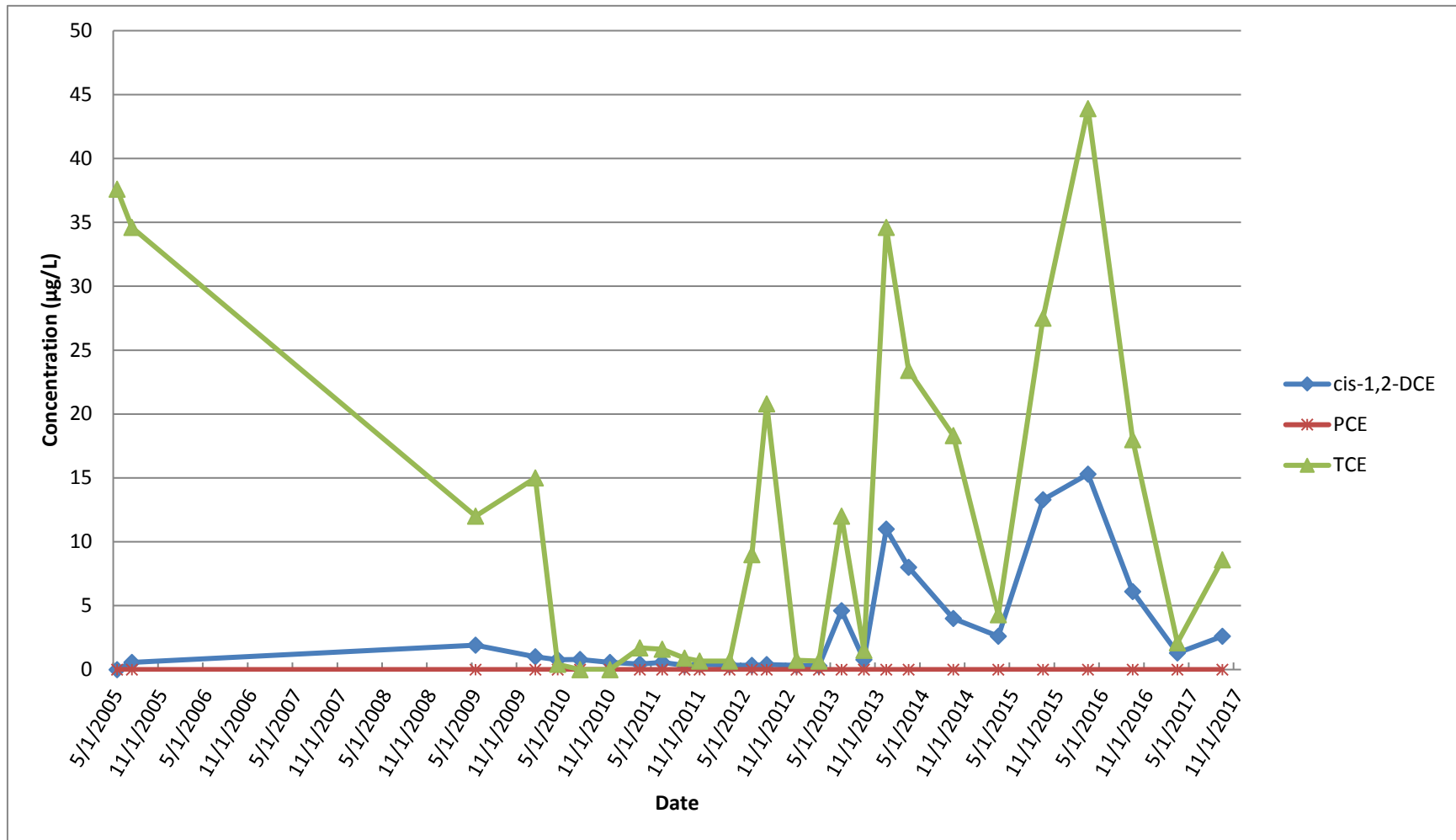


Figure 10
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW3-MW1

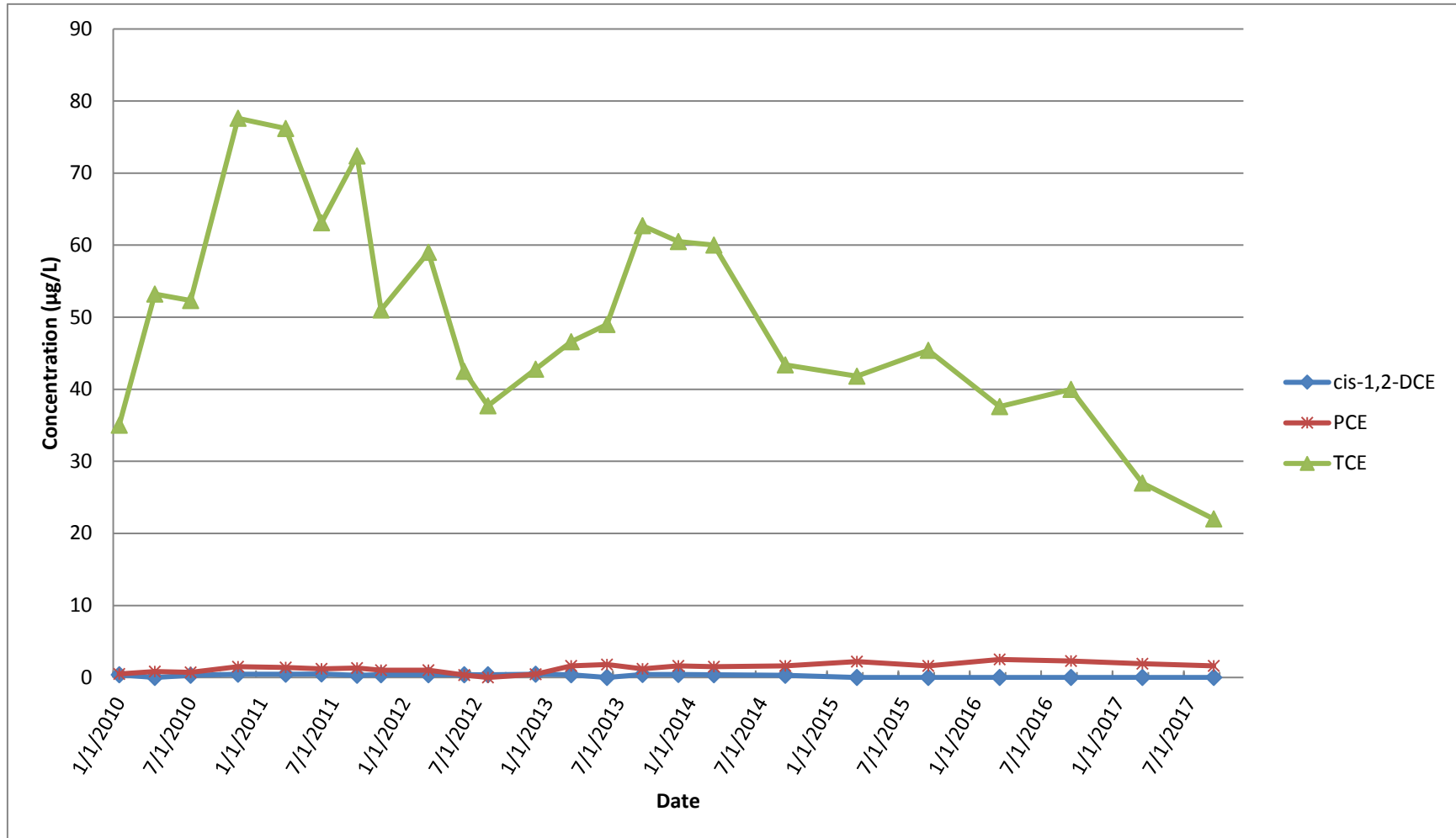


Figure 11
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW3-MW2

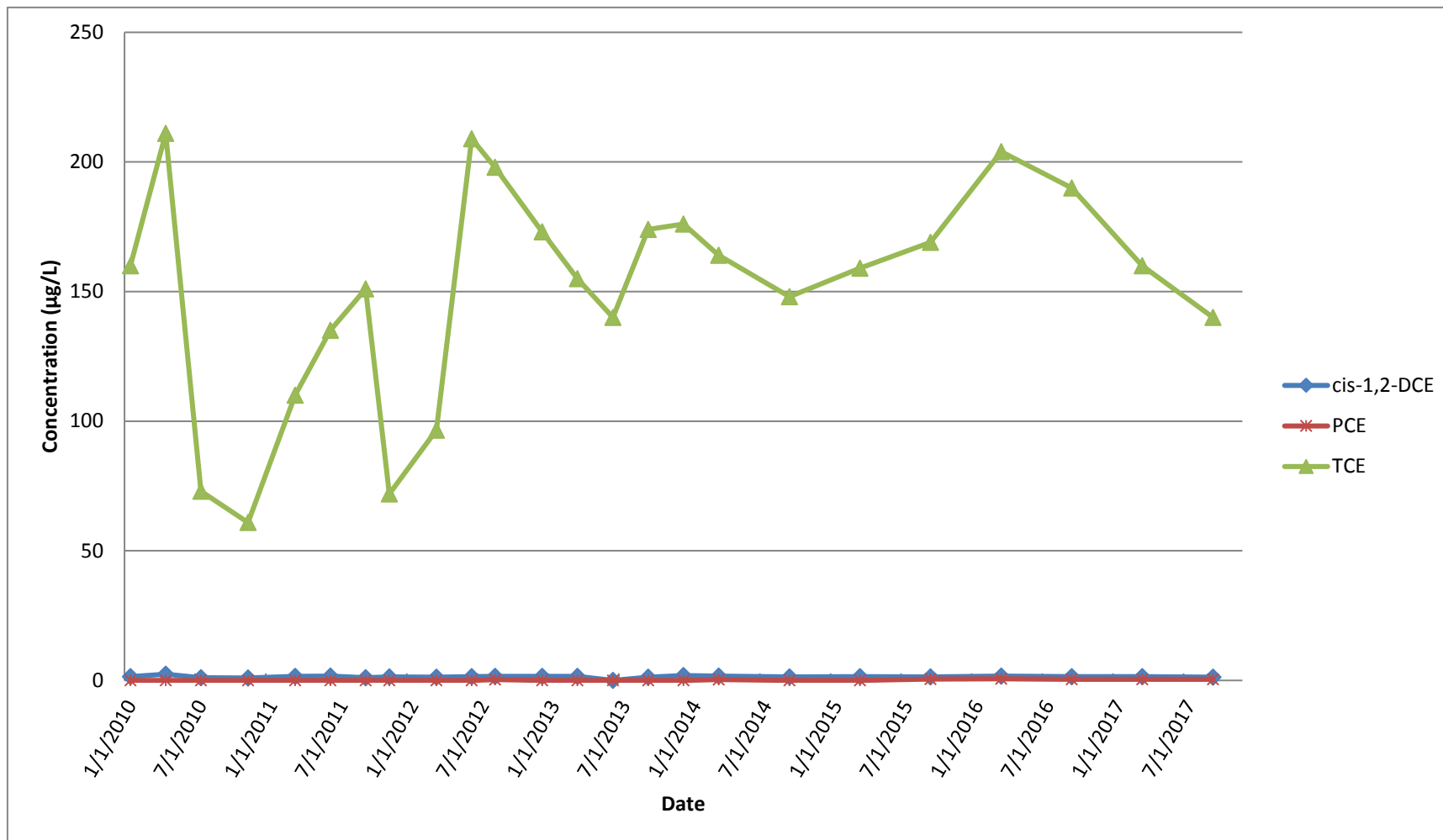


Figure 12
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW3-MW3

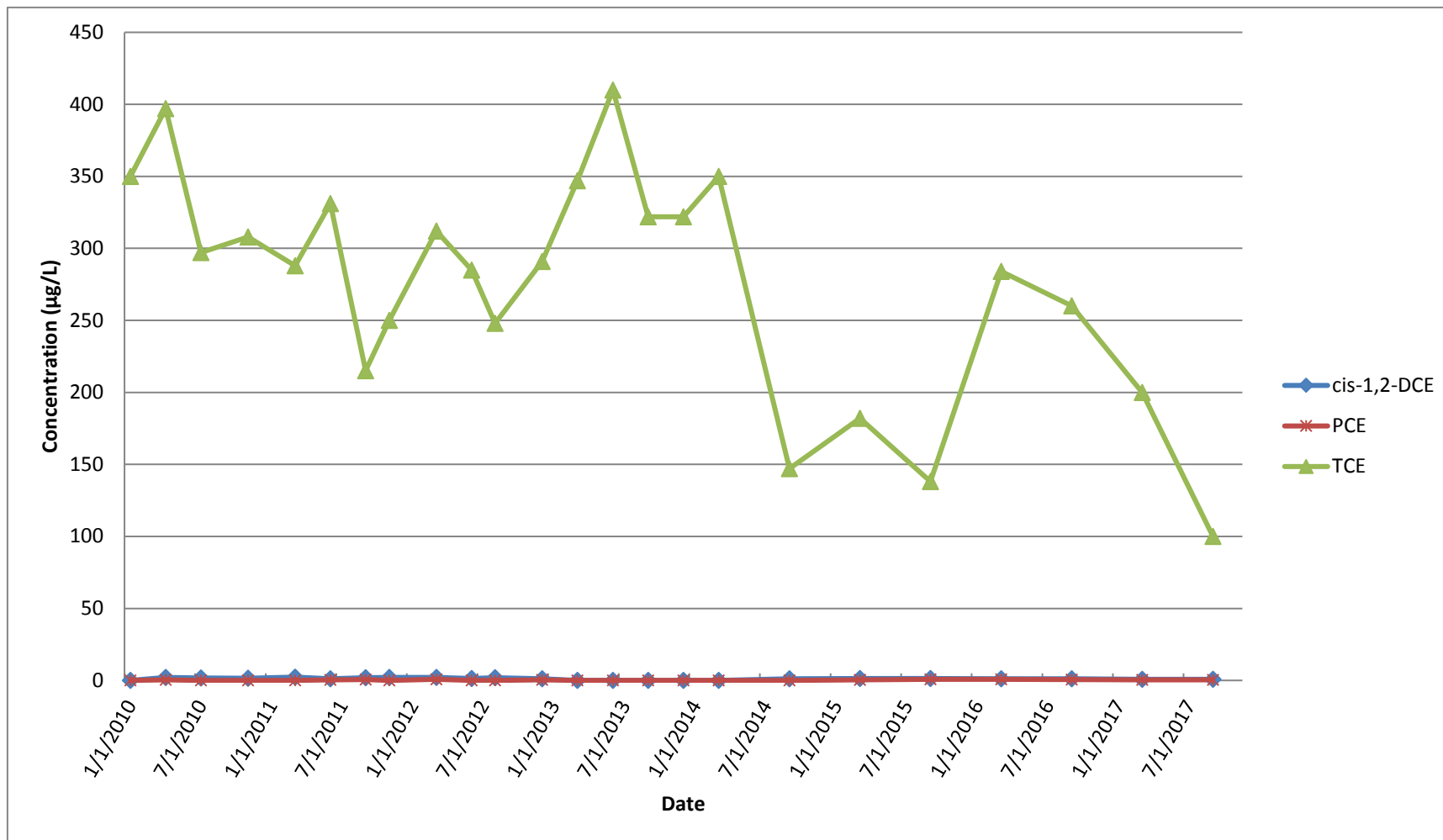


Figure 13
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
RW3-MW4

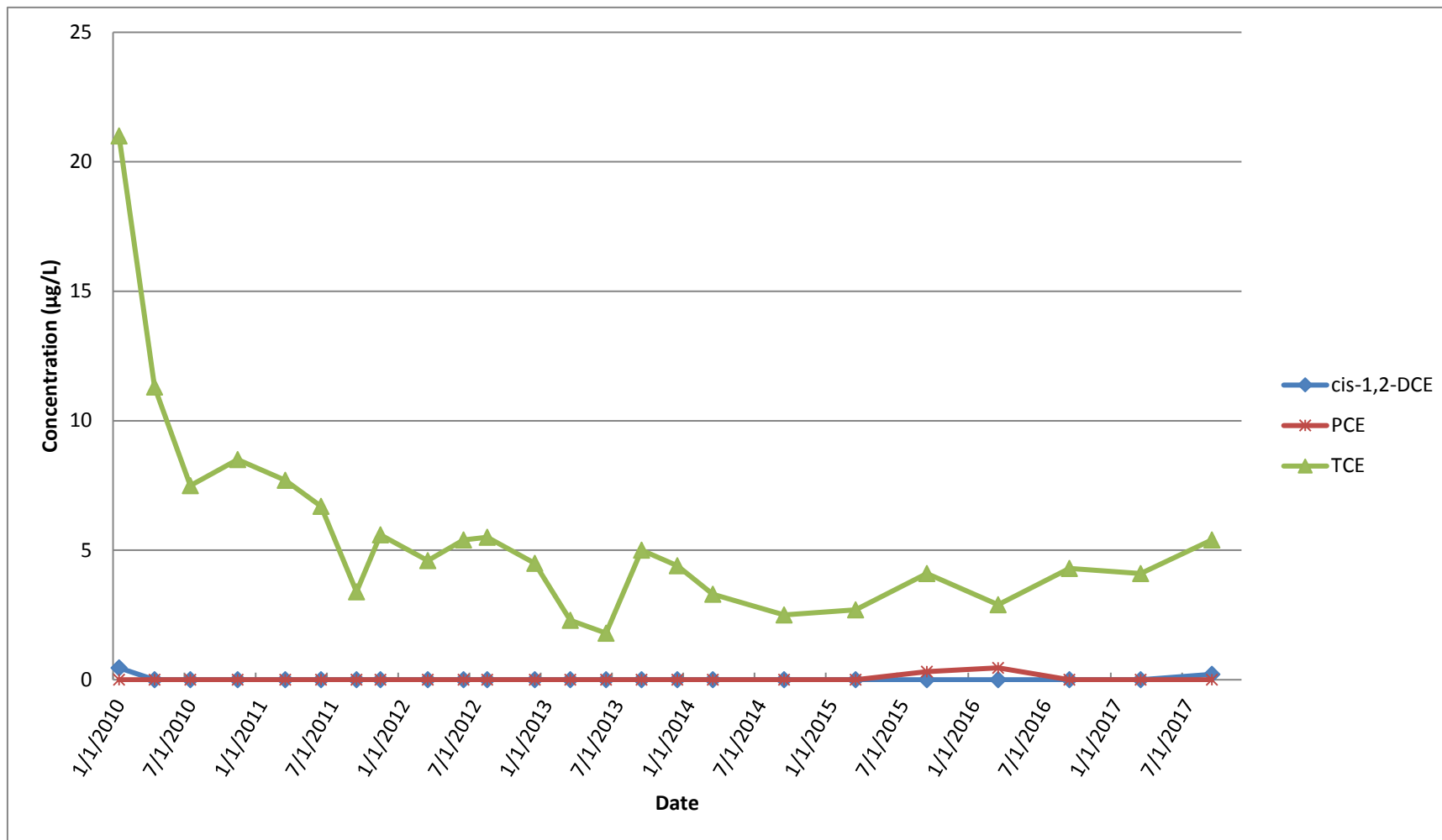
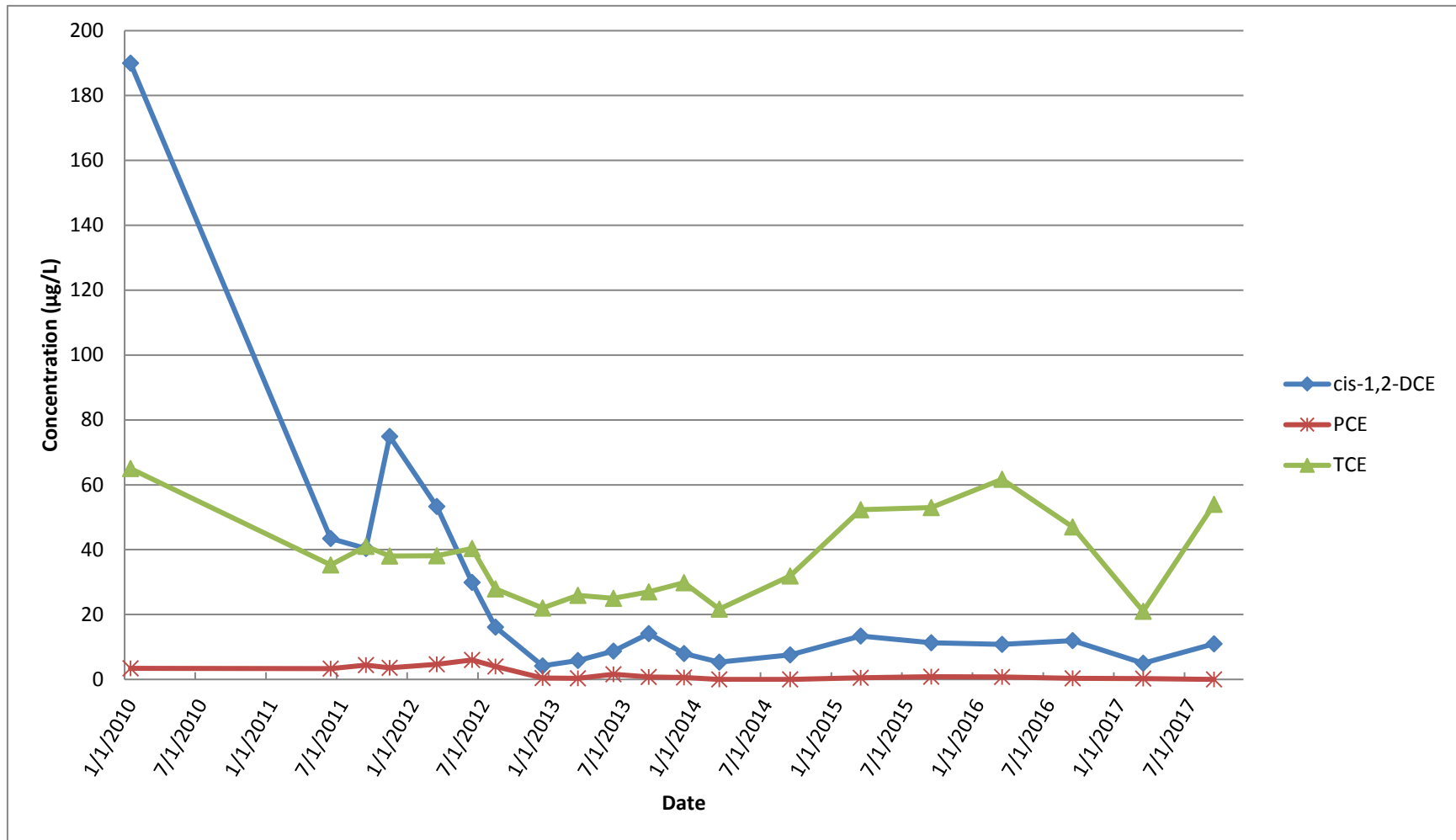


Figure 14
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs
TP-01



TABLES

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Third Quarter 2017

SPDES Parameters	Daily Maximum Goal	Units	July 2017									
			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
Process Stream												
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			7/10/17									
Average Flowrate	1100	GPM	989	0	989	NR	976	NR	NR	NR	1,017	NR
Total Flow		gallons	43,594,500	0	43,594,500	NR	43,510,600	NR	NR	NR	44,852,800	NR
pH	5.5 - 8.5	SU	5.10	NS	5.10	6.04	6.08	6.12	6.13	6.14	6.14	6.15
Carbon Tetrachloride	NA	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)
1,1-Dichloroethane	5	µg/L	1.5	NS	1.5	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	0.42 J	NS	0.42 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	6.9	NS	6.9	0.22 J	0.31 J	ND (1.0)	0.21 J	0.24 J	0.29 J	0.23 J
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	24	NS	24	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	0.96 J	NS	1.0	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	100	NS	100	1.6	1.4	0.41 J	0.49 J	0.32 J	0.44 J	0.55 J
Vinyl Chloride	2	µg/L	0.23 J	NS	0.20 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
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)	8.9	ND (1.0)	5.1	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
Third Quarter 2017

SPDES Parameters	Daily Maximum Goal	Units	August 2017									
			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
Process Stream												
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			8/1/17									
Average Flowrate	1100	GPM	953	0	953	NR	955	NR	NR	NR	996	NR
Total Flow		gallons	42,554,700	0	42,554,700	NR	42,610,900	NR	NR	NR	43,929,000	NR
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.06	6.09	6.15	6.14	6.14	6.14	6.15
Carbon Tetrachloride	NA	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)
1,1-Dichloroethane	5	µg/L	1.6	NS	1.6	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)	0.20 J
1,1-Dichloroethene	5	µg/L	1.5	NS	1.5	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	6.5	NS	6.5	ND (1.0)	0.28 J	ND (1.0)	0.20 J	0.24 J	0.28 J	0.27 J
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	22	NS	22	ND (1.0)	0.26 J	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	0.8	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	100	NS	100	1.6	1.4	0.39 J	0.61 J	0.51 J	0.45 J	0.46 J
Vinyl Chloride	2	µg/L	0.24 J	NS	0.24 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
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)

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Third Quarter 2017

SPDES Parameters	Daily Maximum Goal	Units	September 2017										
			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	
Process Stream													
Well Depth		ft	445	530	NA	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	NA
Sampling Date			9/5/17										
Average Flowrate	1100	GPM	956	1.3	958	NR	959	NR	NR	NR	986	NR	
Total Flow		gallons	41,931,346	57,900	41,989,246	NR	42,042,570	NR	NR	NR	43,226,363	NR	
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.07	6.11	6.13	6.13	6.15	6.17	6.15	
Chloroform	5	µg/L	0.38 J	NS	0.38 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Carbon Tetrachloride	NA	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)	
1,1-Dichloroethane	5	µg/L	1.9	NS	1.90	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	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)	
1,1-Dichloroethene	5	µg/L	1.1	NS	1.10	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	6.70	0.40 J	0.32 J	0.25 J	0.30 J	0.27 J	0.33 J	0.32 J	
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	21	NS	21.00	0.22 J	0.25 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
1,1,1-Trichloroethene	5	µg/L	0.98 J	NS	0.98 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	95.00	1.7	1.6	0.47 J	0.54 J	0.42 J	0.69 J	0.45 J	
Trichlorofluoroethane	5	µg/L	ND (1.0)	ND (1.0)	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	0.24 J	NS	0.24 J	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	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	ND (20)	
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)	8.9	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	

Notes:

B - Method blank contamination

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 trichlorofluoroethane are now monitored under the new permit.

(2) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.

(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
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
Third Quarter 2017

DAR Parameters	Discharge Goal ⁽³⁾	Units	July 2017					August 2017				
			Influent (VC1)	VC12	VC23	Effluent	Effluent Duplicate	Influent (VC1)	VC12	VC23 ⁽⁵⁾	Effluent	Effluent Duplicate
Process Stream												
Sampling Date			7/10/17					8/1/17				
Average Flowrate		CFM	NA	NA	NA	7,612	NA	NA	NA	NA	7,408	NA
Total Flow ⁽¹⁾		ft ³	NA	NA	NA	339,817,536	NA	NA	NA	NA	330,700,560	NA
Total Flow ⁽²⁾		m ³	NA	NA	NA	9,622,561	NA	NA	NA	NA	9,364,397	NA
1,2-Dichloroethane	NA	µg/m ³	3.4 J	6.6 J	1.6 J	1.60 J	1.40 J	4.1 J	2.1 J	2.0 J	2.0 J	0.74 J
cis 1,2-Dichloroethene	> 100,000 ⁽⁴⁾	µg/m ³	130	240	220	160	170	110	73	220	150	56
trans 1,2-Dichloroethene		µg/m ³	2.5 J	6.0 J	3.1	2.4 J	2.1 J	1.9 J	1.9 J	3.9	2.0 J	1.4 J
1,2-Dichloroethene (total)	> 100,000	µg/m ³	130	250	220	160	170	110	75	230	160	57
Toluene	NA	µg/m ³	2.20 J	4.80 J	0.54 J	ND	ND	2.1 J	1.5 J	0.32 J	ND	8.5
Xylene	NA	µg/m ³	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NA	µg/m ³	ND	ND	ND	ND	ND	1.8 J	ND	ND	ND	ND
Trichloroethene	2,600	µg/m ³	1600	5200	78.0	7	2.2 J	1700	1800	25	11	1000.00
Vinyl Chloride	560	µg/m ³	3.9	3.0 J	6.7	4.6	4.8	3.3	2.6 J	3.1	2.0	4.4
Tetrachloroethene	5,100	µg/m ³	350	250	25.0	2.6 J	ND J	320	82	7.2	3.9 J	290

Notes:

NA - Not applicable

ND - Not detected

SGC - Short-term Guideline Concentration

µg/m³ - micrograms per cubic meter

CFM - cubic feet per minute

DAR - Division of Air Resources

(1) Total Flow (ft³) = avg flowrate (cfm) * operational time (min)

(2) Total Flow (m³) = total flow (ft³) * (0.3048³)m³/ft³

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

(4) Discharge goal is for total 1,2-Dichloroethene.

Table 2
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
Third Quarter 2017

DAR Parameters	Discharge Goal ⁽³⁾	Units	September 2017				
			Influent (VCI1)	VC12	VC23	Effluent	Effluent Duplicate
Process Stream							
Sampling Date			9/5/17				
Average Flowrate		CFM	NA	NA	NA	7,876	NA
Total Flow ⁽¹⁾		ft ³	NA	NA	NA	340,236,000	NA
Total Flow ⁽²⁾		m ³	NA	NA	NA	9,634,411	NA
1,2-Dichloroethane	NA	µg/m ³	4.2 J	2.0 J	3.1	2.8 J	2.9 J
cis 1,2-Dichloroethene	> 100,000 ⁽⁴⁾	µg/m ³	100	110	200	150	140
trans 1,2-Dichloroethene		µg/m ³	ND	ND	3.2	1.7 J	1.6 J
1,2-Dichloroethene (total)	> 100,000	µg/m ³	100	110	200	150	140
Toluene	NA	µg/m ³	0.66 J	1.4 J	ND	ND	ND
Xylene	NA	µg/m ³	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	NA	µg/m ³	1.5 J	ND	ND	ND	ND
Trichloroethene	2,600	µg/m ³	1700	1800	6.8	7.0	2.2 J
Vinyl Chloride	560	µg/m ³	2.9 J	2.5 J	2.8	2.0	2.0
Tetrachloroethene	5,100	µg/m ³	380	88	4.1 J	3.9 J	1.0 J

Notes:

NA - Not applicable

ND - Not detected

SGC - Short-term Guideline Concentration

µg/m³ - micrograms per cubic meter

CFM - cubic feet per minute

DAR - Division of Air Resources

(1) Total Flow (ft³) = avg flowrate (cfm) * operational time (min)

(2) Total Flow (m³) = total flow (ft³) * (0.3048³)m³/ft³

(3) Discharge 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
Stack Emissions
Third Quarter 2017

DAR Parameters	Discharge Goal ⁽¹⁾	Units	July 2017	August 2017	September 2017
Sampling Date			7/10/17	8/1/17	9/5/17
Average Flowrate		CFM	7,612	7,408	7,876
Total Flow		ft ³	339,817,536	330,700,560	340,236,000
Total Flow		m ³	9,622,561	9,364,397	9,634,411
Trichloroethene	0.09	lb/hr	0.00020	0.00031	0.00021
Vinyl Chloride	0.02	lb/hr	0.00013	0.00006	0.00006
1,2 Dichloroethene	11	lb/hr	0.00456	0.00444	0.00443
1,2-Dichloroethane	NA	lb/hr	0.00005	0.00006	0.00008
Toluene	NA	lb/hr	0.00000	0.00000	0.00000
Xylene	NA	lb/hr	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	NA	lb/hr	0.00000	0.00000	0.00000
Tetrachloroethene	0.18	lb/hr	0.00007	0.00011	0.00012

Notes:

NA - Not applicable

lb/hr - pounds per hour

DAR - Division of Air Resources

CFM - Cubic feet per minute

Stack Emissions (lb/hr) = average flowrate (cfm) * (0.3048^{^3})m³/ft³ * conc.(ug/m³) * 1 lb/453592370 ug * 60 min/hr

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

Table 4
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Level Measurements
Third Quarter 2017

Monitoring Well ID	Date	Well Elevation (ft amsl)	Total Depth (ft)	Screen Interval (ft)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
RW1-MW1	09/12/17	85.86	435	395-435	40.53	45.33
RW1-MW2	09/12/17	87.35	435	395-435	43.87	43.48
RW1-MW3	09/12/17	80.34	435	395-435	33.72	46.62
RW2-MW1	09/12/17	90.75	510	470-510	43.33	47.42
RW2-MW2	09/12/17	90.15	510	470-510	43.27	46.88
RW2-MW3	09/12/17	89.75	510	470-510	42.95	46.80
RW3-MW1	09/12/17	92.22	350	330-350	41.23	50.99
RW3-MW2	09/12/17	91.98	495	475-495	42.85	49.13
RW3-MW3	09/12/17	92.98	340	320-340	42.30	50.68
RW3-MW4	09/12/17	92.92	495	475-495	43.19	49.73
TP-01	09/12/17	85.91	470	450-470	39.05	46.86
IW1-MW1	09/12/17	89.41	150	20-150	39.80	49.61
GM38D	NA	91.37	340	320-340	NA	NA
GM382D	NA	91.57	495	475-495	NA	NA

Notes:

amsl - above mean sea level

ft - feet

NA - Not Available

Table 5
Summary of Final Groundwater Chemistry Data
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Groundwater Chemistry Results
Third Quarter 2017

Location	Temp (°C)	pH (SU)	S.C. (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color (Visual)
RW1-MW1	16.00	4.50	172.0	0.22	199.80	0.41	Clear
RW1-MW3	14.73	5.08	173.0	0.32	27.20	11.90	Clear
RW2-MW1	16.37	7.03	226.0	1.64	-53.50	3.19	Clear
RW3-MW1	19.70	4.49	137.0	6.05	90.40	12.10	Clear
RW3-MW2	15.90	4.79	96.5	0.00	199.70	1.95	Clear
RW3-MW3	18.99	4.83	133.0	1.47	20.60	11.20	Clear
RW3-MW4	15.40	4.87	134.6	0.02	198.70	2.74	Clear
TP-01	14.10	5.65	148.9	8.32	249.60	0.19	Clear

Notes:

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

Table 6
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Detected Groundwater Analytical Results
Third Quarter 2017

Sample ID	RW1-MW1	RW1-MW3	RW2-MW1	RW3-MW1	RW3-MW2	RW3-MW3	RW3-MW3	RW3-MW4	TP-01	RW-3 ⁽²⁾
Sample Date	9/12/2017	9/13/2017	9/13/2017	9/12/2017	9/12/2017	9/12/2017	9/12/2017	9/12/2017	9/13/2017	9/13/2017
Comments							Duplicate			
VOCS (EPA 624) ug/L⁽¹⁾										
Chloroform	0.58 J	0.69 J	2	ND	0.24 J	0.35 J	0.27 J	0.21 J	6.3	0.28 J
1,1-dichloroethane	7.7	4.4	6.6	ND	0.36 J	2.5	2.2	2.6	1.3	1.5
1,2-dichloroethane	0.35 J	ND	0.71 J	ND	ND	ND	ND	ND	0.79 J	ND
1,1-dichloroethene	2.1	1.2	1.3	ND	0.26 J	1	0.78 J	0.41 J	0.36 J	1.4
cis-1,2-dichloroethene	9.8	0.37 J	2.6	ND	1.3	0.8 J	0.76 J	0.21 J	11	1.9
trans-1,2-dichloroethene	0.35 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.59 J	0.22 J	ND	1.6	0.43 J	0.31 J	0.44 J	ND	ND	0.65 J
1,1,1-trichloroethane	1	1.1	0.49 J	ND	0.26 J	0.46 J	0.38 J	0.26 J	0.29 J	0.83 J
1,1,2-trichloroethane	ND	0.35 J	ND	ND	0.26 J	ND	ND	ND	ND	0.45 J
Trichloroethene	110	2.8	8.6	22	140	100	95	5.4	54	220
Mercury (EPA 245.1) ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	ND	5.6	8.7	2.9	ND	2.5	1.9	1.3	ND	8.1

Notes:

J = estimated value

ND = Not detected above laboratory method detection limit

mg/L = milligrams per liter

µg/L = micrograms per liter

(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.

APPENDIX A

**NYSDEC EFFLUENT LIMITATIONS AND MONITORING
REQUIREMENTS AND MONTHLY DMRS**

JULY 2017



SBA-certified 8(a), SDB Company

14 August 2017

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
JULY 2017 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.

GWTP operational data from 1 July 2017 to 31 July 2017 are presented in Attachment A. During this reporting period, unscheduled downtime occurred on 12 July 2017 due to a power outage. The GWTP was down for approximately 6.5 hours before it was brought back online the following day. The unscheduled downtime had minimum impact on the average flowrates during this reporting period.

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

Please contact me at 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 July 2017

Cc: Donald Hesler - NYSDEC
Robert Wither - NYSDEC Division of Water
Jennifer Pilewski - NYSDEC – Region 1 Water Engineer
Gerard Ennis - Nassau County Department of Public Works
Tom Licata - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Greg Pearman – NWIRP Bethpage
GM-38 Copy

ATTACHMENT A
GROUNDWATER AND AIR SAMPLING RESULTS
JULY 2017

**GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
July 2017**

SPDES Parameters	July 2017					
	Daily Treated Effluent Maximum	Units	RW-1 ⁽¹⁾	RW-3	Combined Influent ⁽¹⁾	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		7/10/17			
Effective Flowrate	1100	GPM	989	0	989	1,017
Total Flow	N/A	gallons	43,594,500	0	43,594,500	44,852,800
pH	5.5 - 8.5	SU	5.10	NS	5.10	6.14
Carbon Tetrachloride	NA	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.5	NS	1.5	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.42 J	NS	0.42 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	6.9	NS	6.9	0.29 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0) J	ND (1.0)
Tetrachloroethene	5	µg/L	24	NS	24	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.96 J	NS	1.0	ND (1.0)
Trichloroethene	5	µg/L	100	NS	100	0.44 J
Vinyl Chloride	2	µg/L	0.23 J	NS	0.23 J	ND (1.0)
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) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.

**GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
July 2017**

DAR Parameters	July 2017	Discharge Goal ⁽¹⁾	July 2017	
			Influent	Effluent
Process Stream				
Sampling Date	N/A	N/A	7/10/17	
Average Flowrate	CFM	N/A	NR	7,612
Total Flow	ft ³	N/A	NR	339,817,536
Total Flow	m ³	N/A	NR	9,622,561
1,2-Dichloroethane	µg/m ³	N/A	3.4 J	1.6 J
cis 1,2-Dichloroethene	µg/m ³	> 100,000 ⁽²⁾	130	160
trans 1,2-Dichloroethene	µg/m ³		2.5 J	2.4 J
1,2-Dichloroethene (total)	µg/m ³	>100,000	130	160
Toluene	µg/m ³	N/A	2.20 J	ND
Total Xylene	µg/m ³	N/A	ND	ND
1,1,2-Trichloroethane	µg/m ³	N/A	ND	ND
Trichloroethene	µg/m ³	2,600	1600	7
Vinyl Chloride	µg/m ³	560	3.9	4.6
Tetrachloroethene	µg/m ³	5,100	350	2.6 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
July 2017**

DAR Parameters	Units	Discharge Goal ⁽¹⁾	July 2017
Sampling Date	N/A	N/A	7/10/17
Average Flowrate	CFM	N/A	7,612
Total Flow	ft ³	N/A	339,817,536
Total Flow	m ³	N/A	9,622,561
Trichloroethene	lb/hr	0.09	0.00020
Vinyl Chloride	lb/hr	0.02	0.00013
1,2 Dichloroethene	lb/hr	11	0.00456
1,2-Dichloroethane	lb/hr	N/A	0.00005
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	0.00007

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.

AUGUST 2017



SBA-certified 8(a), SDB Company

28 September 2017

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
AUGUST 2017 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.

GWTP operational data from 1 August 2017 to 31 August 2017 are presented in Attachment A. During this reporting period, an unscheduled downtime occurred on 6-7 August due to a faulty level transducer at recovery well RW-1. The GWTP was down for approximately 9 hours. The unscheduled downtime had minimum impact on the average flowrates during this reporting period.

In addition, during the August air emission sampling event, the duplicate sample result for trichloroethene (TCE) of 1,000 ug/m³ was inconsistent with the August routine sample result (11 ug/m³) as well as historical results. The September air emission sampling event confirmed the typical TCE results of 7.0 ug/m³ for the routine sample and 2.2 J ug/m³ for the duplicate observed at the GWTP.

As indicated in Attachment A, all 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 August 2017

Cc: Donald Hesler - NYSDEC
Robert Wither - NYSDEC Division of Water
Jennifer Pilewski - NYSDEC – Region 1 Water Engineer
Gerard Ennis - Nassau County Department of Public Works
Tom Licata - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Greg Pearman – NWIRP Bethpage
GM-38 Copy

ATTACHMENT A
GROUNDWATER AND AIR SAMPLING RESULTS
AUGUST 2017

**GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
August 2017**

SPDES Parameters	August 2017					
Process Stream	Daily Treated Effluent Maximum	Units	RW-1 ⁽¹⁾	RW-3	Combined Influent ⁽¹⁾	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		8/1/17			
Effective Flowrate	1100	GPM	953	0	953	996
Total Flow	N/A	gallons	42,554,700	0	42,554,700	43,929,000
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.14
Carbon Tetrachloride	NA	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.6	NS	1.6	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	1.5	NS	1.5	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.5	NS	6.5	0.28 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0) J	ND (1.0)
Tetrachloroethene	5	µg/L	22	NS	22	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.84 J	NS	0.8	ND (1.0)
Trichloroethene	5	µg/L	100	NS	100	0.45 J
Vinyl Chloride	2	µg/L	0.24 J	NS	0.24 J	ND (1.0)
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) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.

**GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
August 2017**

DAR Parameters	August 2017	Discharge Goal ⁽¹⁾	August 2017	
			Influent	Effluent
Process Stream				
Sampling Date	N/A	N/A	8/1/17	
Average Flowrate	CFM	N/A	NR	7,408
Total Flow	ft ³	N/A	NR	330,700,560
Total Flow	m ³	N/A	NR	9,364,397
1,2-Dichloroethane	µg/m ³	N/A	4.1 J	2.0 J
cis 1,2-Dichloroethene	µg/m ³	> 100,000 ⁽²⁾	110	150
trans 1,2-Dichloroethene	µg/m ³		1.9 J	2.0 J
1,2-Dichloroethene (total)	µg/m ³	>100,000	110	160
Toluene	µg/m ³	N/A	2.1 J	ND
Total Xylene	µg/m ³	N/A	ND	ND
1,1,2-Trichloroethane	µg/m ³	N/A	1.8 J	ND
Trichloroethene	µg/m ³	2,600	1700	11
Vinyl Chloride	µg/m ³	560	3.3	2.0
Tetrachloroethene	µg/m ³	5,100	320	3.9 J

Notes:

CFM - cubic feet per minute

DAR - Division of Air Resources

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

N/A - Not Applicable

NR - Not recorded

(1) 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
August 2017**

DAR Parameters	Units	Discharge Goal ⁽¹⁾	August 2017
Sampling Date	N/A	N/A	8/1/17
Average Flowrate	CFM	N/A	7,408
Total Flow	ft ³	N/A	330,700,560
Total Flow	m ³	N/A	9,364,397
Trichloroethene	lb/hr	0.09	0.00031
Vinyl Chloride	lb/hr	0.02	0.00006
1,2 Dichloroethene	lb/hr	11	0.00444
1,2-Dichloroethane	lb/hr	N/A	0.00006
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	0.00011

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.

SEPTEMBER 2017



SBA-certified 8(a), SDB Company

19 October 2017

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
SEPTEMBER 2017 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 September 2017 to 30 September 2017 are presented in Attachment A. During this reporting period, scheduled downtime occurred on 19 September 2017 to install and rewire the new PLC analog card and replace three intrinsic safety barriers. The GWTP was down for approximately 5 hours. The scheduled downtime had minimum impact on the average flowrates during this reporting period.

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 September 2017

Cc: S. Edwards, NYSDEC
Donald Hesler – NYSDEC
C. Haas, NYSDEC Region 1
W. Parish, NYSDEC Region 1
Robert Wither - NYSDEC Division of Water
Jennifer Pilewski - NYSDEC – Region 1 Water Engineer
S. Karpinski, NYSDOH
J. Lovejoy, NCDOH
L. Thantu, USEPA Region 2
Gerard Ennis - Nassau County Department of Public Works
Tom Licata - Town of Oyster Bay
Lora Fly - NAVFAC Mid-Atlantic RPM
Greg Pearman – NWIRP Bethpage
GM-38 Copy

ATTACHMENT A
GROUNDWATER AND AIR SAMPLING RESULTS
SEPTEMBER 2017

**GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
September 2017**

SPDES Parameters	September 2017 ⁽¹⁾					
	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		9/5/17			
Effective Flowrate	1100	GPM	956	1.3	958	986
Total Flow	N/A	gallons	41,931,346	57,900	41,989,246	43,226,363
pH	5.5 - 8.5	SU	5.17	NS	5.17	6.17
Chloroform	5	µg/L	0.38 J	NS	0.38 J	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.9	NS	1.90	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	1.1	NS	1.10	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	6.7	NS	6.70	0.33 J
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	21	NS	21.00	ND (1.0)
1,1,1-Trichloroethene	5	µg/L	0.98 J	NS	0.98 J	ND (1.0)
Trichloroethene	5	µg/L	95	NS	95.00	0.69 J
Trichlorofluoroethane	5	µg/L	ND (1.0)	NS	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	0.24 J	NS	0.24 J	ND (1.0)
1,4-Dioxane	--	µg/L	ND (20)	NS	ND (20)	ND (20)
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 trichlorofluoroethane are now monitored under the new permit.

(2) On 1 July 2015, the RW-1 flowrate was increased from ~800 gpm to ~1,000 gpm and RW-3 was taken off-line, as approved by NYSDEC on 20 April 2015. Influent concentrations presented above are therefore equivalent to RW-1 concentrations only.

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

**GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
September 2017**

DAR Parameters	September 2017	Discharge Goal ⁽¹⁾	September 2017	
			Influent	Effluent
Process Stream				
Sampling Date	N/A	N/A	9/5/17	
Average Flowrate	CFM	N/A	NR	7,876
Total Flow	ft ³	N/A	NR	340,236,000
Total Flow	m ³	N/A	NR	9,634,411
1,2-Dichloroethane	µg/m ³	N/A	4.2 J	2.8 J
cis 1,2-Dichloroethene	µg/m ³	> 100,000 ⁽²⁾	100	150
trans 1,2-Dichloroethene	µg/m ³		ND	1.7 J
1,2-Dichloroethene (total)	µg/m ³	>100,000	100	150
Toluene	µg/m ³	N/A	0.66 J	ND
Total Xylene	µg/m ³	N/A	ND	ND
1,1,2-Trichloroethane	µg/m ³	N/A	1.5 J	ND
Trichloroethene	µg/m ³	2,600	1700	7.0
Vinyl Chloride	µg/m ³	560	2.9 J	2.0
Tetrachloroethene	µg/m ³	5,100	380	3.9 J

Notes:

CFM - cubic feet per minute

DAR - Division of Air Resources

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

N/A - Not Applicable

NR - Not recorded

(1) 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
September 2017**

DAR Parameters	Units	Discharge Goal ⁽¹⁾	September 2017
Sampling Date	N/A	N/A	9/5/17
Average Flowrate	CFM	N/A	7,876
Total Flow	ft ³	N/A	340,236,000
Total Flow	m ³	N/A	9,634,411
Trichloroethene	lb/hr	0.09	0.00021
Vinyl Chloride	lb/hr	0.02	0.00006
1,2 Dichloroethene	lb/hr	11	0.00443
1,2-Dichloroethane	lb/hr	N/A	0.00008
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	0.00012

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 I-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™ 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™ 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:

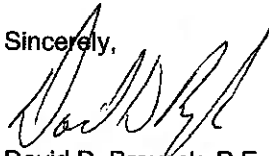
On behalf of the Navy, please find enclosed a copy of the subject document. This document presents an evaluation of current concentrations of off gas VOCs from the GM-38 groundwater treatment plant air-stripping tower (prior to treatment with granular activated carbon). Maximum emission rates were re-evaluated 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.

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

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

Chemical	Existing Discharge Goal		Actual January to March 2011 Values (Pre-Off Gas Treatment)		Proposed Revised Discharge Goals based on DAR-1 Analysis	
	Existing Discharge Loading Rate (pounds (lbs)/hour) ⁽¹⁾	Equivalent Existing Discharge Goals ($\mu\text{g}/\text{m}^3$) ⁽²⁾	Actual Jan-Mar 2011 Concentration ($\mu\text{g}/\text{m}^3$) ⁽³⁾	Actual VOC Loading Pre-Off Gas Treatment (lbs/hour) ⁽⁴⁾	Proposed Discharge Loading Rate (lbs/hour) ⁽⁵⁾	Equivalent Proposed Discharge Goal ($\mu\text{g}/\text{m}^3$) ⁽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 <u>N/A</u>	<input type="checkbox"/> New	<input type="checkbox"/> Significant Modification	<input type="checkbox"/> Administrative Amendment	State Facility Permit <u>N/A</u>
<input type="checkbox"/> Renewal	<input type="checkbox"/> Minor Modification	General Permit Title: _____		<input type="checkbox"/> New
<input checked="" type="checkbox"/> Application involves construction of new facility		<input type="checkbox"/> Application involves construction of new emission unit(s)		
				<input type="checkbox"/> Modification
				General Permit Title: _____

Owner/Firm				
Name <u>US Navy/NAVFAC Midlant</u>				
Street Address <u>9742 Maryland Ave, Bldg Z-144</u>				
City <u>Norfolk</u>	State <u>VA</u>	Country <u>US</u>	Zip <u>23511-3095</u>	
Owner Classification <input checked="" type="checkbox"/> Federal		<input type="checkbox"/> State	<input type="checkbox"/> Municipal	
<input type="checkbox"/> Corporation/Partnership		<input type="checkbox"/> Individual	Taxpayer ID	
Facility <input type="checkbox"/> Confidential				
Name <u>Naval Weapons Industrial Reserve Plant (NWIRP) GM-38 Area</u>				
Location Address <u>Bethpage</u>				
<input type="checkbox"/> City / <input checked="" type="checkbox"/> Town / <input type="checkbox"/> Village <u>Oyster Bay, New York</u>			Zip <u>11714</u>	
Project Description <input type="checkbox"/> Continuation Sheet(s)				
<u>Air stripping of groundwater to remove VOCs</u>				

Owner/Firm Contact Mailing Address				
Name (Last, First, Middle Initial) <u>Fly, Lora</u>			Phone No. (757)444-0781	
Affiliation <u>Department of the Navy</u>		Title <u>Remedial PM</u>	Fax No. ()	
Street Address <u>9742 Maryland Ave. Bldg Z-144</u>				
City <u>Norfolk</u>	State <u>VA</u>	Country <u>US</u>	Zip <u>23511-3095</u>	
Facility Contact Mailing Address				
Name (Last, First, Middle Initial) <u>Same</u>			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					
<input type="checkbox"/> Hospital	<input type="checkbox"/> Residential	<input type="checkbox"/> Educational/Institutional	<input type="checkbox"/> Commercial	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Utility

Affected States (Title V Only) N/A					
<input type="checkbox"/> Vermont	<input type="checkbox"/> Massachusetts	<input type="checkbox"/> Rhode Island	<input type="checkbox"/> Pennsylvania	Tribal Land: _____	
<input type="checkbox"/> New Hampshire	<input type="checkbox"/> Connecticut	<input type="checkbox"/> New Jersey	<input type="checkbox"/> Ohio	Tribal Land: _____	

SIC Codes									
9999									

Facility Description		<input type="checkbox"/> Continuation Sheet(s)
Groundwater Remediation by Air Stripping followed by Vapor-Phase GAC for emission control		

Compliance Statements (Title V Only) N/A	
<p>I certify that as of the date of this application the facility is in compliance with all applicable requirements: <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>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 <u>in compliance</u> with all applicable requirements complete the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 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. <input type="checkbox"/> 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. <input type="checkbox"/> 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										<input type="checkbox"/> 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										<input type="checkbox"/> 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	<input type="checkbox"/> Continuation Sheet(s)	
Rule Citation												
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause			
<input type="checkbox"/> Applicable Federal Requirement		<input type="checkbox"/> Capping		CAS No.			Contaminant Name					
<input type="checkbox"/> State Only Requirement												
Monitoring Information												
<input type="checkbox"/> Ambient Air Monitoring		<input type="checkbox"/> Work Practice Involving Specific Operations				<input type="checkbox"/> Record Keeping/Maintenance Procedures						
Description												
Work Practice		Process Material						Reference Test Method				
Type	Code	Description										
Code		Parameter						Manufacturer Name/Model No.				
		Description										
Limit				Limit Units								
Upper		Lower		Code		Description						
Averaging Method				Monitoring Frequency				Reporting Requirements				
Code		Description		Code		Description		Code		Description		

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

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
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Section IV - Emission Unit Information

Emission Unit Description										<input type="checkbox"/> Continuation Sheet(s)
EMISSION UNIT	0	-	0	0	E	U	1			
Air Stripper AS-1 for groundwater remediation, provided with activated carbon for emission control.										
The emission point is stack 00ST-1. The 2-stage VGAC is followed by a 3rd vessel containing a potassium permanganate zeolite media for increased VC capacity.										

Building					<input type="checkbox"/> Continuation Sheet(s)
Building	Building Name		Length (ft)	Width (ft)	Orientation
BLDG-1	Treatment Plant		75	75	0

Emission Point							<input type="checkbox"/> Continuation Sheet(s)
EMISSION PT.	00ST1						
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section		
90	40	15	36	80	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	
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								<input type="checkbox"/> Continuation Sheet(s)
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.	
ID	Type				Code	Description		
AS-1	I				048	Granular Act. Carbon	Air Stripping Column	
Design Capacity	Design Capacity Units			Waste Feed		Waste Type		
	Code	Description		Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.	
ID	Type				Code	Description		
Design Capacity	Design Capacity Units			Waste Feed		Waste Type		
	Code	Description		Code	Description	Code	Description	

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
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Section IV - Emission Unit Information (continued)

Process Information										<input type="checkbox"/> Continuation Sheet(s)	
EMISSION UNIT 0 - 00 E U 1								PROCESS		PR 1	
Description											
The remedial system is air stripping, using a packed column at a groundwater flow rate of 1,100 gpm (plus 100 gpm recycle, for a total of 1,200 gpm). Vapor phase treatment includes the use of 3 vessels, a 2-stage GAC unit, followed by a 3rd vessel containing a potassium permanganate impregnated zeolite for increased VC capacity. Prior to entering the vapor-phase GAC adsorption system, the humidity of the air stripper exhaust is reduced to approximately 50 percent or less to optimize the efficiency of the vapor-phase GAC.											
Air Stripper AS-1: Existing. Type: Vertical, Cylindrical Construction: Aluminum											
Packing: 25-foot Jaeger Tripack. Dimensions: 10.0 ft. Dia x 47 ft. H											
Source Classification Code (SCC)		Total Thruput		Thruput Quantity Units							
		Quantity/Hr	Quantity/Yr	Code	Description						
<input type="checkbox"/> Confidential <input checked="" type="checkbox"/> Operating at Maximum Capacity <input type="checkbox"/> 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						
<input type="checkbox"/> Confidential <input type="checkbox"/> Operating at Maximum Capacity <input type="checkbox"/> Activity with Insignificant Emissions		Operating Schedule		Building		Floor/Location					
		Hrs/Day	Days/Yr								
Emission Source/Control Identifier(s)											

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
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Section IV - Emission Unit Information (continued)

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements										<input type="checkbox"/> 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										<input type="checkbox"/> Continuation Sheet(s)
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause	
-														
-														
-														
-														

Emission Unit Compliance Certification											<input type="checkbox"/> Continuation Sheet(s)
Rule Citation											
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause		
6	NYCRR	212									
<input checked="" type="checkbox"/> Applicable Federal Requirement				<input type="checkbox"/> State Only Requirement				<input type="checkbox"/> Capping			
Emission Unit	Emission Point	Process	Emission Source	CAS No.			Contaminant Name				
0-00EU1	00ST1	PR1	AS-1	00079 - 01 - 6			Trichloroethylene				
Monitoring Information											
<input type="checkbox"/> Continuous Emission Monitoring <input checked="" type="checkbox"/> Intermittent Emission Testing <input type="checkbox"/> Ambient Air Monitoring				<input type="checkbox"/> Monitoring of Process or Control Device Parameters as Surrogate <input type="checkbox"/> Work Practice Involving Specific Operations <input type="checkbox"/> 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		Process Material					Reference Test Method				
Type	Code	Description									
Parameter		Manufacturer Name/Model No.									
Code	Description										
23	Concentration										
Limit			Limit Units								
Upper	Lower	Code	Description								
3,125		255	micrograms per cubic meter								
Averaging Method			Monitoring Frequency			Reporting Requirements					
Code	Description	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
01	Instantaneous	05	Monthly	10	Upon Request						

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
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Section IV - Emission Unit Information (continued)

Determination of Non-Applicability (Title V Only) N/A <input type="checkbox"/> 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			<input type="checkbox"/> Applicable Federal Requirement <input type="checkbox"/> 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			<input type="checkbox"/> Applicable Federal Requirement <input type="checkbox"/> State Only Requirement				
Description										
Process Emissions Summary <input type="checkbox"/> Continuation Sheet(s)										
EMISSION UNIT	0 - 0 0 E U 1					PROCESS	P	R	1	
CAS No.	Contaminant Name			% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined		
0079 - 01 - 6	Trichloroethylene					95	1.87	02		
PTE			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.09	99			02						
EMISSION UNIT	0 - 0 0 E U 1					PROCESS	P	R	1	
CAS No.	Contaminant Name			% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined		
00075 - 01 - 4	Vinyl Chloride					95	0.17	03		
PTE			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.01	3.7			02						
EMISSION UNIT	0 - 0 0 E U 1					PROCESS	P	R	1	
CAS No.	Contaminant Name			% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined		
000540 - 59 - 0	1,2-Dichloroethylene					95	0.6	02		
PTE			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.03	7.3			02						

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
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Section IV - Emission Unit Information (continued)

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

Compliance Plan													<input type="checkbox"/> Continuation Sheet(s)
For any emission units which are <u>not in compliance</u> 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		

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
-									

Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits						<input type="checkbox"/> Continuation Sheet(s)			
EMISSION UNIT -									
Emission Reduction Description									
Contaminant Emission Reduction Data									
Baseline Period ____ / ____ / ____ to ____ / ____ / ____						Reduction			
						Date	Method		
						____ / ____ / ____			
CAS No.		Contaminant Name				ERC (lbs/yr)			
						Netting		Offset	
-									
-									
-									
Facility to Use Future Reduction									
Name						APPLICATION ID			
						- / -			
Location Address									
<input type="checkbox"/> City / <input type="checkbox"/> Town / <input type="checkbox"/> Village						State		Zip	

Use of Emission Reduction Credits						<input type="checkbox"/> Continuation Sheet(s)			
EMISSION UNIT -									
Proposed Project Description									
Contaminant Emissions Increase Data									
CAS No.		Contaminant Name				PEP (lbs/yr)			
-									
Statement of Compliance									
<input type="checkbox"/> 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									
<input type="checkbox"/> City / <input type="checkbox"/> Town / <input type="checkbox"/> Village						State		Zip	
Emission Unit	CAS No.	Contaminant Name			ERC (lbs/yr)				
					Netting		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 m³/hr
Water Flow Including Recycle 1,200 gpm: max or normal
273 m³/hr
Air Flow 8,000 cfm
13,592 m³/hr
A/W vol ratio 50

EXAMPLE EMISSION CALC: Vinyl Chloride
4.8 ug/L x 1000 L/m³ x 250 m³ water/13,623 m³ air = 88 ug/m³

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

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

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

**ATTACHMENT 1
Emission Estimate**

Feed Water Flow 1,100 gpm: max or normal
250 m³/hr
Water Flow Including Recycle 1,200 gpm: max or normal
273 m³/hr
Air Flow 8,000 cfm
13,592 m³/hr
A/W vol ratio 50

Controlled Stripper Exhat

Name	CAS Number	Toxicity: H/M/L ²	VOC ³	HAP ⁴	Control by	Max	Avg	Max	Avg
					GAC	lb/day	lb/day	gm/sec	gm/sec
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	L	No	Yes	95%	0.00	0.00	1.04E-05	1.04E-05
1,1,2-Trichloroethane	00079-00-5	M	Yes	Yes	95%	0.00	0.00	1.21E-05	1.04E-06
1,1-Dichloroethane	00075-34-3	L	Yes	Yes	95%	0.00	0.00	1.39E-05	2.43E-06
1,2-Dichloroethane	00107-06-2	M	Yes	Yes	95%	0.00	0.00	9.36E-06	3.12E-06
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	M	Yes	Yes	95%	0.01	0.00	3.12E-05	5.55E-06
1,2-Dichloroethylene	00540-59-0	M	Yes	No	95%	0.73	0.02	3.81E-03	1.09E-04
Benzene	00071-43-2	H	Yes	Yes	95%	0.00	0.00	1.39E-05	3.47E-07
Carbon Tetrachloride	00056-23-5	H	Yes	Yes	95%	0.00	0.00	1.39E-05	3.47E-07
Chlorobenzene (Monochlorobenzene)	00108-90-7	M	Yes	Yes	95%	0.00	0.00	3.47E-06	3.47E-07
Chloroform	00067-66-3	M	Yes	Yes	95%	0.00	0.00	6.94E-06	2.77E-06
Methyl Tert Butyl Ether	01634-04-4	M	Yes	Yes	95%	0.00	0.00	6.94E-06	3.47E-07
Tetrachloroethylene	00127-18-4	M	Yes	Yes	95%	0.59	0.02	3.12E-03	1.17E-04
Toluene	00108-88-3	L	Yes	Yes	95%	0.01	0.00	5.20E-05	2.43E-06
Trichloroethylene	00079-01-6	M	Yes	Yes	95%	2.24	0.27	1.18E-02	1.43E-03
Vinyl chloride	00075-01-4	H	Yes	Yes	95%	0.20	0.00	1.04E-03	1.66E-05
Xylenes	01330-20-7	M	Yes	Yes	95%	0.01	0.00	5.55E-05	6.94E-07
Total VOCs						3.80	0.32		
Total HAPs						3.08	0.30		
						Total Controlled VOC	117 lb/yr		
						Total Controlled HAP	110 lb/yr		

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

ATTACHMENT C

2011 DISCHARGE GOALS AND 2011 DAR-1 ANALYSIS

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

1. Purpose:

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

2. Approach:

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

3. Calculation of Current Discharge Goals:

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

Notes:

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

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

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

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

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

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

Chemical	CAS No. 00079-01-6 (TCE)	CAS No. 00127-18-4 (PCE)	CAS No. 00075-01-4 (Vinyl Chloride)	CAS No. 00156-59-2 (cis 1,2- Dichloroethene)	CAS No. 00540-59-0 (1,2- Dichloroethene, total)
Emission Rate Prior to Treatment ⁽¹⁾ (lb/hour)	0.3444	0.2342	0.0026	0.0258	0.0258
Emission Rate Prior to Treatment ⁽¹⁾ (lb/year)	3,017	2,052	22.93	226.0	226.0
Maximum Concentration of Untreated Off Gas ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	10,000	6,800	76	750	750
Annual Guideline Concentration (AGC) ($\mu\text{g}/\text{m}^3$)	0.5	1.0	0.11	63	63
Short-term Guideline Concentration (SGC) ($\mu\text{g}/\text{m}^3$)	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 (Cav. 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 (Cav. 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	1.95113296	
00127-18-4	1.00000000	73.85244750	0.00000000	1.32663476	1.32815004	
00156-59-2	63.00000000	8.13575172	0.00000000	0.14614509	0.14630693	
00540-59-0	63.00000000	8.13575172	0.00000000	0.14614509	0.14630693	

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

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NWIRP BETHPAGE GM-38 AREA          BETHPAGE          OYSTER BAY, NEW
EMISSION POINT =          TOTAL          CAS NUMBER = 00079-01-6          SIC = 0
AGC =          0.500000000 ug/m3          SGC =          14000.000000 ug/m3
STACK: HA= 15., SH= 40., D= 36., T= 80., U= 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.

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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: $h_s < 40. \text{ feet} > > h_c < 26. \text{ feet} >$.

II.C. CAVITY Short-Term Impact < 0.000 ug/m3 > is less than SGC < 14000.000 ug/m3 >.

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

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

2.4 Maximum non-downwash GEP stack Short-Term Impact (CSTP) is equal to 38.826 ug/m3, for $h_s/h_b = 1.60$

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

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

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

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

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

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NWIRP BETHPAGE GM-38 AREA          BETHPAGE          OYSTER BAY, MEV
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., U=          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.

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

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

**** Refer to DAR-1 Section III.D.1. A refined site specific modeling analysis 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: hc(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, F_m , is equal to 1000.331 ft⁴/sec².

2.3 Effective stack height, h_e , 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 $h_c/h_b = 1.60$

2.5 Maximum downwash Short-Term Impact (CSTD) is equal to 88.340 ug/m3, for: $h_c/h_b = 1.60$ 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:

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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., I=          80., U=          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.

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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, F_m , is equal to 1000.331 ft<4>/sec<2>.

2.3 Effective stack height, h_e , 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 $h_s/h_b = 1.60$

2.5 Maximum downwash Short-Term Impact (CSTD) is equal to 0.981 ug/m3, for: $h_s/h_b = 1.60$ 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:

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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., I=          80., U=          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.

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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):

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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., U=          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, Pm, 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.

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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	II O V	AGC ug/m3	II I O O V X CODES
00075-01-4	VINYL CHLORIDE	18000.00000	D	0.110000000	E H U HA
00079-01-6	TRICHLOROETHYLENE	14000.00000	Z	0.500000000	D M O HA
00127-10-4	TETRACHLOROETHYLENE	1000.00000	H	1.000000000	H M O HA
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
00127-10-4	TETRACHLOROETHYLENE	1	0.2342000	2052.00000
00156-59-2	DICHLOROETHYLENE, cis	1	0.0258000	226.00000
00540-59-0	DICHLOROETHYLENE, 1,2	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 =													13:17:58
	367000.	368000.	369000.	370000.	371000.	372000.	373000.	374000.	375000.	376000.	377000.	378000.	
TIME +	368000.	370000.	372000.	374000.	376000.	378000.							
4511000.	0.04	0.06	0.08	0.14	0.23	0.32	0.41	0.30	0.14	0.10	0.08	0.06	0.05
4510000.	0.03	0.05	0.08	0.13	0.25	0.43	0.60	0.40	0.17	0.12	0.09	0.07	0.06
4509000.	0.02	0.03	0.06	0.11	0.24	0.58	1.01	0.52	0.22	0.14	0.11	0.08	0.06
4508000.	0.02	0.03	0.04	0.06	0.18	0.62	2.16	0.64	0.31	0.19	0.13	0.11	0.09
4507000.	0.02	0.03	0.04	0.06	0.11	0.26	7.27	1.43	0.60	0.34	0.22	0.15	0.12
4506000.	0.03	0.03	0.05	0.07	0.13	0.33	2.58	2.99	1.12	0.51	0.30	0.20	0.14
4505000.	0.03	0.04	0.05	0.08	0.20	0.45	0.94	0.81	0.60	0.45	0.33	0.23	0.16
4504000.	0.03	0.04	0.07	0.12	0.20	0.22	0.47	0.43	0.33	0.27	0.24	0.20	0.16

TOP 100 CONTRIBUTORS TO MAXIMUM CONCENTRATION FOR 00079-01-6							09/08/11
@ UTMN: 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:

```

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

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

3. RUN FILE: TEMP?.RUN
4. METEOROLOGICAL FILE: ALB.MET
5. RUN MODE: URBAN
6. HALF-LIVES: not used to account for pollutant removal from air.
7. BLD. WAKE EFFECTS: AS-1 METHOD, All data KNOWN (hb, hv, hl, orientation)
8. EMISSIONS: ACTUAL ANNUAL EMISSIONS
9. SOURCES: All sources within 25. meters of
   UTME: 373275. UTMN: 4506537.
10. CONTAMINANT CAS NUMBER(s): 00079-01-6
11. EMISSION POINT - CONTAMINANT(s) found by computer: 1
12. No data is being copied to DUMP file.
```

APPENDIX C

FIELD LOGS

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
 Location: Bethpage, NY
 Well ID: RW i - MW 21

Date: 09/12/17
 Sampler: E. Seiler + S. George
 PID: -----



Start Time: 1145 End Time: 1205
 Well Construction: 4"
 Depth to Water: 40.53'
 Well Depth: 435
 Water Column: 394.47
 Total Volume Removed (L): 3.0 L
 Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI YSI	-556 ProDSS	16M101728
LaMotte	2020e	903-1811
QED	MP15	
Marschalk Bladder Pump	24"	ID# 711

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1145	—	200	40.56	16.4	4.85	169.8	0.26	190.4	1.01	Clear
1150	1L	200	40.60	16.3	4.47	171.9	0.34	208.7	0.52	Clear
1155	2L	200	40.59	16.1	4.48	171.8	0.26	212.1	0.28	Clear
1200	3L	200	40.58	16.0	4.50	172.0	0.22	199.8	0.41	Clear

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.16 gal/ft

6" Screen Volume = 1.46 gal/ft

4" Screen Volume = 0.64 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1205	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1205	RW i -MW 1-091217	500 mL PL	1	HNO ₃	Hg (245.1)
1205	RW i -MW 1-091217	250 mL PL	1	---	TSS (SM2540D)

Comments

Salinity @ 0.08

Erich Seiler
Signature

9/12/2017
Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
 Location: Bethpage, NY
 Well ID: RW 3 - MW 2

Date: 09/12/17
 Sampler: S. GEORGES
 PID: -----



Start Time: 1320 End Time: 1415

Field Testing Equipment

Well Construction: 4"
 Depth to Water: 42.85
 Well Depth: 495
 Water Column: 452.15
 Total Volume Removed (L): 8.0 L
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556 ProDSS	16M101728
LaMotte	2020e	903-1811
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1320	—	200	42.79	17.4	4.84	96.0	1.50	196.8	—	
1335	1L	200	42.75	16.8	4.70	95.3	0.31	212.4	1.62	Clear
1340	2L	200	42.80	16.6	4.73	95.0	0.05	213.9	2.32	Clear
1345	3L	200	42.85	16.9	4.71	94.9	0.00	217.9	2.36	Clear
1350	4L	200	42.83	16.3	4.71	94.8	0.00	211.5	4.87	Clear
1355	5L	200	42.65	16.6	4.72	95.4	0.00	210.7	—	—
1405	6L	200	42.80	16.0	4.80	95.5	0.00	194.0	2.15	Clear
1410	7L	200	42.75	16.0	4.77	96.2	0.00	199.0	1.81	Clear
1415	8L	200	42.72	15.9	4.79	96.5	0.00	199.7	1.95	Clear

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.16 gal/ft

6" Screen Volume = 1.46 gal/ft

4" Screen Volume = 0.64 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1415	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1415	RW 3 -MW2 - 091217	500 mL PL	1	HNO ₃	Hg (245.1)
1415		250 mL PL	1	---	TSS (SM2540D)

Comments

@ 1325 - Air CANISTER EMPTY, REPLACING w/ ONE @ PLANT. SALINITY @ 0.11
 @ 1330 - PUMP RESTARTED.
 @ 1357 - AIR CANISTER EMPTY REPLACING w/ SPARE. — @ 1402 - RESTARTED PUMP

S. Georges
 Signature

09.12.17

Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 09/12/17
 Sampler: E. Seiler
 PID: -----



Start Time: 1325 End Time: 1405
 Well Construction: 4"
 Depth to Water: 41.23
 Well Depth: 350
 Water Column: 308.77
 Total Volume Removed (L): 8.0 L
 Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	14F100256
LaMotte	2020e	903-1811
QED	MP15	27717
Marschalk Bladder Pump	24"	ID# 27717 711 EoS

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm ²)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1325	-	200	41.15	21.33	5.02	0.133	6.26	118.3	2.28	clear
1330	1.0	200	41.14	19.92	4.27	0.129	5.50	134.6	1.58	" "
1335	2.0	200	41.12	19.62	4.20	0.129	5.39	126.0	16.50	" w/ specks
1340	3.0	200	41.13	19.49	4.36	0.132	5.71	107.4	23.60	" "
1345	4.0	200	41.13	19.53	4.40	0.134	5.83	100.5	19.9	" "
1350	5.0	200	41.11	19.65	4.50	0.135	5.96	92.7	16.6	" "
1355	6.0	200	41.11	19.64	4.51	0.136	6.10	90.7	13.8	clear
1400	7.0	200	41.10	19.51	4.50	0.137	6.04	91.0	13.3	" "
1405	8.0	200	41.11	19.70	4.49	0.137	6.05	90.4	12.1	" "

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.16 gal/ft

6" Screen Volume = 1.46 gal/ft

4" Screen Volume = 0.64 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1410	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1410	RW 3 - MW 1 - 091217	500 mL PL	1	HNO ₃	Hg (245.1)
1410		250 mL PL	1	---	TSS (SM2540D)

Comments

Erich Seiler
 Signature

9/12/2017
 Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
 Location: Bethpage, NY
 Well ID: RW3 - MW3

Date: 09/12/17
 Sampler: E. Seiler
 PID: -----



Start Time: 1525 End Time: _____

Field Testing Equipment

Well Construction: 4"
 Depth to Water: 42.30
 Well Depth: 340
 Water Column: 297.7
 Total Volume Removed (L): 7.0L
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	14F100056
LaMotte	2020e	903-1811
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1535	—	200	42.30	17.20	4.37	0.130	5.62	49.0	3.98	clear
1540	1.0	200	42.30	17.79	4.29	0.130	3.04	49.9	4.56	"
1545	2.0	200	42.29	18.42	4.77	0.131	1.92	24.8	6.86	"
1550	3.0	200	42.27	18.61	4.90	0.131	1.62	17.1	8.83	"
1555	4.0	200	42.27	18.61	4.86	0.132	1.54	19.3	10.08	"
1600	5.0	200	42.27	18.77	4.83	0.132	1.50	19.4	10.27	"
1605	6.0	200	42.27	18.97	4.85	0.133	1.51	19.5	10.76	"
1610	7.0	200	42.25	18.99	4.83	0.133	1.47	20.6	11.20	"

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.16 gal/ft

6" Screen Volume = 1.46 gal/ft

4" Screen Volume = 0.64 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1620	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1620	RW3-MW3-091217	500 mL PL	1	HNO ₃	Hg (245.1)
1620		250 mL PL	1	---	TSS (SM2540D)

Comments

*gas ran out just before sample was collected, wait for new gas canister, tank switched @ 1640

E. Seiler
 Signature

9/12/2017
 Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
 Location: Bethpage, NY
 Well ID: RW 3 - MW 4

Date: 09/12/17
 Sampler: S. Georges
 PID: -----



Start Time: 1530 End Time: 1620
 Well Construction: 4"
 Depth to Water: 43.19
 Well Depth: ~~451.81~~ 495
 Water Column: 451.81
 Total Volume Removed (L): 10.02
 Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556 ProDSS	10M101728
LaMotte	2020e	903-1811
QED	MP15	
Marschalk Bladder Pump	24"	ID# 711

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm ²)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1535	1L	200	43.21	15.9	4.75	120.5	5.16	193.3	0.05	Clear
1540	2L	200	43.19	15.8	4.67	120.4	2.21	196.3	0.69	Clear
1545	3L	200	43.11	15.7	4.67	125.2	0.81	198.6	2.21	Clear
1550	4L	200	43.08	15.6	4.77	127.3	0.63	194.6	2.14	Clear
1555	5L	200	43.05	15.6	4.79	130.7	0.34	194.8	2.74	Clear
1600	6L	200	43.03	15.5	4.83	133.8	0.23	195.6	2.82	Clear
1605	7L	200	43.03	15.5	4.87	133.9	0.15	195.0	2.74	Clear
1610	8L	200	43.08	15.5	4.86	133.5	0.09	196.3	2.71	Clear
1615	9L	200	43.03	15.4	4.86	133.6	0.05	197.8	2.79	Clear
1620	10L	200	43.05	15.4	4.87	134.6	0.02	198.7	2.74	Clear

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

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

6" Screen Volume = 1.46 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1620	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1620	RW 3 -MW 4 - 091217	500 mL PL	1	HNO ₃	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

- UNCLEAR WHY DTW IS DECREASING VS. INCREASING - LEAVING PUMP ON TO MONITOR LEVEL
 STEADY FLOW @ 43.03 - 43.08
 Salinity @ 0.00.

[Signature]
 Signature

09.12.17
 Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 09/13/17
 Sampler: E. Seiler + S. Georges
 PID: -----



Start Time: 0815 End Time: _____
 Well Construction: 4"
 Depth to Water: 39.05
 Well Depth: 470
 Water Column: 430.95
 Total Volume Removed (L): 5.0L
 Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	10M101728
LaMotte	2020e	2285-2612
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0825	-	200	39.05	14.2	5.77	133.7	8.34	229.5	0.02	Clear
0830	1.0	200	39.08	14.1	5.65	146.5	8.30	240.7	0.70	"
0835	2.0	200	39.09	14.1	5.66	148.7	8.33	243.7	0.16	"
0840	3.0	200	39.09	14.0	5.65	149.0	8.34	245.4	0.28	"
0845	4.0	200	39.09	14.1	5.65	148.9	8.33	247.5	0.13	"
0850	5.0	200	39.09	14.1	5.65	148.9	8.32	249.6	0.19	"

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.16 gal/ft

6" Screen Volume = 1.46 gal/ft

4" Screen Volume = 0.64 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
	NWIRP-GM-38-GW-TP-1-691317	40 mL CG	3	---	TCL VOCs (624)
0855	RW MW	500 mL PL	1	HNO ₃	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Salinity @ 0.06

Evel Seiler
 Signature

9/13/2017
 Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 09/13/17
 Sampler: E. Seiler + S. Georges
 PID: -----



Start Time: 0940 End Time: _____

Field Testing Equipment

Well Construction: 4"
 Depth to Water: 43.33
 Well Depth: 510
 Water Column: 466.67
 Total Volume Removed (L): 11.0 L
 Dedicated Pump in Well?: No

Make	Model	Serial #
YSI	556	16M101728
LaMotte	2020e	2285-2612
QED	MP15	
Marschalk Bladder Pump	24"	ID#

→ 14F100056

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
0950	—	200	43.36	15.0	8.03	169.2	1.38	182.3	6.23	clear
0955	1.0	200	43.35	15.0	8.21	169.9	0.56	155.3	7.83	"
1000	2.0	200	43.37	15.0	8.33	169.4	0.33	132.9	4.72	"
1005	3.0	200	43.37	15.0	8.24	169.1	0.37	-90.1	4.21	"
1010	4.0	200	43.37	15.0	6.81	197.0	0.33	-24.8	4.38	"
1015	5.0	200	43.38	15.0	6.36	221.4	0.34	-2.0	4.77	"
*1020	6.0	200	43.38	15.34	7.65	228.0	1.40	-61.9	4.29	"
1025	7.0	200	43.35	15.89	7.01	226.0	0.35	-47.9	3.33	"
1030	8.0	200	43.37	16.09	7.08	227.0	0.29	-56.2	3.50	"
1035	9.0	200	43.36	16.20	7.10	227.0	1.90	-56.3	3.41	"
1040	10.0	200	43.36	16.26	7.06	226.0	1.76	-54.1	3.65	"
1045	11.0	200	43.36	16.37	7.03	226.0	1.64	-53.5	3.19	"

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.16 gal/ft

6" Screen Volume = 1.46 gal/ft

4" Screen Volume = 0.64 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1050	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1050	RW 2 - MW 1 - 091317	500 mL PL	1	HNO ₃	Hg (245.1)
1050		250 mL PL	1	---	TSS (SM2540D)

Comments

* Switched to other YSI,

E. Seiler

Signature

9/13/2017

Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM-38
 Location: Bethpage, NY
 Well ID: RW1 - MW 3

Date: 09/13/17
 Sampler: E. Seiler + S. Georges
 PID: _____



Start Time: 1140 End Time: _____
 Well Construction: 4"
 Depth to Water: 33.72
 Well Depth: 435
 Water Column: 401.28
 Total Volume Removed (L): 5.0 L
 Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	14F100056
LaMotte	2020e	2285-2612
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1148	—	200	33.72	18.20	5.62	0.176	4.18	28.8	7.45	Clear
1153	1.0	200	33.74	15.42	4.78	0.174	0.58	65.1	10.71	"
1158	2.0	200	33.61	15.10	4.83	0.173	0.42	55.1	11.23	"
1203	3.0	200	33.46	14.95	5.00	0.173	0.39	40.6	10.17	"
1208	4.0	200	33.36	14.72	5.03	0.173	0.34	34.5	12.00	"
1213	5.0	200	33.29	14.73	5.08	0.173	0.32	27.2	11.90	"

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

2" Screen Volume = 0.16 gal/ft

6" Screen Volume = 1.46 gal/ft

4" Screen Volume = 0.64 gal/ft

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1215	NWIRP-GM-38-GW-	40 mL CG	3	---	TCL VOCs (624)
1215	RW 1-MW - 3 - 091317	500 mL PL	1	HNO ₃	Hg (245.1)
1215		250 mL PL	1	---	TSS (SM2540D)

Comments

E. Seiler

Signature

9/13/2017

Date

KOMAN Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 09/13/17
 Sampler: S. G. [Signature] E. Selb
 PID: -----



Start Time: 1355 End Time: _____
 Well Construction: 4"
 Depth to Water: NA
 Well Depth: NA
 Water Column: NA
 Total Volume Removed (L): _____
 Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	556	26848
LaMotte	2020e	2255-2012
QED	MP15	
Marschalk Bladder Pump	24"	ID#

Time (hh:mm)	Volume Removed (L)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color
1355	—	—	—	16.93	5.63	94	2.27	2.7	4.77	Clear

Acceptance Criteria: <0.3ft 3% ±0.1 3% 10% ± 10mv 10%

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

Sample Collection

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

Comments

_____ CLAR SAMPLE _____

 Signature

 Date



Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38

Date: 09/12/17

Weather: Sunny, humid, ~70°F

Calibrated By: Stefano Georges

Instrument: YSI 556

Serial Number: 14F100056

Parameters	Morning Calibration Time: <u>1120</u>	Cal. Temperature °C	Afternoon Cal. Check Time: _____	Comments
ORP Conductivity 240 MV 1413 (µS/cm ^o)	249.2 → 240.0	24.18°C		Exp: 1/31/2021 Lot #: 9674
pH (7)	6.86 → 7.00	24.47°C		Exp: 12/31/2018 Lot #: 66L570
pH (4)	3.76 → 4.6 ^{3.98} ETS	23.86°C		Exp: 12/31/2018 Lot: 66L126
pH (10)	9.97 → 10.00	24.23°C		Exp: 12/31/2018 Lot #: 66L207
Conductivity ORP 1413 (mv)	1.387 → 1.413	24.01°C		Exp: 12/31/2017 Lot #: 66L243
Dissolved Oxygen (%)	93.1% → 100.2%	30.35°C		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	761.7			

pH Check (Every 3 hrs): Time: _____
 Standard: NA
 Reading: _____
 (NJ only)

Time: _____
 Standard: NA
 Reading: _____

Time: _____
 Standard: NA
 Reading: _____

Signature: 

Date: 09.14.17



Instrument Calibration Log

Project/Site Name: nWIRP Bethpage GMSA Date: 9/13/2017

Weather: Sunny, some clouds, ~ 60°F

Calibrated By: Erica Seiler Instrument: YSI 556

Serial Number: 14F100CS50

Parameters	Morning Calibration Time: <u>0740</u>	Cal. Temperature °C	Afternoon Cal. Check Time: _____	Comments
Conductivity ($\mu\text{S}/\text{cm}^\circ$)	1.403 → 1.413	22.69°C		Exp: 1/31/2021 Lot #: 9674
pH (7)	6.98 → 7.00	23.88°C		Exp: 12/31/2018 Lot #: 66L570
pH (4)	3.93 → 4.00	22.98°C		Exp: 12/31/2018 Lot #: 66L126
pH (10)	10.01 → 10.00	23.04°C		Exp: 12/31/2018 Lot #: 66L207
ORP (mv)	233.8 → 240.1	22.05°C		Exp: 12/31/2017 Lot #: 66L243
Dissolved Oxygen (%)	133.9% → 99.8%	21.91°C		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	758.0			
Turbidity (NTU)				

Signature: Erica Seiler

Date: 9/13/2017



Instrument Calibration Log

Project/Site Name: NWIRP Bethpage – GM-38

Date: 09/12/17

Weather: Sunny, humid, ~ 73°F

Calibrated By: Erica Seider

Instrument: -YSI-556-

Serial Number: _____

Ysi ProDSS

16M101728

Parameters	Morning Calibration Time: <u>1048</u>	Cal. Temperature °C	Afternoon Cal. Check Time: _____	Comments
Conductivity 1413 (µS/cm°)	<u>1403 → 1413</u>	<u>22.1°C</u>		EXP: Jan 2018 Lot: 7GA718
pH (7)	<u>7.02 → 7.01</u>	<u>21.9°C</u>		EXP: 12/31/18 Lot: 6GL570
pH (4)	<u>4.00 → 4.00</u>	<u>22.0°C</u>		EXP: 1/31/18 Lot: 6GA048
pH (10)	<u>10.03 → 10.03</u>	<u>22.1°C</u>		EXP: 12/31/18 Lot: 6GL207
ORP 240 (mv)	<u>235.3 → 240.0</u>	<u>21.7°C</u>		EXP: 5/31/21 Lot: 0207
Dissolved Oxygen (%)	<u>105.0% → 102.8%</u>			N/A
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mmHg)	<u>780.5 780.5</u>			

pH Check (Every 3 hrs): Time: _____
Standard: NA
Reading: _____
(NJ only)

Time: _____
Standard: NA
Reading: _____

Time: _____
Standard: NA
Reading: _____

Signature: Erica Seider

Date: 9/12/2017



Instrument Calibration Log

Project/Site Name: NWIRP Bethpage GM-38

Calibrated By: Erica Seiler

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 903 - 1811	1.20 0.26	1.00	8.63	10.02					9/12/2017
									Time: 1040 &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &

Signature: Erica Seiler

Date: 9/12/2017



Instrument Calibration Log

Project/Site Name: NWIRP Bethpage GM-38

Calibrated By: Erica Seiler

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 2285-2617	1.03	0.98	9.50	9.47					9/13/2017
									Time: 0810 &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &
									Time: &

Signature: Erica Seiler

Date: 9/13/2017



ALS-Environmental
1565 Jefferson Rd. Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: KOMAN Government Solutions, LLC
180 Gordon Dr., Suite 110
Exton, PA, 19341

Project Manager: Stephane Roy

CHAIN of CUSTODY

Project: NWIRP Bethpage GM-38 Semi-annual LTM
Telephone No. 610-400-0622
Email: sroy@komangs.com

Method of Shipment
FedEx Priority Overnight

Special Detection Limit/Reporting
Requires DOD QSM reporting.
Standard TAT (no more than 10 days).

Sample I.D.	Lab Sample No.	No. of Containers	Matrix				Prsv.		Sampling Date	Sampling Time	TCL VOCs (624) -project specific	Mercury (245.1)	TSS (SM2540D)	1,4-dioxane											
			Soil	Water	Air	Other	Yes	No																	
BP-GM-38-GW-RW1-MW1-091217		5	X			X		09/12/17	1205	3	1	1	X												
BP-GM-38-GW-RW1-MW3-091317		5	X			X		09/13/17	1215	3	1	1	X												
BP-GM-38-GW-RW2-MW1-091317		5	X			X		09/13/17	1050	3	1	1	X												
BP-GM-38-GW-RW3-MW1-091217		5	X			X		09/12/17	1410	3	1	1	X												
BP-GM-38-GW-RW3-MW2-091217		5	X			X		09/12/17	1415	3	1	1	X												
BP-GM-38-RW3-MW-3-DUP-091217		5	X			X		09/12/17	-	3	1	1	X												
BP-GM-38-GW-RW3-MW3-091217		13	X			X		09/12/17	1020	3	1	1	X												
BP-GM-38-GW-RW3-MW4-091217		5	X			X		09/12/17	1620	3	1	1	X												
BP-GM-38-GW-TP1-091317		5	X			X		09/13/17	0855	3	1	1	X												
BP-GM-38-RW3-091317		5	X			X		09/13/17	1355	3	1	1	X												
BP-GM-38-FB-091317		4	X			X		09/13/17	1300	3	1														
BP-GM-38-TB-		3	X						X	3															

MS/MSD for VOCs, Hg only
ms/msd for VOCs, Hg only

Sample Received Intact: Yes No Temperature received: Ice No ice

Relinquished by (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)
<i>[Signature]</i>	7/15/17	1500	
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory
			<i>[Signature]</i>
	Date	Time	
	9/14/17	0940	

Lab Work No.

R1708649 5
KOMAN Government Solutions, LLC
NWIRP Bethpage GM-38 Semi-Annual LTM

APPENDIX D

DATA VALIDATION REPORTS

VOLATILE ORGANIC COMPOUNDS
USEPA Region II –Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM
Location: 100 Broadway, Bethpage, NY
Project Number: 2031-807
SDG #: R1708649
Client: KOMAM Government Solutions, LLC
Date: 10/12/2017
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 9/12 thru 13/2017. The samples were submitted to ALS Environmental, Middletown, PA on 9/14/2017 for analysis.
3. The USEPA Region II SOP HW-24, Revision No.: 2, 2008, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B; USEPA National Functional Guidelines for Organic Data Review, EPA 540/R-99/008, October 1999; EPA Method 624 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Volatiles data in this summary report.
4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	9/12/2017	Water	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	9/13/2017	Water	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	9/13/2017	Water	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	9/12/2017	Water	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	9/12/2017	Water	
BP-GM-38-GW-RW3-MW-3-DUP-091217	R1708649-006	9/12/2017	Water	Field Duplicate of sample BP-GM-38-GW-RW3-MW3-030217
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	9/12/2017	Water	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	9/12/2017	Water	
BP-GM-38-GW-TP1-091317	R1708649-009	9/13/2017	Water	
BP-GM-38-RW3-091317	R1708649-010	9/13/2017	Water	
BP-GM-38-FB-091317	R1708649-011	9/13/2017	Water	Field Blank
BP-GM-38-TB	R1708649-012		Water	Trip Blank

Sample Conditions/Problems:

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



Holding Times:

1. All water samples were analyzed within 14 days from sample collection. No qualifications were required.
2. All water samples were properly preserved (pH<2.0). No qualifications were required.

GC/MS Tuning:

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

Initial Calibration:

1. Initial calibration curve analyzed on 9/18/2017 (R-MS-06) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

Continuing Calibration Verification (CCV):

1. CCV analyzed (R-MS-06) exhibited acceptable %Ds ($\leq 20.0\%$) 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 (RQ1709469-04) analyzed on 9/18/2017 was free of contamination. No qualifications were required.

- Field Blank (BP-GM-38-FB-091317) (R1708649-011) analyzed on 9/18/2017 contained toluene (0.21 µg/L). Results for toluene in the field samples was non-detect. No qualifications were required.
- Trip Blank (BP-GM-38-TB) (R1708649-012) analyzed on 9/18/2017 was free of contamination. No qualifications were required.

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

- Laboratory Control Sample (RQ1709469-03) was analyzed on 09/18/2017. All %RECs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

- Sample BP-GM-38-GW-RW3-MW-3-DUP-091217 (R1708649-006) was collected as field duplicate for sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All RPDs were ≤50.0%. No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
BP-GM-38-GW-RW3-MW3-091217	1,1,1-Trichloroethane	EPA 624	0.46	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.38	µg/l	19.0	None
BP-GM-38-GW-RW3-MW3-091217	1,1-Dichloroethane	EPA 624	2.5	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	2.2	µg/l	12.8	None
BP-GM-38-GW-RW3-MW3-091217	1,1-Dichloroethene	EPA 624	1	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.78	µg/l	24.7	None
BP-GM-38-GW-RW3-MW3-091217	Chloroform	EPA 624	0.35	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.27	µg/l	25.8	None
BP-GM-38-GW-RW3-MW3-091217	Cis-1,2-Dichloroethene	EPA 624	0.8	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.76	µg/l	5.1	None
BP-GM-38-GW-RW3-MW3-091217	Tetrachloroethene	EPA 624	0.31	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	0.44	µg/l	34.7	None
BP-GM-38-GW-RW3-MW3-091217	Trichloroethene	EPA 624	100	µg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	95	µg/l	5.1	None

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

- Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All %RECs and RPDs were within the laboratory control limits. No qualifications were required.



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

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: R1708649.

MERCURY
USEPA Region II – Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM
Location: 100 Broadway, Bethpage, NY
Project Number: 2031-807
SDG #: R1708649
Client: KOMAM Government Solutions, LLC
Date: 10/12/2017
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 245.1.
2. The samples were collected on 9/12 thru 13/2017. The samples were submitted to ALS Environmental, Middletown, PA on 9/14/2017 for analysis.
3. The USEPA Region II SOP No. HW-2, Revision 13, September 2006, Validation of Metals for Contract Laboratory Program (CLP), SOW-ILM05.3 (SOP Revision 13); USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004, October 2004 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Mercury data in this summary report.
4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (See discussion below).



Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	9/12/2017	Water	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	9/13/2017	Water	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	9/13/2017	Water	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	9/12/2017	Water	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	9/12/2017	Water	
BP-GM-38-GW-RW3-MW-3-DUP-091217	R1708649-006	9/12/2017	Water	Field Duplicate of sample BP-GM-38-GW-RW3-MW3-030217
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	9/12/2017	Water	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	9/12/2017	Water	
BP-GM-38-GW-TP1-091317	R1708649-009	9/13/2017	Water	
BP-GM-38-RW3-091317	R1708649-010	9/13/2017	Water	
BP-GM-38-FB-091317	R1708649-011	9/13/2017	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 (PBW) digested on 9/21/2017 contained mercury (0.099 $\mu\text{g/L}$). Results for mercury in the field samples was non-detect. No qualifications were required.

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

1. Field Blank (BP-GM-38-FB-030117) (R1701946-011) analyzed on 9/21/2017 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 09/21/2017 was within the laboratory control limits. No qualifications were required.

Laboratory Duplicate:

1. Laboratory Duplicate was performed on sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). All RPDs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample BP-GM-38-GW-RW3-MW-3-DUP-091217 (R1708649-006) was collected as field duplicate for sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). 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 BP-BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). 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: R1708649.

GENERAL CHEMISTRY
USEPA Region II – Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, GM-38 Area-LTM
Location: 100 Broadway, Bethpage, NY
Project Number: 2031-807
SDG #: R1708649
Client: KOMAM Government Solutions, LLC
Date: 10/12/2017
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 9/12 thru 13/2017. The samples were submitted to ALS Environmental, Middletown, PA on 9/14/2017 for analysis.
3. The USEPA Region II SOP No. HW-2, Revision 13, September 2006, Validation of Metals for Contract Laboratory Program (CLP), SOW-ILM05.3 (SOP Revision 13); USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004, October 2004 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Solids, Total Suspended data in this summary report.
4. In general, the data are valid as reported and may be used for decision making purposes. 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
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	9/12/2017	Water	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	9/13/2017	Water	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	9/13/2017	Water	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	9/12/2017	Water	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	9/12/2017	Water	
BP-GM-38-GW-RW3-MW-3-DUP-091217	R1708649-006	9/12/2017	Water	Field Duplicate of sample BP-GM-38-GW-RW3-MW3-030217
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	9/12/2017	Water	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	9/12/2017	Water	
BP-GM-38-GW-TP1-091317	R1708649-009	9/13/2017	Water	
BP-GM-38-RW3-091317	R1708649-010	9/13/2017	Water	
BP-GM-38-FB-091317	R1708649-011	9/13/2017		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 (R1708649-MB) analyzed on 9/19/2017 was free of contamination. No qualifications were required.

Field Duplicate:

1. Sample BP-GM-38-GW-RW3-MW-3-DUP-091217 (R1708649-006) was collected as field duplicate for sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). RPD was ≤50.0% No qualifications were required.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
BP-GM-38-GW-RW3-MW3-091217	TSS	2540D	2.5	mg/l	BP-GM-38-GW-RW3-MW-3-DUP-091217	1.9	mg/l	27.3	None

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

1. Laboratory Control Sample (R1708649-LCS) was analyzed on 09/19/2017. All %RECs were within the laboratory control limits. No qualifications were required.

Laboratory Duplicate:

1. Sample Duplicate was performed on sample BP-GM-38-GW-RW3-MW3-091217 (R1708649-007). 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: R1708649.

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	7.7	UG_L		0.21	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	2.1	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,2-Dichloroethane	0.35	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chloroform	0.58	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	cis-1,2-Dichloroethene	9.8	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Tetrachloroethene (PCE)	0.59	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	trans-1,2-Dichloroethene	0.35	UG_L	J	0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Trichloroethene (TCE)	110	UG_L		0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW1-091217	R1708649-001	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1,1-Trichloroethane (TCA)	1.1	UG_L		0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1,2-Trichloroethane	0.35	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	4.4	UG_L		0.21	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1.2	UG_L		0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chloroform	0.69	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	cis-1,2-Dichloroethene	0.37	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Tetrachloroethene (PCE)	0.22	UG_L	J	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Trichloroethene (TCE)	2.8	UG_L		0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW1-MW3-091317	R1708649-002	2540D	20170919	1	Solids, Total Suspended (TSS)	5.6	MG_L			
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.49	UG_L	J	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	6.6	UG_L		0.21	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1.3	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,2-Dichloroethane	0.71	UG_L	J	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chloroform	2	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	cis-1,2-Dichloroethene	2.6	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Trichloroethene (TCE)	8.6	UG_L		0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW2-MW1-091317	R1708649-003	2540D	20170919	1	Solids, Total Suspended (TSS)	8.7	MG_L			
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1	UG_L	U	0.21	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,1-Dichloroethane (1,1-DCE)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chloroform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	cis-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Tetrachloroethene (PCE)	1.6	UG_L		0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Trichloroethene (TCE)	22	UG_L		0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW-1-091217	R1708649-004	2540D	20170919	1	Solids, Total Suspended (TSS)	2.9	MG_L			
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1,2-Trichloroethane	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	0.36	UG_L	J	0.21	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,1-Dichloroethane (1,1-DCE)	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chloroform	0.24	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	cis-1,2-Dichloroethene	1.3	UG_L		0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Tetrachloroethene (PCE)	0.43	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Trichloroethene (TCE)	140	UG_L		0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW2-091217	R1708649-005	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.38	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	2.2	UG_L		0.21	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,1-Dichloroethane (1,1-DCE)	0.78	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chloroform	0.27	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	cis-1,2-Dichloroethene	0.76	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Tetrachloroethene (PCE)	0.44	UG_L	J	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Trichloroethene (TCE)	95	UG_L		0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-MW-3-DUP-091217	R1708649-006	2540D	20170919	1	Solids, Total Suspended (TSS)	1.9	MG_L			
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.46	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1



**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	2.5	UG_L		0.21	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L		0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chloroform	0.35	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	cis-1,2-Dichloroethene	0.8	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Tetrachloroethene (PCE)	0.31	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Trichloroethene (TCE)	100	UG_L		0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW3-091217	R1708649-007	2540D	20170919	1	Solids, Total Suspended (TSS)	2.5	MG_L			
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.26	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	2.6	UG_L		0.21	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	0.41	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chloroform	0.21	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	cis-1,2-Dichloroethene	0.21	UG_L	J	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Trichloroethene (TCE)	5.4	UG_L		0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-RW3-MW4-091217	R1708649-008	2540D	20170919	1	Solids, Total Suspended (TSS)	1.3	MG_L			
BP-GM-38-GW-TP1-091317	R1708649-009	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.29	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1.3	UG_L		0.21	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,1-Dichloroethane (1,1-DCE)	0.36	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,2-Dichloroethane	0.79	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Bromodichloromethane	0.53	UG_L	J	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chloroform	6.3	UG_L		0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	cis-1,2-Dichloroethene	11	UG_L		0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Trichloroethene (TCE)	54	UG_L		0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-GW-TP1-091317	R1708649-009	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-RW3-091317	R1708649-010	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1,1-Trichloroethane (TCA)	0.83	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1,2-Trichloroethane	0.45	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1.5	UG_L		0.21	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1.4	UG_L		0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1



**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chloroform	0.28	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	cis-1,2-Dichloroethene	1.9	UG_L		0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Tetrachloroethene (PCE)	0.65	UG_L	J	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	2	Trichloroethene (TCE)	220	UG_L		0.4	2
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-RW3-091317	R1708649-010	2540D	20170919	1	Solids, Total Suspended (TSS)	8.1	MG_L			
BP-GM-38-FB-091317	R1708649-011	245.1	20170921	1	Mercury	0.1	UG_L	U	0.09	0.1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1	UG_L	U	0.21	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chloroform	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	cis-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Toluene	0.21	UG_L	J	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Trichloroethene (TCE)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1
BP-GM-38-FB-091317	R1708649-011	2540D	20170919	1	Solids, Total Suspended (TSS)	1	MG_L	U		
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1,1-Trichloroethane (TCA)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1,2-Trichloroethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1-Dichloroethane (1,1-DCA)	1	UG_L	U	0.21	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,2-Dichlorobenzene	1	UG_L	U	0.25	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,2-Dichloroethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,2-Dichloropropane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,3-Dichlorobenzene	1	UG_L	U	0.22	1
BP-GM-38-TB	R1708649-012	624	20170918	1	1,3-Dichloropropene, Total	2	UG_L	U		
BP-GM-38-TB	R1708649-012	624	20170918	1	1,4-Dichlorobenzene	1	UG_L	U	0.2	1

**NWIRP BETHPAGE GM-38
SEPTEMBER 2017 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R1708649**

Sample Name	Lab ID	Analytical Method	Analysis Date	Dilution Factor	Analyte	Result	Unit	Qualifier	DL	LOD
BP-GM-38-TB	R1708649-012	624	20170918	1	1,4-Dioxane	40	UG_L	U	20	
BP-GM-38-TB	R1708649-012	624	20170918	1	2-Chloroethyl Vinyl Ether	1	UG_L	U	0.6	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Acrolein	10	UG_L	U	2.9	
BP-GM-38-TB	R1708649-012	624	20170918	1	Acrylonitrile	10	UG_L	U	1.8	
BP-GM-38-TB	R1708649-012	624	20170918	1	Benzene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Bromodichloromethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Bromoform	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Bromomethane	1	UG_L	U	0.44	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Carbon Tetrachloride	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chlorobenzene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chloroethane	1	UG_L	U	0.24	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chloroform	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Chloromethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	cis-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	cis-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Dibromochloromethane	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Ethylbenzene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Methylene Chloride	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Tetrachloroethene (PCE)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Toluene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	trans-1,2-Dichloroethene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	trans-1,3-Dichloropropene	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Trichloroethene (TCE)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	0.2	1
BP-GM-38-TB	R1708649-012	624	20170918	1	Vinyl Chloride	1	UG_L	U	0.2	1