25 January 2020

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

Subject: **US NAVY CONTRACT NO. N40085-16-D-2288**
CONTRACT TASK ORDER NO. 0005
THIRD QUARTER 2020 OPERATIONS REPORT
GWTP GM-38 AREA REMEDIATION
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, BETHPAGE, NY

Dear Mr. Sokolowski:

An electronic copy of the *Third Quarter 2020 Operations Report, Groundwater Treatment Plant, GM-38 Area Groundwater Remediation, Naval Weapons Industrial Reserve Plant, Bethpage, New York,* has been submitted to your attention via email.

Please contact me at rgregory@komangs.com or 610.400.0636 if you have any questions or comments regarding this submittal.

Sincerely,
KOMAN Government Solutions, LLC (KGS)

Robert G. Gregory
Project Manager

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Mr. William Cords (NAVAIR) – electronic only
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Mr. Vin Varricchio (NWIRP Bethpage) – 2 hard copies, 2 CDs
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Quarterly Operations Report
Third Quarter 2020

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

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

January 2021

Prepared for:

Naval Facilities Engineering Systems Command NAVFAC Mid-Atlantic
9324 Virginia Avenue
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9324 Virginia Avenue
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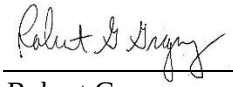
1/14/2021

Patrick Schauble
Program Manager

Date



11/14/2021

Robert Gregory
Project Manager

Date

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APPENDICES

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
EB	equipment blank
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Accreditation Program
EQ	equalization
GOCO	Government Owned Contractor Operated
gpm	gallons 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
MS/MSD	matrix spike/matrix spike duplicate
NAVFAC	Naval Facilities Systems Engineering Command
Navy	United States Department of the Navy
NELAC	National Environmental Laboratory Accreditation Conference
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation

O&M	Operation and Maintenance
ORP	oxidation reduction potential
OU	operable unit
%	percent
PCE	tetrachloroethene
PLC	programmable logic controller
QA/QC	quality assurance/quality control
ROD	Record of Decision
RPD	relative percent difference
SC	specific conductance
scfm	standard cubic feet per minute
SPDES	State Pollution Discharge Elimination System
TB	trip blank
TCE	trichloroethene
TE	treated effluent
Tetra Tech	Tetra Tech, Inc.
TIC	tentatively identified compound
TSS	total suspended solids
TtEC	Tetra Tech EC, Inc.
µg/L	micrograms per liter
USEPA	United States 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 United States Department of the Navy (Navy), Naval Facilities Systems Engineering Command (NAVFAC), Mid-Atlantic, under Contract No. N40085-16-D-2288, Contract Task Order No. 0005. This Third Quarter 2020 Operations Report details routine and non-routine activities that occurred from July to September 2020. The semi-annual groundwater monitoring event, typically conducted in the month of September, was postponed until early October 2020 to avoid interfering with construction activities being performed within and adjacent to the GM-38 GWTP. The groundwater data from this semi-annual monitoring event are provided in this report. Data were 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* Tetra Tech EC, Inc. (TtEC), 2010, hereafter referred to as the "O&M Manual".
- *Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), UFP-SAP for Operations, Maintenance, and Monitoring of the Groundwater Treatment Plant, GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, New York,* TtEC, 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, New York.

The "hot spot" cleanup remedy for the GM-38 Area groundwater was originally set forth in Record of Decision (ROD) documents for Operable Unit (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 wells RW-1 and RW-3 (pumping at RW-3 was suspended from July 2015 to June 2018 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 State Pollution Discharge Elimination System (SPDES) Permit 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 (DCE), 1,2-dichloroethane (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 AS distribution port and sprayed over the column of Jaeger Tripack at a design 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 AS 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-pound (lb) vapor phase granular activated carbon (VGAC) units (VGAC-1 and VGAC-2). VC is oxidized into potassium chloride and carbon dioxide via treatment in a 20,000-lb vessel (VGAC-3) containing zeolite impregnated with potassium permanganate. 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 AS is subsequently processed through three 8,000-lb liquid phase granular activated carbon (LGAC) units in parallel prior to discharge in the recovery basin (or injection well, if necessary).

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

A 2014 evaluation of the GM-38 Area, conducted in order to better determine the capture zone of the recovery wells, recommended that use of recovery well RW-3 be discontinued ("*Capture Zone*

Evaluation and Path Forward, GM-38 Area Groundwater Treatment Plant" (Tetra Tech, Inc. [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. Pumping at RW-3 was once again resumed in June 2018 to address persisting VOC concentrations at this well. Pumping rates were adjusted so that approximately 80 percent (%) of the total groundwater extracted is from RW-1 with the remaining 20% extracted from RW-3.

2.0 GWTP OPERATIONS AND MAINTENANCE

While designed to run autonomously, 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 July, the operator backwashed LGAC-2 and LGAC-3.
- On 29 July, the operator backwashed LGAC-1 and LGAC-2.

2.2 Non-routine Maintenance / Site Activities

During routine maintenance tasks at GWTP, the operator observed that both LGAC backwashing and bag filter changes were required more frequently than usual to maintain the desired process flowrate. In addition, the backwash water from the LGACs in the plant sump was increasingly turbid. Following pumping of the water to the equalization (EQ) tank, a light gray coating was observed on the walls of the sump and on the sump pump and associated piping. In addition, the operation of the sump pump was compromised by the accumulation of solids from the backwash water. Collection and investigation of solids from the floor of the sump identified dark gray clay-sized material that dried and hardened to a light gray solid. Chemical analysis of the solid identified inorganics and elements typical of clay materials. This material was presumed to be accumulating with the LGAC vessels resulting in the increase in backwash frequency and damage to the sump pump. Discussions between Navy and the project team resulted in a phased approach to determine if one or both of the active recovery wells (RW-1 and RW-3) was the source of the solids observed in the plant influent as discussed below.

The following non-routine activities took place during the current reporting period:

- On 16 July, the operator installed a new sump pump. The pump was not operated to prevent damage; water in the sump was pumped to the EQ tank via a separate pump drawing water from the top of the water column to minimize the amount of suspended solids reintroduced to the treatment train.
- On 28 August, there was a power outage causing the plant to be offline for 9.5 hours.

- On 1 September, well RW-3 was taken offline and was temporarily diverted directly into a portable containment tank to observe if turbidity and/or solid materials collect in the tank. A total of approximately 20,000 gallons of water were collected in the tank. This volume of water was allowed to settle over several days, with turbidity readings recorded several times per day from a port located at the mid depth of the tank.

- On 4 September, this first tank volume was pumped to the GWTP for processing, and a second volume of approximately 20,000 gallons was pumped into the tank. This volume of water was also allowed to settle over several days, with turbidity measurements recorded several times per day.

- On 8 September, the second tank volume was pumped to the GWTP. The turbidity readings for both tank volumes were inconclusive with respect to measurable settling of suspended solids in the contained water, and no solids were present at the base of the tank following dewatering.

- During this period of time in which RW-3 was offline and RW-1 was the only source of influent to the GWTP, the previously observed increase in the frequency of the required bag filter changes continued at the GWTP.

- On 10 September, well RW-3 was operated at approximately 390 gpm for one hour, resulting in two bag filter changes attributable to significant iron-colored deposits that had accumulated in the well while inactive. RW-1 remained online during this temporary test of RW-3, but was not considered to be the source of the iron-colored materials.

- On 14 September, well RW-1 was taken offline and well RW-3 was restarted at a reduced rate of approximately 320 gpm, which also resulted in multiple bag filter changes over the next several days.

- On 18 September, the flow rate for RW-3 was reduced to approximately 210 gpm, at which point the bag filter change frequency resulting from the operation of RW-3 alone was substantially reduced. Following a bag filter change on the previous day (17 September), this set of bag filters remained in place throughout the remainder of the reporting period and into October 2020.

This sequence of events at RW-3 provided a first indication that RW-3 was not the source of the gray-colored clay-sized solids affecting the treatment train within the GM-38 GWTP.

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 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 the current NYSDEC effluent limitation, monitoring constituents, and the reporting forms are included in **Appendix A**.

Monthly aqueous samples are collected from the active recovery wells (RW-1 and RW-3), and the treated effluent (TE) discharge line. In addition, various intermediary process system samples are collected monthly, consisting of air stripper effluent (ASE), bag filter effluent (BFE), and effluent of each of the three LGAC units (LC1, LC2, and LC3).

The analytical results of monthly process water samples collected during the Third Quarter are presented in **Table 1**. The data demonstrate that all permitted constituents were in compliance with regulatory requirements. **Table 1** also summarizes the average monthly flowrates along with the total volume of water processed during each month of the Third Quarter. Monthly DMRs for the Third Quarter (July – September 2020) are included in **Appendix A**.

Based on NYSDEC's interest with several non-VOC parameters in groundwater near Bethpage Water District Plant 4, the Navy has agreed to sample and analyze groundwater for 1,4-dioxane, using United States Environmental Protection Agency (USEPA) Method 8270D, on a monthly basis from the GWTP effluent. Analytical results for 1,4-dioxane are provided in **Table 1**.

3.2 Air Quality Monitoring

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

While only sampling of the stack emissions is required for NYSDEC compliance, process vapor samples are also collected using 6-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 VC13) 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 regulatory requirements 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 14 monitoring wells, three recovery wells (RW-1, RW-2, RW-3), and one injection well (IW-1). Groundwater level measurements were collected 6 October 2020 and are summarized in **Table 4**. Although RW-2 was installed in 2005, a pump was never installed in this well and the well is not operated as a recovery well because of concerns expressed by the Bethpage Water District. As mentioned above, pumping at RW-3 was suspended between July 2015 and June 2018. RW-3 was reactivated on 1 June 2018 to address persistent VOC concentrations at this location. Well locations are depicted on **Figure 3**.

Depth to water (DTW) measurements are collected from 12 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 timeframes. The semi-annual sampling event described in this report was conducted in October 2020 to avoid interfering with construction activities within the GWTP area. 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.

Descriptions of monitoring well locations are as follows:

Recovery Well (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 sampled 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 sampled 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 associated with the influence from the pumping rates at the neighboring public water supply well field near the hot spot area and is also sampled for water quality.

Injection Well (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

Semi-annual groundwater samples in the Third Quarter were collected on 5-6 October 2020. Field parameters measured during well purging, which consisted of pH, specific conductance (SC), temperature, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity are summarized in **Table 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 laboratory accredited in accordance with National Environmental Laboratory Accreditation Conference (NELAC) requirements and the Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP). The samples were sent to 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**. Raw analytical data are provided under separate cover.

3.3.2 Quality Assurance/Quality Control Sampling

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

VOC analytes were not detected in the TB, EB, or laboratory method blank; no qualification was required. Neither Mercury or TSS were detected in either the EB or the laboratory method blank; no qualifications were required.

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 their duplicates verifies that proper sample collection methods were followed.

The MS/MSD recoveries for all of the samples for the analysis of VOCs, metals, and TSS were within the laboratory control limits and no qualification were required.

3.3.3 Groundwater Concentration Trends

Groundwater analytical results of select VOCs (cis-1,2-DCE, PCE, TCE, and VC) for the monitoring and recovery wells during the semi-annual groundwater monitoring event are presented graphically on **Figure 4**. Historical groundwater analytical results through the Third Quarter 2020 are presented in **Table 7**. Additionally, concentration trends of select VOCs for recovery well RW-1 (cis-1,2-DCE, PCE, TCE, and VC), recovery well RW-3 (cis-1,2-DCE, PCE, and TCE), and the eight monitoring wells (cis-1,2-DCE, PCE, and TCE) sampled during the semi-annual event are presented on **Figures 5 through 14** and discussed below.

Figure 5 presents concentrations measured at recovery well RW-1. TCE concentrations have decreased from initial concentrations in early 2010 [747 micrograms per liter (µg/L) measured in April 2010], remaining below 300 µg/L since the latter half of 2012, decreasing to a minimum concentration of 58.6 µg/L in November 2019 before increasing slightly to 66.2 µg/L in June 2020, then decreasing again to 58.5 µg/L in September 2020. Concentrations of cis-1,2-DCE have followed a similar trend, decreasing from a maximum of 160 µg/L in February 2010 to a minimum of 3.23 µg/L in August 2020 and have remained below 5.0 µg/L since February 2019. PCE concentrations have also exhibited decreasing trends over time, with concentrations decreasing from 180 µg/L in February 2010 to a minimum of 15.2 µg/L in November 2019. PCE concentrations increased slightly ranging from 16.1 µg/L to 17.7 µg/L in the Third Quarter 2020. 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 6a and Figure 6b presents concentrations measured at recovery well RW-3. TCE concentrations at this location have decreased from initial concentrations in February 2010 (660 µg/L), remaining below 300 µg/L from the latter half of 2012 through the Third Quarter 2015. RW-3 was temporarily taken off-line between July 2015 and June 2018, which may have contributed to the increase to 371 µg/L in March 2016. However, since March 2016, TCE concentrations decreased from 371 µg/L to a minimum of 120 µg/L in March 2018. The TCE concentrations for the Third Quarter 2020 (122 µg/L to 131 µg/L) decreased relative to those measured in the Second Quarter. Concentrations of cis-1,2-DCE have remained consistently below 4.0 µg/L, and below 2.0 µg/L since June 2018. Cis-1,2-DCE was measured

at between 1.38 J µg/L and 1.64 J µg/L during the Third Quarter 2020. PCE has only been detected infrequently at this location, with the most recent detection of 0.224 J µg/L in September 2020. VC has not been detected during any sampling event.

Figure 7 presents concentrations measured at RW1-MW1. TCE concentrations have varied widely since the initial sampling in May 2005 (53.6 µg/L). The concentration of TCE in October 2020 (86.8 µg/L) was higher than the concentration reported in May 2005, but less than the maximum concentration observed in September 2013 (175 µg/L). The concentration of cis-1,2-DCE in October 2020 (4.33 J µg/L) increased slightly from the concentration observed in March 2020 (3.86 J µg/L) but remains well below the initial concentration observed in May 2005 (78.6 µg/L). PCE concentrations have remained consistently below 1.0 µg/L.

Figure 8 presents concentrations measured at RW1-MW3. TCE concentrations have consistently remained below 5.0 µg/L since January 2010. Concentrations of cis-1,2-DCE and PCE have consistently remained below 1.0 µg/L since January 2010.

Figure 9 presents concentrations measured at RW2-MW1. TCE concentrations have varied since the initial sampling in May 2005 (37.6 µg/L). The concentration of TCE in October 2020 (2.82 J µg/L) was below the initial concentration and the maximum concentration observed in March 2016 (43.9 µg/L). The concentration of cis-1,2-DCE measured in October 2020 (4.01 J µg/L) was above initial concentrations observed in May 2005 (non-detect) but below the maximum concentration observed in the March 2016 (15.3 µg/L). PCE has not been detected during any sampling events.

Figure 10 presents concentrations measured at RW3-MW1. TCE concentrations have decreased since reaching a maximum in November 2010 (77.6 µg/L). The TCE concentration in October 2020 (23.1 µg/L) was also below the initial concentration observed in January 2010 (35.0 µg/L). Cis-1,2-DCE has not been detected since September 2014. PCE concentrations have remained consistently near or below 2.0 µg/L since May 2005, with a concentration of 2.50 J µg/L measured in October 2020, equal to the previous maximum in March 2016.

Figure 11 presents concentrations measured at RW3-MW2. TCE concentrations have remained consistent since June 2012 ranging from 118 µg/L to 209 µg/L. The TCE concentration observed in October 2020 (119 µg/L) was below the initial concentration observed in January 2010 (160 µg/L) and below the maximum concentration observed in April 2010 (211 µg/L). Concentrations of cis-1,2-DCE at this location have consistently remained below 2.0 µg/L. PCE has only been detected infrequently at this location, with concentrations ranging from 0.28 J µg/L in August 2012 to 0.66 J µg/L in March 2016.

Figure 12 presents concentrations measured at RW3-MW3. TCE concentrations have decreased since the maximum concentration was observed in June 2013 (410 µg/L). The TCE concentration observed in October 2020 (180 µg/L) was well below both the initial concentration observed in January 2010 (350 µg/L) and the maximum concentration measured in June 2013. Concentrations of cis-1,2-DCE have remained near or below 2.0 µg/L since March 2012. PCE has remained below 1.0 µg/L for all events.

Figure 13 presents concentrations measured at RW3-MW4. TCE concentrations have decreased since the initial sampling event in January 2010 (21 µg/L), with a concentration of 3.02 J µg/L in October 2020. PCE was detected for the first time in September 2015 at a concentration of 0.31 J µg/L but has not been detected since the March 2016 sampling event. Cis-1,2-DCE has been detected infrequently since the initial sampling event in January 2010 (0.46 µg/L), and was last detected in March 2020 at a concentration of 0.465 J µg/L.

Figure 14 presents concentrations measured at TP-01. TCE concentrations have steadily decreased since the initial sampling event in January 2010. The TCE concentration observed in October 2020 (11.1 µg/L) represents the minimum value reported to date and was well below initial and maximum concentration observed in January 2010 (65 µg/L). Concentrations of cis-1,2-DCE have generally decreased from an initial value of 190 µg/L in January 2010 to the current concentration measured in October 2020 (3.14 J µg/L). PCE has remained below 1.0 µg/L since September 2013 and has not been detected since March 2017.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The intent of the groundwater treatment system at GM-38 is to remove contaminant 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, progress toward these goals is apparent. Based on the concentrations in the groundwater wells, the GWTP should continue to be operated. In accordance with the O&M Manual, the groundwater sampling frequency for the eight monitoring wells has been reduced to semi-annually. Water levels for the 14 monitoring wells will continue to be monitored on a quarterly basis.

5.0 REFERENCES

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

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

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

TABLES

Table 1
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Results
Third Quarter 2020

SPDES Parameters	Daily Maximum Goal	Units	July 2020									
Process Stream			RW-1	RW-3	Combined Influent	Treated Effluent	Treated Effluent DUPLICATE	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)
Well Depth		ft	445	530	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Screened Interval		ft	335-395 410-430	392-412 442-504	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sampling Date			7/1/20									
Average Flowrate	1100	GPM	838	217	1,055	1,075	NR	NR	1,048	NR	NR	NR
Total Flow	NA	gallons	37,430,000	9,668,800	47,098,800	47,969,300	NR	NR	46,784,800	NR	NR	NR
pH	5.5 - 8.5	SU	5.23	5.51	5.29	6.71	6.73	6.64	6.67	6.69	6.69	6.70
Chloroform	5	µg/L	0.330 J	0.376 J	0.34 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.35 J	2.59 J	1.60 J	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)	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)
1,1-Dichloroethene	5	µg/L	0.795 J	1.10 J	0.858 J	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	4.41 J	1.62 J	3.84 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
trans 1,2-Dichloroethene	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)
Tetrachloroethene	5	µg/L	16.1	0.235 J	12.84	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.506 J	0.615 J	0.528 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	56.8	122	70.2	0.436 J	0.414 J	0.790 J	0.868 J	0.294 J	0.509 J	0.348 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	0.583 J	0.12 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	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)
1,4-Dioxane	--	µg/L	5.8	5.9	5.8	NS	NS	NS	NS	NS	NS	NS
Mercury	0.00025	mg/L	ND (0.00010)	ND (0.00010)	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)	1.9	0.4	ND (1.0)	ND (1.0)	ND (1.0)	6.6	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 2020

SPDES Parameters	Daily Maximum Goal	Units	August 2020									
Process Stream			RW-1	RW-3	Combined Influent	Treated Effluent	Treated Effluent DUPLICATE	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)
Well Depth		ft	445	530	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Screened Interval		ft	335-395 410-430	392-412 442-504	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sampling Date			8/3/20									
Average Flowrate	1100	GPM	799	213	1,012	1,052	NR	NR	1,005	NR	NR	NR
Total Flow	NA	gallons	35,669,600	9,517,600	45,187,200	46,974,700	NR	NR	44,882,900	NR	NR	NR
pH	5.5 - 8.5	SU	4.91	5.41	5.02	6.70	6.71	6.68	6.69	6.69	6.70	6.71
Chloroform	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)
1,1-Dichloroethane	5	µg/L	0.905 J	1.85 J	1.10 J	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)	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)
1,1-Dichloroethene	5	µg/L	0.620 J	1.230 J	0.748 J	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	3.23 J	1.38 J	2.84 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
trans 1,2-Dichloroethene	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)
Tetrachloroethene	5	µg/L	16.7	ND (1.0)	13.18	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.375 J	0.498 J	0.401 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	60.1	131	75.0	0.470 J	0.417 J	0.925 J	0.889 J	0.325 J	0.549 J	0.437 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	0.501 J	0.11 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	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)
1,4-Dioxane	--	µg/L	2.2	5.9	3.0	NS	NS	NS	NS	NS	NS	NS
Mercury	0.00025	mg/L	ND (0.00010)	ND (0.00010)	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)	3.1	0.7	ND (1.0)	ND (1.0)	4.6	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 2020

SPDES Parameters	Daily Maximum Goal	Units	September 2020									
Process Stream			RW-1	RW-3	Combined Influent	Treated Effluent	Treated Effluent DUPLICATE	Air Stripper Effluent (ASE)	Bag Filter Effluent (BFE)	Liquid Carbon 1 Effluent (LC1)	Liquid Carbon 2 Effluent (LC2)	Liquid Carbon 3 Effluent (LC3)
Well Depth		ft	445	530	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Screened Interval		ft	335-395 410-430	392-412 442-504	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sampling Date			9/1/20									
Average Flowrate	1100	GPM	297	135	431	540	NR	NR	538	NR	NR	NR
Total Flow	NA	gallons	12,740,400	5,778,300	18,518,700	23,198,000	NR	NR	23,098,100	NR	NR	NR
pH	5.5 - 8.5	SU	5.69	5.29	5.57	6.80	6.81	6.77	6.79	6.79	6.80	6.80
Chloroform	5	µg/L	0.309 J	0.367 J	0.327 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.12 J	2.34 J	1.50 J	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	0.202 J	ND (1.0)	0.14 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	0.855 J	1.24 J	0.975 J	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	3.80 J	1.64 J	3.13 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
trans 1,2-Dichloroethene	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)
Tetrachloroethene	5	µg/L	17.7	0.224 J	12.18	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.505 J	0.607 J	0.537 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	58.5	129	80.5	0.432 J	0.485 J	0.860 J	0.863 J	0.421 J	0.532 J	0.379 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	0.575 J	0.18 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	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)
1,4-Dioxane	--	µg/L	2.2	5.8	1.81	NS	NS	NS	NS	NS	NS	NS
Mercury	0.00025	mg/L	ND (0.00010)	ND (0.00010)	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)	4.9	1.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

Notes:
J - Estimated result between laboratory method detection limit and reporting limit
NA - Not Applicable
ND - Not detected above laboratory method detection limit. Limit of detection (LOD) given in parentheses.
NR - Not Recorded
gpm - gallons per minute

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

Table 2
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
Third Quarter 2020

DAR Parameters	Discharge Goal [3]	Units	July 2020				
Process Stream			Influent (VCI1)	Effluent	Effluent Duplicate	VC12	VC23
Sampling Date			7/1/20				
Average Flowrate		CFM	NR	8,894	NR	NR	NR
Total Flow [1]		ft^3	NR	395,154,073	NR	NR	NR
Total Flow [2]		m^3	NR	11,189,517	NR	NR	NR
1,2-Dichloroethane	NA	$\mu g/m^3$	2.9 J	ND	ND	ND	ND
cis 1,2-Dichloroethene	≤ 100,000 [4]	$\mu g/m^3$	61	ND	ND	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	1.1 J	ND	ND	ND	ND
1,2-Dichloroethene (total)	≤ 100,000	$\mu g/m^3$	62	ND	ND	ND	ND
Toluene	N/A	$\mu g/m^3$	0.92 J	ND	ND	ND	0.79 J
Total Xylene	N/A	$\mu g/m^3$	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	N/A	$\mu g/m^3$	1.8 J	ND	ND	ND	ND
Trichloroethene	≤ 2600	$\mu g/m^3$	1300	1.1 J	0.58 J	71	0.88 J
Vinyl Chloride	≤ 560	$\mu g/m^3$	0.87	0.42 J	0.60 J	0.69 J	0.59 J
Tetrachloroethene	≤ 5100	$\mu g/m^3$	220	0.87 J	ND	1.3 J	ND

Notes:
NA - Not applicable
ND - Not detected
NR - Not recorded
NS - Not sampled
SGC - Short-term Guideline Concentration
$\mu g/m^3$ - micrograms per cubic meter
CFM - cubic feet per minute
DAR - Division of Air Rescources
(1) Total Flow (ft^3) = avg flowrate (cfm) * operational time (min)
(2) Total Flow (m^3) = total flow (ft^3) * (0.3048^3)m^3/ft^3
(3) Disharge goal approved by NYSDEC's letter dated 10/31/2013.
(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 2020

DAR Parameters	Discharge Goal [3]	Units	August 2020				
Process Stream			Influent (VCI1)	Effluent	Effluent Duplicate	VC12	VC23
Sampling Date			8/3/20				
Average Flowrate		CFM	NR	8,794	NR	NR	NR
Total Flow [1]		ft^3	NR	387,564,171	NR	NR	NR
Total Flow [2]		m^3	NR	10,974,595	NR	NR	NR
1,2-Dichloroethane	NA	$\mu g/m^3$	2.9 J	ND	ND	ND	ND
cis 1,2-Dichloroethene	≤ 100,000 [4]	$\mu g/m^3$	49	ND	ND	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	1.6 J	ND	ND	ND	ND
1,2-Dichloroethene (total)	≤ 100,000	$\mu g/m^3$	51	ND	ND	ND	ND
Toluene	N/A	$\mu g/m^3$	2.0 J	0.77 J	0.87 J	0.97 J	0.80 J
Total Xylene	N/A	$\mu g/m^3$	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	N/A	$\mu g/m^3$	2.8 J	ND	ND	ND	ND
Trichloroethene	≤ 2600	$\mu g/m^3$	1200	ND	ND	25	1.1 J
Vinyl Chloride	≤ 560	$\mu g/m^3$	1.9 J	2.1 J	2.1	2.0 J	2.5
Tetrachloroethene	≤ 5100	$\mu g/m^3$	220	ND	ND	4.1 J	ND

Notes:
NA - Not applicable
ND - Not detected
NR - Not recorded
NS - Not sampled
SGC - Short-term Guideline Concentration
$\mu g/m^3$ - micrograms per cubic meter
CFM - cubic feet per minute
DAR - Division of Air Rescources
(1) Total Flow (ft^3) = avg flowrate (cfm) * operational time (min)
(2) Total Flow (m^3) = total flow (ft^3) * (0.3048^3)m^3/ft^3
(3) Disharge goal approved by NYSDEC's letter dated 10/31/2013.
(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 2020

DAR Parameters	Discharge Goal [3]	Units	September 2020				
Process Stream			Influent (VCI1)	Effluent	Effluent Duplicate	VC12	VC23
Sampling Date			9/1/20				
Average Flowrate		CFM	NR	8,672			
Total Flow [1]		ft^3	NR	372,274,650	NR	NR	NR
Total Flow [2]		m^3	NR	10,541,644	NR	NR	NR
1,2-Dichloroethane	NA	$\mu g/m^3$	2.1 J	ND	ND	ND	ND
cis 1,2-Dichloroethene	≤ 100,000 [4]	$\mu g/m^3$	49	ND	ND	ND	ND
trans 1,2-Dichloroethene		$\mu g/m^3$	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	≤ 100,000	$\mu g/m^3$	49	ND	ND	ND	ND
Toluene	N/A	$\mu g/m^3$	ND	ND	ND	ND	ND
Total Xylene	N/A	$\mu g/m^3$	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	N/A	$\mu g/m^3$	1.5 J	ND	ND	ND	ND
Trichloroethene	≤ 2600	$\mu g/m^3$	1200	ND	ND	13	ND
Vinyl Chloride	≤ 560	$\mu g/m^3$	ND	ND	ND	ND	ND
Tetrachloroethene	≤ 5100	$\mu g/m^3$	210	ND	ND	7.5	ND

Notes:
NA - Not applicable
ND - Not detected
NR - Not recorded
NS - Not sampled
SGC - Short-term Guideline Concentration
$\mu g/m^3$ - micrograms per cubic meter
CFM - cubic feet per minute
DAR - Division of Air Rescources
(1) Total Flow (ft^3) = avg flowrate (cfm) * operational time (min)
(2) Total Flow (m^3) = total flow (ft^3) * (0.3048^3)m^3/ft^3
(3) Disharge goal approved by NYSDEC's letter dated 10/31/2013.
(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 2020

DAR Parameters	Discharge Goal (1)	Units	July 2020	August 2020	September 2020
Sampling Date			7/1/20	8/3/20	9/1/20
Average Flowrate	N/A	CFM	8,894	8,794	8,672
Total Flow	N/A	ft^3	395,154,073	387,564,171	372,274,650
Total Flow	N/A	m^3	11,189,517	10,974,595	10,541,644
Trichloroethene	≤ 0.09	lb/hr	0.00004	0.00000	0.00000
Vinyl Chloride	≤ 0.02	lb/hr	0.00001	0.00007	0.00000
1,2 Dichloroethene	≤ 11	lb/hr	0.00000	0.00000	0.00000
1,2-Dichloroethane	N/A	lb/hr	0.00000	0.00000	0.00000
Toluene	N/A	lb/hr	0.00000	0.00003	0.00000
Total Xylene	N/A	lb/hr	0.00000	0.00000	0.00000
1,1,2-Trichloroethane	N/A	lb/hr	0.00000	0.00000	0.00000
Tetrachloroethene	≤ 0.18	lb/hr	0.00003	0.00000	0.00000

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

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

Table 4
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Level Measurements
Third Quarter 2020

Monitoring Well ID	Date	Well Elevation (ft amsl)	Total Depth (ft)	Screen Interval (ft)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
RW1-MW1	10/6/2020	85.86	435	395-435	34.13	51.73
RW1-MW2	10/6/2020	87.35	435	395-435	35.75	51.60
RW1-MW3	10/6/2020	80.34	435	395-435	27.90	52.44
RW2-MW1	10/6/2020	90.75	510	470-510	38.21	52.54
RW2-MW2	10/6/2020	90.15	510	470-510	38.35	51.80
RW2-MW3	10/6/2020	89.75	510	470-510	37.85	51.90
RW3-MW1	10/6/2020	92.22	350	330-350	37.60	54.62
RW3-MW2	10/6/2020	91.98	495	475-495	39.10	52.88
RW3-MW3	10/6/2020	92.98	340	320-340	38.08	54.90
RW3-MW4	10/6/2020	92.92	495	475-495	39.76	53.16
TP-01	10/6/2020	85.91	470	450-470	33.10	52.81
IW1-MW1	10/6/2020	89.41	150	20-150	35.23	54.18
RW-1	NA	91.37	340	320-340	NA	NA
RW-3	NA	91.57	495	475-495	NA	NA

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

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 2020

Location	Temp (ºC)	pH (SU)	S.C. (uS/cm^3)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color (Visual)
RW1-MW1	15.33	4.39	158	1.04	358.00	4.69	Clear
RW1-MW3	15.99	4.53	182	1.14	347.60	10.90	Clear
RW2-MW1	14.94	8.42	149	0.15	-113.00	130.00	Clear/Gray Tint
RW3-MW1	15.26	4.41	155	4.16	371.10	4.30	Clear
RW3-MW2	20.76	4.49	96	0.79	362.10	1.78	Clear
RW3-MW3	15.31	4.94	129	0.92	304.20	38.30	Clear
RW3-MW4	15.42	4.44	129	1.23	792.10	3.50	Clear
TP-01	14.05	6.15	262	8.36	172.50	2.14	Clear

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

Table 6
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Detected Groundwater Analytical Results
Third Quarter 2020

Sample ID	RW1-MW1	RW1-MW3	RW2-MW1	RW3-MW1	RW3-MW2	RW3-MW3	RW3-MW3	RW3-MW4	TP-01	RW-1	RW-3
Sample Date	**10/6/2020**	**10/6/2020**	**10/6/2020**	**10/6/2020**	**10/6/2020**	**10/6/2020**	**10/6/2020**	**10/5/2020**	**10/6/2020**	**9/1/2020**	**9/1/2020**
Comments							**Duplicate**				
VOCS (EPA 624) ug/L [(1)]											
Chloroform	0.454 J	0.623 J	ND	ND	ND	0.328 J	0.342 J	ND	0.292 J	0.309 J	0.367 J
1,1-dichloroethane	5.54	4.00 J	2.38 J	ND	0.287 J	1.78 J	1.90 J	1.50 J	0.363 J	1.12 J	2.34 J
1,2-dichloroethane	ND	ND	0.393 J	ND	ND	ND	ND	ND	ND	0.202 J	ND
1,1-dichloroethene	1.81 J	1.22 J	0.532 J	ND	ND	1.38 J	1.39 J	0.409 J	ND	0.855 J	1.24 J
1,4-Dioxane	NS	NS	NS	NS	NS	NS	NS	NS	NS	2.2	5.8
cis-1,2-dichloroethene	4.33 J	0.275 J	4.01 J	ND	0.809 J	0.803 J	0.840 J	ND	3.14 J	3.80 J	1.64 J
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.395 J	0.324 J	ND	2.50 J	0.317 J	0.533 J	0.545 J	ND	ND	17.7	0.224 J
1,1,1-trichloroethane	0.819 J	0.817 J	ND	ND	ND	0.402 J	0.384 J	ND	ND	0.505 J	0.607 J
1,1,2-trichloroethane	ND	0.346 J	ND	ND	ND	ND	ND	ND	ND	ND	0.575 J
Trichloroethene	86.8	3.13 J	2.82 J	23.1	119	180	180	3.02 J	11.1	58.5	129
Mercury (EPA 245.1) ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	3.7	2.3	116	1.1	ND	6.5	5.9	2.2	1.0	ND	4.9

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

(1) Samples were analyzed for TCL VOCs (including tentatively identified compounds [TICs]). Only those VOCs detected are presented above.

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

Sample ID	RW1-MW1																																		
Sample Date	**5/4/2005**	**7/22/2005**	**5/27/2009**	**1/21/2010**	**4/21/2010**	**7/28/2010**	**11/10/2010**	**3/25/2011**	**6/14/2011[1]**	**6/14/2011 Duplicate**	**9/28/2011**	**11/30/2011**	**3/8/2012**	**6/6/2012**	**6/6/2012 Duplicate**	**8/21/2012**	**12/4/2012**	**3/13/2013**	**6/19/2013[2]**	**9/17/2013**	**12/16/2013**	**3/24/2014**	**3/24/2014 Duplicate**	**9/22/2014**	**3/25/2015**	**9/15/2015**	**3/22/2016**	**9/14/2016**	**3/1/2017**	**9/12/2017**	**3/5/2018**	**9/11/2018**	**3/7/2019**	**9/26/2019**	**3/11/2020**	**10/6/2020**
Comments																																			
Well Depth (Ft)	**435**																																		
Screened Interval (Ft)	**395-435**																																		
VOCS (EPA 624) ug/L [4]																																			
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	0.32J	ND	ND	ND	0.17J	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	2.0 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Chloroform	ND	0.7J	1.1	ND	0.70J	0.65J	0.56J	0.55J	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	0.39 J	ND	ND	0.48 J	0.48 J	0.50 J	0.58 J	0.55 J	0.500 J	0.573 J	ND	0.476 J	0.454 J
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.74J	0.79J	3.3	2.9J	2.8	2.8	3.0	3.6	1.6 J	4.2 J	4.0 J	4.1	5.2	4.8	4.3	5.3	4.9	5.3	4.8 J	4.7 J	5.2	5.3	5.3	4.1 J	5.1	5.1	6.5	7.0	6.6	7.7	7.5	7.67	7.89	6.30	6.26	5.54
1,2-dichloroethane	ND	ND	0.29J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.26 J	0.220 J	ND	0.227 J	ND	ND
1,1-dichloroethene	1.3	2.8	3.1	1.7J	1.9	1.7	1.7	1.9	0.85 J	2.1 J	2.3 J	2.1	2.7	2.5	2.3	2.8	2.0	2.8	ND	2.5	2.6	2.8	2.7	2.2 J	2.2 J	1.9	2.2	1.8	1.6	2.1	2.4	2.16	2.19 J	1.79 J	1.76 J	1.81 J
cis-1,2-dichloroethene	78.6	80.4	180D	130	121	118	108	121	55.8 J	145 J	164	132	179	165	145	167	108	91.7	64	86.2 J	84.4	92.6 J	94.2	49.8	39.5	22.0	20.0	16	11	9.8	7.1	3.00	3.86 J	4.70 J	3.86 J	4.33 J
trans-1,2-dichloroethene	2.0	1.3J	2.8	4J	2.9	2.1	1.3	4.2	0.71 J	2.0 J	2.0 J	1.7	3.0	3.7	2.6	2.4	1.8	1.7	ND	ND	1.4	1.4	1.4	1.0	0.79 J	0.50 J	0.51 J	0.42 J	0.26 J	0.35 J	0.20 J	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	1.75J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	0.72J	ND	0.42J	ND	ND	ND	ND	ND	0.36 J	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.67 J	0.33 J	0.37 J	0.76 J	0.30 J	0.62 J	0.67 J	0.45 J	0.46 J	0.59 J	0.50 J	0.300 J	0.323 BJ	0.401 J	0.308 J	0.395 J
Toluene	ND	0.33J	0.68	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	0.71J	ND	0.52J	0.43J	0.53J	0.79J	ND	0.63 J	1.1 J	0.66 J	0.96 J	0.98 J	0.89 J	0.99 J	0.88 J	1.1	ND	1.2	1.5	ND	ND	ND	ND	ND	ND	1.0	0.94 J	1	1.2	0.920 J	1.16 J	0.988 J	0.841 J	0.819 J
1,1,2-trichloroethane	ND	ND	0.58J	NR	ND	ND	ND	ND	NR	NR	ND	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	53.6	52.7	140.0	79.0	116	95.4	84.2	97.6	26.6 J	73.8 J	129	84.5	115	107	102	126	85	101	78	175	128	101	103	94.3	99.5	98.9	114	110	86	110	170	118	110	95.4	74.1	86.8
Vinyl chloride	ND	ND	1.6	ND	ND	ND	0.17J	ND	ND	0.38 J	0.29 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	ND	0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	2.8	2.8	6.0	4.0	4.0	4.0	ND	6	ND	11	16	9	5	6	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

Sample ID	RW1-MW2				RW1-MW3																															
Sample Date	5/4/2005	7/22/2005	5/28/2009	6/18/2013[2]	1/20/2010	4/21/2010	7/29/2010	11/10/2010	3/25/2011	6/14/2011	9/28/2011	11/30/2011	3/8/2012	6/7/2012	8/22/2012	12/7/2012	3/14/2013	6/19/2013[2]	9/17/2013	12/17/2013	3/25/2014	9/23/2014	3/25/2015	9/14/2015	3/21/2016	9/14/2016	3/1/2017	9/13/2017	3/5/2018	9/12/2018	3/7/2019	9/26/2019	3/12/2020	10/6/2020
Comments																																				
Well Depth (Ft)	435				435																															
Screened Interval (Ft)	395-435				395-435																															
VOCS (EPA 624) ug/L [4]																																				
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.41 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR
Chloroform	ND	1.4	ND	ND	0.67J	0.80J	0.47J	0.69J	0.73J	NR	0.97 J	ND	0.73 J	0.64 J	ND	1.2 J	ND	0.82	ND	ND	0.74 J	0.67 J	0.79 J	ND	0.79 J	0.80 J	0.61 J	0.69 J	0.67 J	0.720 J	0.725 J	ND	0.631 J	0.623 J
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	ND	ND	ND	D	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	4.6	5.5	3.4	3.9	2.4	4.6	1.5	2.3	2.4	9.3	10.1 J	2.1	8.4	5.7	9.4	9.3	8.5	10	9.7 J	8.1	8.6	6.1 J	8.1	7.7	7.4	7.0	4.5	4.4	4.1	3.47	4.14 J	2.86 J	4.03 J	4.00 J
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	3.2	12.3	ND	ND	0.42J	1.10	ND	0.28J	ND	1.8	2.2 J	ND	1.8	0.86 J	2.4	2.2	1.7	1.8	1.6	1.9	2.1	1.6 J	2.3 J	2.3	2.5	1.7	1.1	1.2	0.97 J	0.950 J	1.08 J	0.888 J	1.1 J	1.22 J
cis-1,2-dichloroethene	181.0	47.6	160.0	120	0.54J	0.48J	0.36J	0.55J	0.58J	0.59 J	0.43 J	0.55 J	0.68 J	0.33 J	0.56 J	0.46 J	0.53 J	0.46 J	0.72 J	0.60 J	0.57 J	0.44 J	0.54 J	0.49 J	0.58 J	0.44 J	0.29 J	0.37 J	0.36 J	0.310 J	0.398 J	0.363 J	0.39 J	0.275 J
trans-1,2-dichloroethene	2.5	7.6	2.5	1.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	4.01	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	1.0	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-pentanone	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	ND	0.20 J	ND	ND	ND	ND	ND	ND	0.25 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	134.0	19.0	5.9	ND	049J	ND	ND	ND	0.33 J	0.62 J	ND	0.65 J	0.30 J	0.97 J	0.40 J	ND	ND	ND	ND	ND	ND	ND	0.50 J	ND	0.35 J	ND	0.22 J	0.23 J	0.290 J	ND	0.397 J	0.295 J	0.324 J	ND	ND
Toluene	0.32J	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	1.3	1.0	ND	ND	0.41J	0.98J	ND	0.26J	0.33J	1.6	2.7 J	ND	ND	1.1 J	1.9	1.7	1.4	1.8	1.5	2.0	1.7	1.2 J	1.5	1.6	2.1	1.6	1	1.1	0.87 J	0.810 J	1.27 J	0.711 J	0.754 J	0.817 J	ND
1,1,2-trichloroethane	ND	0.65J	ND	ND	0.62J	0.60J	0.36J	0.55J	0.41J	NR	0.57 J	0.63 J	0.70 J	0.61 J	0.56 J	0.54 J	0.61 J	0.46 J	ND	0.55 J	0.46 J	0.46 J	0.43 J	0.44 J	0.47 J	0.41 J	0.51 J	0.35 J	0.37 J	0.400 J	0.296 J	0.284 J	0.312 J	0.346 J	ND
Trichloroethene	158.0	198.0	200.0	64	1.2	1.6	0.58J	0.91J	1.0	1.4	1.8 J	1.0 J	2.2	1.3	2.3	1.6	1.9	1.7	2.5	3.2	2.5	1.9	2.0	2.4	4.5	3.5	2.3	2.8	2.2	2.24	4.49 J	3.34 J	3.21 J	3.13 J	ND	ND
Vinyl chloride	12.9	187.0	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.20	NR	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	4.0	NR	NR	8.0	<4.0	<4.0	<4.0	ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	ND	ND	1.8	2.1	5.6	7.1	2.7	8.6	2.2	ND	2.3	

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

Sample ID	RW2-MW1																																		
Sample Date	**5/4/2005**	**7/20/2005**	**5/27/2009**	**1/18/2010**	**4/21/2010**	**7/28/2010**	**11/3/2010**	**3/24/2011**	**6/14/2011**	**9/27/2011**	**11/29/2011**	**3/7/2012**	**6/6/2012**	**8/21/2012**	**12/7/2012**	**3/13/2013**	**6/17/2013[2]**	**9/17/2013**	**12/17/2013**	**12/17/2013**	**3/25/2014**	**9/23/2014**	**3/26/2015**	**9/14/2015**	**3/21/2016**	**3/21/2016**	**9/15/2016**	**3/1/2017**	**9/13/2017**	**3/5/2018**	**9/11/2018**	**3/7/2019**	**9/25/2019**	**3/12/2020**	**10/6/2020**
Comments																				**Duplicate**						**Duplicate**									
Well Depth (Ft)	**510**																																		
Screened Interval (Ft)	**470-510**																																		
VOCS (EPA 624) ug/L [1]																																			
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	0.15J	0.69J	0.58J	0.30J	NR	0.22 J	0.27 J	0.22 J	ND	ND	0.68 J	0.54 J	ND	0.59 J	ND	ND	0.21 J	0.21 J	0.56 J	ND	ND	0.18 J	ND	0.51 J	ND	ND	0.250 J	ND	ND	0.233 J	0.208 J
Bromodichloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.0 J	1.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	2.0 R	2.0 R	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	NR	NR	NR
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.38 J	ND	ND	ND	2.9	ND	ND	ND	2.8 J	1.5	0.46 J	2.2	3.4	3.5	2.4	0.25 J	2	1.0	0.550 J	2.03 J	ND	ND	ND
Chloromethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.53J	0.93J	1.2J	0.82J	0.60J	0.58J	0.42J	ND	0.61 J	0.64 J	ND	0.50 J	4.2	4.8	0.58 J	0.52 J	7.0	ND	5.8	6.4	5.1	ND	2.1	6.3	8.7	8.5	6.4	1.7	6.6	6.5	2.75	7.81	6.03	2.18 J	2.38
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	1.9 J	1.7 J	1.3	0.69 J	0.41 J	1.4	1.4	1.3	0.93 J	ND	0.71 J	0.39 J	0.330 J	0.552 J	0.627 J	0.26 J	0.393 J
1,1-dichloroethene	ND	0.58J	0.55J	0.63J	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	0.95 J	0.19 J	ND	1.9	ND	2.6	2.6	1.8	1.3 J	0.61 J	2.6	3.7	3.4	1.6	0.27 J	1.3	1.5	0.470 J	1.67 J	1.87 J	0.269 J	0.532 J
cis-1,2-dichloroethene	ND	0.55J	1.9	1.0	0.78J	0.80J	0.55J	0.43J	0.56 J	0.32 J	0.39 J	0.34 J	0.32 J	0.39 J	0.33 J	0.29 J	7.7	0.77 J	11.0 J	11.1 J	8.0	4.0	2.6	13.3	15.3	15.0	6.1	1.3	2.6	1.2	1.09	2.42 J	7.18	1.66 J	4.01 J
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	5.34	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-pentanone	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	0.85J	1.0	ND	0.52J	0.49J	0.50J	ND	NR	0.24 J	0.29 J	0.19 J	ND	ND	0.27 J	ND	ND	0.31 J	ND	ND	ND	ND	0.26 J	ND	0.20 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	0.37J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND	0.84	ND	0.94 J	0.94 J	ND	0.39 J	ND	ND	ND	ND	0.56 J	ND	0.49 J	0.43 J	ND	0.761 J	0.712 J	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	37.6	34.6	12.0	15.0	0.42J	ND	ND	1.7	1.6	0.89 J	0.67 J	0.67 J	9.0	20.8	0.73 J	0.67 J	14	1.5	34.6	33.5	23.4	18.3	4.3	27.5	43.9	44.2	18	2.1	8.6	7.1	2.61	9.65	15.7	1.49 J	2.82 J
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	1.4J	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	0.05J	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	2260.0	NR	58.0	<4.0	<4.0	<4.0	181	5	36	6	25	12	10	ND	13	12	30	24	12	6	17	11	24	26	3.8	13.8	8.7	12.1	7.6	24.2	14	36.2	116

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

Sample ID	RW2-MW3				RW3-MW1																																			
Sample Date	5/3/2005	7/20/2005	5/28/2009	6/18/2013[2]	1/19/2010	4/22/2010	7/29/2010	11/9/2010	3/25/2011	3/25/2011	6/14/2011	9/27/2011	11/30/2011	11/30/2011	3/7/2012	6/7/2012	8/22/2012	12/6/2012	3/14/2013	6/20/2013[2]	6/20/2013[2]	9/18/2013	12/17/2013	3/25/2014	9/23/2014	3/25/2015	9/15/2015	3/22/2016	9/14/2016	3/2/2017	9/12/2017	3/6/2018	9/11/2018	3/5/2019	9/25/2019	3/11/2020	10/6/2020
Comments										Duplicate				Duplicate							Duplicate																			
Well Depth (Ft)	510				350																																			
Screened Interval (Ft)	470-510				330-350																																			
VOCS (EPA 624) ug/L [4]																																								
Acrolein	NR	NR	30 R	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	R	R	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	0.19J	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR
Chloroform	ND	ND	ND	ND	ND	ND	ND	0.20J	ND	ND	NR	ND	ND	ND	ND	ND	0.63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	0.68J	0.31J	1.4	7.4	1.6	1.5	1.7	1.4	1.3	1.3	1.1	1.0 J	0.96 J	0.93 J	0.90 J	0.80 J	0.87 J	0.98 J	1.2	ND	ND	1.2 J	1.2	1.1	0.69 J	0.64 J	0.76 J	0.40 J	0.33 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloroethane	ND	ND	ND	ND	0.27J	ND	ND	ND	ND	ND	ND	0.57 J	ND	ND	0.43 J	ND	ND	0.50 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	0.42J	ND	1.2	1.3	1.2	1.2	1.2	1.1	0.85 J	0.65 J	0.64 J	0.66 J	0.47 J	0.19 J	0.54 J	0.65 J	0.68 J	ND	ND	0.57 J	0.69 J	0.74 J	0.43 J	0.42 J	0.41 J	0.29 J	0.21 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-dichloroethene	0.40J	0.66J	2.3	ND	0.37J	ND	0.32J	0.45J	0.47J	0.45J	0.48 J	0.31 J	0.36 J	0.43 J	0.37 J	0.39 J	0.36 J	0.44 J	0.38 J	ND	ND	0.43 J	0.41 J	0.38 J	0.30 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	7.42J	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-pentanone	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	0.49J	0.81J	0.73J	1.5	1.4	1.6	1.2	1.3 J	1.0	1.1	1.0	0.33 J	ND	0.44 J	1.6	1.8 J	1.7 J	1.2	1.6	1.5	1.6	2.2	1.6	2.5	2.3	1.9	1.6	1.7	1.71	ND	1.69 J	1.73 J	2.50 J
Toluene	ND	0.50J	0.39J	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	ND	ND	ND	0.98J	0.84J	1.2	1.1	1.1	0.78 J	1.0 J	0.59 J	0.63 J	0.58 J	0.54 J	0.42 J	0.34 J	0.49 J	ND	ND	0.61 J	0.66 J	0.66 J	0.39 J	0.35 J	0.36 J	0.30 J	0.21 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	16.2	20.6	18.0	60	35.0	53.2	52.3	77.6	76.2	77.9	63.1	72.4 J	51.0	55.2	59.0	42.5	37.7	42.8	46.6	49	48	62.7	60.5	60.0	43.4	41.8	45.4	37.6	40	27	22	19	19.2	19.3	21.1	18.4	23.1
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	ND	NR	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	14.8	NR	NR	<4.0	<4.0	<4.0	<4.0	<4.0	5160	ND	ND	ND	NR	17	ND	ND	16	ND	9.5 J	ND	15	14	8	12	ND	ND	ND	3.3	2.9	1.3	3.3	16.4	16	15.3	1.1

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

Sample ID	RW3-MW2																																					
Sample Date	1/19/2010	1/19/2010	4/22/2010	7/29/2010	11/9/2010	11/9/2010	3/25/2011	6/14/2011	9/27/2011	11/30/2011	3/8/2012	6/7/2012	8/22/2012	8/22/2012	12/4/2012	12/4/2012	3/14/2013	6/20/2013[2]	9/17/2013	12/17/2013	3/25/2014	9/23/2014	9/23/2014	3/25/2015	9/14/2015	3/22/2016	9/14/2016	9/14/2016	3/2/2017	3/2/2017	9/12/2017	3/6/2018	9/11/2018	3/5/2019	9/25/2019	3/11/2020	10/6/2020
Comments		Duplicate			Duplicate									Duplicate		Duplicate							Duplicate					Duplicate		Duplicate								
Well Depth (Ft)	495																																					
Screened Interval (Ft)	475-495																																					
VOCS (EPA 624) ug/L [4]																																						
Acrolein	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	30 R	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	NR	NR	NR	NR	NR
Chloroform	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	0.23 J	ND	ND	0.62 J	0.64 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.27 J	0.24 J	0.23 J	0.26 J	0.24 J	0.24 J	0.23 J	ND	ND	ND	ND	ND	ND
Chloromethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	ND	ND	0.54J	ND	ND	ND	ND	0.52 J	0.37 J	ND	0.41 J	0.66 J	0.74 J	0.73 J	0.69 J	0.71 J	0.68 J	ND	0.65 J	0.59 J	0.62 J	0.51 J	0.51 J	0.56 J	0.47 J	0.52 J	0.39 J	0.34 J	0.39 J	0.47 J	0.36 J	0.29 J	0.290 J	0.364 J	ND	0.203 J	0.287 J
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	ND	1.2	ND	ND	ND	ND	0.57 J	0.45 J	0.27 J	0.27 J	0.36 J	0.49 J	0.49 J	0.40 J	0.43 J	0.53 J	ND	0.29 J	0.45 J	0.44 J	0.38 J	0.33 J	0.33 J	0.30 J	0.46 J	0.31 J	0.37 J	0.25 J	ND	0.26 J	ND	ND	0.256 J	ND	ND	ND
cis-1,2-dichloroethene	1.5J	1.6J	2.4	1.1	0.92J	0.92J	1.6	1.7	1.1	1.4	1.3	1.5	1.6	1.5	1.6	1.6	1.6	ND	1.3 J	1.9	1.7	1.4	1.3	1.5	1.4	1.7	1.5	1.5	1.5	1.3	1.3	1.2	0.990 J	1.10 J	0.994 J	ND	0.809 J
trans-1,2-dichloroethene	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	0.69 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-pentanone	NR	NR	ND	ND	ND	ND	ND	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND	ND	ND	0.52 J	0.66 J	0.48 J	0.54 J	0.44 J	0.38 J	0.43 J	0.38 J	0.430 J	0.328 J	0.477 J	0.367 J	0.317 J
Toluene	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	0.58J	ND	ND	ND	ND	0.39 J	0.43 J	ND	ND	0.54 J	0.52 J	0.49 J	0.42 J	0.43 J	0.41 J	ND	0.47 J	0.50 J	0.43 J	0.36 J	0.39 J	0.38 J	0.41 J	0.47 J	0.44 J	0.47 J	0.41 J	0.34 J	0.26 J	0.33 J	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	ND	ND	ND	ND	0.25 J	0.27J	ND	NR	0.32 J	0.32 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	0.31 J	0.21 J	0.32 J	0.24 J	0.26 J	ND	ND	0.240 J	0.204 J	ND	ND
Trichloroethene	160	170	211	73	58.2	60.9	110	135	151	71.9	96.5	209	198	192	173 J	171	155	140	174	176	164	148	151	159	169	204	190	190	160	150	140	130	131	118	131	128	119
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	NR	5.0	6.0	ND	10.0	10.0	7	6	ND	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

Sample ID	RW3-MW3																																					
Sample Date	1/20/2010	4/22/2010	4/22/2010	7/28/2010	11/3/2010 [1]	3/25/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013	6/21/2013 [2]	9/18/2013	12/17/2013	3/26/2014	9/23/2014	3/25/2015	3/25/2015	9/15/2015	3/21/2016	9/15/2016	3/2/2017	9/12/2017	9/12/2017	3/6/2018	3/6/2018	9/12/2018	9/12/2018	3/5/2019	3/5/2019	9/25/2019	9/25/2019	3/11/2020	3/11/2020	10/6/2020	10/6/2020
Comments			Duplicate								Duplicate											Duplicate						Duplicate		Duplicate		Duplicate		Duplicate		Duplicate		Duplicate		Duplicate
Well Depth (Ft)	340																																					
Screened Interval (Ft)	320-340																																					
VOCS (EPA 624) ug/L [4]																																						
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	150 R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.0 R	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	ND	ND	0.40J	0.46J	ND	0.33J	NR	0.48 J	ND	0.42 J	0.42 J	2.3 J	ND	0.88 J	ND	ND	ND	3.4 J	ND	0.27 J	0.40 J	0.33 J	ND	ND	0.48 J	0.45 J	0.35 J	0.27 J	0.33 J	0.37 J	0.400 J	0.400 J	0.420 J	0.370 J	ND	ND	0.269 J	0.324 J	0.328 J	0.342 J
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	ND	1.6	1.6	2.3	1.0	1.5	7.1	3.2 J	1.5	3.3	3.3	2.6 J	ND	4.2	4.5 J	ND	ND	3.7 J	4.9 J	1.3 J	1.8	1.8	1.2	4.0	3.5	2.9	2.5	2.2	2.0	2.3	2.08	2.24	2.21 J	1.97 J	1.85 J	1.80 J	2.01 J	2.06 J	1.78 J	1.90 J
1,2-dichloroethane	ND	0.52J	0.54J	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.255 J	ND	ND	0.223 J	ND	ND
1,1-dichloroethene	ND	1.1	1.3	1.2	ND	0.96J	2.6	1.8 J	0.96 J	1.9	1.9	1.7 J	1.4 J	1.9	2.1 J	ND	ND	ND	2.4 J	0.94 J	1.5 J	1.4 J	1.1	2.4	2.0	1.3	ND	0.78 J	1.1	1.2	1.00	1.14	1.17 J	1.14 J	1.52 J	1.36 J	1.13 J	1.26 J	1.38 J	1.39 J
cis-1,2-dichloroethene	ND	2.1	2.1	1.7	ND	2.3	1.2	1.9	2.1	2.1	2.1	1.4 J	1.8 J	1.2	ND	ND	ND	ND	ND	1.2	1.3	1.3	1.3	1.1	1.1	0.83 J	0.8 J	0.76 J	0.63 J	0.59 J	0.590 J	0.640 J	0.840 J	0.805 J	1.07 J	1.05 J	0.91 J	0.983 J	0.803 J	0.840 J
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	3.2 J	ND	6.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	0.45J	0.49J	ND	ND	ND	0.40 J	0.50 J	ND	0.72 J	0.69 J	ND	ND	0.43 J	ND	ND	ND	ND	ND	0.36 J	0.37 J	0.77 J	0.71 J	0.58 J	0.43 J	0.31 J	0.44 J	0.36 J	0.32 J	0.390 J	0.390 J	ND	ND	0.672 J	0.727 J	0.446 J	0.471 J	0.533 J	0.545 J
Toluene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	0.95J	1.0J	0.72J	ND	0.62J	1.3	1.0 J	0.49 J	0.84 J	0.87 J	ND	ND	0.85 J	ND	ND	ND	ND	ND	0.40 J	0.48 J	0.45 J	0.36 J	1.1	0.75 J	0.69 J	0.46 J	0.38 J	0.61 J	0.57 J	0.550 J	0.530 J	0.594 J	0.599 J	0.518 J	0.467 J	0.472 J	0.388 J	0.402 J	0.384 J
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	350	397	382	297	8.5	288	331	215 J	250	312	325	285	248	291	347	410	322	322	350	147	182	184	138	284	260	200	100	95	150	160	124	155	151	147	176	172	178 J-	183	180	180
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.88 J	0.122 J	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	4.0	5.0	<4.0	<4.0	<4.0	ND	ND	ND	ND	ND	13	10	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	2.4	3	1.9	4.7 J	2.8 J	5.7	6.0	5.1	1.6	2.6 J	1.7	2.3	2.3	6.5	5.9

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

Sample ID	RW3-MW4																														
Sample Date	1/20/2010	4/22/2010	7/28/2010	7/28/2010	11/3/2010[1]	3/24/2011	6/15/2011	9/28/2011	11/29/2011	3/7/2012	6/7/2012	8/22/2012	12/4/2012	3/14/2013	6/21/2013[2]	9/17/2013	12/17/2013	3/26/2014	9/23/2014	3/25/2015	9/15/2015	3/21/2016	9/15/2016	3/2/2017	9/12/2017	3/6/2018	9/12/2018	3/5/2019	9/25/2019	3/11/2020	10/5/2020
Comments				Duplicate																											
Well Depth (Ft)	495																														
Screened Interval (Ft)	475-495																														
VOCS (EPA 624) ug/L [4]																															
Acrolein	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	30 R	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
carbon disulfide	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	NR	NR	NR	NR	NR
Chloroform	ND	ND	ND	ND	0.32J	ND	NR	0.87 J	ND	0.38 J	ND	ND	0.71 J	ND	1.2	ND	ND	1.2 J	0.38 J	1.2	ND	0.64 J	ND	ND	0.21 J	0.47 J	ND	0.996 J	ND	0.954 J	ND
Chloromethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-dichloroethane	2.5	0.6	0.54J	0.50J	1.8	0.81	0.78 J	5.4 J	0.84 J	1.8	0.50 J	ND	1.2	3.8	4.6	2.9	4.9	5.5	2.7 J	6.9	0.88 J	4.9	2.0	1.5	2.6	3.9	1.47	6.22	5.72	6.99	1.50 J
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.235 J	0.253 J	ND	ND
1,1-dichloroethene	1.0	ND	ND	ND	0.86J	ND	0.20 J	0.53 J	ND	0.21 J	ND	ND	0.19 J	0.38 J	0.42 J	ND	0.39 J	0.95 J	0.37 J	1.3 J	0.21 J	0.85 J	0.40 J	0.27 J	0.41 J	0.70 J	0.340 J	0.981 J	1.37 J	1.7 J	0.409 J
cis-1,2-dichloroethene	0.46J	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21 J	ND	ND	0.351 J	0.475 J	0.465 J	ND
trans-1,2-dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR
Ethylbenzene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-methyl-2-pentanone	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
styrene	NR	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31 J	0.46 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	ND	ND	ND	0.67J	ND	ND	0.66 J	ND	ND	ND	ND	ND	ND	0.29 J	ND	0.39 J	0.48 J	ND	0.60 J	ND	0.48 J	0.24 J	ND	0.26 J	0.40 J	ND	0.481 J	0.668 J	0.727 J	ND
1,1,2-trichloroethane	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	21	11	7.5	8.0	308	7.7	6.7	3.4 J	5.6	4.6	5.4	5.5	4.5	2.3	1.8	5.0	4.4	3.3	2.5	2.7	4.1	2.9	4.3	4.1	5.4	1.5	2.66	2.12 J	1.30 J	2.15 J	3.02 J
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	<0.20	<0.20	<0.20	<0.20	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	16.0	<4.0	<4.0	<4.0	<4.0	ND	11	6	5	ND	ND	ND	22	ND	ND	ND	9	5	5	ND	ND	1.4	ND	1.3	ND	ND	1.3	2.7	2.6	2.2

Table 7
GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Summary of Historical Groundwater Analytical Results
Through Third Quarter 2020

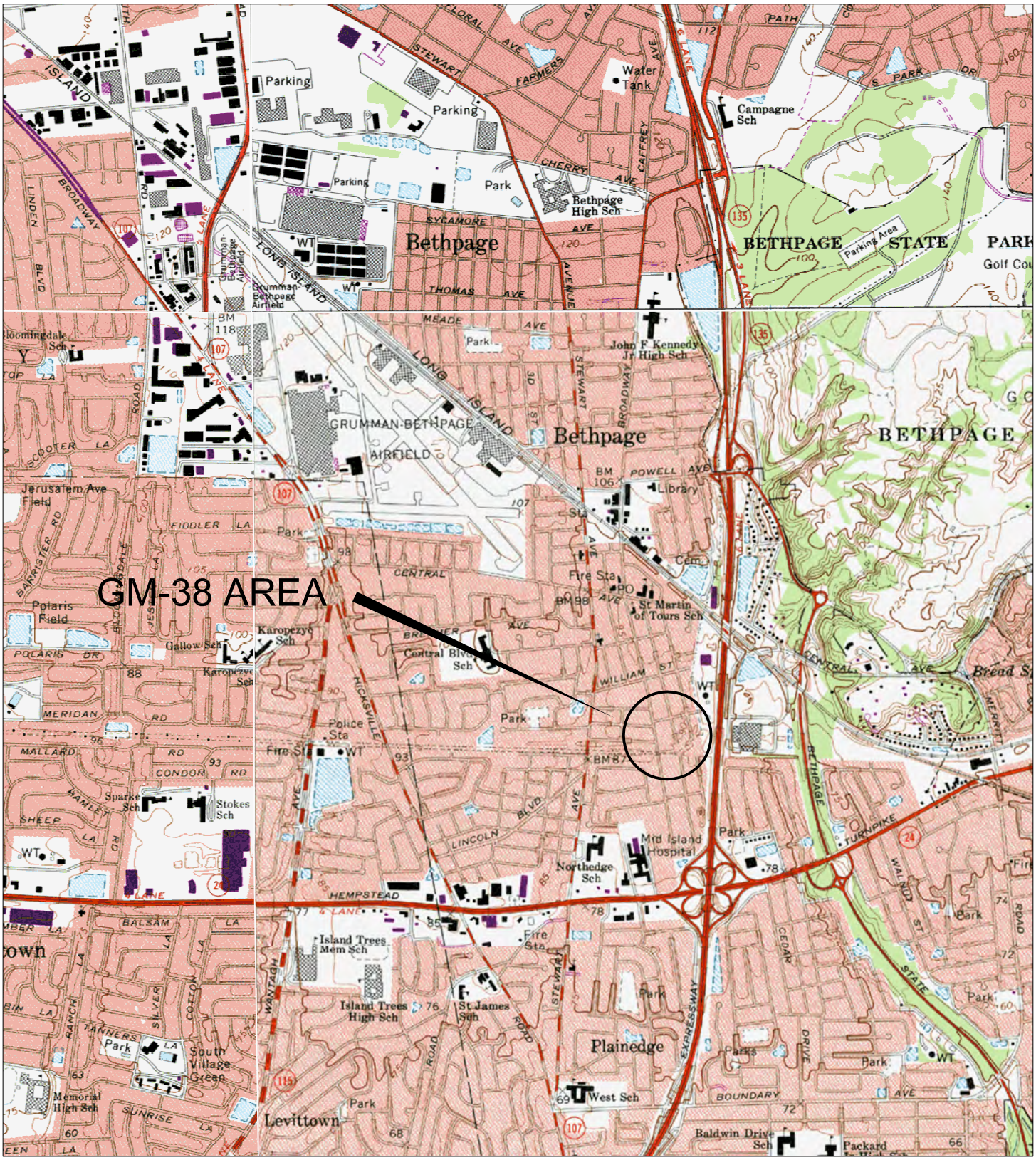
Sample ID	TP-01																													IW-1 MW-1		IW-1	RW-3 [3]				
Sample Date	1/21/2010	6/15/2011	9/27/2011	9/27/2011	11/30/2011	3/8/2012	6/6/2012	8/22/2012	12/4/2012	3/13/2013	3/13/2013	6/17/2013[2]	9/17/2013	9/17/2013	12/16/2013	3/25/2014	9/22/2014	3/25/2015	9/14/2015	9/14/2015	3/21/2016	9/14/2016	3/1/2017	9/13/2017	3/5/2018	9/11/2018	3/6/2019	9/25/2019	3/12/2020	10/6/2020	5/3/2005	6/18/2013[2]	5/27/2009	9/15/2015	3/22/2016	9/15/2016	3/2/2017	9/13/2017
Comments				Duplicate							Duplicate			Duplicate						Duplicate																		
Well Depth (Ft)	470																													150		230	530				
Screened Interval (Ft)	450-470																													20-150		200-230	392-412				
VOCS (EPA 624) ug/L [4]																																					
Acrolein	NR	NR	ND	ND	ND	ND	ND	30 R	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND
Acrylonitrile	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND
Acetone	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	NR	NR
Benzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.53 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-butanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	R	ND	ND	NR	NR	NR	NR
carbon disulfide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND	NR	NR	NR	NR
Carbon tetrachloride	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND
Chloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-chloroethylvinyl ether	NR	NR	ND	ND	ND	ND	ND	ND	ND	2.0 R	2.0 R	NR	ND	ND	ND	ND	ND	ND	2.0 R	ND	ND	ND	NR	ND	ND	ND	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	ND
Chloroform	ND	NR	0.68 J	0.74 J	ND	0.74 J	0.82 J	ND	2.5 J	1.2	1.1	11	5.2 J	ND	7.4	6.8 J	1.9	2.6	1.3	1.3	1.7	1.6	1.2	6.3	2.0	1.08	0.684 J	ND	ND	0.292 J	0.94J	ND	0.98J	ND	0.46 J	0.26 J	ND	0.28 J
Chloromethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND
cyclohexane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,2-dibromo-3-chloro-propane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,2-dibromomethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,2-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,3-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,4-dichlorobenzene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
dichlorodifluoromethane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
1,1-dichloroethane	3.6J	5.0	3.7	3.7	2.9	3.7	3.7	3.4	1.1	1.5	1.4	3.2	2.1 J	2.8	1.5	ND	1.3 J	2.5	2.1	2.0	1.8	2.1	0.78 J	1.3	1.2	1.24	0.717 J	0.381 J	0.335 J	0.363 J	0.39J	0.51	0.22J	1.9	2.1	1.8	1.4 J	1.5
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.36 J	0.37 J	0.30 J	ND	ND	ND	ND	0.67 J	0.88 J	0.82 J	0.82 J	0.82 J	0.86 J	0.70 J	0.45 J	0.79	0.79 J	0.650 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	ND	1.7	1.1	1.0	1.0	1.2	1.4	1.1	0.23 J	0.44 J	0.42 J	0.77	0.66 J	0.74 J	0.33 J	0.22 J	0.47 J	1.2 J	0.77 J	0.83 J	0.75 J	0.68 J	0.23 J	0.36 J	0.46 J	0.420 J	ND	ND	ND	ND	ND	ND	ND	1.9	2.5	1.5	1.3 J	1.4
cis-1,2-dichloroethene	190	43.4	40.4	40.2	74.9	53.3	29.9	16.1	4.2	5.8	5.8	8.7	14.1 J	14.7	8.0	5.3	7.6	13.4	11.3	11.6	10.8	12	5	11	12	12.1	6.01	3.75 J	3.01 J	3.14 J	ND	ND	ND	1.6	2.4	1.4	1.6 J	1.9
trans-1,2-dichloroethene	3.0J	1.1	1.0 J	0.92 J	1.1	0.87 J	0.79 J	0.35 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND	ND	ND
1,2-dichloropropane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dioxane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND
Ethylbenzene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-hexanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR
isopropylbenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
methyl acetate	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
Methylene chloride	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.64 J	ND	ND	ND
4-methyl-2-pentanone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	ND	ND	NR	NR	NR	NR
styrene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND	NR	NR	NR	NR
1,1,2,2-tetrachloroethane	NR	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	NR	NR	NR
Tetrachloroethene	3.4J	3.3	4.4	4.4	3.6	4.7	6.0	4.0	0.42 J	0.34 J	0.32 J	1.6	0.77 J	1.5 J	0.57 J	ND	ND	0.48 J	0.82 J	0.88 J	0.72 J	0.37 J	0.22 J	ND	ND	ND	ND	ND	ND	ND	ND	0.55	ND	0.68 J	0.79 J	0.64 J	0.60 J	0.65 J
Toluene	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19J	ND	ND	ND	ND	ND
1,1,1-trichloroethane	ND	0.63 J	0.73 J	0.76 J	0.29 J	0.57 J	1.1 J	0.86 J	ND	0.35 J	0.35 J	0.62	0.66 J	0.66 J	0.50 J	ND	ND	ND	ND	ND	ND	0.49 J	0.25 J	0.29 J	0.27 J	ND	ND	ND	ND	ND	0.47	0.92	0.49J	0.96 J	1.3	0.95 J	ND	0.83 J
1,1,2-trichloroethane	ND	NR	0.31 J	0.31 J	0.32 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30 J	0.49 J	0.29 J	ND	0.45 J
Trichloroethene	65	35.3	41.0	39.6	38.0	38.1	40.4	27.9	22.0	25.9	25.4	25	27.0	26.7	29.8	21.7	31.9	52.3	53.0	53.9	61.7	47	21	54	55	38.2	28.3	14.4	12.7	11.1	ND	ND	0.17J	237	371	230	230	220
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	ND	NR	ND	NR	NR	NR	NR
Mercury (EPA 245.1) ug/L	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR	0.20	ND	ND	ND	ND	ND
TSS (SM20 2540D) mg/L	NR	63	18	NR	ND	7	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	1.0	NR	NR	2.4	ND	ND	ND	2.4	8.1

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

(1) Analytical results presented above for samples collected from RW3-MW3 and RW3-MW4 in November 2010 are not consistent with historical trends, indicating samples may have been switched. For trend analysis, concentrations for RW3-MW3 were used for RW3-MW4 for November 2010 and vise versa.
(2) VOCs were analyzed by USEPA Method 524.2 (as opposed to Method 624) in June 2013 to correlate with samples collected under the Bethpage Regional Plume Comprehensive Groundwater Sampling Plan conducted in June 2013.
(3) RW-3, previously an active extraction well sampled on a monthly basis, was taken off-line on 7/1/15. While off-line, RW-3 was sampled semi-annually in conjunction with the semi-annual LTM events.
(4) Samples were analyzed for TCL VOCs, including tentatively identified compounds (TICs), beginning in March 2016. No TICs were detected, unless otherwise indicated.

Data prior to June 2011 were collected by others.

FIGURES



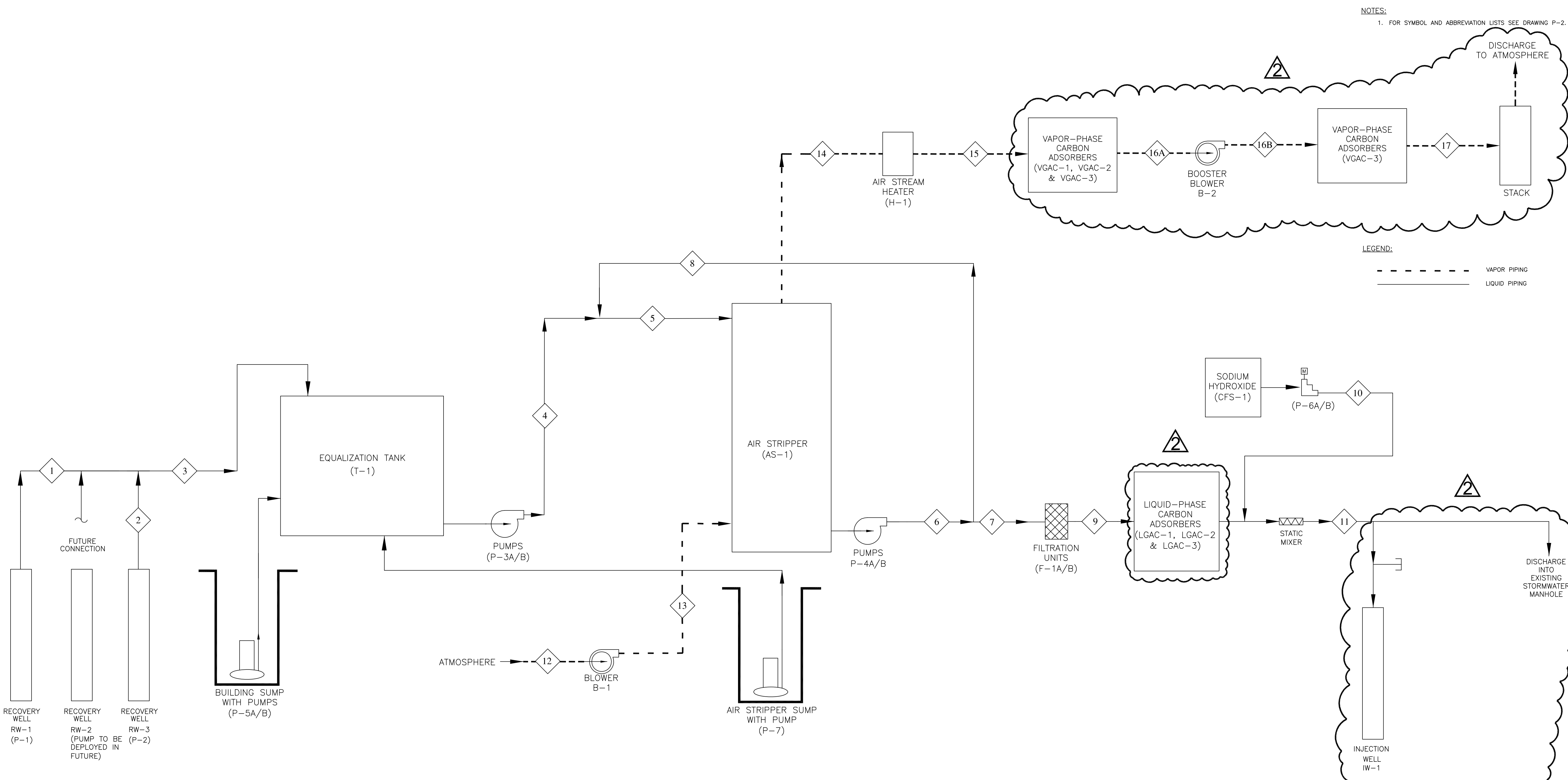
Source: U.S.G.S. Topographic Maps (7.5 Minute)
Amityville, Freeport, Hicksville, Huntington, NY Quadrangles

U.S. Navy RAC
Engineering Field Activity, Northeast

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

Figure 1
Site Location Map

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



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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TETRA TECH ENGINEERING CORPORATION PC

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

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY - NORTHEAST
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT — BETHPAGE, NEW YORK
GM-38 AREA
GROUNDWATER TREATMENT PLANT
PROCESS FLOW DIAGRAM - GROUNDWATER AND OFF-GAS TREATMENT

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

Legend

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

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

RW3-MW-4
RW3-MW-3
RW3-MW-1
RW3-MW-2
RW-3
GM-38D
GM-38D-2
RECHARGE BASIN
RW2-MW-1
RW2-MW-2
RW2-MW-3
RW-2
TP-1
GROUNDWATER TREATMENT PLANT
RW1-MW-3
RW1-MW-2
RW1-MW-1
RW-1
IW-1
IW1-MW-1

0 160
APPROXIMATE SCALE IN FEET

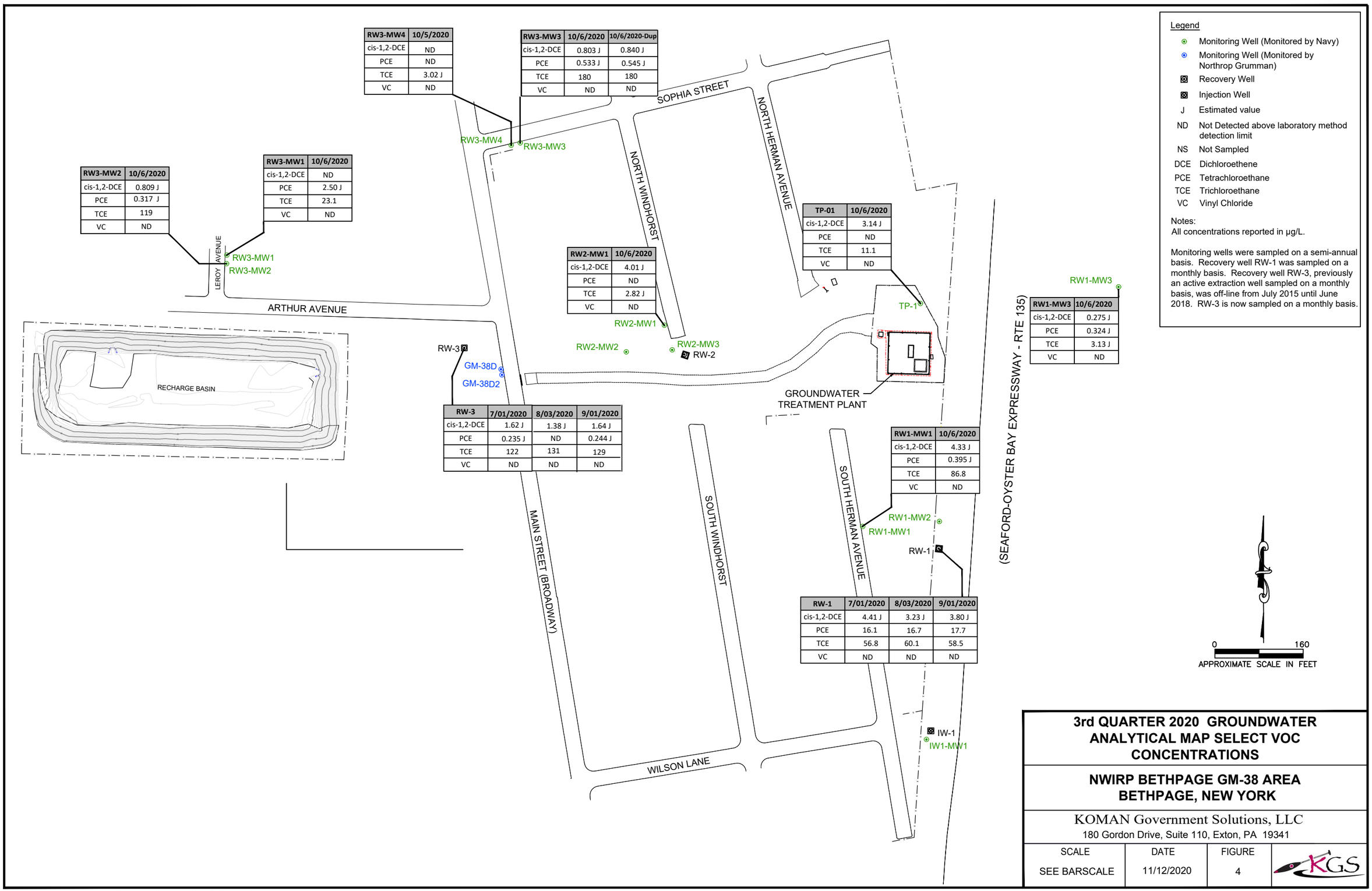
SITE MAP

NWIRP BETHPAGE GM-38 AREA
BETHPAGE, NEW YORK

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

SCALE	DATE	FIGURE
SEE BARSCALE	04/15/2020	3

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



3rd QUARTER 2020 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	11/12/2020	4

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

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

RW1

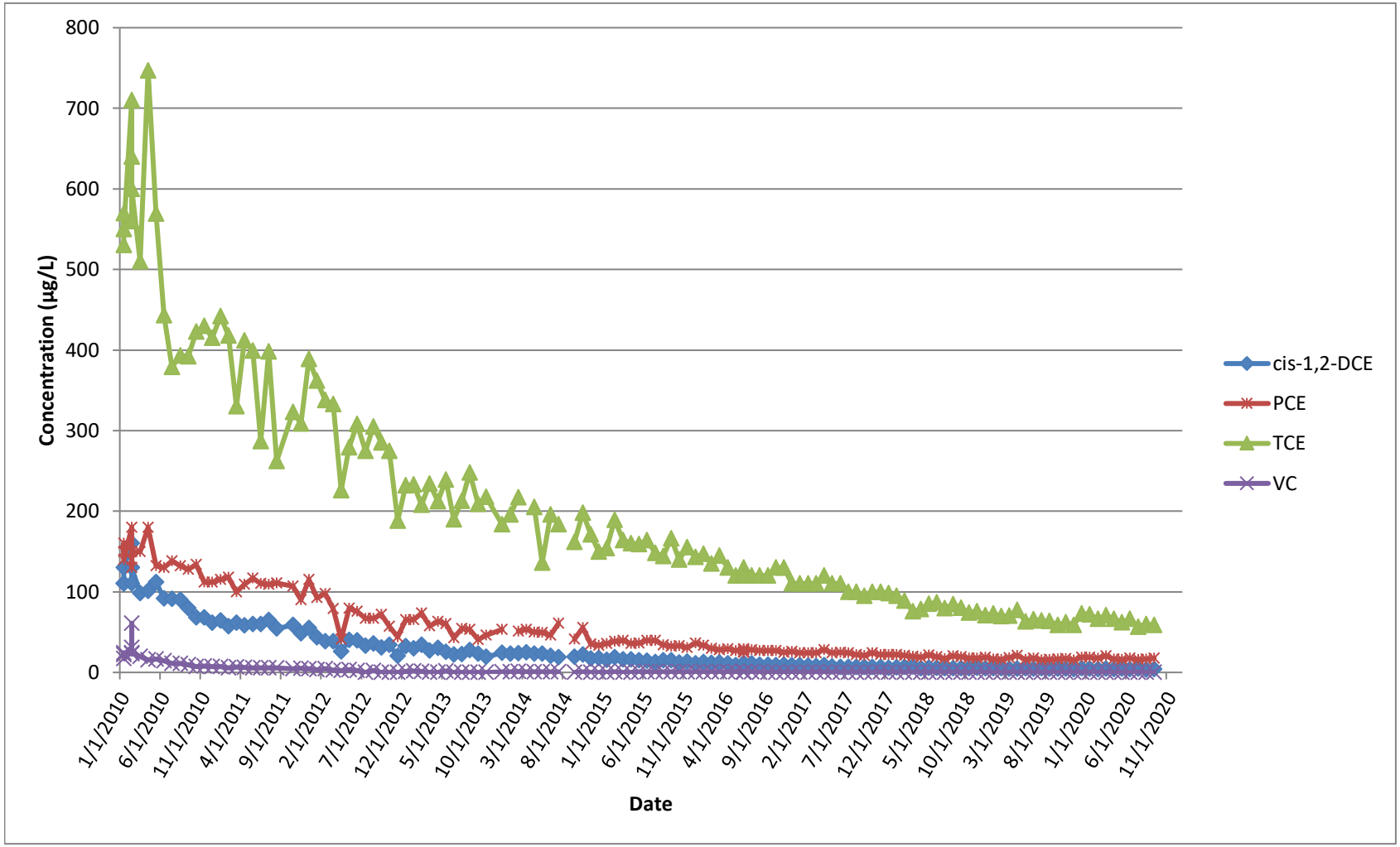


Figure 6a
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3

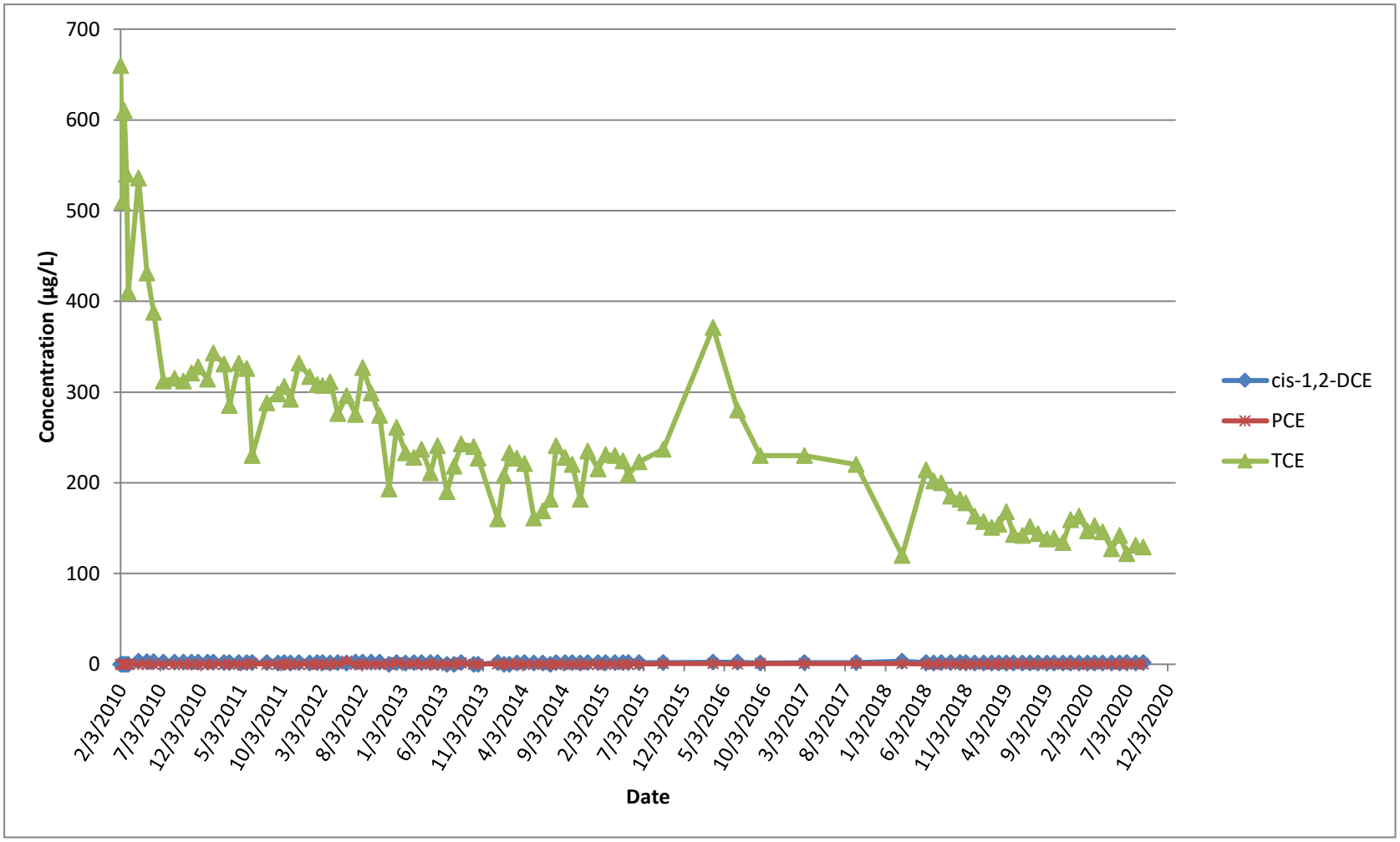


Figure 6b
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3

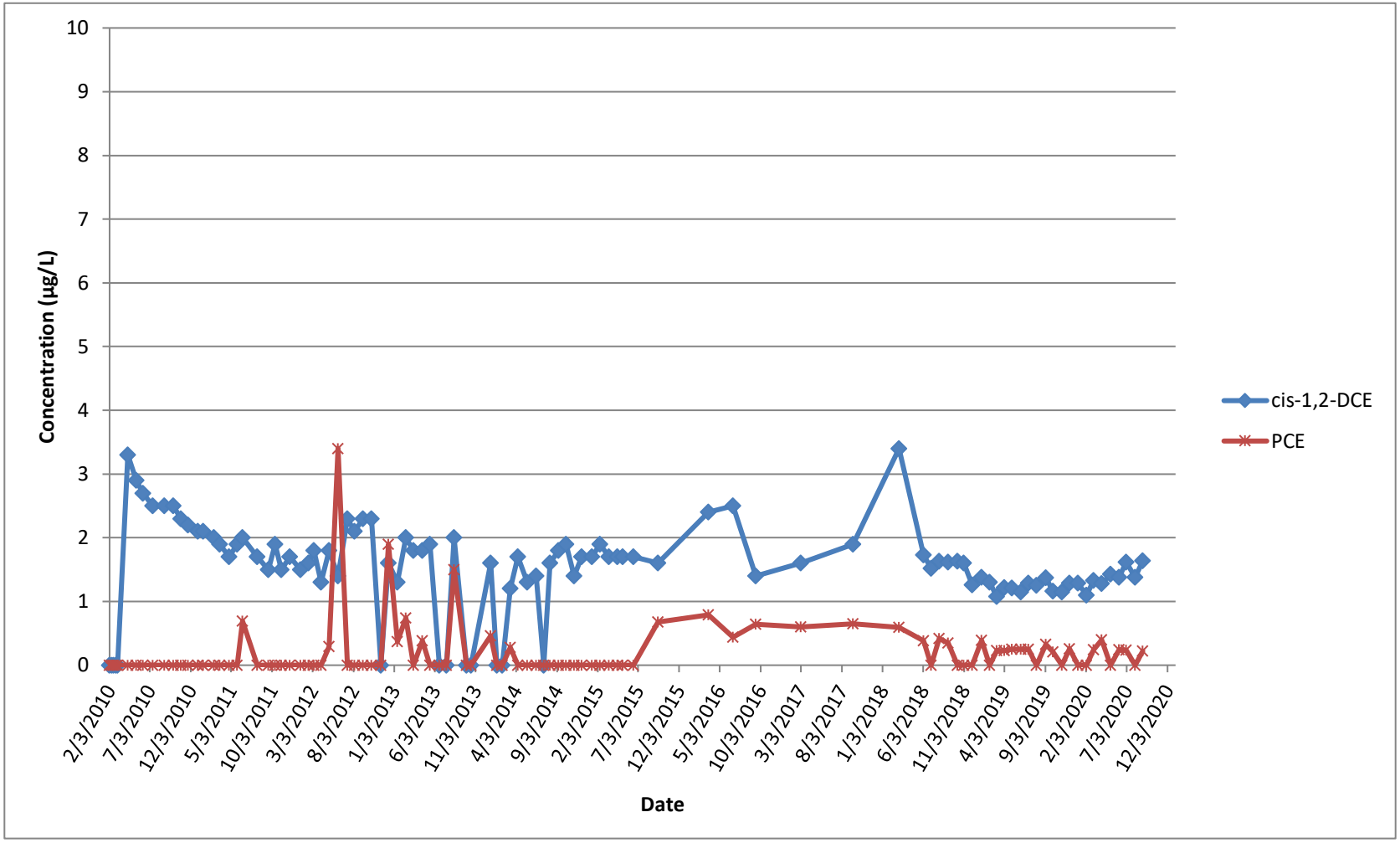


Figure 7
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW1

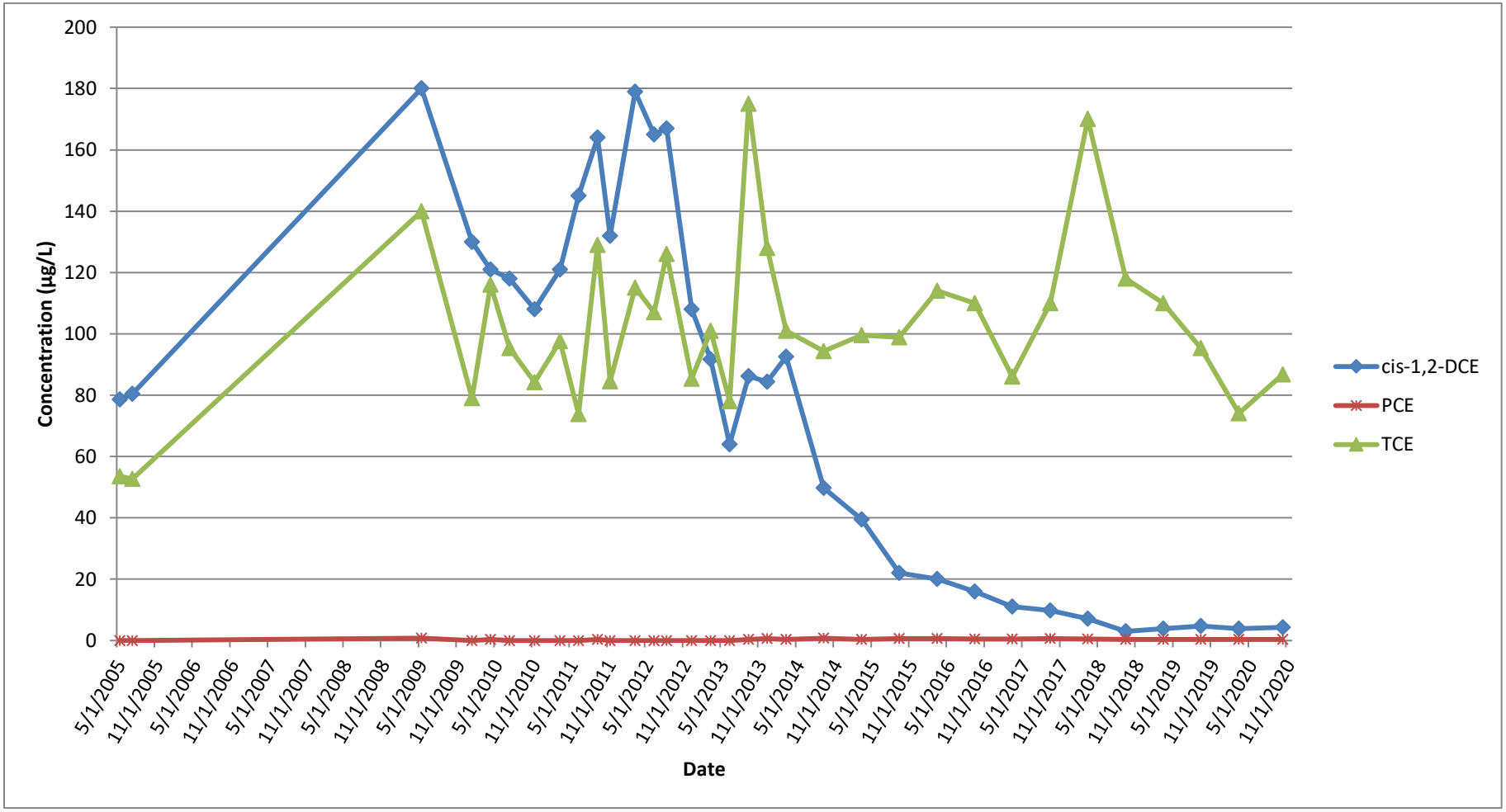


Figure 8
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW1-MW3

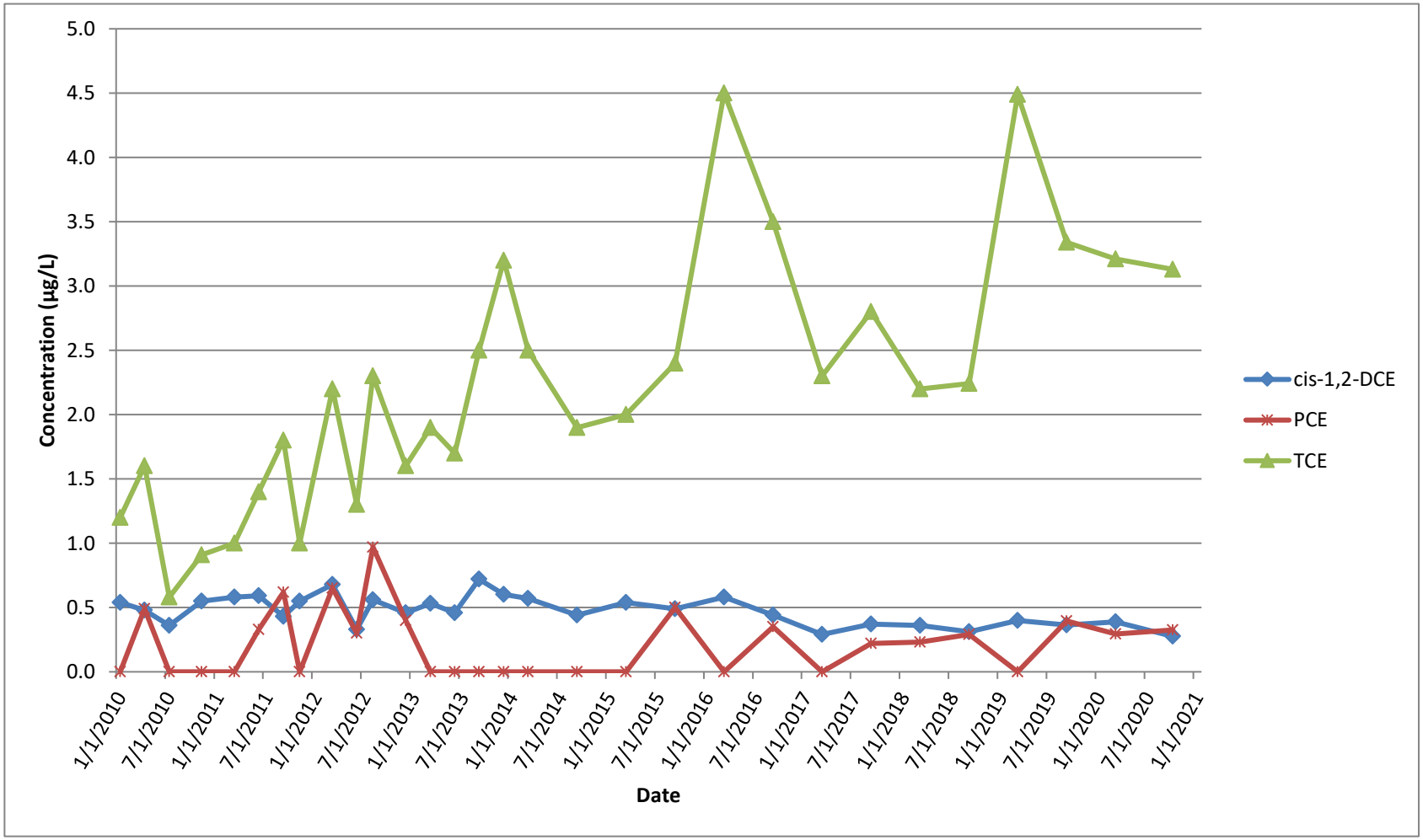


Figure 9
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW2-MW1

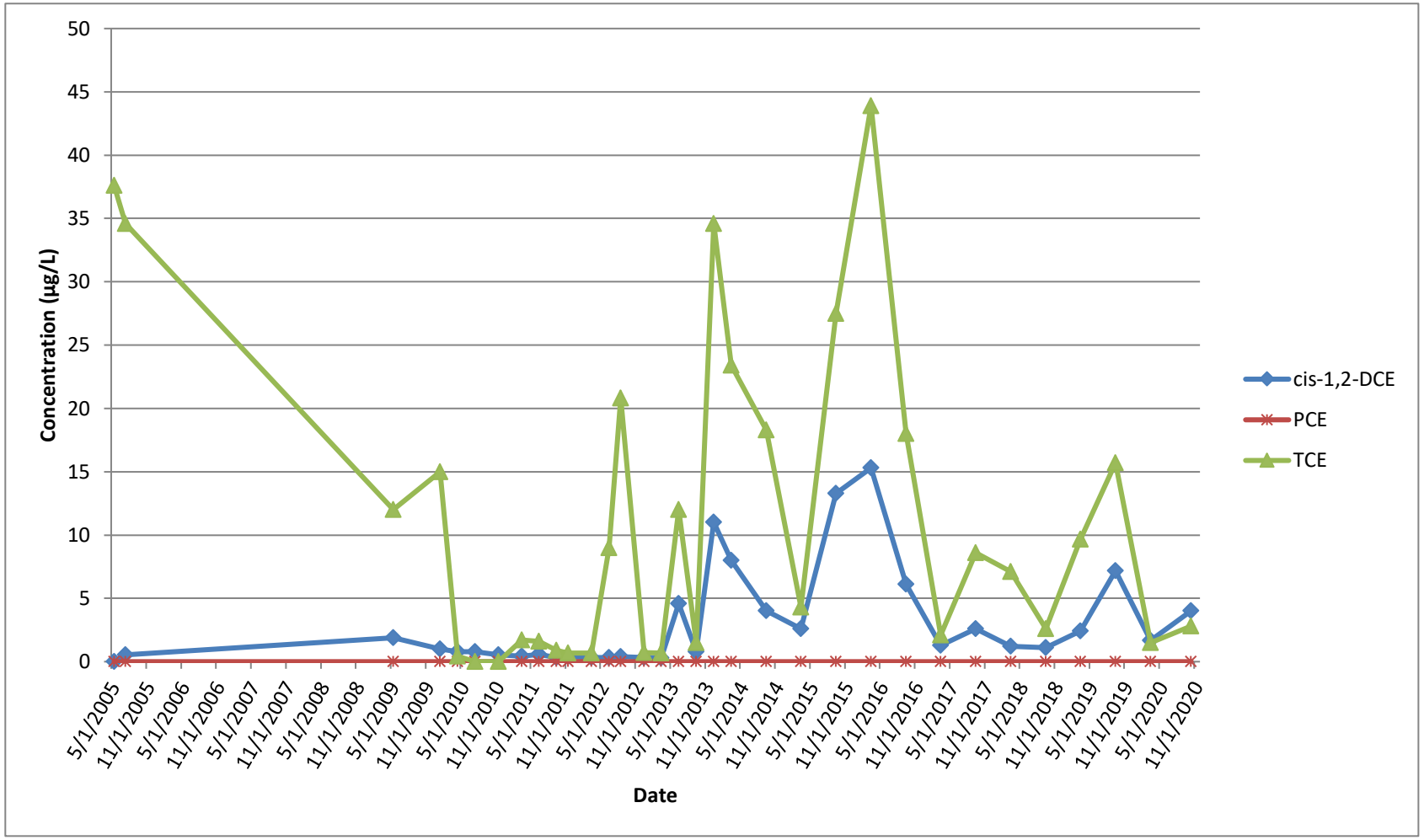


Figure 10
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW1

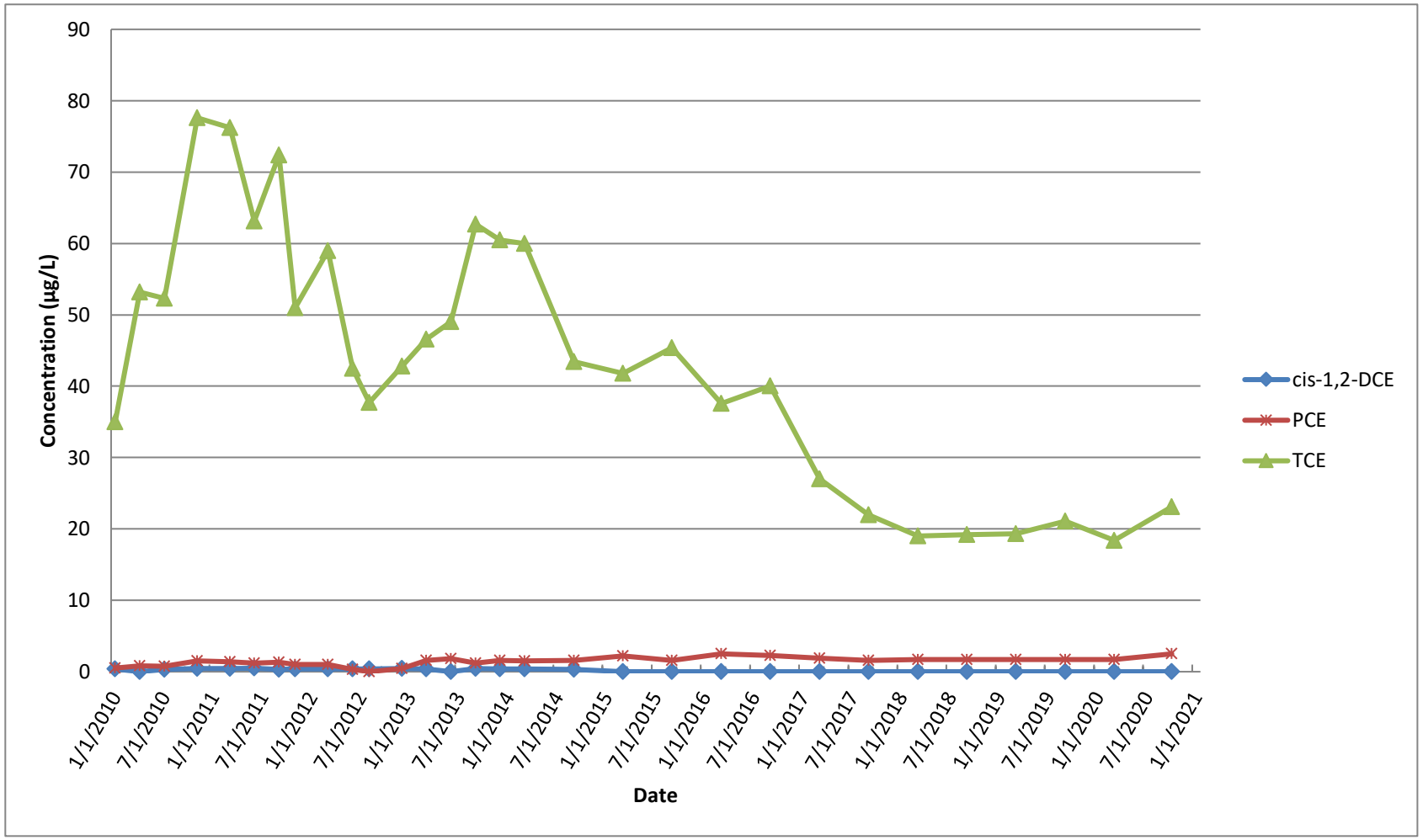


Figure 11
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW2

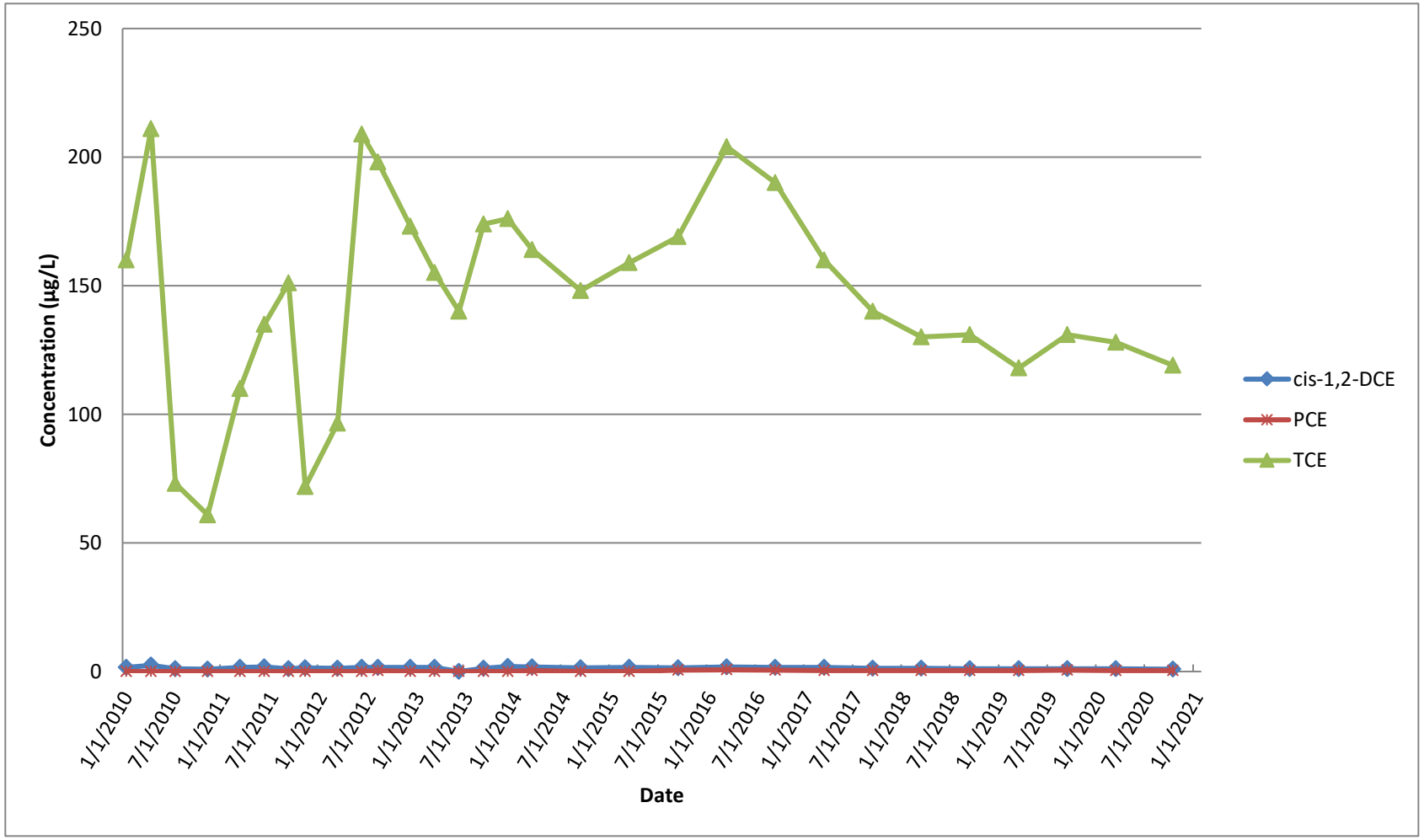


Figure 12
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW3

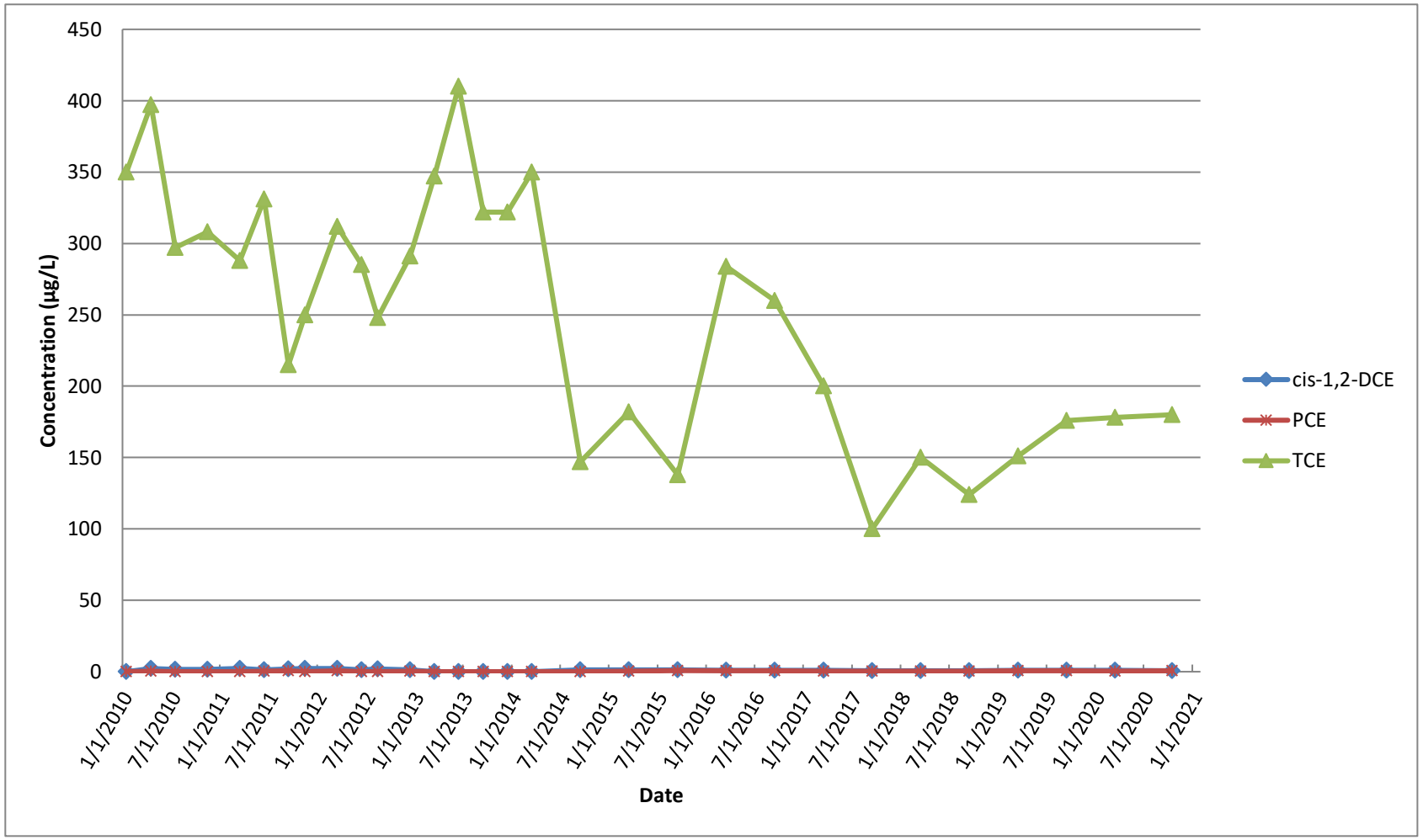


Figure 13
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

RW3-MW4

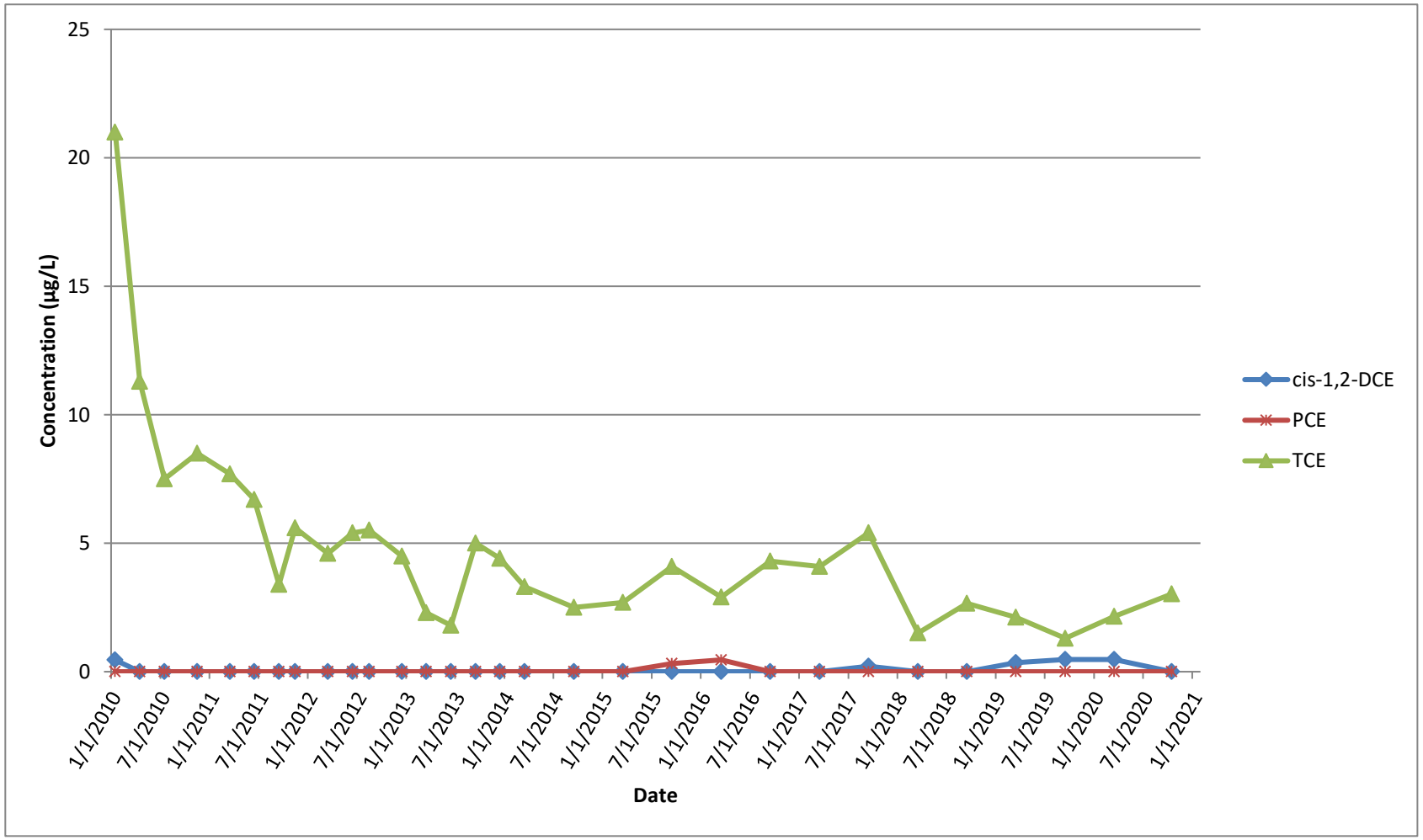
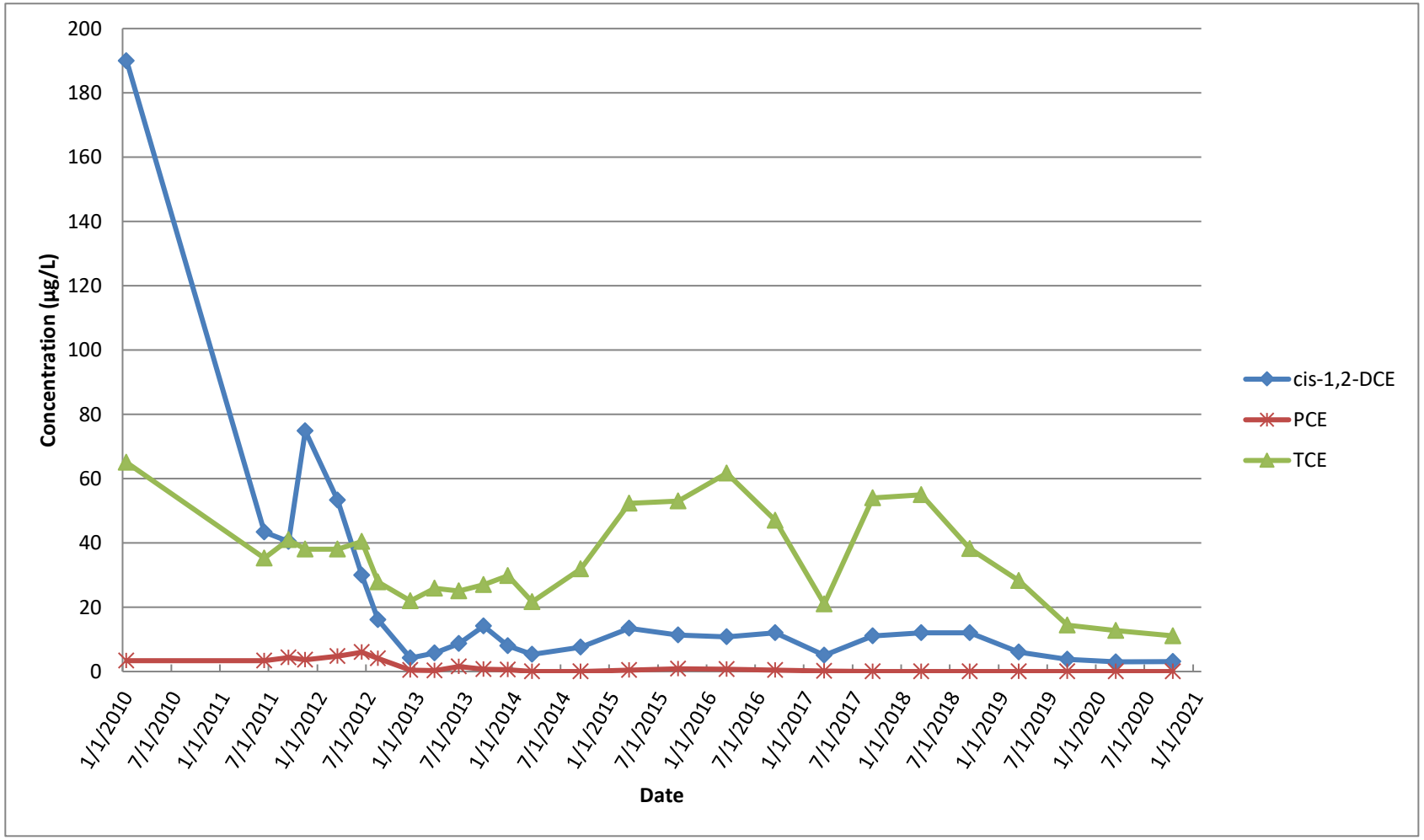


Figure 14
GM-38 Area Groundwater Remediation
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

TP-01



APPENDIX A

NYSDEC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS AND MONTHLY DMRS

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

Alexander B. Grannis
Commissioner

RECEIVED
JUN - 9 2008
BUREAU OF EASTERN

MEMORANDUM

TO: Steven Scharf, DER

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

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

DRAINAGE BASIN: na

DATE: June 6, 2008

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

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

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

Attachment

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

Naval Weapons Industrial Reserve Plant

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

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning: April 1, 2009

and lasting until: April 1, 2014

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

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

Footnotes:

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

Additional Conditions:

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

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

With a copy sent to:

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

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

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

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

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

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau D
625 Broadway, 12th Floor, Albany, NY 12233-7013
P: (518) 402-9676 I F: (518) 402-9773
www.dec.ny.gov

August 31, 2017

Ms. Lora Fly
Remedial Project Manager
Naval Facilities Engineering Command
9324 Virginia Ave.
Bldg. Z-144, Code OPTE3-6
Norfolk, VA 23511

Re: SPDES Permit Equivalent Application,
Naval Weapons Industrial Reserve
Plant Site (NWIRP), Bethpage.
NYSDEC Site No 130003B

Lora:

The Department of the Navy (Navy) has requested to renew the State Pollutant Discharge Elimination System (SPDES) effluent for the GM-38 groundwater extraction and treatment system. The New York State Department Environmental Conservation (NYSDEC) has reviewed this request and has established discharge limits for the GM-38 system. These discharge limits, and associated reporting requirements, are detailed in the attached memorandum from the NYSDEC Division of Water.

Thanks and please do not hesitate to contact me at (518) 402-9478 or jason.pelton@dec.ny.gov with any questions.

Sincerely,

Jason Pelton

Digitally signed by Jason Pelton
DN: cn=Jason Pelton, o=NYSDEC, ou=Division of Environmental Remediation, email=jason.pelton@dec.ny.gov, c=US
Date: 2017.08.31 07:13:24 -04'00'

Jason M. Pelton
Project Manager
Remedial Section B, Remedial Bureau D
Division of Environmental Remediation

ec: B. Caldwell, EnSafe/Resolution Consultants
S. Edwards, NYSDEC
D. Hesler, NYSDEC
C. Haas, NYSDEC Region 1
W. Parish, NYSDEC Region 1
S. Karpinski, NYSDOH
J. DeFranco/J. Lovejoy, NCDOH
L. Thantu, USEPA Region 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water, Bureau of Permits
625 Broadway, Albany, New York 12233-3505
P: (518) 402-8111 | F: (518) 402-9029
www.dec.ny.gov

M E M O R A N D U M

TO: Jason Pelton, DER
FROM: Robert Wither, Chief, South Permits Section, DOW
SUBJECT: Naval Weapons Industrial Reserve Plant, DER Site #1-30-003B
DATE: August 18, 2017

In response to your request received July 13, 2017, attached please find effluent limitations and monitoring requirements for the above noted remediation discharge.

The DOW does not have any regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. DER will be responsible for ensuring compliance with the attached effluent limitations and monitoring requirements, and approval of all engineering submissions. Footnote 1 identifies the appropriate DER contact as the place to send all effluent results, engineering submissions, and modification requests. The Regional Water Engineer should be kept appraised of the status of this discharge and, in accordance with the attached criteria, receive a copy of the effluent results for informational purposes.

If you have any questions, please call me at 518-402-8123.

Attachment (Effluent Limitations and Monitoring Requirements)

cc: Cathy Haas, RWE, Region 1

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning **September 1, 2017** and lasting until **August 31, 2027** the discharges from the wastewater treatment facility to groundwater, Class GA shall be limited and monitored by the operator as specified below:

Outfall Number and Parameter	Discharge Limitations		Units	Minimum Monitoring Requirements	
	Monthly Avg.	Daily Max		Measurement Frequency	Sample Type
Outfall 001 - Treated Remediation Discharge:					
Flow	Monitor	1100	GPM	Continuous	Recorder
pH (range)	5.5 - 8.5		SU	Monthly	Grab
1,1-Dichloroethanrie	NA	5	µg/l	Monthly	Grab
1,2-Dichloroethane	NA	0.6	µg/l	Monthly	Grab
1,1-Dichloroethene	NA	5	µg/l	Monthly	Grab
cis-1,2-Dichloroethene	NA	5	µg/l	Monthly	Grab
trans-1,2-Dichloroethene	NA	5	µg/l	Monthly	Grab
Tetrachloroethene	NA	5	µg/l	Monthly	Grab
1,1,1-Trichloroethane	NA	5	µg/1	Monthly	Grab
Trichloroethene	NA	5	µg/l	Monthly	Grab
Vinyl Chloride	NA	2	µg/l	Monthly	Grab
Mercury	NA	0.25	µg/l	Monthly	Grab
Chloroform	NA	5	µg/l	Monthly	Grab
Trichlorotrifluoroethane (Freon 113)	NA	5	µg/l	Monthly	Grab
1,4 Dioxane	NA	Monitor	µg/l	Monthly	Grab

Additional Conditions:

1. The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

   Jason Pelton
   Division of Environmental Remediation
   NYSDEC
   625 Broadway
   Albany, New York 12233- 7015
   518-402-9870

   With a copy sent to:

   Regional Water Engineer, Region 1
   NYSDEC
   SUNY @ Stony Brook
   50 Circle Road
   Stony Brook, NY 11790-3409

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

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

4. Both concentration (mg/l or µg/l) and mass loadings (lbs/day) must be reported to the Department for all parameters except flow and pH.

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

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

DISCHARGE MONITORING REPORT
JULY 2020

29 August 2020

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 2020 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 July to 31 July 2020 are presented in Attachment A. Three and a half hours of downtime were recorded during this period associated with the backwashing of GAC units #1, #2, and #3.

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

Please contact me at 610-400-0636 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Robert Gregory
Project Manager

Attachment A: Groundwater and Air Sampling Results from July 2020

Cc: S. Edwards, NYSDEC
D. Hesler, NYSDEC
C. Haas, NYSDEC Region 1

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110
Exton, Pennsylvania 19341
Phone (610) 363-3000
Fax (610) 363-3001
www.komangs.com

C. Engelhardt, NYSDEC Region 1
J. Pilewski, NYSDEC – Region 1 Water Engineer
J. Sullivan, NYSDOH
J. Lovejoy, NCDH
G. Ennis, Nassau County Department of Public Works
T. Licata, Town of Oyster Bay
M. Russo, Town of Oyster Bay
S. Sokolowski, NAVFAC Mid-Atlantic RPM
V. Varricchio, NWIRP Bethpage Facilities Management
P. Schauble, KGS
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

JULY 2020

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
July 2020

SPDES Parameters			July 2020 (1)			
Process Stream	**Daily Treated Effluent Maximum (1)**	**Units**	**RW-1**	**RW-3 (2)**	**Combined Influent (3) (RW-1 + RW-3)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		7/1/20			
Effective Flowrate	1100	GPM	838	217	1,055	1,075
Total Flow	N/A	gallons	37,430,000	9,668,800	47,098,800	47,969,300
pH	5.5 - 8.5	SU	5.23	5.51	5.29	6.71
Chloroform	5	µg/L	0.330 J	0.376 J	0.34 J	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.35 J	2.59 J	1.60 J	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	0.795 J	1.10 J	0.858 J	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	4.41 J	1.62 J	3.84 J	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	16.1	0.235 J	12.84	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.506 J	0.615 J	0.528 J	ND (1.0)
Trichloroethene	5	µg/L	56.8	122	70.2	0.436 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	0.583 J	0.12 J	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	5.8	5.9	5.8	NS
Mercury	0.00025	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	1.9	0.4	ND (1.0)

Notes:

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

D - Concentration is a result of a dilution.

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

NR - Not Recorded

N/A - Not Applicable

NS - Not Sampled

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

(2) Well RW-3 was placed back in operation on 1 June, 2018.

(3) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
July 2020

DAR Parameters			**July 2020**	
Process Stream	**Units**	**Discharge Goal** [1]	**Influent**	**Effluent**
Sampling Date			7/1/20	
Average Flowrate	CFM	N/A	NR	8,894
Total Flow	ft^3	N/A	NR	395,154,073
Total Flow	m^3	N/A	NR	11,189,517
1,2-Dichloroethane	$\mu g/m^3$	N/A	2.9 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	≤ 100,000 [2]	61	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		1.1 J	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	≤ 100,000	62	ND
Toluene	$\mu g/m^3$	N/A	0.92 J	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	1.8 J	ND
Trichloroethene	$\mu g/m^3$	≤ 2600	1300	1.1 J
Vinyl Chloride	$\mu g/m^3$	≤ 560	0.87	0.42 J
Tetrachloroethene	$\mu g/m^3$	≤ 5100	220	0.87 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 2020

DAR Parameters	Units	Discharge Goal [(1)]	July 2020
Sampling Date			7/1/20
Average Flowrate	CFM	N/A	8,894
Total Flow	ft^3	N/A	395,154,073
Total Flow	m^3	N/A	11,189,517
Trichloroethene	lb/hr	≤ 0.09	0.00004
Vinyl Chloride	lb/hr	≤ 0.02	0.00001
1,2 Dichloroethene	lb/hr	≤ 11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	≤ 0.18	0.00003

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

DISCHARGE MONITORING REPORT
AUGUST 2020

15 September 2020

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 2020 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 August to 31 August 2020 are presented in Attachment A. Nine and a half hours of downtime were recorded during this period associated with a power outage.

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

Please contact me at 610-400-0636 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Robert Gregory
Project Manager

Attachment A: Groundwater and Air Sampling Results from August 2020

Cc: S. Edwards, NYSDEC
D. Hesler, NYSDEC
C. Haas, NYSDEC Region 1
C. Engelhardt, NYSDEC Region 1

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110
Exton, Pennsylvania 19341
Phone (610) 363-3000
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J. Pilewski, NYSDEC – Region 1 Water Engineer
J. Sullivan, NYSDOH
J. Lovejoy, NCDOH
G. Ennis, Nassau County Department of Public Works
T. Licata, Town of Oyster Bay
M. Russo, Town of Oyster Bay
S. Sokolowski, NAVFAC Mid-Atlantic
B. Murray, NAVFAC Mid-Atlantic
V. Varricchio, NWIRP Bethpage Facilities Management
P. Schauble, KGS
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

AUGUST 2020

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
August 2020

SPDES Parameters			August 2020 (1)			
Process Stream	**Daily Treated Effluent Maximum (1)**	**Units**	**RW-1**	**RW-3 (2)**	**Combined Influent (3) (RW-1 + RW-3)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		8/3/20			
Effective Flowrate	1100	GPM	799	213	1,012	1,052
Total Flow	N/A	gallons	35,669,600	9,517,600	45,187,200	46,974,700
pH	5.5 - 8.5	SU	4.91	5.41	5.02	6.70
Chloroform	5	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethane	5	µg/L	0.905 J	1.85 J	1.10 J	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethene	5	µg/L	0.620 J	1.23 J	0.748 J	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	3.23 J	1.38 J	2.84 J	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	16.7	ND (1.0)	13.18	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.375 J	0.498 J	0.401 J	ND (1.0)
Trichloroethene	5	µg/L	60.1	131	75.0	0.470 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	0.501 J	0.11 J	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	2.2	5.9	3.0	NS
Mercury	0.00025	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	3.1	0.7	ND (1.0)

Notes:

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

D - Concentration is a result of a dilution.

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

NR - Not Recorded

N/A - Not Applicable

NS - Not Sampled

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

(2) Well RW-3 was placed back in operation on 1 June, 2018.

(3) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
August 2020

DAR Parameters			**August 2020**	
Process Stream	**Units**	**Discharge Goal** [(1)]	**Influent**	**Effluent**
Sampling Date			8/3/20	
Average Flowrate	CFM	N/A	NR	8,794
Total Flow	ft^3	N/A	NR	387,564,171
Total Flow	m^3	N/A	NR	10,974,595
1,2-Dichloroethane	$\mu g/m^3$	N/A	2.9 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	≤ 100,000 [(2)]	49	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		1.6 J	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	≤ 100,000	51	ND
Toluene	$\mu g/m^3$	N/A	2.0 J	0.77 J
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	2.8 J	ND
Trichloroethene	$\mu g/m^3$	≤ 2600	1200	ND
Vinyl Chloride	$\mu g/m^3$	≤ 560	1.9 J	2.1 J
Tetrachloroethene	$\mu g/m^3$	≤ 5100	220	ND

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

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
August 2020

DAR Parameters	Units	Discharge Goal [(1)]	August 2020
Sampling Date			8/3/20
Average Flowrate	CFM	N/A	8,794
Total Flow	ft^3	N/A	387,564,171
Total Flow	m^3	N/A	10,974,595
Trichloroethene	lb/hr	≤ 0.09	0.00000
Vinyl Chloride	lb/hr	≤ 0.02	0.00007
1,2 Dichloroethene	lb/hr	≤ 11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00003
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	≤ 0.18	0.00000

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

DISCHARGE MONITORING REPORT
SEPTEMBER 2020

11 October 2020

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 2020 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 to 30 September 2020 are presented in Attachment A. Four and a half hours of downtime were recorded during this period associated with multiple bag filter changeouts associated with non-routine clogging of the filters.

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

Please contact me at 610-400-0636 with any questions or concerns you may have regarding this report.

Sincerely,

KOMAN Government Solutions, LLC

Robert Gregory
Project Manager

Attachment A: Groundwater and Air Sampling Results from September 2020

Cc: S. Edwards, NYSDEC
D. Hesler, NYSDEC
C. Haas, NYSDEC Region 1

KOMAN Government Solutions, LLC
180 Gordon Drive, Suite 110
Exton, Pennsylvania 19341
Phone (610) 363-3000
Fax (610) 363-3001
www.komangs.com

C. Engelhardt, NYSDEC Region 1
J. Pilewski, NYSDEC – Region 1 Water Engineer
J. Sullivan, NYSDOH
J. Lovejoy, NCDOH
G. Ennis, Nassau County Department of Public Works
T. Licata, Town of Oyster Bay
M. Russo, Town of Oyster Bay
S. Sokolowski, NAVFAC Mid-Atlantic
B. Murray, NAVFAC Mid-Atlantic
V. Varricchio, NWIRP Bethpage Facilities Management
P. Schauble, KGS
GM-38 Copy

ATTACHMENT A

GROUNDWATER AND AIR SAMPLING RESULTS

SEPTEMBER 2020

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Discharge Monitoring Report
September 2020

SPDES Parameters			September 2020 [1]			
Process Stream	**Daily Treated Effluent Maximum[1]**	**Units**	**RW-1**	**RW-3 [2]**	**Combined Influent [3] (RW-1 + RW-3)**	**Treated Effluent**
Well Depth	N/A	ft	445	530	N/A	N/A
Screened Interval	N/A	ft bgs	335-395 410-430	392-412 442-504	N/A	N/A
Sampling Date	N/A		9/1/20			
Effective Flowrate	1100	GPM	297	135	431	540
Total Flow	N/A	gallons	12,740,400	5,778,300	18,518,700	23,198,000
pH	5.5 - 8.5	SU	5.69	5.29	5.57	6.80
Chloroform	5	µg/L	0.309 J	0.367 J	0.327 J	ND (1.0)
1,1-Dichloroethane	5	µg/L	1.12 J	2.34 J	1.50 J	ND (1.0)
1,2-Dichloroethane	0.6	µg/L	0.202 J	ND (1.0)	0.14 J	ND (1.0)
1,1-Dichloroethene	5	µg/L	0.855 J	1.24 J	0.975 J	ND (1.0)
cis 1,2-Dichloroethene	5	µg/L	3.80 J	1.64 J	3.13 J	ND (1.0)
trans 1,2-Dichloroethene	5	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	5	µg/L	17.7	0.224 J	12.18	ND (1.0)
1,1,1-Trichloroethane	5	µg/L	0.505 J	0.607 J	0.537 J	ND (1.0)
Trichloroethene	5	µg/L	58.5	129	80.5	0.432 J
1,1,2-Trichlorotrifluoroethane	5	µg/L	ND (1.0)	0.575 J	0.18 J	ND (1.0)
Vinyl Chloride	2	µg/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,4-Dioxane	--	µg/L	2.2	5.8	1.81	NS
Mercury	0.00025	mg/L	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)
Total Suspended Solids (TSS)	N/A	mg/L	ND (1.0)	4.9	1.5	ND (1.0)

Notes:

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

D - Concentration is a result of a dilution.

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

NR - Not Recorded

N/A - Not Applicable

NS - Not Sampled

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

(2) Well RW-3 was placed back in operation on 1 June, 2018.

(3) Influent concentrations presented are the weighted average concentrations of RW-1 and RW-3.

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Air Sampling Results
September 2020

DAR Parameters			**September 2020**	
Process Stream	**Units**	**Discharge Goal** [1]	**Influent**	**Effluent**
Sampling Date			9/1/20	
Average Flowrate	CFM	N/A	NR	8,672
Total Flow	ft^3	N/A	NR	372,274,650
Total Flow	m^3	N/A	NR	10,541,644
1,2-Dichloroethane	$\mu g/m^3$	N/A	2.1 J	ND
cis 1,2-Dichloroethene	$\mu g/m^3$	≤ 100,000 [2]	49	ND
trans 1,2-Dichloroethene	$\mu g/m^3$		ND	ND
1,2-Dichloroethene (total)	$\mu g/m^3$	≤ 100,000	49	ND
Toluene	$\mu g/m^3$	N/A	ND	ND
Total Xylene	$\mu g/m^3$	N/A	ND	ND
1,1,2-Trichloroethane	$\mu g/m^3$	N/A	1.5 J	ND
Trichloroethene	$\mu g/m^3$	≤ 2600	1200	ND
Vinyl Chloride	$\mu g/m^3$	≤ 560	ND	ND
Tetrachloroethene	$\mu g/m^3$	≤ 5100	210	ND

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

GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Controlled Stack Emissions
September 2020

DAR Parameters	Units	Discharge Goal (1)	September 2020
Sampling Date			9/1/20
Average Flowrate	CFM	N/A	8,672
Total Flow	ft^3	N/A	372,274,650
Total Flow	m^3	N/A	10,541,644
Trichloroethene	lb/hr	≤ 0.09	0.00000
Vinyl Chloride	lb/hr	≤ 0.02	0.00000
1,2 Dichloroethene	lb/hr	≤ 11	0.00000
1,2-Dichloroethane	lb/hr	N/A	0.00000
Toluene	lb/hr	N/A	0.00000
Total Xylene	lb/hr	N/A	0.00000
1,1,2-Trichloroethane	lb/hr	N/A	0.00000
Tetrachloroethene	lb/hr	≤ 0.18	0.00000

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

APPENDIX B

NYSDEC AIR DISCHARGE LIMIT DOCUMENTATION

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

Joseph Martens
Commissioner

October 31, 2013

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

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

Dear Ms. Fly:

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

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

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

Sincerely,

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

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

NOR-01264

November 21, 2011

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

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

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

Dear Mr. Scharf:

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

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

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

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

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

Sincerely,

David D. Brayack, P.E.
Project Manager

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

Distribution:

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

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

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

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

Notes:

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

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

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

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

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

ATTACHMENT A

2008 AIR PERMIT SUBMITTAL

New York State Department of Environmental Conservation
Air Permit Application

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

Section I - Certification

Title V Certification

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

Responsible Official	Title
Signature	Date / /

State Facility Certification

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

Responsible Official	Title
Signature	Date / /

Section II - Identification Information

Title V Facility Permit N/A			State Facility Permit N/A	
❑ New	❑ Significant Modification	❑ Administrative Amendment	❑ New	❑ Modification
❑ Renewal	❑ Minor Modification	General Permit Title:	General Permit Title:	
☒ Application involves construction of new facility		❑ Application involves construction of new emission unit(s)		

Owner/Firm

Name	US Navy/NAVFAC Midlant		
Street Address	9742 Maryland Ave, Bldg Z-144		
City Norfolk	State VA	Country US	Zip 23511-3095
Owner Classification ☒ Federal ❑ State ❑ Municipal ❑ Corporation/Partnership ❑ Individual			Taxpayer ID

Facility

❑ Confidential

Name	Naval Weapons Industrial Reserve Plant (NWIRP) GM-38 Area	
Location Address	Bethpage	
❑ City / ☒ Town / ❑ Village	Oyster Bay, New York	Zip 11714

Project Description

❑ Continuation Sheet(s)

Air stripping of groundwater to remove VOCs

Owner/Firm Contact Mailing Address

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

Facility Contact Mailing Address

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

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

Section III - Facility Information

Classification

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

Affected States (Title V Only) N/A

❑ Vermont ❑ Massachusetts ❑ Rhode Island ❑ Pennsylvania Tribal Land:_____
❑ New Hampshire ❑ Connecticut ❑ New Jersey ❑ Ohio Tribal Land:_____

SIC Codes

9999												

Facility Description ❑ Continuation Sheet(s)

Groundwater Remediation by Air Stripping followed by Vapor-Phase GAC for emission control

Compliance Statements (Title V Only) N/A

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

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

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

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

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

Facility State Only Requirements ❑ Continuation Sheet(s)

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

New York State Department of Environmental Conservation
Air Permit Application

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

Section III - Facility Information (continued)

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

Rule Citation

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

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

Monitoring Information

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

Description

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

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

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

Facility Emissions Summary ❑ Continuation Sheet(s)

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

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - -

Section IV - Emission Unit Information

Emission Unit Description

❑ Continuation Sheet(s)

EMISSION UNIT: 0-00EU1

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

Building

❑ Continuation Sheet(s)

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

Emission Point

❑ Continuation Sheet(s)

EMISSION PT.: 00ST1

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

EMISSION PT.:

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section	
					Length (in)	Width (in)
Exit Velocity (FPS)	**Exit Flow (ACFM)**	**NYTM (E) (KM)**	**NYTM (N) (KM)**	**Building**	**Distance to Property Line (ft)**	**Date of Removal**

Emission Source/Control

❑ Continuation Sheet(s)

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

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

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

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

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - -

Section IV - Emission Unit Information (continued)

Process Information

❑ Continuation Sheet(s)

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

Description

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

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

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

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

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

Emission Source/Control Identifier(s)

AS-1							

EMISSION UNIT	-	PROCESS

Description

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

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

Emission Source/Control Identifier(s)

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - -

Section IV - Emission Unit Information (continued)

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

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

Emission Unit Compliance Certification ❑ Continuation Sheet(s)

Rule Citation

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

☒ Applicable Federal Requirement ❑ State Only Requirement ❑ Capping

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

Monitoring Information

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

Description

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

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

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

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

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

DEC ID
- -

Section IV - Emission Unit Information (continued)

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

Rule Citation

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

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

Description

Rule Citation

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

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

Description

Process Emissions Summary ❑ Continuation Sheet(s)

EMISSION UNIT	0-00EU1				PROCESS	PR1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
0079-01-6	Trichloroethylene			95	1.87	02

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

EMISSION UNIT	0-00EU1				PROCESS	PR1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00075-01-4	Vinyl Chloride			95	0.17	03

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

EMISSION UNIT	0-00EU1				PROCESS	PR1
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
000540-59-0	1,2-Dichloroethylene			95	0.6	02

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

DEC ID
- - -

Section IV - Emission Unit Information (continued)

EMISSION UNIT 0-00EU1	Emission Unit Emissions Summary		❑ Continuation Sheet(s)	
CAS No.	Contaminant Name			
00107- 06 - 2	1,2-Dichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
13.4	Below Reporting Threshold BRT			
CAS No.	Contaminant Name			
00108 - 88 - 3	Toluene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
72.7	BRT	BRT		
CAS No.	Contaminant Name			
01330- 20 - 7	Xylene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
77.1	BRT	BRT		
CAS No.	Contaminant Name			
- -	1,1,2-Trichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	BRT		

Compliance Plan

❑ Continuation Sheet(s)

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

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

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

Remedial Measure / Intermediate Milestones	R/I	Date Scheduled

DEC ID

Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits

❑ Continuation Sheet(s)

EMISSION UNIT

Emission Reduction Description

Contaminant Emission Reduction Data

Baseline Period ___/___/___ to ___/___/___

Reduction Date	Reduction Method
/ /	

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

Facility to Use Future Reduction

Name | APPLICATION ID

Location Address

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

Use of Emission Reduction Credits

❑ Continuation Sheet(s)

EMISSION UNIT

Proposed Project Description

Contaminant Emissions Increase Data

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

Statement of Compliance

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

Source of Emission Reduction Credit - Facility

Name | PERMIT ID

Location Address

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

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

DEC ID
- -

Supporting Documentation

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

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ATTACHMENT B

2008 EMISSION ESTIMATES BASED ON 95% REMOVAL

ATTACHMENT 1
Emission Estimate

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

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

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

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

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

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

ATTACHMENT 1
Emission Estimate

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

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

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

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

ATTACHMENT C

2011 DISCHARGE GOALS AND 2011 DAR-1 ANALYSIS

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

1. Purpose:

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

2. Approach:

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

3. Calculation of Current Discharge Goals:

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

Notes:

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

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

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

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

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

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

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

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

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

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

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

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

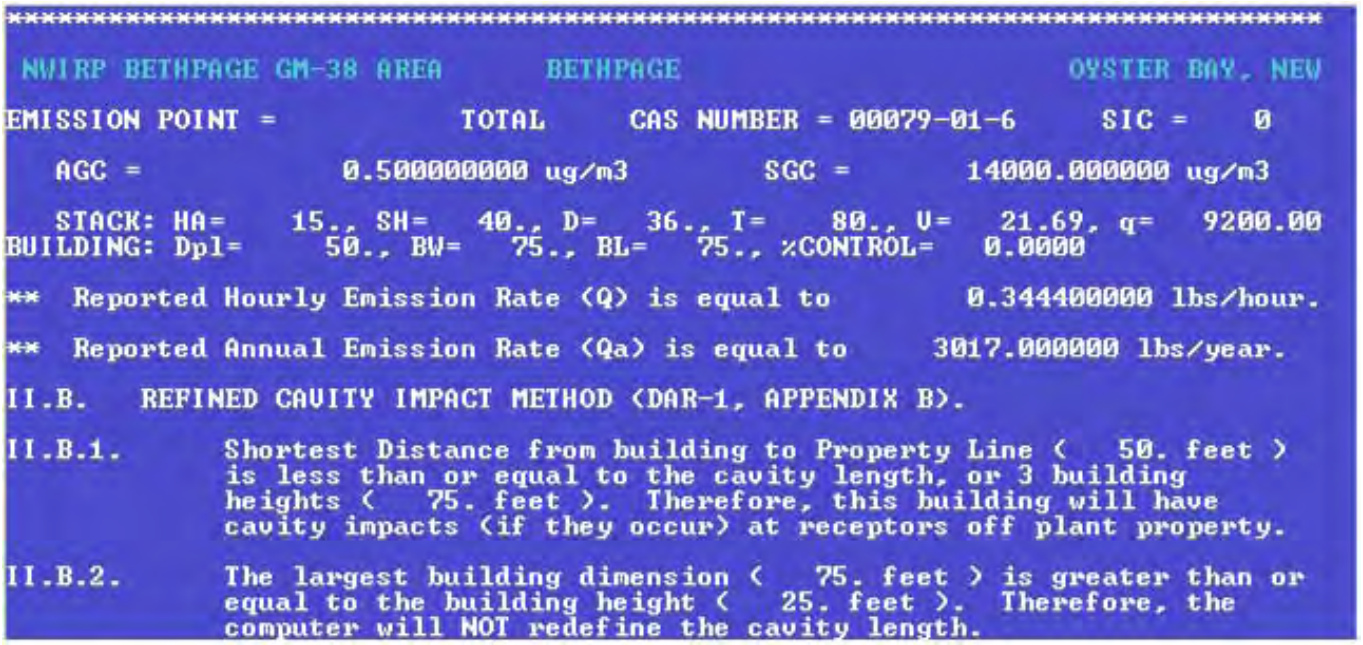
		SHORT-TERM	CAVITY	POINT or AREA SOURCE	
CAS NUMBER	AGC ug/m3	MAXIMUM (Gav,Pt,Area) % OF SGC	ACTUAL ANNUAL % OF AGC	POTENTIAL ANNUAL % OF AGC	ACTUAL ANNUAL % OF AGC
00075-01-4	0.11000000	0.0005	0.0000	13.3889	13.4948
00079-01-6	0.50000000	0.7757	0.0000	390.1734	390.6266
00127-18-4	1.00000000	7.3852	0.0000	132.6635	132.8415
00156-59-2	63.00000000	0.0000	0.0000	0.2320	0.2322
00540-59-0	63.00000000	0.0000	0.0000	0.2320	0.2322
SUMMARY TOTALS		8.1614	0.0000	536.6897	537.4274

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

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

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

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



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**********************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                              OYSTER BAY, NEW

EMISSION POINT =           TOTAL     CAS NUMBER = 00079-01-6     SIC =    0

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

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

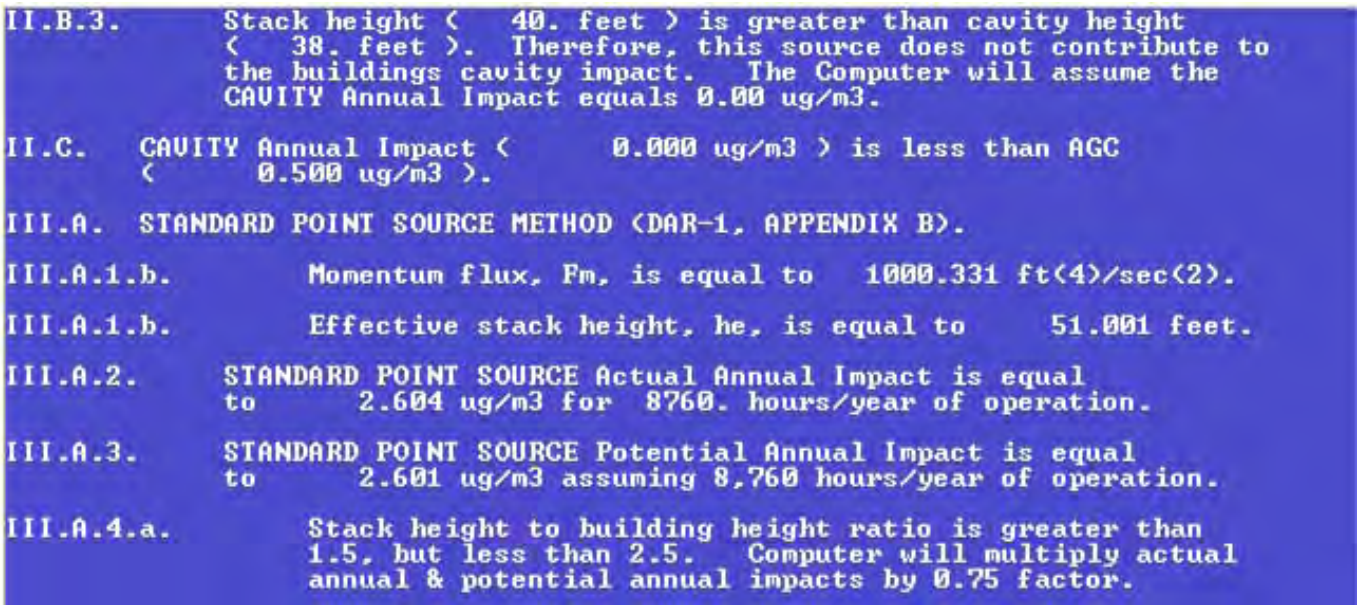
**  Reported Hourly Emission Rate (Q) is equal to         0.344400000 lbs/hour.

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
**********************************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                              OYSTER BAY, NEW
EMISSION POINT =           TOTAL     CAS NUMBER = 00127-18-4     SIC =    0
   AGC =            1.000000000 ug/m3        SGC =         1000.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000

**  Reported Hourly Emission Rate (Q) is equal to         0.234200000 lbs/hour.

**  Reported Annual Emission Rate (Qa) is equal to     2052.000000 lbs/year.

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

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

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

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

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

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

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

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

III.A.2.      STANDARD POINT SOURCE Actual Annual Impact is equal
              to      1.771 ug/m3 for  8762. hours/year of operation.

III.A.3.      STANDARD POINT SOURCE Potential Annual Impact is equal
              to      1.769 ug/m3 assuming 8,760 hours/year of operation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
**********************************************************************
 NWIRP BETHPAGE GM-38 AREA      BETHPAGE                    OYSTER BAY, NEW
EMISSION POINT =          TOTAL     CAS NUMBER = 00075-01-4     SIC =    0
   AGC =            0.110000000 ug/m3        SGC =      180000.000000 ug/m3
   STACK: HA=    15., SH=   40., D=   36., T=    80., V=   21.69, q=   9200.00
BUILDING: Dpl=     50., BW=   75., BL=   75., %CONTROL=   0.0000

**  Reported Hourly Emission Rate (Q) is equal to         0.002600000 lbs/hour.

**  Reported Annual Emission Rate (Qa) is equal to        22.930000 lbs/year.

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

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

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

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

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

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

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

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

III.A.2.      STANDARD POINT SOURCE Actual Annual Impact is equal
              to      0.020 ug/m3 for  8819. hours/year of operation.

III.A.3.      STANDARD POINT SOURCE Potential Annual Impact is equal
              to      0.020 ug/m3 assuming 8,760 hours/year of operation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

AGCs & SGCs — 9/ 8/11 — Page 1

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

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

CONTAMINANT EMISSIONS SUMMARY 9/ 8/11
Page 1

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

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

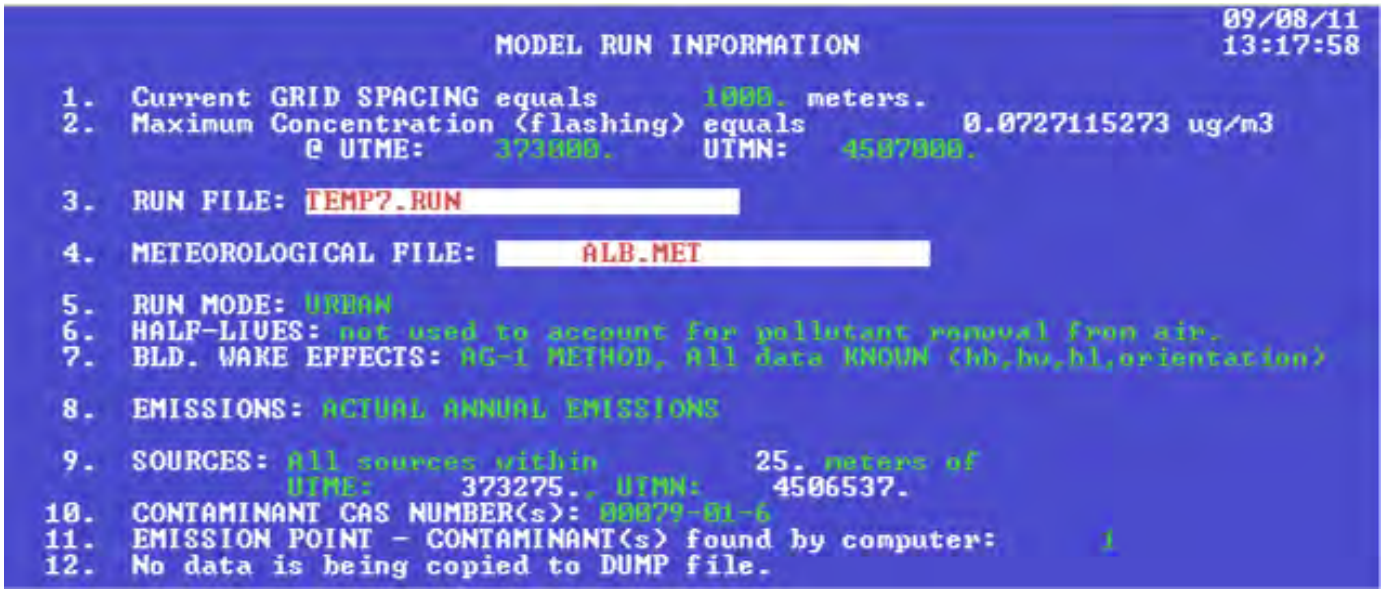
CONCENTRATIONS x 10 (-2) (ug/m3) for 00079-01-6 09/08/11 13:17:58
AGC = 0.500000000 ug/m3

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

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

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

XII. ISCLT Model Run Information, within 25 meters:



APPENDIX C

FIELD LOGS AND
CHAIN OF CUSOTDY DOCUMENTATION

Date: 10/6/2020

Groundwater Level Measurement Sheet

Project Site: NWIPR Bethpage – GM-38
Location: Bethpage, NY
Field Crew: Seiler + Hoffmaster

Water Level Meter: Solinst
Weather: Sunny, clear, high of 70°F
Time of Low Tide: N/A
Time of High Tide: N/A

Well ID	Time	Depth to Water (Ft.)	Total Depth of Well/ Screened Interval (Ft.)	Comments
RW1-MW1	1236	34.13	435 / 395 – 435	
RW1-MW2	* ~~0940~~ 0900	35.75	435 / 395 – 435	
RW1-MW3	1408	27.90	435 / 395 – 435	
RW2-MW1	1046	38.21	510 / 470 – 510	
RW2-MW2	1100	38.35	510 / 470 – 510	
RW2-MW3	1105	37.85	510 / 470 – 510	
RW3-MW1	1652	37.60	350 / 330 – 350	
RW3-MW2	1542	39.10	495 / 475 – 495	
RW3-MW3	0910	38.08	340 / 320 – 340	
RW3-MW4	*1600	39.76	495 / 475 – 495	
TP1	0748	33.10	470 / 450 – 470	
IW1-MW1	*0940	35.23	470 / 450 – 470	
RW-1	—	—	Open vault and check integrity of piping, etc.	
RW-3	—	—	Open vault and check integrity of piping, etc.	

Signature: Eric Seiler

Date: 10/7/2020

Instrument Calibration Log

Project/Site Name: Bethpage GM38 **Date:** 10/5/2020 **Weather:** mostly sunny, high of 70°F

Calibrated By: Seiler **Instrument:** YSI 650 MDS **Serial Number:** 07F1006002

Parameters	Morning Calibration Time: 0745	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
Conductivity (0.1) (µS/cm)	.975 → .988	18.52		06F424 Jun/21
pH (7)	6.97 → 7.00	18.20		06E815 MAY/22
pH (4)	3.89 → 4.00	17.30		06F127 Jun/22
pH (10)	10.17 → 10.02	18.58		06E148 MAY/22
ORP (228) (mV)	248.4 → 229.0	18.58		06C520 Oct/20
Dissolved Oxygen (%)	143.7% → 100.6%	19.36		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mm Hg)	764.3	—		

Signature: Ernest Seiler Date: 10/5/2020

Instrument Calibration Log

Project/Site Name: Bethpage GM38 **Date:** 10/6/2020 **Weather:** sunny, high of 70°F

Calibrated By: Seiler **Instrument:** YSI 650 MDS **Serial Number:** 07F100602

Parameters	Morning Calibration Time: 0710	Cal. Temperature °C	Afternoon Cal. Check Time:	Comments
Conductivity (0.1) (µS/cm)	0.1003 → 0.100	20.57		06F424 Jun/21
pH (7)	6.97 → 7.00	20.97		06E615 MAY/22
pH (4)	4.02 → 4.00	20.54		06F127 Jun/22
pH (10)	10.09 → 10.01	20.71		06E148 MAY/22
ORP (229) (mV)	222.0 → 229.0	20.57		06C526 oct/20
Dissolved Oxygen (%)	104.6% → 100.7%	20.30		
Zero Dissolved Oxygen (mg/L)				
Barometric Pressure (mm Hg)	765.3			

Signature: Brent Seiler Date: 10/6/20

Hanna Turbidity Meter - Calibration

Model # HI 98703
Serial # J00048838

10/5/2020 → 0745 calibrate equipment
15 NTU solution read 15.1 NTU
100 NTU Solution read 100.3 NTU

10/6/2020 → 0710 calibrate equipment
15 NTU Solution read 15.0 NTU
100 NTU Solution read 100.1 NTU

Erick Silva 10/7/2020

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 10/ 6 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: ~~1652~~ 1652 End Time: 1740
Well Construction: 4" pvc Flushmount
Depth to Water: 37.60
Well Depth: 350
Water Column: 347.4
Total Volume Removed (L): 12.0
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	07F100682
Hanna Turbidity Meter	HI 98703	JW048838
GeoTech	SS GeoSub Pump	10B0221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
1700	—	400	37.62	15.74	4.47	155	4.72	339.7	4.90		clear
1705	2.0	↓	37.62	15.78	4.24	155	4.22	367.2	4.77		clear
1710	4.0	↓	37.63	15.64	4.32	155	4.18	364.5	4.66		clear
1715	6.0	↓	37.63	15.57	4.35	155	4.15	370.2	4.35		clear
1720	8.0	↓	37.64	15.49	4.38	155	4.14	370.1	4.27		clear
1725	10.0	↓	37.65	15.29	4.39	155	4.14	372.3	4.13		clear
1730	12.0	↓	37.65	15.26	4.41	155	4.16	371.3	4.30		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1735	GM-38-GW-RW3-MW1-1020				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Pump set @ ≈ 200' bgs

Signature

10/6/2020
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW3-MW2

Date: 10/ 6 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: 1542 End Time: 1630
Well Construction: 4" pvc Flushmount
Depth to Water: 39.10
Well Depth: 495
Water Column: 455.9
Total Volume Removed (L): 12
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	07F100602
Hanna Turbidity Meter	HI 98703	10048838
GeoTech	SS GeoSub Pump	10B0221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
1550	–	400	39.87	23.51	4.42	90	3.97	395.4	2.49	X	clear
1555	2.0	|	39.89	20.70	4.15	97	0.99	367.4	2.32		clear
1600	4.0	|	39.89	20.88	4.25	96	0.88	364.5	1.93		clear
1605	6.0	|	39.89	20.77	4.41	96	0.81	360.7	1.74		clear
1610	8.0	|	39.89	20.95	4.48	96	0.80	359.8	2.20		clear
1615	10.0	|	39.89	20.77	4.49	96	0.79	359.8	1.59		Clear
1620	12.0	↓	39.89	20.76	4.49	96	0.79	362.1	1.78		Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1625	GM-38-GW-RW3-MW2-1020				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Pump set @ ≈ 200' bgs

Signature

10/6/2020
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 10/ 6 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: ~~1353~~ 1408 End Time: 1450
Well Construction: 4" PVC Flushmount
Depth to Water: 27.90
Well Depth: 435
Water Column: 407.1
Total Volume Removed (L): 12.5
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	07F100602
Hanna Turbidity Meter	HI 98703	J00 48838
GeoTech	SS GeoSub Pump	100B6221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
1415 ~~1400~~	—	500	27.93	16.15	4.13	182	1.81	346.7	13.2	X	clear
1420	2.5	↓	29.93	16.18	4.24	182	1.23	355.1	13.1		clear
1425	5.0		29.93	15.95	4.34	182	1.13	351.5	12.6		clear
1430	7.5		29.93	16.31	4.46	183	1.13	347.5	11.7		clear
1435	10.0		29.93	16.22	4.48	183	1.13	347.7	11.2		clear
1440	12.5	↓	29.93	15.94	4.53	182	1.14	347.6	10.9		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1445	GM-38-GW-RW1-MW3-1020				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

pump set @ ≈ 180' bgs

Signature

10/6/2020
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW1-MW1

Date: 10/ 6 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: 1236 End Time: 1320
Well Construction: 4" PVC Flushmount
Depth to Water: 34.13
Well Depth: 435
Water Column: 400.87
Total Volume Removed (L): 15.0
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	07F100602
Hanna Turbidity Meter	HI 98703	5000488 38
GeoTech	SS GeoSub Pump	16B0221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
1240	—	500	34.20	15.72	5.84	161	2.00	291.6	16.8	/	clear
1245	2.5	↓	34.22	15.42	4.43	160	1.12	347.1	7.82		clear
1250	5.0		34.22	15.40	4.31	160	1.04	357.6	5.60		clear
1255	7.5		34.22	15.37	4.36	159	1.01	360.0	5.79		clear
1300	10.0		34.23	15.36	4.37	159	0.99	359.4	4.92		clear
1305	12.5		34.23	15.34	4.39	159	1.01	359.2	4.71		clear
1310	15.0	↓	34.23	15.33	4.39	158	1.04	358.0	4.69		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1315	GM-38-GW-RW1-MW1-1020				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

pump set @ ≈ 200' bgs

Signature

10/6/2020
Date

RW2 MW2 38.35
RW2 MW3 37.95

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: RW2-MW1

Date: 10/ 6 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: 1046 End Time: 1200
Well Construction: 4" pvc Flushmount
Depth to Water: 38.21
Well Depth: 510
Water Column: 471.79
Total Volume Removed (L): 18.0
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	07F100602
Hanna Turbidity Meter	HI 98703	J0048838
GeoTech	SS GeoSub Pump	10B0221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
1050	—	300	38.28	14.87	7.49	149	1.31	197.1	37.7	X	Clear
1055	1.5		38.30	15.00	8.09	148	0.58	183.9	19.7		clear
1100	3.0		38.31	14.99	8.39	148	0.33	100.1	21.5		clear
1105	4.5		38.34	15.07	8.64	148	0.25	16.5	25.5		clear
1110	6.0		38.37	15.07	8.75	149	0.22	-34.3	30.8		Clear
1115	7.5		38.39	15.07	8.77	148	0.19	-79.1	38.7		Clear
1120	9.0		38.42	15.06	8.81	148	0.18	-112.3	63.7		clear/gray tint
1125	10.5		38.45	14.95	8.81	148	0.16	-143.8	88.2		clear/gray tint
1130	12.0		38.46	14.86	8.80	149	0.15	-139.3	109		clear/gray tint
1135	13.5		38.48	14.88	8.84	148	0.14	-130.0	131		clear/gray tint
1140	15.0		38.50	15.12	8.85	148	0.15	-117.9	134		clear/gray tint
1145	16.5		38.52	14.99	8.87	149	0.15	-114.6	141		clear/gray tint
Acceptance Criteria:		↓	<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

1150 18.0 38.54 14.95 8.42 149 0.15 -113.0 138 clear/~~light~~ tint gray

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1155 ~~1150~~	GM-38-GW-RW 2-MW 1 -1020				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

pump set @ ≈ 200' bgs

Signature

10/5/2020
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 10/ 6 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: 0910 End Time: 1011
Well Construction: 4" PVC Flushmount
Depth to Water: ~~38.29~~ 38.08
Well Depth: 340
Water Column: 301.92
Total Volume Removed (L): 12.0
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	04 07F10 0602
Hanna Turbidity Meter	HI 98703	J0048838
GeoTech	SS GeoSub Pump	16B60221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
0915	—	400	38.11	15.26	5.16	129	1.23	294.6	33.3	X	clear
0920	2.0	|	38.11	15.17	4.99	129	0.97	284.3	36.6		clear
0925	4.0	|	38.11	15.12	4.91	129	0.93	295.3	35.8		clear
0930	6.0	|	38.11	15.18	4.85	129	0.92	304.4	37.5		clear
0935	8.0	|	38.11	15.32	4.90	129	0.92	308.4	36.2		clear
0940	10.0	|	38.11	15.22	4.91	129	0.92	307.3	37.0		clear
0945	12.0	↓	38.11	15.31	4.94	129	0.92	304.2	38.3		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
0950	GM-38-GW-RW3-MW3-1020				
		40 mL CG	~~3~~ 9	---	TCL VOCs (624)
		500 mL PL	~~1~~ 3	HNO_3	Hg (245.1)
		250 mL PL	~~1~~ 3	---	TSS (SM2540D)
0955	GM-38-GW-RW3-MW3-DUP-1020				

Comments

MS/MSD collected here
Pump set @ ≈ 200' bgs

Signature

10/6/2020
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

Project: NWIRP Bethpage - GM38
Location: Bethpage, NY
Well ID: TP-01

Date: 10/ 6 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: 0748 End Time: 0835
Well Construction: 4" PVC Flushmount
Depth to Water: 33.10
Well Depth: 470
Water Column: 436.9
Total Volume Removed (L): 6.0
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	07F100602
Hanna Turbidity Meter	HI 98703	J00488038
GeoTech	SS GeoSub Pump	160B0221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
0755	—	200	33.12	13.92	6.34	262	8.50	142.2	5.28	X	clear
0800	2.0	|	33.12	13.93	6.19	263	8.23	143.6	4.31		clear
0805	2.0	|	33.12	13.97	6.17	262	8.24	150.8	3.24		clear
0810	3.0	|	33.13	13.99	6.17	262	8.27	157.8	2.56		clear
0815	4.0	|	33.13	14.00	6.17	262	8.32	163.4	2.34		Clear
0820	5.0	|	13.13	14.05	6.16	262	8.34	168.5	2.08		clear
0825	6.0	↓	13.13	14.05	6.15	262	8.36	172.5	2.14		Clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
0830	~~GM-38-GW-RW MW-1020~~				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)
	GM-38-GW-TP01-1020				

Comments

pump set @ ≈ 200' bgs

Signature

10/6/2020
Date

Koman Government Solutions, LLC

Low Flow/ Low Stress Groundwater Sampling Log

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

Date: 10/ 5 /2020
Sampler: Seiler + Hoffmaster
PID: ------

Start Time: 1600 End Time: 1650
Well Construction: 4" PVC Flushmount
Depth to Water: ~~40.28~~ 39.76
Well Depth: 495
Water Column: 455.24
Total Volume Removed (L): 10.5 L
Dedicated Pump in Well?: No

Field Testing Equipment

Make	Model	Serial #
YSI	650 MDS	07F100602
Hanna Turbidity Meter	HI 98703	J00488838
GeoTech	SS GeoSub Pump	140B0221
GeoTech	SS GeoSub Controller	4010-1153

Time (hh:mm)	Volume Removed (L)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Salinity (ppm)	Color
1605	—	300	39.88	15.51	4.59	131	1.84	319.4	3.76	X	clear
1610	1.5	|	39.90	15.53	4.52	131	1.28	245.4	6.27		clear
1615	3.0	|	39.91	15.55	4.50	130	1.23	254.1	5.74		clear
1620	4.5	|	39.91	15.38	4.50	130	1.23	255.5	6.55		clear
1625	6.0	|	39.92	15.43	4.48	129	1.24	276.3	3.88		clear
1630	7.5	|	39.93	15.53	4.47	129	1.24	783.4	4.14		clear
1635	9.0	|	39.94	15.49	4.45	129	1.26	787.2	3.46		clear
1640	10.5	↓	39.94	15.42	4.44	129	1.23	792.1	3.50		clear
Acceptance Criteria:			<0.3ft	3%	±0.1	3%	10%	± 10mv	10%		

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

Sample Collection

Time	Sample ID	Container	# Bottles	Preservative	Analysis
1645	GM-38-GW-RW3-MW4-1020				
		40 mL CG	3	---	TCL VOCs (624)
		500 mL PL	1	HNO_3	Hg (245.1)
		250 mL PL	1	---	TSS (SM2540D)

Comments

Pump set @ ≈ 200' bgs

Signature

10/6/2020
Date

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 60496

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

Project Name: Bethpage GM38 Semi Annual LTM	Project Number: 2605-106
Project Manager: Bob Gregory	Report CC:
Company/Address: 180 Gordon Drive Suite 110, Exton PA 19341	
Phone #: 610-400-6636	Email: Rgregory@komanqs.com
Sampler's Signature: [signature]	Sampler's Printed Name: Ericka Seiler

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

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TSS							REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE											0			2		0				
Gm-38-GW-RW3-MW4-1020		10/5/20	1645	GW	5	3					1		1							
Gm-38-GW-TP01-1020		10/6/20	0830	GW	5	3					1		1							
Gm-38-GW-RW3-MW3-1020		10/6/20	0950	GW	15	9					3		3							ms/msd
Gm-38-GW-RW2-MW1-1020		10/6/20	1155	GW	5	3					1		1							
Gm-38-GW-RW1-MW1-1020		10/6/20	1315	GW	5	3					1		1							
Gm-38-GW-RW1-MW3-1020		10/6/20	1445	GW	5	3					1		1							
Gm-38-GW-RW3-MW2-1020		10/6/20	1625	GW	5	3					1		1							
Gm-38-GW-RW3-MW1-1020		10/6/20	1735	GW	5	3					1		1							
Gm-38-GW-RW3-MW3-DUP-1020		10/6/20	0455	GW	5	3					1		1							
Gm-38-EB-1020		10/5/20	1745	Blank	5	3					1		1							Equipment Blank
Trip Blank		—	—	Blank	3	3														Trip Blank

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

SPECIAL INSTRUCTIONS/COMMENTS
Metals Total Metals = Hg only

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
X Standard (10 business days-No Surcharge)

REQUESTED REPORT DATE _____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data

Edata _____ Yes _____ No

INVOICE INFORMATION
PO #
BILL TO:

STATE WHERE SAMPLES WERE COLLECTED New York

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm	Firm	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

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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

SDG #: R2009432

Client: KOMAN Government Solutions, LLC

Date: 10/30/2020

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for nine (9) water samples, one (1) trip blank and one (1) equipment blank analyzed for Volatiles by EPA Method 624.1.

2. The samples were collected on 10/5-6/2020. The samples were submitted to ALS Environmental, Middletown, PA on 10/8/2020 for analysis.

3. The USEPA Region II SOP HW-34, Revision No.: 3, Trace Volatile Data Validation; USEPA National Functional Guidelines for Organic Data Review, EPA 540/R-2017-002, January 2017; EPA Method 624 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Volatiles data in this summary report.

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

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
GM-38-GW-RW3-MW4-1020	R2009432-001	10/05/2020	Water	
GM-38-GW-TP01-1020	R2009432-002	10/06/2020	Water	
GM-38-GW-RW3-MW3-1020	R2009432-003	10/06/2020	Water	
GM-38-GW-RW2-MW1-1020	R2009432-004	10/06/2020	Water	
GM-38-GW-RW1-MW1-1020	R2009432-005	10/06/2020	Water	
GM-38-GW-RW1-MW3-1020	R2009432-006	10/06/2020	Water	
GM-38-GW-RW3-MW2-1020	R2009432-007	10/06/2020	Water	
GM-38-GW-RW3-MW1-1020	R2009432-008	10/06/2020	Water	
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	10/06/2020	Water	Field Duplicate of sample GM-38-GW-RW3-MW3-1020
GM-38-EB-1020	R2009432-010	10/05/2020	Water	Equipment Blank
Trip Blank	R2009432-011	10/05/2020	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 condition of samples, analytical problems or special circumstances affecting the quality of the data. The Laboratory indicated on the cooler receipt and preservation check form that VOC bottle labeled RW3-MW4 should be RW3-MW3 due to time match. 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.

Surrogates:

1. All surrogates %REC values for all water samples and associated QC were within the laboratory control limits. 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 (RQ2012134-04) analyzed on 10/10/2020 was free of contamination. No qualifications were required.

2. Equipment Blank (GM-38-EB-1020) (R2009432-010) analyzed on 10/10/2020 was free of contamination. No qualifications were required.

3. Trip Blank (R2009432-011) analyzed on 10/10/2020 was free of contamination. No qualifications were required.

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

1. Laboratory Control Sample (RQ2012134-02) was analyzed on 10/10/2020. All %RECs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample GM-38-GW-RW3-MW3-DUP-1020 (R2009432-009) was collected as field duplicate for sample GM-38-GW-RW3-MW3-1020 (R2009432-003). All RPDs were ≤50.0%.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
GM-38-GW-RW3-MW3-0320	1,1,1-Trichloroethane	EPA 624	0.402	µg/l	GM-38-GW-RW3-MW3-DUP-1020	0.384	µg/l	4.6	None
GM-38-GW-RW3-MW3-0320	1,1-Dichloroethane	EPA 624	1.78	µg/l	GM-38-GW-RW3-MW3-DUP-1020	1.90	µg/l	6.5	None
GM-38-GW-RW3-MW3-0320	1,1-Dichloroethene	EPA 624	1.38	µg/l	GM-38-GW-RW3-MW3-DUP-1020	1.39	µg/l	0.7	None
GM-38-GW-RW3-MW3-0320	Chloroform	EPA 624	0.328	µg/l	GM-38-GW-RW3-MW3-DUP-1020	0.342	µg/l	4.2	None
GM-38-GW-RW3-MW3-0320	Cis-1,2-Dichloroethene	EPA 624	0.803	µg/l	GM-38-GW-RW3-MW3-DUP-1020	0.840	µg/l	4.5	None
GM-38-GW-RW3-MW3-0320	Tetrachloroethene	EPA 624	0.533	µg/l	GM-38-GW-RW3-MW3-DUP-1020	0.545	µg/l	2.2	None
GM-38-GW-RW3-MW3-0320	Trichloroethene	EPA 624	180	µg/l	GM-38-GW-RW3-MW3-DUP-1020	180	µg/l	0	None

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample GM-38-GW-RW3-MW3-1020 (R2009432-003). All %RECs/RPDs were within the laboratory control limits. No qualifications were required.

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

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

Target Compound Identification:

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

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

3. No QC deviations were observed.

Comments:

1. Validation qualifiers (if required) were entered into the EDD for SDG: R2009432.

2. Summary of the qualified data is listed in the Qualification Summary Table for SDG: R2009432 at the end of the data validation report.

NWIRP BETHPAGE GM-38
OCTOBER 2020 EVENT
QUALIFICATION SUMMARY TABLE
AQUEOUS
SDG: R2009432
VOC

Sample Name	Lab ID	Analytical Method	Analyte	Unit	Reported Result	Lab Qualifier	Validated Value	DV Qualifier	Reason Code
No qualifiers were added after data validation.									

NOTE: Only results that had qualifications added after validation are listed in this table.

MERCURY
USEPA Region II – Data Validation

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

Location: 100 Broadway, Bethpage, NY

SDG #: R2009432

Client: KOMAN Government Solutions, LLC

Date: 10/30/2020

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

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

2. The samples were collected on 10/5-6/2020. The samples were submitted to ALS Environmental, Middletown, PA on 10/8/2020 for analysis.

3. The USEPA Region II SOP No. HW-2C, Revision 15, December 2012, Mercury and Cyanide Data Validation; USEPA National Functional Guidelines for Inorganic Data Review, EPA 540-R-2017-001, January 2017 and Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 were used in evaluating the Mercury data in this summary report.

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

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
GM-38-GW-RW3-MW4-1020	R2009432-001	10/05/2020	Water	
GM-38-GW-TP01-1020	R2009432-002	10/06/2020	Water	
GM-38-GW-RW3-MW3-1020	R2009432-003	10/06/2020	Water	
GM-38-GW-RW2-MW1-1020	R2009432-004	10/06/2020	Water	
GM-38-GW-RW1-MW1-1020	R2009432-005	10/06/2020	Water	
GM-38-GW-RW1-MW3-1020	R2009432-006	10/06/2020	Water	
GM-38-GW-RW3-MW2-1020	R2009432-007	10/06/2020	Water	
GM-38-GW-RW3-MW1-1020	R2009432-008	10/06/2020	Water	
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	10/06/2020	Water	Field Duplicate of sample GM-38-GW-RW3-MW3-1020
GM-38-EB-1020	R2009432-010	10/05/2020	Water	Equipment 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.

Blanks (Method Blank, ICB and CCB):

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

2. Method Blank digested on 10/12/2020 was free of contamination. No qualifications were required.

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

1. Field Blank (GM-38-EB-1020) (R2009432-010) analyzed on 10/13/2020 was free of contamination. No qualifications were required.

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

1. Mercury %REC in Laboratory Control Sample analyzed on 10/13/2020 was within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample GM-38-GW-RW3-MW3-DUP-1020 (R2009432-009) was collected as field duplicate for sample GM-38-GW-RW3-MW3-0320 (R2009432-003). Results for mercury were non-detect in the field duplicate pair. No qualifications were required.

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

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample GM-38-GW-RW3-MW3-1020 (R2009432-003). 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: R2009432.

2. Summary of the qualified data is listed in the Qualification Summary Table for SDG: R2009432 at the end of the data validation report.

NWIRP BETHPAGE GM-38
OCTOBER 2020 EVENT
QUALIFICATION SUMMARY TABLE
AQUEOUS
SDG: R2009432
MERCURY

Sample Name	Lab ID	Analytical Method	Analyte	Unit	Reported Result	Lab Qualifier	Validated Value	DV Qualifier	Reason Code
No qualifiers were added after data validation.									

NOTE: Only results that had qualifications added after validation are listed in this table.

GENERAL CHEMISTRY
USEPA Region II – Data Validation

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

Location: 100 Broadway, Bethpage, NY

SDG #: R2009432

Client: KOMAN Government Solutions, LLC

Date: 10/30/2020

Laboratory: ALS Environmental, Middletown, PA

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for nine (9) water samples and one (1) equipment blank (EB) sample analyzed for Solids, Total Suspended (TSS) by SM2540D.

2. The samples were collected on 10/5-6/2020. The samples were submitted to ALS Environmental, Middletown, PA on 10/8/2020 for analysis.

3. Quality Assurance Project Plan for GM-38 Area, Naval Weapons Industrial Reserve Plant, Bethpage, NY; September 3, 2009 was used in evaluating the Solids, Total Suspended data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. No data points were qualified due to nonconformance of Quality Control criteria (See discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Matrix	Sample Status
GM-38-GW-RW3-MW4-1020	R2009432-001	10/05/2020	Water	
GM-38-GW-TP01-1020	R2009432-002	10/06/2020	Water	
GM-38-GW-RW3-MW3-1020	R2009432-003	10/06/2020	Water	
GM-38-GW-RW2-MW1-1020	R2009432-004	10/06/2020	Water	
GM-38-GW-RW1-MW1-1020	R2009432-005	10/06/2020	Water	
GM-38-GW-RW1-MW3-1020	R2009432-006	10/06/2020	Water	
GM-38-GW-RW3-MW2-1020	R2009432-007	10/06/2020	Water	
GM-38-GW-RW3-MW1-1020	R2009432-008	10/06/2020	Water	
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	10/06/2020	Water	Field Duplicate of sample GM-38-GW-RW3-MW3-1020
GM-38-EB-1020	R2009432-010	10/05/2020	Water	Equipment 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. The Laboratory indicated on the cooler receipt and preservation check form that TSS bottle labeled RW3-MW1 should be RW3-MW2 due to time match. 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 (R2009432-MB) analyzed on 10/10/2020 was free of contamination. No qualifications were required.

2. Equipment Blank (GM-38-EB1-1020) (R2009432-010) analyzed on 10/10/2020 was free of contamination. No qualifications were required.

Field Duplicate:

1. Sample GM-38-GW-RW3-MW3-DUP-1020 (R2009432-009) was collected as field duplicate for sample GM-38-GW-RW3-MW3-1020 (R2009432-003). RPD was <50.0%.

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
GM-38-GW-RW3-MW3-1020	TSS	2540D	6.5	mg/l	GM-38-GW-RW3-MW3-DUP-1020	5.9	mg/l	9.7	None

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

1. Laboratory Control Sample (R2009432-LCS) was analyzed on 10/10/2020. All %RECs were within the laboratory control limits. No qualifications were required.

Laboratory Duplicate:

1. Sample Duplicate was performed on sample GM-38-GW-RW3-MW3-1020 (R2009432-003). TSS RPD was 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: R2009432.

2. Summary of the qualified data is listed in the Qualification Summary Table for SDG: R2009432 at the end of the data validation report.

NWIRP BETHPAGE GM-38
OCTOBER 2020 EVENT
QUALIFICATION SUMMARY TABLE
AQUEOUS
SDG: R2009432
GENERAL CHEMISTRY

Sample Name	Lab ID	Analytical Method	Analyte	Unit	Reported Result	Lab Qualifier	Validated Value	DV Qualifier	Reason Code
No qualifiers were added after data validation.									

NOTE: Only results that had qualifications added after validation are listed in this table.

NWIRP BETHPAGE GM-38
OCTOBER 2020 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R2009432

Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-EB-1020	R2009432-010	2540D	10/5/2020	1	Solids, Total Suspended (TSS)	1.0	MG_L	U		1.0
GM-38-EB-1020	R2009432-010	245.1	10/5/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,1,1-Trichloroethane (TCA)	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,1-Dichloroethane (1,1-DCA)	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,1-Dichloroethene (1,1-DCE)	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Chloroform	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Tetrachloroethene (PCE)	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Trichloroethene (TCE)	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	cis-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-EB-1020	R2009432-010	624.1	10/5/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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OCTOBER 2020 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R2009432

Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW1-MW1-1020	R2009432-005	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	3.7	MG_L			1.0
GM-38-GW-RW1-MW1-1020	R2009432-005	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	0.819	UG_L	J	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	5.54	UG_L		1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	1.81	UG_L	J	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Chloroform	0.454	UG_L	J	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Tetrachloroethene (PCE)	0.395	UG_L	J	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Trichloroethene (TCE)	86.8	UG_L		1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	cis-1,2-Dichloroethene	4.33	UG_L	J	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW1-1020	R2009432-005	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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OCTOBER 2020 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R2009432

Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW1-MW3-1020	R2009432-006	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	2.3	MG_L			1.0
GM-38-GW-RW1-MW3-1020	R2009432-006	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	0.817	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,1,2-Trichloroethane	0.346	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	4.00	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	1.22	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Chloroform	0.623	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Tetrachloroethene (PCE)	0.324	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Trichloroethene (TCE)	3.13	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	cis-1,2-Dichloroethene	0.275	UG_L	J	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW1-MW3-1020	R2009432-006	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW2-MW1-1020	R2009432-004	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	116	MG_L			4.0
GM-38-GW-RW2-MW1-1020	R2009432-004	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	2.38	UG_L	J	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	0.532	UG_L	J	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,2-Dichloroethane	0.393	UG_L	J	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Benzene	0.208	UG_L	J	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Chloroform	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Tetrachloroethene (PCE)	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Trichloroethene (TCE)	2.82	UG_L	J	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	cis-1,2-Dichloroethene	4.01	UG_L	J	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW2-MW1-1020	R2009432-004	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW1-1020	R2009432-008	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	1.1	MG_L			1.0
GM-38-GW-RW3-MW1-1020	R2009432-008	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Chloroform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Tetrachloroethene (PCE)	2.50	UG_L	J	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Trichloroethene (TCE)	23.1	UG_L		1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	cis-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW1-1020	R2009432-008	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW2-1020	R2009432-007	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	1.0	MG_L	U		1.0
GM-38-GW-RW3-MW2-1020	R2009432-007	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	0.287	UG_L	J	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Chloroform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Tetrachloroethene (PCE)	0.317	UG_L	J	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Trichloroethene (TCE)	119	UG_L		1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	cis-1,2-Dichloroethene	0.809	UG_L	J	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW2-1020	R2009432-007	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW3-1020	R2009432-003	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	6.5	MG_L			1.0
GM-38-GW-RW3-MW3-1020	R2009432-003	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	0.402	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	1.78	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	1.38	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Chloroform	0.328	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Tetrachloroethene (PCE)	0.533	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Trichloroethene (TCE)	180	UG_L		1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	cis-1,2-Dichloroethene	0.803	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-1020	R2009432-003	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	5.9	MG_L			1.0
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	0.384	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	1.90	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	1.39	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Chloroform	0.342	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Tetrachloroethene (PCE)	0.545	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Trichloroethene (TCE)	180	UG_L		1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	cis-1,2-Dichloroethene	0.840	UG_L	J	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW3-DUP-1020	R2009432-009	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-RW3-MW4-1020	R2009432-001	2540D	10/5/2020	1	Solids, Total Suspended (TSS)	2.2	MG_L			1.0
GM-38-GW-RW3-MW4-1020	R2009432-001	245.1	10/5/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,1,1-Trichloroethane (TCA)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,1-Dichloroethane (1,1-DCA)	1.50	UG_L	J	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,1-Dichloroethene (1,1-DCE)	0.409	UG_L	J	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Chloroform	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Tetrachloroethene (PCE)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Trichloroethene (TCE)	3.02	UG_L	J	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	cis-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-RW3-MW4-1020	R2009432-001	624.1	10/5/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
GM-38-GW-TP01-1020	R2009432-002	2540D	10/6/2020	1	Solids, Total Suspended (TSS)	1.0	MG_L			1.0
GM-38-GW-TP01-1020	R2009432-002	245.1	10/6/2020	1	Mercury	0.10	UG_L	U	0.1	0.20
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,1,1-Trichloroethane (TCA)	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,1,2,2-Tetrachloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,1,2-Trichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,1-Dichloroethane (1,1-DCA)	0.363	UG_L	J	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,1-Dichloroethene (1,1-DCE)	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,2-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,2-Dichloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,2-Dichloropropane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,3-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,4-Dichlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Acrylonitrile	100	UG_L	U		100
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Benzene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Bromodichloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Bromoform	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Bromomethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Carbon Tetrachloride	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Chlorobenzene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Chloroethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Chloroform	0.292	UG_L	J	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Chloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Dibromochloromethane	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Methylene Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Ethylbenzene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Tetrachloroethene (PCE)	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Toluene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Trichloroethene (TCE)	11.1	UG_L		1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Trichlorofluoromethane (CFC 11)	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	Vinyl Chloride	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	cis-1,2-Dichloroethene	3.14	UG_L	J	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	cis-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	trans-1,2-Dichloroethene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	trans-1,3-Dichloropropene	1.00	UG_L	U	1	5.00
GM-38-GW-TP01-1020	R2009432-002	624.1	10/6/2020	1	1,3-Dichloropropene, Total	10.0	UG_L	U		10.0

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OCTOBER 2020 EVENT
DATA SUMMARY TABLE
AQUEOUS
SDG: R2009432

Sample Name	Lab ID	Analytical Method	Collection Date	Dilution Factor	Analyte	Result	Unit	Qualifier	LOD	LOQ
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,1,1-Trichloroethane (TCA)	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,1,2,2-Tetrachloroethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,1,2-Trichloroethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,1-Dichloroethane (1,1-DCA)	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,1-Dichloroethene (1,1-DCE)	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,2-Dichlorobenzene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,2-Dichloroethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,2-Dichloropropane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,3-Dichlorobenzene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,4-Dichlorobenzene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Acrylonitrile	100	UG_L	U		100
Trip Blank	R2009432-011	624.1	10/5/2020	1	Benzene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Bromodichloromethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Bromoform	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Bromomethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Carbon Tetrachloride	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Chlorobenzene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Chloroethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Chloroform	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Chloromethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Dibromochloromethane	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Methylene Chloride	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Ethylbenzene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Tetrachloroethene (PCE)	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Toluene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Trichloroethene (TCE)	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Trichlorofluoromethane (CFC 11)	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	Vinyl Chloride	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	cis-1,2-Dichloroethene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	cis-1,3-Dichloropropene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	trans-1,2-Dichloroethene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	trans-1,3-Dichloropropene	1	UG_L	U	1	5
Trip Blank	R2009432-011	624.1	10/5/2020	1	1,3-Dichloropropene, Total	10	UG_L	U		10