DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090
November 14, 2017

REPLY TO
ATTENTION OF

Programs and Project Management Division

New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau B
c/o Mr. Kyle Forster
625 Broadway, 11th Floor
Albany, New York 12233-7016

RE: GROUNDWATER MONITORING PROGRAM REPORT FOR THE DEFENSE NATIONAL STOCKPILE CENTER, SCOTIA, GLENVILLE, NEW YORK [NYSDEC Site ID No. 447023]

Dear Mr. Forster:

Enclosed for the record is the *Groundwater Monitoring Program, 2017 Quarter Two Status Report for Remedial Action at the Defense National Stockpile Center Scotia Depot, Glenville, New York*, dated November 2017.

The enclosed report includes analysis results from the groundwater sampling conducted in June, 2017.

The next sampling event will take place during the week of December 11, 2017.

Please contact me at (917) 790-8235 for anything further regarding this matter.

Sincerely,

Gregory J. Goepfert
Project Manager

Encl.

cc: Scotia Industrial Park, Inc. / Mr. David Ahl, w/ encl. (CD only)
Adirondack Beverages / Mr. Douglas Martin, w/encl. (CD only)
New York State Department of Health / Mr. Anthony Parretta, w/ encl. (CD only)
General Services Administration / Mr. David Baker, w/encl. (CD only)
USACE, Huntsville Center / Ms. Amy Doss, w/encl. (CD only)
USACE, New England District / Mr. Dean Brammer, w/encl. (hard copy & CD)
USACE, New York District / Mr. Tim Leonard, w/o encl.

GROUNDWATER MONITORING PROGRAM
2017 QUARTER TWO STATUS REPORT
FOR
REMEDIAL ACTION AT
THE DEFENSE NATIONAL STOCKPILE CENTER SCOTIA DEPOT
GLENVILLE, NEW YORK

Prepared For:



U.S. Army Corps of Engineers

Prepared By:

AECOM Technical Services

November 2017

GROUNDWATER MONITORING PROGRAM
2017 QUARTER TWO STATUS REPORT

FOR

REMEDIAL ACTION AT
THE DEFENSE NATIONAL STOCKPILE CENTER SCOTIA DEPOT
GLENVILLE, NEW YORK

Prepared For:

U.S. Army Corp of Engineers

Prepared By:

AECOM

Contract No. W912DY-09-D-0059

Task Order No. 0010

November 2017

Table of Contents

1 INTRODUCTION 1-1

1.1 Site Description 1-1

1.2 Site History 1-1

1.2.1 Summary of Previous Investigations 1-2

1.2.2 Pre-Design Groundwater Investigation – 2013 1-3

1.2.3 Baseline Groundwater Investigation 1-3

1.3 PRB Design Summary 1-4

1.4 Remedial Action Implementation 1-4

2 QUARTERLY GROUNDWATER MONITORING PROGRAM 2-1

2.1 Sample Collection Methods 2-1

3 RESULTS 3-1

3.1 Hydrogeological Results 3-1

3.2 Groundwater MNA Parameter Results 3-1

3.3 Groundwater VOC results 3-2

4 SUMMARY AND CONCLUSIONS 4-1

5 REFERENCES 5-1

List of Figures

Figure 1-1 Site Location Map

Figure 1-2 Site Layout Map

Figure 2-1 Compliance Wells and PRB Profile – June 2017

Figure 3-1 Potentiometric Site Map – June 2017

Figure 3-2 Groundwater Results – Quarterly Monitoring Locations –June 2017

Figure 3-3 Groundwater Results-Annual Site Wide Results –June 2017

Figure 3-4 TCE Isopatch Concentration Map- June 2017

List of Tables

Table 2-1 Monitoring Well Sampling Schedule and Guidelines

Table 3-1 Groundwater Elevation Data – June 2017

Table 3-2 Compliance Well Pairs Groundwater Sample Results - June 2017

Table 3-3 Site Wide Results Groundwater Sample Results - June 2017

List of Appendices

Appendix A Groundwater Sample Collection Field Forms

Appendix B Field Calibration Forms

Appendix C Full Laboratory Analytical Results

Appendix D AECOM Data Usability Summary Report (DUSR)

Appendix E Groundwater Concentration Trend Plots

1 INTRODUCTION

This report has been prepared by AECOM on behalf of the United States Army Corps of Engineers (USACE) and the United States General Services Administration (GSA) to document the groundwater monitoring activities performed at the Former Scotia Navy Depot (FSND) (Site) for the second quarter of 2017 (April 1, 2017, through June 30, 2017). This report presents the results of the third groundwater sampling event after the completion of the construction of the zero valent iron (ZVI) permeable reactive barrier (PRB) which was installed across the volatile organic compound (VOC) plume to remediate groundwater at the Site. This groundwater sampling event was a Site-wide sampling event which included collection of groundwater samples from 33 monitoring wells. Installation of the PRB was completed in from February 2016 to December 2016. The Site is adjacent to the north side of New York State (NYS) Route 5 (Amsterdam Road) in the Town of Glenville, Schenectady County, New York. A Site location map is provided in Figure 1-1.

1.1 Site Description

The Site and adjacent properties are zoned for commercial use. Residential properties are located to the south between Amsterdam Road and the Mohawk River. The Mohawk River is located approximately 1,500 feet west-southwest of the Site and represents the major drainage feature in Schenectady County. The water table beneath the Site is approximately 65 feet below ground surface (bgs), and groundwater beneath the Site flows from northeast to southwest toward the Mohawk River.

The Site overlies a United States Environmental Protection Agency (US EPA) designated Sole Source Aquifer referred to as the Schenectady or Great Flats Aquifer system, which is adjacent to and extends beneath the Mohawk River over a distance of approximately 12 miles in Schenectady County. Relative to a series of four aquifer protection zones established to protect five municipal water supplies relying on the aquifer system, the Site lies in Zone III or the General Aquifer Recharge Area. The Site is located approximately 1,500 feet southwest of the Village of Scotia well field and approximately 1.25 miles north of the Town of Rotterdam and City of Schenectady well fields.

Portions of the original Scotia Naval Depot have been subdivided and sold since 1972 by the United States Government. The Site now consists of several large privately held parcels in addition to a portion of land still administered by the GSA. The private parcels contain a variety of industrial tenants; while the GSA leases its remaining portion to the Defense Logistics Agency/Defense National Stockpile Center and the Navy.

1.2 Site History

The Scotia Depot was built in 1942 and 1943 and was commissioned as a United States Navy facility on March 30, 1943. It served as a storage and supply depot for naval forces along the Atlantic coast and Europe, and as a storage and distribution point for National Stockpile materials. On January 1, 1960, the Navy turned the facility over to the GSA. During the period between early 1966 and approximately 1973, the USACE/Army Material Command (AMC) leased buildings from the Navy for the fabrication and storage of vehicles as well as other

military equipment. Additionally, between 1967 and 1969, the GSA and the Navy leased to the United States Army/Defense Supply Agency, Buildings 202 and 203. The agreement indicates these buildings were used for the preservation and rail loading of trucks; and storage of trucks and vehicles.

1.2.1 Summary of Previous Investigations

In the late 1980s, trichloroethene (TCE) was detected at low-level concentrations of less than 1 microgram per liter (µg/L) in the Town of Rotterdam and City of Schenectady well fields. In an effort to determine the potential source(s) of the TCE, the New York State Department of Health (NYSDOH) performed sampling of private water supply wells in the area during 1991. The private water supply sampling included residences located on NYS Route 5 in the Town of Glenville hydraulically downgradient of the Defense National Stockpile Center Scotia Depot Site. VOCs, including TCE, 1,1,1-trichloroethane (1,1,1-TCA), and tetrachloroethene (PCE), were detected in groundwater collected in some of these residential wells. The sampling results were consistent with the known groundwater contamination concentrations at the Defense National Stockpile Center Scotia Depot Site, including TCE which was detected in the NYS Route 5 residential well water samples at concentrations up to 320 µg/L. Following a recommendation by the NYSDOH to connect to public water, the homes on NYS Route 5 were subsequently connected to public water provided by the Town of Glenville. Although the drinking water standard was never exceeded in the City of Schenectady and the Town of Rotterdam municipal water supply wells, increased groundwater quality monitoring was initiated following the identification of the contamination.

Subsequent to the NYSDOH residential groundwater sampling, six subsurface investigations were completed to identify the possible source of TCE in the residential wells and to delineate the extent of the TCE groundwater plume. The investigations were completed between 1995 and 2007 and focused on the assemblage of properties comprising the former 337-acre Defense National Stockpile Center Scotia Depot. The New York State Department of Environmental Conservation (NYSDEC) 2007 Expanded Site Investigation (ESI) (NYSDEC, 2007) provides details on each of these investigations. Investigation data indicated that TCE disposal may have also occurred in the northeast corner of the 401 sub-block and the area near the north corner of the 403 sub-block.

Based on these investigations, a Record of Decision (ROD) specifying a groundwater remedy was approved by the NYSDEC in March 2010 (NYSDEC, 2010). The ROD specified a remedial action for the groundwater plume which included treatment of the plume through the installation of a zero valent iron (ZVI) PRB. During this time investigations were also conducted in relation to a carbon tetrachloride plume that was identified as a source for potential soil vapor intrusion. In addition to the groundwater remedy, the ROD also identified the need for soil vapor intrusion mitigation at the building 201 sub-block. Details on the installation and monitoring of the SVI portion of the remedy are provided in the Draft Final Engineering Report (FER) (AECOM, 2017a). A Site Layout Map is provided in Figure 1-2.

1.2.2 Pre-Design Groundwater Investigation – 2013

A pre-design investigation (PDI) was completed by Stone Environmental in 2013 to verify the location and dimensions of the TCE plume to better estimate the appropriate location and depth of the PRB. The PDI was completed as a component of the ROD selected remedy to aid in the PRB design. The pre-design investigation included:

- Baseline groundwater sampling of 24 existing onsite monitoring wells
- Synoptic measurement of groundwater elevations in 35 on-site and off-site monitoring wells
- Vertical groundwater profile of VOC plume at 16 locations (WP-01 to WP-16)
- Installation and development of four on-site monitoring wells (MW-24 through MW-27)
- Hydraulic conductivity measurements
- Geotechnical soil sampling (laboratory sieve, bulk density, and effective porosity analyses)
- ZVI treatability study (bench-scale column test) using Site soil and groundwater

The results of the PDI indicated that the plume location had shifted to the south/southeast from the estimated plume delineation shown in the 2010 ROD (see Figure 3 from the ROD and Figures 6 and 10 from Final PDI Report) (Stone, 2013). The PDI also delineated the vertical and horizontal limits of the plume across a transect of groundwater profile locations, which had not been well defined in previous investigations. The results of the ZVI treatability study indicated that ZVI would be effective in remediating the TCE plume at the detected maximum concentrations and Site-specific geochemical conditions. The PDI evaluated a preliminary PRB design approximately 850-feet long centered on the highest concentration axis of the TCE plume and extending to estimated lateral limits of the plume based on the results of the vertical groundwater profile locations. Subsequent evaluation of the data to maximize effectiveness and efficiency of the remedial design suggested a 700-feet long deep section centered on the TCE plume with a shallower 250-feet long section to treat lower TCE concentrations would be effective at mitigating the groundwater contamination.

1.2.3 Baseline Groundwater Investigation

As part of the remedial design investigation work plan (RDIWP) (AECOM, 2015) various field activities were conducted during the fall of 2015 in order to gather data and information needed to complete the final PRB design. The main components of the remedial design investigation (RDI) field activities that related to the PRB design included:

- Installation and development of four compliance well pairs (MW-28 to MW-35) and one additional monitoring well (MW-36) to confirm upgradient edge of groundwater plume

- Collection of 33 baseline groundwater samples
- Performance of a confirmatory ZVI bench scale test
- Performance of aquifer tests including slug testing and hydraulic pulse interference testing (HPIT)

Detailed methods and results of these field activities were presented in the Remedial Action Work Plan (PRB-RAWP) (AECOM, 2016) and the 2015 RDI Work Summary Memo presented in Appendix A of the PRB-RAWP.

1.3 PRB Design Summary

The remedial investigation activities at the Site indicated that variable hydraulic conductivity and hydraulic gradient, and therefore groundwater velocity, conditions may exist at the Site. Therefore, various design cases were analyzed within the range of the measured values to determine the optimum design for the PRB. Three design cases in particular were outlined in the (PRB-RAWP) (AECOM, 2016). These design cases were based on average values from the slug test data and HPIT data from the 2015 RDI activities and historic data from the Stone PDI (Stone, 2013). The three design cases used an average value of 0.004 ft/ft for the hydraulic gradient and varied the hydraulic conductivity from 15.66 ft/day to 193.8 ft/day. This variability of hydraulic conductivity results in a range of groundwater velocity at the Site from 0.128 ft/day to 2.83 ft/day. GeoSierra Environmental, Inc. (GeoSierra), the PRB installation subcontractor, performed a sensitivity analysis based on these design cases and the design of the PRB was chosen based on design scenarios that reflected a conservative approach. A full description of the PRB design including details of each design case is presented in the PRB-RAWP (AECOM, 2016).

1.4 Remedial Action Implementation

In accordance with the ROD for the remedial action at the FSND, a ZVI PRB was installed in order to mitigate the impacted groundwater plume at the Site. AECOM, and its subcontractor GeoSierra, performed the installation of the PRB over the course of 10 months in 2016. The design and installation procedures of the PRB are outlined in the PRB-RAWP (AECOM, 2016). The main components of PRB installation were as follows:

- Installation of 77 injection wells
- Installation of 31 Resistivity strings
- Placement of ZVI into the formation via injection wells
- Post PRB installation HPIT testing

The installation of the ZVI PRB was successfully completed in November of 2016. Details of the PRB construction activities of the PRB are provided in the Draft FER (AECOM, 2017a) for the Site.

2 GROUNDWATER MONITORING PROGRAM

Site-wide groundwater monitoring is conducted on an annual basis and includes groundwater monitoring at 36 locations. The June 2017 monitoring event was the first side-wide sampling event since the completion of the PRB installation Monitoring well locations are shown on Figure 1-2 and are described in Table 2-1. Table 2-1 also provides the monitoring well sample schedule for quarterly and annually sampled locations and analytical information for the groundwater monitoring program. The groundwater monitoring program will be carried out in accordance with the schedule and sampling protocol outlined in the Draft Site Management Plan (SMP) (AECOM, 2017b). Three monitoring wells included in the annual sampling program were unable to be sampled during the June 2017 event. Monitoring wells MW-8 and MW-11 had damaged casings rendering them unable to be sampled, and MW-12 was not able to be located. Therefore, the total number of wells that were sampled during the June 2017 event was 33. These wells will be repaired and or replaced prior to the 2018 annual sampling event.

The eight compliance monitoring wells (MW-28 through MW-35) were installed in pairs so that groundwater quality could be monitored directly upgradient and directly downgradient to of the PRB. The four monitoring wells pairs are installed 20 feet apart on opposite sides of the wall, one being upgradient and one being downgradient, with corresponding screen depths. Figure 2-1 provides a profile well of the compliance monitoring wells showing the screened interval in relation to the PRB. Results from the groundwater monitoring program will be used to evaluate the effectiveness of the remedy at decreasing chlorinated VOC concentrations in groundwater and preventing the migration of contaminated groundwater off-site. The compliance well pairs, in addition to MW-24 (downgradient), MW-26 (downgradient), MW-15 (upgradient) and MW-16 (outside of plume), will be sampled quarterly for the first two years (eight quarters) then annually thereafter. The first quarterly sampling event was conducted in December 2016.

Deliverables for the groundwater monitoring program are specified in Section 7.0 of the Draft SMP.

2.1 Sample Collection Methods

Prior to sample collection, depth to water measurements were collected with an electronic water level meter from all accessible wells on Site. Depth to water measurements were taken to the hundredth of a foot from a designated measuring point on the well casing.

The groundwater sampling event was performed in accordance with EPA's low stress, often referred to as low-flow, sampling technique (Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, EPA/540/S-95/504) (EPA, 2010) and is discussed below.

A bladder pump was used to purge the monitoring wells with the pump intake set at the midpoint of the saturated screened interval. During purging, the pump was operated at a flow rate of approximately 100 to 500 milliliters per minute (mL/min) and water levels were monitored to ensure that the pumping rate caused minimal/no drawdown. Dedicated tubing for each monitoring well was used for groundwater sample collection. Field parameters were recorded on the Well Sampling Forms every five minutes during purging, including:

- Purge rate (mL/min)
- Depth to water (0.01 ft)
- Temperature (degrees Celsius)
- pH
- Specific conductance (millisiemens per centimeter [ms/cm])
- Dissolved Oxygen (DO) (milligrams per liter [mg/L])
- Oxidation-Reduction Potential (ORP) (millivolts [mV])
- Turbidity (NTU)

A flow-through cell was used to obtain temperature, pH, specific conductance, DO, and ORP. Turbidity will be measured using a separate instrument. Purging was considered complete when the indicator parameters have stabilized over three consecutive readings. Stabilization parameters include the following:

- Drawdown: less than 0.3 ft drawdown during purging
- pH: ± 0.1 standard unit
- Specific Conductivity: ± 3%
- DO: ± 10 % (mg/L) for values greater than 0.5 mg/L or 3 readings < 0.5 mg/L
- ORP: ±10 mV
- Turbidity: < 5 NTU or ± 10% for readings >5 NTU

Groundwater sample collection field forms with the field parameter readings for each monitoring well are included as Appendix A. Sampling instruments were calibrated daily prior to starting sampling activities, or as needed throughout the day. A log of the field equipment calibration records is provided in Appendix B.

Prior to sample collection, the flow-through cell was disconnected from the dedicated sample tubing and the sample was collected directly from the tubing into the laboratory supplied sample containers. The target flow rate during sample collection was approximately 100 mL/min and sample collection was completed within a single bladder pulse for VOC analysis. Once sampling was complete, the purge water was placed in a 55-gallon drum and will be disposed of offsite at a later date. More detailed procedures for sample collection and handling and waste handling, are included in Appendix H of the Draft SMP (AECOM, 2017b). Appendix G of the Draft SMP

includes the analytical QAPP for the site management activities. Appendix I of the Draft SMP includes the HASP for the site management activities.

Groundwater samples were packaged on ice and delivered to ALS Laboratory daily via courier during the sample collection timeframe. Standard chain of custody procedures were used for sample transport. In total, 12 groundwater samples were collected and analyzed for targeted VOCs (EPA method 8260C) and monitored natural attenuation (MNA) parameters including TOC (EPA SM 5310B), alkalinity (EPA SM 2320B), chloride, nitrate, sulfate (EPA Method 300.0), and dissolved gases (methane, ethane, and ethene; Method RSK 175).

3 RESULTS

3.1 Hydrogeologic Results

The groundwater elevations for the Site were determined based on the initial depth to groundwater measurements that were taken prior to sample collection. Table 3-1 shows the groundwater elevation data for the June 2017 sampling event and compares it to the December 2015 baseline sampling event, December 2016 groundwater elevation data and past sampling event levels. A potentiometric Site map indicating the overburden, groundwater elevation and direction of groundwater flow during the June 2017 sampling event is included as Figure 3-1. Observed groundwater flow direction in June 2017 was to the west, which is similar to past sampling events.

Based on observed trends during the past three sampling events it appears that the groundwater elevation at the Site is subject to seasonal variability. The June 2017 sampling event exhibits significantly higher groundwater elevations at approximately 5 to 6 feet abovethe past two sampling events. This is likely the result of the increased rainfall in the area during the Spring of 2017. Groundwater elevation data for the June 2017 event indicate that groundwater levels are currently higher than the top of the PRB wall. The current potentiometric surface in relation to the PRB is shown in profile on Figure 2-1.

The average hydraulic gradient at the Site in the vicinity of the PRB, estimated based on the June 2017 hydrogeologic conditions, was determined to be 0.0037 ft/ft. The June 2017 hydraulic gradient is consistent with the past two quarterly sampling events where the hydraulic gradient was 0.0025ft/ft in December 2016 and 0.0039ft/ft in March 2017. Based on the June 2017 hydraulic gradient of 0.0037 ft/ft and the range of hydraulic conductivities evaluated for the PRB design (15.66 ft/day to 193.8 ft/day) linear groundwater velocity at the Site could vary between approximately 0.058 ft/day and 0.72 ft/day. The range of estimated groundwater velocities based on the March 2017 Site conditions (0.0585 ft/day-0.72 ft/day) is approximately within the lower end of the range of estimated groundwater velocities used for the PRB design (0.128 ft/day-2.83 ft/day).

3.2 Groundwater MNA Parameter Results

Results of groundwater MNA parameters obtained from June 2017 quarterly sampling event for the PRB monitoring compliance wells are presented in Table 3-2. Site-wide results are presented in Table 3-3. MNA parameters were compared between compliance well pairs. In general conductivity values showed are relativity consistent throughout the compliance well pairs.

To date no significant changes have been observed in DO and ORP concentrations and measurements were variable with some well pairs showing an increase and some pairs showing a decrease. During future monitoring events a decrease in DO and ORP would be expected downgradient of the PRB indicating reducing conditions as the groundwater passes through the PRB. Furthermore, low DO and ORP values downgradient indicate that anaerobic conditions exist which promote anaerobic biodegradation that would be expected from the breakdown of the guar in the ZVI delivery fluid. The June 2017 groundwater results showed an increase in

methane, ethane, and ethane in most downgradient compliance monitoring wells, particularly in MW-30, MW-32. The largest increase in methane and ethane this quarter was seen in compliance monitoring well pairs in the middle of the PRB. Methane, ethane and ethene concentrations are expected to increase over time from the breakdown of the ZVI carrier fluids/guar. To date nitrate and sulfate levels have been variable since the 2015 baseline sampling event. Nitrate and sulfate concentrations are expected to decrease from upgradient to downgradient wells as this would further indicate that bioactivity is occurring.

3.3 Groundwater VOC results

The VOC results from the June 2017 quarterly sampling event are presented in Table 3-2. This groundwater sampling event was a Site wide event which included 36 groundwater samples. Figure 3-2 provides a summary of the groundwater VOC results for the monitoring well compliance pairs that exceed the NYSDEC Ambient Water Quality Standards (AWQS) and Guidance Values (GV) found in the Technical and Operational Guidance Series (TOGS) 1.1.1 (NYSDEC, 1998) and compares the June 2017 sampling event results to the historic sampling event results.

Figure 3-3 provides a summary of the groundwater results where VOC exceedances were observed for the Site wide monitoring well network and compares the June 2017 results to the December 2015 baseline event. Figure 3-4 is an TCE isoconcentration map based on the June 2017 results.

Full analytical reports are included in Appendix B.

The laboratory data was validated by an AECOM chemist and a full data usability summary report (DUSR) was prepared. The DUSR, included in Appendix D, indicated that all data points were usable and no data points were rejected.

A narrative summary of the results is presented below:

- Trichloroethene (TCE), the primary constituent of concern, was detected in 10 of the 12 wells sampled, nine of which were above the AWQS of 5 µg/L. Wells with detectable levels of TCE were MW-15, MW-24, MW-28, MW-29, MW-30, MW-31, MW-32, MW-33, MW-34, and MW-35. The concentration of TCE found in MW-24 was below the AWQS.

- No TCE was detected in samples from monitoring wells MW-16 and MW-26. Monitoring Well MW-16 is a plume bounding well located outside of the estimated area of the contamination plume.

- For the June 2017 event downgradient wells of the compliance well monitoring pairs showed lower levels of TCE concentrations than their upgradient counterparts. Based on the calculated groundwater velocity these reduced concentrations are not like likely from flow through the PRB but may be a result of enhanced biodegradation from the breakdown of the guar fluid.

- In general detected concentrations of TCE, as well as other chlorinated VOCs, for the June 2017 sampling event were consistent with previous groundwater sample results. However, as noted in the preceding bullet there appears to be some reduction in TCE concentrations downgradient of the PRB based on the results of the compliance well pairs.

- Monitoring wells GEP-1 through GEP-4, MW-17 through MW-22, MW-25, showed results of TCE levels detected above the NYSDEC AWQS GV. These monitoring wells are all located upgradient of the PRB. This is consistent with the previous sampling events at the Site.

- Monitoring well MW-27 also exhibited TCE concentrations above the NYSDEC AWQS GV. MW-27 is located downgradient of the PRB. This is consistent with the 2015 sampling event.

Monitoring well MW-15, which is located directly upgradient of the PRB and is not a member of a confirmation well pair, showed a increase in TCE concentration from the March 2017 event. The concentration of TCE increased from 80.5 µg/L to 122 µg/L, which may be due to groundwater level variation.

Graphs showing concentrations of chlorinated volatile organic compounds (CVOCS) were created for the monitoring well compliance pairs to monitor groundwater concentration trends. Data shown includes the baseline sampling event in December 2015 through the most recent sampling event in June 2017. These trend plots are included in Appendix E as Figures E-1 through E-4.To date no definitive trends have been observed as groundwater concentrations have been generally consistent with the baseline sampling event.

4 SUMMARY AND CONCLUSIONS

The June 2017 groundwater monitoring event was the third quarterly groundwater sampling event and the first Site wide sampling event at the Site since remedy implementation has been completed. Quarterly groundwater sampling will continue on the selected subset of monitoring wells listed in Table 2-1.The next groundwater sampling event is scheduled for September 2017 and will include groundwater sampling at the 12 designated quarterly sample locations. The next Side-wide sampling event will be conducted in the second quarter of 2018. Details regarding the groundwater sampling program for the Site are included in the Draft SMP (AECOM 2017b).

The laboratory results suggest that concentrations of dissolved VOCs in Site groundwater are currently similar to the baseline concentrations before installation of the ZVI PRB and no significant changes has been observed to date. The mixed MNA results indicate that the PRB and iron carrier fluid are affecting groundwater conditions. Increased methane and ethane concentrations at some downgradient monitoring wells indicate the presence of anaerobic conditions within the subsurface in the vicinity of the PRB. This indicates that the ZVI carrier fluid is continuing to be degraded in the subsurface. While there had been increased TOC concentrations at the MW compliance pairs noted in the previous sampling events it appears TOC has moved toward baseline conditions. Results from the future sampling rounds will help to verify this trend.

Current Site groundwater flow conditions indicate that the on average the hydraulic gradient is consistent with the design, particularly in the southern and center sections of the PRB. The PRB was designed based on a hydraulic gradient of 0.004 ft/ft which is similar to the estimated hydraulic gradient of 0.0037 ft/ft measured in June 2017. There appears to be a seasonal variability in gradient which will be better understood as the quarterly monitoring continues. Historic data indicates a range of gradients from 0.001 to 0.006 ft/ft measured at the Site (Stone 2013). Based on the current gradient it may take 1 to 2 years for groundwater to travel through the PRB to the downgradient compliance monitoring wells.

5 REFERENCES

AECOM, 2015. Remedial Design Investigation Work Plan for the Defense National Stockpile Center Scotia Depot, Town of Glenville, NY. November.

AECOM, 2016. Permeable Reactive Barrier Remedial Action Work Plan for the Defense National Stockpile Center Scotia Depot, Town of Glenville, NY. April.

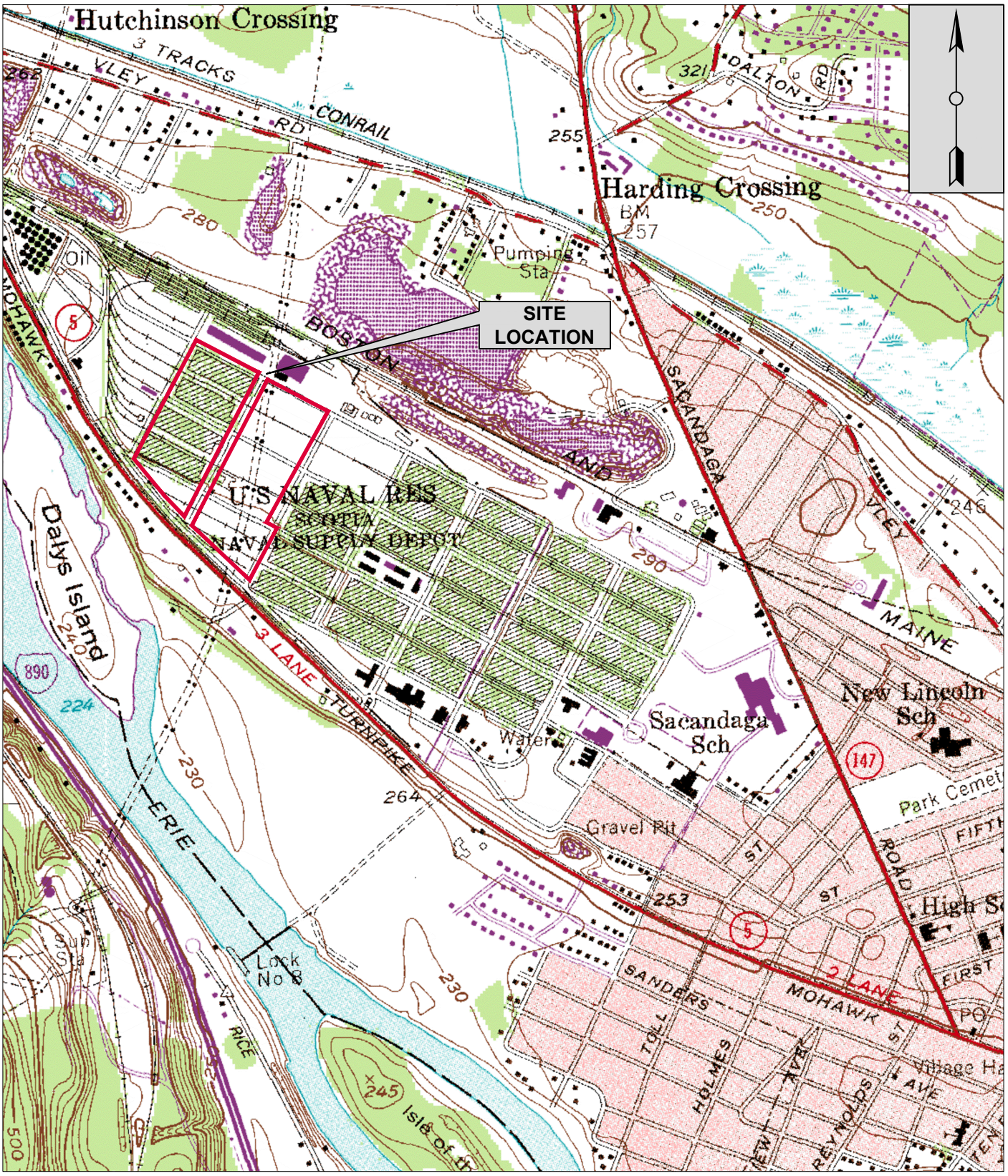
AECOM, 2017a. (Draft) Final Engineering Report for the Defense National Stockpile Center Scotia Depot, Town of Glenville, NY.

AECOM, 2017b. (Draft) Site Management Plan for the Defense National Stockpile Center Scotia Depot, Town of Glenville, NY.

NYSDEC, 2010. Record of Decision for Defense National Stockpile Center Scotia Depot Site State Superfund Project, Site Number 447023, Town of Glenville, NY, March.

Stone Environmental, 2013. Final Pre-Design Investigation Report, Defense Nation Stockpile Center Scotia Depot Site, Town of Glenville, NY, December.

FIGURES



MAP REFERENCE:
IMAGE SHOWN FROM U.S.G.S.7.5 MINUTE QUADRANGLE, SCHENECTADY SERIES

0 2000' 4000'

2017 2nd QUARTER GROUNDWATER REPORT
DEFENSE NATIONAL STOCKPILE
SCOTIA DEPOT SITE - SCOTIA, NY
Project No.: 60440641 Date: October 2017

US ARMY Corps of Engineers

SITE LOCATION MAP

AECOM

Figure: 1-1

AECOM

Figure: 1-2

SITE LAYOUT MAP

US ARMY Corps of Engineers

2017 2nd QUARTER GROUNDWATER REPORT

DEFENSE NATIONAL STOCKPILE CENTER

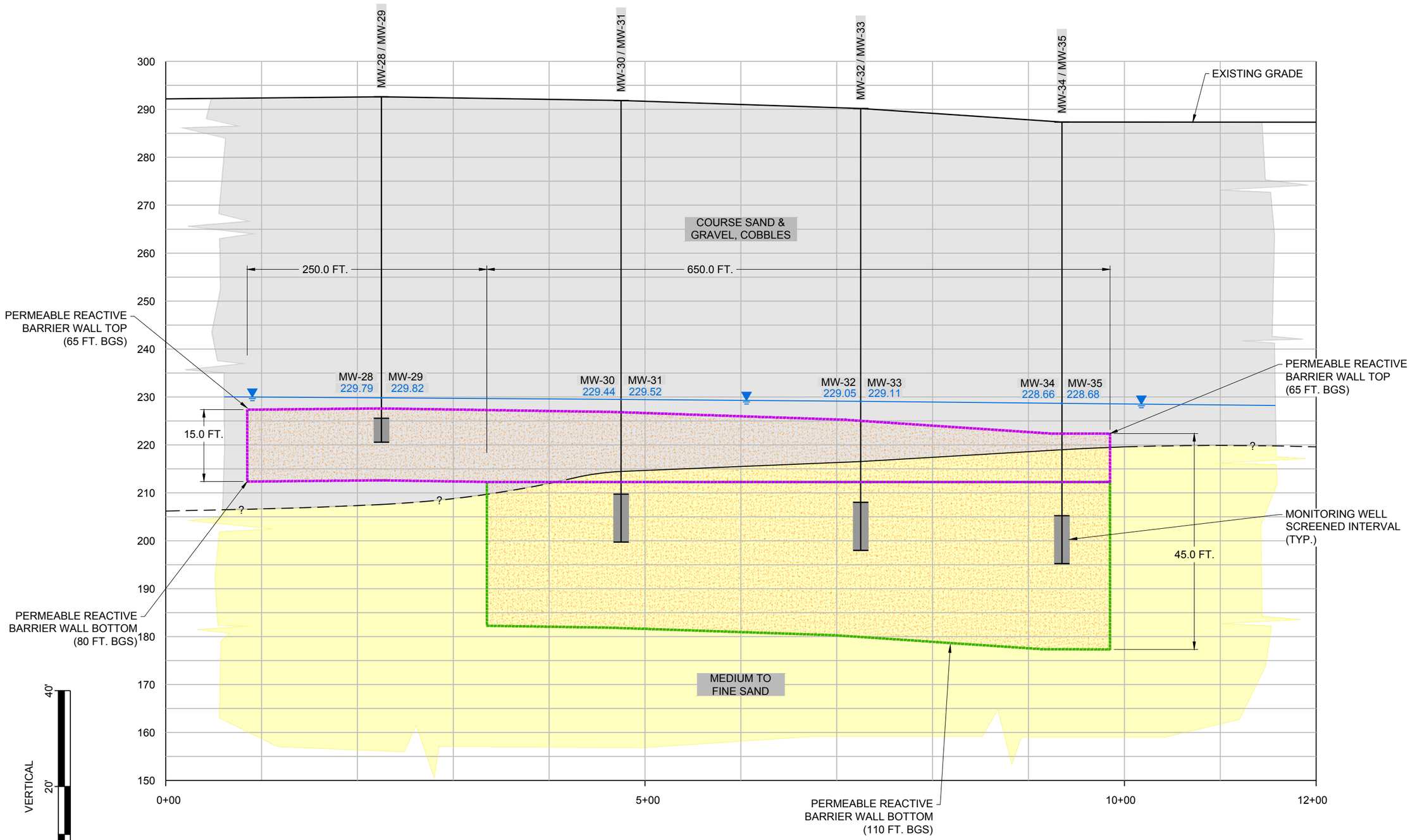
SCOTIA DEPOT SITE - SCOTIA, NY

Project No.: 60440641 Date: October 2017

LEGEND

- 15 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 80' BGS
- 45 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 110' BGS
- MW-25 MONITORING WELL
- APPROXIMATE EXTENT OF TCE - TRICHLOROETHENE GROUNDWATER PLUME
- APPROXIMATE EXTENT OF CT - CARBON TETRACHLORIDE GROUNDWATER PLUME

0 200' 400'



AECOM

Figure: 2-1

COMPLIANCE MONITORING WELLS AND PRB WALL PROFILE JUNE 2017

US ARMY Corps of Engineers

2017 2nd QUARTER GROUNDWATER REPORT
DEFENSE NATIONAL STOCKPILE CENTER
SCOTIA DEPOT SITE - SCOTIA, NY
Project No.: 60440641 Date: October 2017

LEGEND

5 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 80' BGS

45 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 110' BGS

MW-6 — MONITORING WELL WITH REPORTED GROUNDWATER ELEVATION (JUNE 2017)

226 — GROUNDWATER CONTOUR - 1 FT. (JUNE 2017) (DASHED WHERE INFERRED)

GENERAL GROUNDWATER DIRECTION

PMW-3
PMW-1
PMW-2
MW-23 232.56
1st STREET
MW-20 232.33
MW-19 231.93
232
MW-11 230.76
MW-21 231.33
250.0 FT. NATIONAL GRID POWER COMPANY EASEMENT
MW-14 231.32
MW-17 231.15
MW-22 231.27
MW-36 230.49
231
GEP-2 230.84
GEP-4 230.61
MW-18 230.75
MW-15 230.60
GEP-1
GEP-3 230.50
MW-30 229.44
MW-31 229.52
230
MW-28 229.79
MW-29 229.82
MW-12
MW-8
MW-13 229.60
PROPERTY BOUNDARY (TYP.)
MW-25 229.65
MW-B-3
229
MW-24 229.05
MW-33 229.11
MW-32 229.05
228
MW-B-1
MW-26 228.01
MW-35 228.68
MW-34 228.66
MW-5 226.29
MW-9 226.48
MW-6 226.55
227
MW-27 226.43
MW-7 227.30
MW-16 227.63
BUILDING 201
BUILDING 202
BUILDING 203
BUILDING 204
BUILDING 403
BUILDING 404
BUILDING 405
BUILDING 406
AVENUE A
AVENUE B
AVENUE C
5th STREET
3rd STREET
PROPOSED ST BULDING 0,000 GAL. R TANK
CONCRETE REMAINS
TOWERS
CHAIN LINK FENCE
CHAIN LINK ENCLOSED AREA
PAVEMENT
GRAVEL
ASPHALT
80.0 ft
1172.00'
S52°14'20"E

0 200' 400'

POTENTIOMETRIC SITE MAP
JUNE 2017

AECOM

Figure: 3-1

US ARMY Corps of Engineers

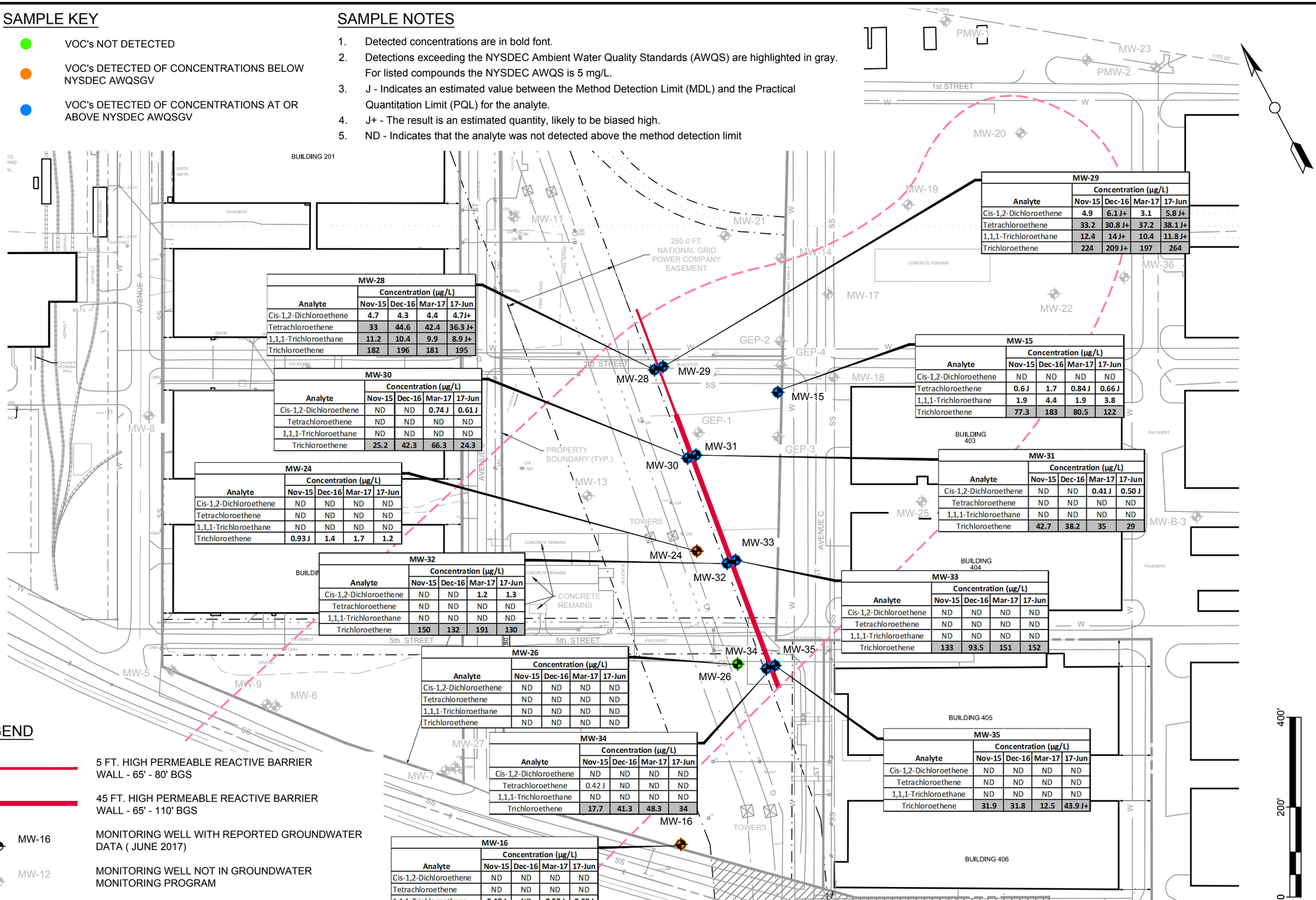
2017 2nd QUARTER GROUNDWATER REPORT
DEFENSE NATIONAL STOCKPILE CENTER
SCOTIA DEPOT SITE - SCOTIA, NY
Project No.: 60440641 Date: October 2017

SAMPLE KEY

- VOC's NOT DETECTED
- VOC's DETECTED OF CONCENTRATIONS BELOW NYSDEC AWQSGV
- VOC's DETECTED OF CONCENTRATIONS AT OR ABOVE NYSDEC AWQSGV

SAMPLE NOTES

1. Detected concentrations are in bold font.
2. Detections exceeding the NYSDEC Ambient Water Quality Standards (AWQS) are highlighted in gray. For listed compounds the NYSDEC AWQS is 5 mg/L.
3. J - Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte.
4. J+ - The result is an estimated quantity, likely to be biased high.
5. ND - Indicates that the analyte was not detected above the method detection limit



MW-28

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	4.7	4.3	4.4	4.7J+
Tetrachloroethene	33	44.6	42.4	36.3 J+
1,1,1-Trichloroethane	11.2	10.4	9.9	8.9 J+
Trichloroethene	182	196	181	195

MW-30

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	0.74 J	0.61 J
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	25.2	42.3	66.3	24.3

MW-24

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	0.93 J	1.4	1.7	1.2

MW-32

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	1.2	1.3
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	150	132	191	130

MW-26

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND

MW-34

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	ND	ND
Tetrachloroethene	0.42 J	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	17.7	41.3	48.3	34

MW-16

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	0.49 J	ND	0.53 J	0.50 J
Trichloroethene	0.55 J	ND	ND	ND

MW-29

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	4.9	6.1 J+	3.1	5.8 J+
Tetrachloroethene	33.2	30.8 J+	37.2	38.1 J+
1,1,1-Trichloroethane	12.4	14 J+	10.4	11.8 J+
Trichloroethene	224	209 J+	197	264

MW-15

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	ND	ND
Tetrachloroethene	0.6 J	1.7	0.84 J	0.66 J
1,1,1-Trichloroethane	1.9	4.4	1.9	3.8
Trichloroethene	77.3	183	80.5	122

MW-31

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	0.41 J	0.50 J
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	42.7	38.2	35	29

MW-33

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	133	93.5	151	152

MW-35

Analyte	Concentration (µg/L)			
	Nov-15	Dec-16	Mar-17	17-Jun
Cis-1,2-Dichloroethene	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Trichloroethene	31.9	31.8	12.5	43.9 J+

LEGEND

- 5 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 80' BGS
- 45 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 110' BGS
- MW-16 — MONITORING WELL WITH REPORTED GROUNDWATER DATA (JUNE 2017)
- MW-12 — MONITORING WELL NOT IN GROUNDWATER MONITORING PROGRAM
- APPROXIMATE EXTENT OF TCE GROUNDWATER PLUME

AECOM

Figure: 3-2

GROUNDWATER RESULTS
QUARTERLY MONITORING LOCATIONS
JUNE 2017

US ARMY Corps of Engineers

2017 2nd QUARTER GROUNDWATER REPORT
DEFENSE NATIONAL STOCKPILE CENTER
SCOTIA DEPOT SITE - SCOTIA, NY
Project No.: 60440641 Date: October 2017

GEP-2		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
1,1,1-Trichloroethane (1,1,1-TCA)	19.7	16.3
Trichloroethene (TCE)	210	167
Total CVOCs	236.06	190.08

MW-29		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
cis-1,2-Dichloroethene (cis-1,2-DCE)	NE	5.8 J+
Tetrachloroethene (PCE)	33.2	38.1 J+
1,1,1-Trichloroethane (1,1,1-TCA)	12.4	11.8 J+
Trichloroethene (TCE)	224.0	264
Total CVOCs	276.2	322.03

MW-28		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Tetrachloroethene (PCE)	33	36.3 J+
1,1,1-Trichloroethane (1,1,1-TCA)	11.2	8.9 J+
Trichloroethene (TCE)	182	195
Total CVOCs	233.5	246.7

GEP-1		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	180	152 J+
Total CVOCs	186.03	155.75

MW-30		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	25.2	24.3
Total CVOCs	25.2	24.91

MW-32		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	150	130
Total CVOCs	150	131.8

MW-6		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	59.8	26
Total CVOCs	62.35	27.16

MW-27		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	189	211
Total CVOCs	189.8	212.2

MW-19		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	30	14.3
Total CVOCs	32.1	17.2

MW-14		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Tetrachloroethene (PCE)	10.8	10.5
Total CVOCs	21.23	14.95

MW-20		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	52.3	86.8
Total CVOCs	53.8	90.5

MW-23	
Nov. 2015	Jun. 2017
NE	NE

MW-17		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
1,1,1-Trichloroethane (1,1,1-TCA)	17	22
Trichloroethene (TCE)	15.2	35.2
Total CVOCs	33.83	60.4

MW-22		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Tetrachloroethene (PCE)	5.6	ND
Trichloroethene (TCE)	282	238
Total CVOCs	287.6	241.8

MW-36	
Nov. 2015	Jun. 2017
NE	NE

GEP-4		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
1,1,1-Trichloroethane (1,1,1-TCA)	5.1	ND
Trichloroethene (TCE)	86	72.4
Total CVOCs	91.68	77.9

MW-18		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	153	117
Total CVOCs	157.7	121.2

MW-B-3	
Nov. 2015	Jun. 2017
NE	NE

MW-24	
Nov. 2015	Jun. 2017
NE	NE

MW-26	
Nov. 2015	Jun. 2017
NE	NE

MW-5	
Nov. 2015	Jun. 2017
NE	NE

MW-9	
Nov. 2015	Jun. 2017
NE	NE

MW-7	
Nov. 2015	Jun. 2017
NE	NE

MW-34		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	17.7	34
Total CVOCs	18.12	34

MW-16	
Nov. 2015	Jun. 2017
NE	NE

MW-15		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	77.3	122
Total CVOCs	79.8	126.46

MW-25		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	96.7	76.7
Total CVOCs	96.7	76.7

GEP-3		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	143	131
Total CVOCs	145	132.8

MW-31		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	42.7	29
Total CVOCs	42.7	29.5

MW-35		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	31.9	43.8 J+
Total CVOCs	31.9	43.8

MW-33		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	133	152
Total CVOCs	133	152

SAMPLE KEY

SAMPLE NAME

DATE

MW-32		
Analytes	Concentration (µg/L)	
	Nov. 2015	Jun. 2017
Trichloroethene (TCE)	150	130
Total CVOCs	150	131.8

CONCENTRATION

ANALYTE

NOTES:

1) TOTAL CVOCS WERE CALCULATED USING DETECTED CONCENTRATIONS FOR CHLORINATED VOLATILE ORGANIC COMPOUNDS.

2) NE = COMPOUNDS NOT DETECTED ABOVE NYSDEC AWQS. FOR ALL LISTED COMPOUNDS THE NYSDEC AWQS EXCEEDANCE LEVEL IS 5 mg/L

3) NS = NOT SAMPLED

4) J = INDICATES AN ESTIMATED VALUE BETWEEN THE METHOD DETECTION LIMIT (MDL) AND THE PRACTICAL QUANTITATION LIMIT (PQL) FOR THE ANALYTE.

5) J+ = THE RESULT IS AN ESTIMATE QUANTITY, LIKELY TO BE BIASED HIGH.

LEGEND

MW-13 MONITORING WELL (ANNUALLY SAMPLED)

MW-30 MONITORING WELL WITH GROUNDWATER EXCEEDANCE

GENERAL GROUNDWATER DIRECTION

APPROXIMATE EXTENT OF TCE GROUNDWATER PLUME

NOTE:
FOR TYPICAL LEGEND SEE FIGURE 1-2.

600'
300'
0

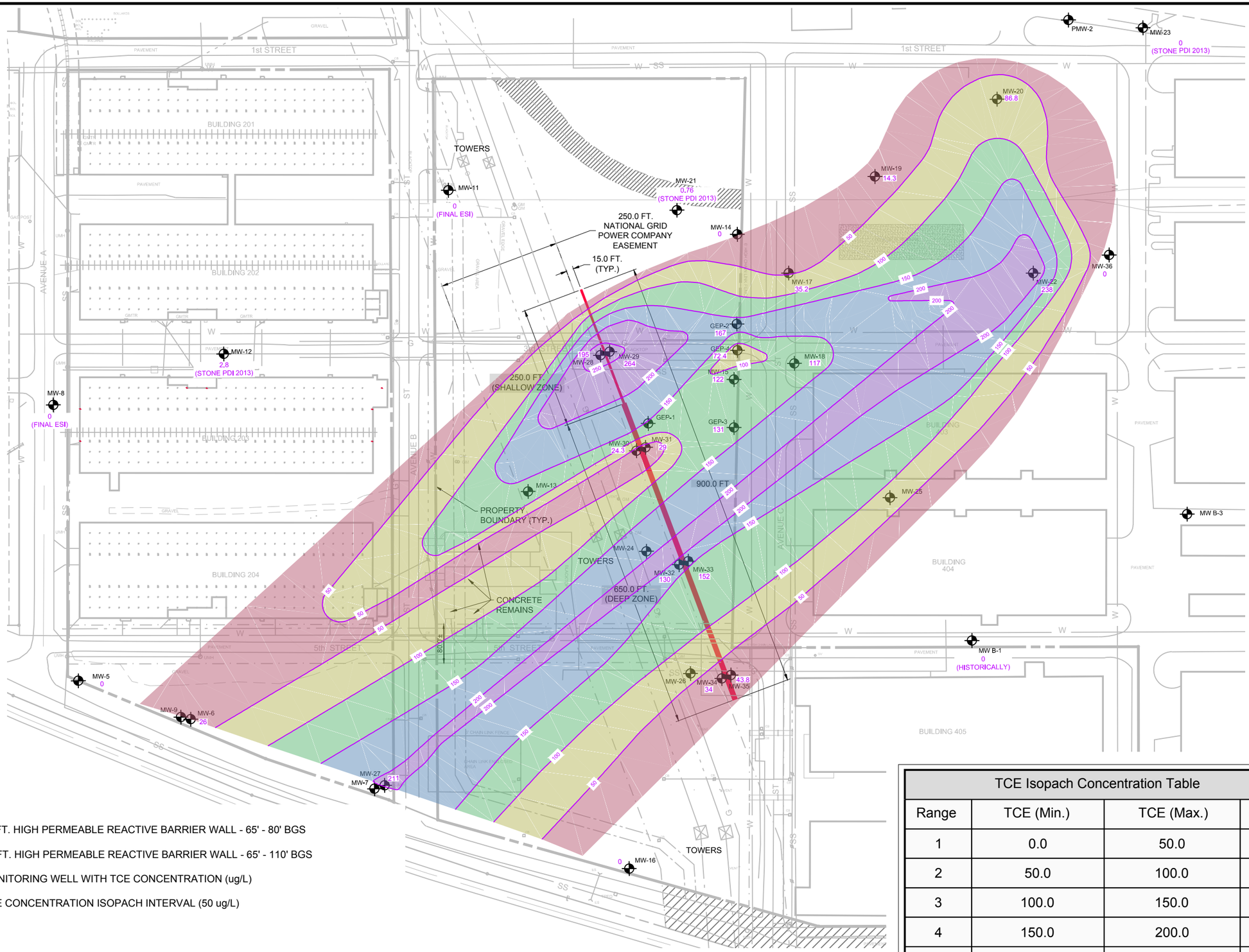
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Figure: 3-3

SITEWIDE GROUNDWATER EXCEEDANCERESULTS
ANNUAL MONITORING LOCATIONS
JUNE 2017

US ARMY Corps of Engineers

2017 2nd QUARTER GROUNDWATER REPORT
DEFENCE NATIONAL STOCKPILE CENTER
SCOTIA DEPOT SITE - SCOTIA, NY
Project No.: 60440641 Date: October 2017



LEGEND

- 15 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 80' BGS
- 45 FT. HIGH PERMEABLE REACTIVE BARRIER WALL - 65' - 110' BGS
- MW-25 130 — MONITORING WELL WITH TCE CONCENTRATION (ug/L)
- 100 — TCE CONCENTRATION ISOPACH INTERVAL (50 ug/L)

TCE Isopach Concentration Table			
Range	TCE (Min.)	TCE (Max.)	Color
1	0.0	50.0	
2	50.0	100.0	
3	100.0	150.0	
4	150.0	200.0	
5	200.0	250.0	

AECOM

Figure: 3-4

TCE ISOPACH CONCENTRATION MAP

US ARMY Corps of Engineers

2017 2nd QUARTER GROUNDWATER REPORT

DEFENSE NATIONAL STOCKPILE CENTER

SCOTIA DEPOT SITE - SCOTIA, NY

Project No.: 60440641 Date: October 2017

TABLES

Table 2-1
Monitoring Well Sampling Schedule and Guidelines
The Defense National Stockpile Center Scotia Depot

Monitoring Well ID[1]	Rationale[2]	Sampling Frequency	Analytes[3]	Screen Interval (ft bgs)
MW-15	Upgradient	Quarterly for 2 years then anually	VOCs/MNA	65-80
MW-16	Outside Plume	Quarterly for 2 years then anually	VOCs/MNA	55-70
MW-24	Downgradient	Quarterly for 2 years then anually	VOCs/MNA	100-110
MW-26	Downgradient	Quarterly for 2 years then anually	VOCs/MNA	100-110
MW-28	Downgradient	Quarterly for 2 years then anually	VOCs/MNA	67-72
MW-29	Upgradient	Quarterly for 2 years then anually	VOCs/MNA	67-72
MW-30	Downgradient	Quarterly for 2 years then anually	VOCs/MNA	82-92
MW-31	Upgradient	Quarterly for 2 years then anually	VOCs/MNA	82-92
MW-32	Downgradient	Quarterly for 2 years then anually	VOCs/MNA	82-92
MW-33	Upgradient	Quarterly for 2 years then anually	VOCs/MNA	82-92
MW-34	Downgradient	Quarterly for 2 years then anually	VOCs/MNA	82-92
MW-35	Upgradient	Quarterly for 2 years then anually	VOCs/MNA	82-92
GEP-3	Upgradient	Annually	VOCs	59.6-74.6
MW-B-3	Outside Plume	Annually	VOCs	47.5-67.5
MW-5	Downgradient	Annually	VOCs	62.5-72.5
MW-6	Downgradient	Annually	VOCs	58.5-68.5
MW-7	Outside Plume	Annually	VOCs	61-71
MW-8	CT Plume	Annually	VOCs	66-76
MW-9	Downgradient	Annually	VOCs	110-120

Table 2-1
Monitoring Well Sampling Schedule and Guidelines
The Defense National Stockpile Center Scotia Depot

Monitoring Well ID[1]	Rationale[2]	Sampling Frequency	Analytes[3]	Screen Interval (ft bgs)
MW-11	CT Plume	Annually	VOCs	65-80
MW-12	CT Plume	Annually	VOCs	65-80
MW-14	Upgradient	Annually	VOCs	65-80
MW-17	Upgradient	Annually	VOCs	60-75
MW-18	Upgradient	Annually	VOCs	60-75
MW-19	Upgradient	Annually	VOCs	62-77
MW-20	Upgradient	Annually	VOCs	63-78
MW-22	Upgradient	Annually	VOCs	63-78
MW-23	Outside Plume	Annually	VOCs	63-78
MW-24	Downgradient	Annually	VOCs	90-100
MW-25	Upgradient	Annually	VOCs	65-75
MW-26	Downgradient	Annually	VOCs	100-110
MW-27	Downgradient	Annually	VOCs	100-110
MW-36	Upgradient	Annually	VOCs	70-80
GEP-2	Upgradient	Annually	VOCs	60.6-75.6
GEP-1	Upgradient	Annually	VOCs	59.6-74.6
GEP-4	Upgradient	Annually	VOCs	60.15-75.15

Notes:

[1] *2015 Compliance monitoring well

[2] Rationale: Upgradient of PRB wall; Downgradient of PRB wall; Outside of any plume; Within Carbon Tetrachloride (CT) plume

[3] Monitored natural attenuation (MNA) parameters include TOC (EPA SM 5310B), alkalinity (EPA SM 2320B), Chloride, nitrate, sulfate (EPA Method 300.0), and Dissolved Gases (Methane, ethane, and ethene; Method RSK 175).

Table 3-1
Groundwater Elevations Data
The Defense National Stockpile Center Scotia Depot
Second Quarter 2017 Status Report
AECOM Project 60440641

Well IDs	Screened Interval (ft bgs)	Ground Surface Elevation (ft)	Reference Point Elevation (ft)	Depth to Water (ft bgs)	Groundwater Elevation 2015	Groundwater Elevation 2016	Groundwater Elevation Q1 2017	Groundwater Elevation Q2 2017
B-1	48-68	-	287.14	57.34	227.74	-	-	**229.80**
B-3	47.5-67.5	-	287.05	-	227.95	-	-	**-**
MW-4	63.8-73.8	289.58	291.74	-	225.74	-	-	**-**
MW-5	62.5-72.5	287.95	290.11	63.82	225.75	219.29	219.61	**226.29**
MW-6	58.5-68.5	286.28	288.58	62.03	225.86	219.80	219.80	**226.55**
MW-7	61-71	286.8	289.26	61.96	226.28	223.16	220.79	**227.30**
MW-9	110-120	285.98	288.33	61.85	225.83	219.75	219.78	**226.48**
MW-10	65-80	290.94	293.15	-	228.24	-	-	**-**
MW-11	65-80	295.73	295.12	64.36	227.7	225.91	225.00	**230.76**
MW-13	65-80	292.62	293.85	64.25	227.32	225.43	223.95	**229.60**
MW-14	65-80	-	296.2	64.88	228.08	226.56	226.07	**231.32**
MW-15	65-80	-	293.67	63.07	227.8	226.27	225.32	**230.60**
MW-16	55-70	-	288.33	60.7	226.39	225.38	221.95	**227.63**
MW-17	60-75	-	295.24	64.09	228.08	226.55	225.99	**231.15**
MW-18	60-75	-	295.24	64.49	227.94	226.46	225.68	**230.75**
MW-19	62-77	-	297.67	65.74	228.43	226.85	227.13	**231.93**
MW-20	63-78	-	301.55	69.22	228.71	227.01	227.83	**232.33**
MW-21	57-72	-	296.52	65.19	228.06	226.50	225.97	**231.33**
MW-22	63-78	-	298.91	67.64	228.29	226.73	226.83	**231.27**
MW-23	63-78	-	300.54	67.98	228.9	227.06	228.40	**232.56**
MW-24	90-100	290.24	292.45	63.4	226.79	225.30	223.60	**229.05**
MW-25	65-75	288.16	290.26	60.61	227.16	225.82	224.82	**229.65**
MW-26	100-110	287.23	286.45	58.44	226.06	224.75	222.60	**228.01**
MW-27	100-110	286.08	288.32	61.89	225.5	223.44	219.65	**226.43**
MW-28	67-72	292.55	292.25	62.46	227.07	225.41	224.31	**229.79**
MW-29	67-72	292.50	292.13	62.31	227.05	225.38	224.33	**229.82**
MW-30	82-92	291.76	291.63	62.19	226.98	225.35	223.98	**229.44**
MW-31	82-92	291.80	291.54	62.02	226.95	225.40	224.12	**229.52**
MW-32	82-92	290.12	289.75	60.7	226.86	225.45	223.70	**229.05**
MW-33	82-92	290.27	289.91	60.8	226.89	225.51	223.80	**229.11**
MW-34	82-92	287.30	287.05	58.39	226.73	225.48	223.35	**228.66**
MW-35	82-92	287.25	286.96	58.28	226.69	225.46	223.40	**228.68**
MW-36	70-80	292.61	292.36	61.87	227.8	226.12	226.26	**230.49**
GEP-1	59.6-74.6	-	294.98	-	227.36	-	224.43	**-**
GEP-2	60.6-75.6	-	296.02	65.18	227.9	226.38	225.59	**230.84**
GEP-3	59.6-74.6	-	292.97		227.81	226.31	225.26	**292.97**
GEP-4	60.15-75.15	-	295.62	65.01	227.73	226.22	225.39	**230.61**

Table 3-2
Quarterly Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	Non-paired Wells															
		MW-15				MW-16				MW-24				MW-26			
		11/9/2015	12/14/2016	3/22/2017	6/21/2017	11/11/2015	12/12/2016	3/20/2017	6/20/2017	11/10/2015	12/13/2016	3/21/2017	6/26/2017	11/17/2015	12/13/2016	3/21/2017	6/26/2017
		Upgradient				Outside Plume				Downgradient				Downgradient			
VOCs (µg/L)																	
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	**1.9**	**4.4**	**1.9**	**3.8**	**0.49 J**	0.75 U	**0.53 J**	**0.50 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	0.75 U	**0.44 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene (PCE; PERC)	5	**0.6 J**	**1.7**	**0.84 J**	**0.66 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.57 J**	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**77.3**	**183**	**80.5**	**122**	**0.55 J**	0.75 U	0.75 U	0.75 U	**0.93 J**	**1.4**	**1.7**	**1.2**	0.75 U	0.75 U	0.75 U	0.75 U
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters																	
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**182**	**212**	**201**	**217**	**248**	**312**	**317**	**322**	**168**	**198**	**205**	**195**	**204**	**197**	**196**	**223**
Chloride (mg/L)	NS	**28.9**	**14.3**	**28.3**	**40.1**	**13.6**	**9.0**	**5.6**	**20.2**	**36.3**	**38.5**	**59.0**	**41.0**	**45.2**	**44.9**	**53.4**	**133**
Nitrate (mg/L)	NS	**0.58**	**0.56**	**0.90**	**0.52**	**1.6**	**1.6**	**2.1 J**	**3.7**	**0.9**	0.060 U	0.060 U	0.20 U	0.06 U	**0.040 J**	0.060 U	0.020 U
Sulfate (mg/L)	NS	**12.3**	**12.4**	**21.3**	**20.5**	**35.2**	**44.8**	**65.3**	**75.5**	**15.5**	**21.4**	**24.1**	**22.1**	**25.1**	**24.6**	**29.4**	**20.9**
Methane (µg/L)	NS	**0.19 J**	0.5 U	**0.21 J**	0.50 U	0.25 U	0.5 U	0.50 U	0.50 U	**0.82**	**1.6**	**1.7 J+**	**2.2**	**34.8**	**2.7**	**1.4 J+**	**2.1**
Ethane (µg/L)	NS	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.34 J**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethene (µg/L)	NS	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.8 U	0.75 U	0.75 U	0.75 U	0.8 U
Total Organic Carbon (mg/L)	NS	**0.55 J**	**0.57 J**	**0.47 J**	**0.21 J**	**3.6**	**0.96 J**	**1.1**	**0.67 J**	**3.5**	**1.9**	**1.0 J**	**0.79 J**	**9.3**	**2.6**	**1.3 J**	**30.7**
Field Parameters																	
Turbidity (NTU)	NS	11.1	7	15.7	2.1	8.01	14.8	7.71	4.4	9.33	13.9	16.3	35.2	68.3	21.8	31.9	0.4
ORP (MeV)	NS	91.4	54.6	-0.6	114.6	137.6	139.9	115.9	298.7	-80.2	-93.2	-111.3	-108.6	-103.6	-28.9	-46.4	-26.9
Conductivity (mS/cm)	NS	0.358	0.25	0.387	0.5	0.361	0.388	0.436	0.486	0.327	0.57	0.438	0.365	0.324	0.59	0.469	0.63
Dissolved Oxygen (mg/L)	NS	31.45	8.04	6.37	4.9	22.27	9.5	10.4	10.82	0.94	0.44	0.55	1.2	0	0.33	0.27	0.62
Groundwater Elevation (ft)	NS	227.80	226.27	225.32	230.6	226.39	225.38	221.95	227.63	226.79	225.30	223.60	229.05	226.06	224.75	222.60	228.01

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Standards (AWQS) are highlighted in gray.
J - Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte.
J+ - The result is an estimated quantity, likely to be biased high.
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as mg $CaCO_3$/L.
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 23.8 and the upper contol limit is 20.

Table 3-2
Quaterly Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	Confirmation Well Pair								Confirmation Well Pair							
		MW-28				MW-29				MW-30				MW-31			
		12/1/2015	12/14/2016	3/22/2017	6/27/2017	12/1/2015	12/14/2016	3/22/2017	6/27/2017	12/1/2015	12/13/2016	3/21/2017	6/26/2017	12/1/2015	12/14/2016	3/22/2017	6/26/2017
		Downgradient				Upgradient				Downgradient				Upgradient			
VOCs (µg/L)																	
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	1.0 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	**11.2**	**10.4**	**9.9**	**8.9 J+**	**12.4**	**14.0 J+**	**10.4**	**11.8 J+**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	1.0 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	**0.46 J**	0.75 U	0.75 U	1.0 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	**1.0**	**0.77 J**	**0.88 J**	**1.0 J+**	**0.97 J**	3.8 U	**0.45 J**	**1.0 J+**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	**0.53 J**	**0.43 J**	**0.53 J**	**0.38 J**	**0.68 J**	3.8 U	**0.55 J**	**0.63 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	**0.61 J**	0.75 U	**0.62 J**	0.75 U	0.75 U	3.8 U	**0.63 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	**4.7**	**4.3**	**4.4**	**4.7 J+**	**4.9**	**6.1** J+	**3.1**	**5.8 J+**	0.75 U	0.75 U	**0.74 J**	**0.61 J**	0.75 U	0.75 U	**0.41 J**	**0.50 J**
Tetrachloroethene (PCE; PERC)	5	**33**	**44.6**	**42.4**	**36.3 J+**	**33.2**	**30.8** J+	**37.2**	**38.1 J+**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	**0.47 J**	**0.42 J**	**0.37 J**	0.75 U	3.8 U	**0.61 J**	**0.70 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**182**	**196**	**181**	**195**	**224**	**209** J+	**197**	**264**	**25.2**	**42.3**	**66.3**	**24.3**	**42.7**	**38.2**	**35.0**	**29.0**
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters																	
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**352**	**316**	**295**	**352**	**327**	**301**	**258**	**361**	**143**	**319**	**210**	**154**	**178**	**222**	**381**	**150**
Chloride (mg/L)	NS	**22.1**	**32.4**	**25.7**	**29.0**	**28.2**	**28.4**	**21.3**	**49.4**	**38.4**	**182**	**136**	**49.6**	**41.9**	**56.6**	**98.5**	**31.0**
Nitrate (mg/L)	NS	0.06 U	**0.06 J**	**0.44**	**1.5**	**0.1 J**	**0.26**	**0.52**	**1.3 J**	0.06 U	0.060 U	0.06 U	0.06 U	0.06 U	0.06 U	**0.040 J**	0.20 U
Sulfate (mg/L)	NS	**22.4**	**20.9**	**21.6**	**13.0**	**29.2**	**24.9**	**20.1**	**13.8**	**35.9**	**2.9**	0.5 U	2.0 U	**26.3**	**10.9**	**2.6**	**5.6**
Methane (µg/L)	NS	**3.4**	**3.0**	**0.94**	**1.0**	**13.9**	**0.62**	**1.1**	0.05 U	**47.4**	**146**	**870**	**3210**	**20.7**	**3.5**	**106**	**56.5**
Ethane (µg/L)	NS	0.50 U	**3.6**	**1.0**	0.50 U	**0.81 J**	0.50 U	0.5 U	0.50 U	**4.7**	**5.4**	**23.5**	**36.7**	**2.2**	**1.5**	**10.1**	**2.7**
Ethene (µg/L)	NS	0.75 U	**1.3 J**	**1.9**	0.75 U	**0.59 J**	0.75 U	0.75 U	0.75 U	**2.2**	**3.3**	**9.1**	**12.7**	**0.91 J**	**0.84 J**	**4.7**	**3.2**
Total Organic Carbon (mg/L)	NS	**1.9**	**2.3**	**0.81 J**	**0.76 J**	**2.3**	**1.4**	**0.91 J**	**0.92 J**	**2.2**	**225**	**139**	**75.2**	**2.1**	**43.9**	**257**	**2.8**
Field Parameters																	
Turbidity (NTU)	NS	209	1.5	2.07	-3	82.4	0.62	2.73	2.8	58.2	3.55	3.82	3	51.7	8.03	11.4	4.6
ORP (MeV)	NS	273.2	71.2	77.1	97.4	-25.1	60.9	46.1	120.2	-278.4	-166.3	-166.9	-173.3	-319.7	-163.1	-201.5	-283.2
Conductivity (mS/cm)	NS	0.324	0.366	0.52	0.554	0.325	0.354	0.424	0.619	0.21	1.41	0.74	0.32	0.243	0.348	0.85	0.28
Dissolved Oxygen (mg/L)	NS	6.75	3.94	5.2	7.59	4.29	6.17	9.26	7.12	3.7	0.29	0.17	0.48	1.29	0.28	0.22	0.7
Groundwater Elevation (ft)	NS	227.07	225.41	224.31	229.79	227.05	225.38	224.33	229.82	226.98	225.35	223.98	229.44	226.95	225.40	224.12	229.52

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Standards (AWQS) are highlighted in gray.
J - Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte.
J+ - The result is an estimated quantity, likely to be biased high.
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as mg $CaCO_3$/L.
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 23.8 and the upper contol limit is 20.

Table 3-2
Quaterly Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	Confirmation Well Pair								Confirmation Well Pair							
		MW-32				MW-33				MW-34				MW-35			
		11/30/2015	12/13/2016	3/21/2017	6/26/2017	11/24/2015	12/14/2016	3/22/2017	6/26/2017	11/24/2015	12/13/2016	3/21/2017	6/26/2017	11/24/2015	12/15/2016	3/22/2017	6/26/2017
		Downgradient				Upgradient				Downgradient				Upgradient			
VOCs (µg/L)																	
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	0.75 U	0.75 U	**0.40 J**	**0.48 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	0.75 U	0.75 U	**1.2**	**1.3**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene (PCE; PERC)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.42 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**150**	**132**	**191**	**130**	**133**	**93.5**	**151**	**152**	**17.7**	**41.3**	**48.3**	**34.0**	**31.9**	**31.8**	**12.5**	**43.8 J+**
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters																	
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**196**	**277**	**214**	**129**	**172**	**218**	**194**	**205**	**99**	**191**	**597**	**201**	**181**	**223**	**51**	**202**
Chloride (mg/L)	NS	**35.6**	**138**	**84.6**	**38.0**	**41.8**	**43.2**	**29.2**	**22.8**	**48.5**	**62.3**	**461**	**15.7**	**42.2**	**53.9**	**2.0**	**17.1**
Nitrate (mg/L)	NS	0.06 U	0.060 U	**0.02 J**	0.20 U	0.06 U	0.060 U	**0.32**	**0.32**	**0.56**	**0.060 J**	0.060 U	0.20 U	0.06 U	**0.040 J**	**0.14 J**	**0.66**
Sulfate (mg/L)	NS	**21.1**	**2.8**	**0.68 J**	2.0 U	**25.1**	**8.2**	**15.0**	**11.8**	**64.3**	**23.8**	**0.56 J**	**13.4**	**48.1**	**7.2**	**3.5**	**13.6**
Methane (µg/L)	NS	**6.8**	**16.5**	**309**	**817**	**64**	**3.4**	**9.2**	**16.0**	**14.5**	**1.2**	**1780**	**12.4**	**13.8**	**0.90**	**5.8**	**7.2**
Ethane (µg/L)	NS	**0.5 J**	**1.5**	**19.3**	**35.9**	**7**	**0.25 J**	0.50 U	0.50 U	**2.2**	0.50 U	**17.3**	0.50 U	**2.9**	0.50 U	0.50 U	0.50 U
Ethene (µg/L)	NS	0.75 U	**1.8**	**10.3**	**15.6**	**3.6**	**0.48 J**	0.75 U	0.75 U	**1.8**	0.75 U	**4.4**	0.75 U	**1.6**	0.75 U	**0.32 J**	0.75 U
Total Organic Carbon (mg/L)	NS	**2.6**	**133**	**98.0**	**22.0**	**8.1**	**30.9**	**2.1**	**0.54 J**	**5.9**	**12**	**631**	**3.3**	**7.7**	**18.3**	**1.4**	**0.75** J
Field Parameters																	
Turbidity (NTU)	NS	180	5.92	4.01	5.1	23.1	9.31	11.7	3.4	44.7	3.23	4.59	-4	381	5.99	16.3	38.2
ORP (MeV)	NS	-234.2	-107.7	-140.7	-238.7	-471.2	-126.8	-64.3	44.9	-185.4	-8.4	-144.0	-139.4	-404	-167.9	-68.4	-10.6
Conductivity (mS/cm)	NS	0.239	1.18	0.64	0.261	0.247	0.303	0.386	0.35	0.361	0.63	2.28	0.332	0.287	0.329	0.078	0.324
Dissolved Oxygen (mg/L)	NS	0.64	1.81	1.77	2.5	0.92	0.41	2.5	2.99	6.9	1.12	0.12	0.46	0.79	0.41	6.63	3.67
Groundwater Elevation (ft)	NS	226.86	225.45	223.70	229.05	226.89	225.51	223.80	229.11	226.73	225.48	223.35	228.66	226.69	225.46	223.40	228.68

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Standards (AWQS) are highlighted in gray.
J - Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte.
J+ - The result is an estimated quantity, likely to be biased high.
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as mg $CaCO_3$/L.
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 23.8 and the upper contol limit is 20.

Table 3-3
Annual Site Wide Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	GEP-1		GEP-2		GEP-3		GEP-4		MW-B-3		MW-5	
		11/10/2015	6/23/2017	11/10/2015	6/21/2017	11/9/2015	6/23/2017	11/9/2015	6/21/2017	11/13/2015	6/22/2017	11/12/2015	6/20/2017
		Upgradient		Upgradient		Upgradient		Upgradient		Outside Plume		Downgradient	
VOCs (µg/L)													
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	**4.6**	**3.3 J+**	**19.7**	**16.3**	**0.93 J**	**1.2**	**5.1**	**4.7**	0.75 U	0.75 U	**0.51 J**	**0.41 J**
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	0.75 U	0.75 U	**0.56 J**	**0.68 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	**0.43 J**	0.75 U	**1.1**	**1.1**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	0.75 U	0.75 U	**1.2**	**1.8**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene (PCE; PERC)	5	**1.0**	**0.45 J**	**3.5**	**3.2**	**1.1**	**0.57 J**	**0.68 J**	**0.80 J**	**1.8**	**3.9**	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**180**	**152 J+**	**210**	**167**	**143**	**131**	**85.9**	**72.4**	0.75 U	0.75 U	**0.46 J**	**0.58 J**
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters													
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	223	NA	**335**	NA	**217**	NA	**227**	NA	**110**	NA	**221**	NA
Chloride (mg/L)	NS	13.2	NA	**5.6**	NA	**15.4**	NA	**22.5**	NA	**155**	NA	**197**	NA
Nitrate (mg/L)	NS	1.0	NA	**0.38 J**	NA	**0.79**	NA	**0.71**	NA	**0.66 J,H**	NA	**6.7**	NA
Sulfate (mg/L)	NS	10.2	NA	**9.9**	NA	**10.8**	NA	**13.2**	NA	**25.3**	NA	**36.7 J**	NA
Methane (µg/L)	NS	0.32 J	NA	**0.33 J**	NA	**0.16 J**	NA	**0.4 J**	NA	**0.39 J**	NA	**0.19 J**	NA
Ethane (µg/L)	NS	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA
Ethene (µg/L)	NS	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	NA
Total Organic Carbon (mg/L)	NS	3.4	NA	**2.9**	NA	**0.47 J**	NA	**2.7**	NA	**5.2**	NA	**7.3**	NA
Field Parameters													
Turbidity (NTU)	NS	33.1	45.6	28.2	0	13.9	113.1	41.8	9.4	4.95	8	23.9	4.7
ORP (MeV)	NS	141.8	203.5	180.3	336.1	131.4	171.5	110.7	109.9	157.4	180.2	74.3	26.3
Conductivity (mS/cm)	NS	0.308	0.396	0.371	0.476	0.329	0.363	0.363	0.51	0.461	0.385	0.654	0.701
Dissolved Oxygen (mg/L)	NS	19.53	9.9	30.01	8.63	114.75	9.44	14.93	5.05	19.91	10.1	17.86	12.4
Groundwater Elevation (ft)	NS	224.81	NA	227.90	230.84	227.81	292.97	227.73	230.61	227.95	NA	225.75	226.29

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Standards (AWQS) are highlighted in gray.
J - Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte.
J+ - The result is an estimated quantity, likely to be biased high.
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as mg $CaCO_3$/L.
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 23.8 and the upper contol limit is 20.

Table 3-3
Annual Site Wide Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	MW-6		MW-7		MW-9		MW-14		MW-15				MW-16			
		11/12/2015	6/20/2017	11/11/2015	6/20/2017	11/12/2015	6/20/2017	11/12/2015	6/21/2017	11/9/2015	12/14/2016	3/22/2017	6/21/2017	11/11/2015	12/12/2016	3/20/2017	6/20/2017
		Downgradient		Outside Plume		Downgradient		Upgradient		Upgradient				Outside Plume			
VOCs (µg/L)																	
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	**2.1**	**0.77 J**	0.75 U	0.75 U	0.75 U	0.75 U	**3.9**	**1.2**	**1.9**	**4.4**	**1.9**	**3.8**	**0.49 J**	0.75 U	**0.53 J**	**0.50 J**
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.43 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.44 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	**0.45 J**	**0.39 J**	0.75 U	0.75 U	0.75 U	0.75 U	**2.4**	**0.85 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene (PCE; PERC)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**10.8**	**10.5**	**0.60 J**	**1.7**	**0.84 J**	**0.66 J**	0.75 U	0.75 U	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**59.8**	**26.0**	**1.3**	0.75 U	**0.68 J**	0.75 U	**3.7**	**2.4**	**77.3**	**183**	**80.5**	**122**	**0.55 J**	0.75 U	0.75 U	0.75 U
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters																	
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**281**	NA	**353**	NA	**186**	NA	**242**	NA	**182**	**212**	**201**	**217**	**248**	**312**	**317**	**322**
Chloride (mg/L)	NS	**28.4**	NA	**26.7**	NA	**12**	NA	**26.4**	NA	**28.9**	**14.3**	**28.3**	**40.1**	**13.6**	**9.0**	**5.6**	**20.2**
Nitrate (mg/L)	NS	**1.7**	NA	**1.1**	NA	0.50 U	NA	**0.96**	NA	**0.58**	**0.56**	**0.90**	**0.52**	**1.6**	**1.6**	**2.1 J**	**3.7**
Sulfate (mg/L)	NS	**23.2 J**	NA	**15**	NA	**56.7 J**	NA	**21 J**	NA	**12.3**	**12.4**	**21.3**	**20.5**	**35.2**	**44.8**	**65.3**	**75.5**
Methane (µg/L)	NS	0.25 U	NA	**1.7**	NA	**2.7**	NA	**0.86**	NA	**0.19 J**	0.5 U	**0.21 J**	0.50 U	0.25 U	0.5 U	0.50 U	0.50 U
Ethane (µg/L)	NS	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethene (µg/L)	NS	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Total Organic Carbon (mg/L)	NS	**5.5**	NA	**5.5**	NA	**3.3**	NA	**6**	NA	**0.55 J**	**0.57 J**	**0.47 J**	**0.21 J**	**3.6**	**0.96 J**	**1.1**	**0.67 J**
Field Parameters																	
Turbidity (NTU)	NS	2.76	3.9	4.64	7.4	3.75	0.1	136	5	11.1	7	15.7	2.1	8.01	14.8	7.71	4.4
ORP (MeV)	NS	151.8	121.4	165.8	126.4	-121.4	-1.0	119.4	122.6	91.4	54.6	-0.6	114.6	137.6	139.9	115.9	298.7
Conductivity (mS/cm)	NS	0.317	0.419	0.32	0.732	0.237	0.386	0.302	0.479	0.358	0.25	0.387	0.5	0.361	0.388	0.436	0.486
Dissolved Oxygen (mg/L)	NS	24.39	8.9	11.81	7.38	0	0.59	14.94	-13.54	31.45	8.04	6.37	4.9	22.27	9.5	10.4	10.82
Groundwater Elevation (ft)	NS	225.86	226.55	226.28	227.30	225.83	226.48	228.08	231.32	227.80	226.27	225.32	230.6	226.39	225.38	221.95	227.63

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Stai
J - Indicates an estimated value between the Method Detection
J+ - The result is an estimated quantity, likely to be biased high
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside

Table 3-3
Annual Site Wide Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	MW-17		MW-18		MW-19		MW-20		MW-22		MW-23	
		11/16/2015	6/23/2017	11/10/2015	6/21/2017	11/16/2015	6/21/2017	11/17/2015	6/22/2017	11/16/2015	6//22/2017	11/17/2015	6/22/2017
		Upgradient		Upgradient		Upgradient		Upgradient		Upgradient		Outside Plume	
VOCs (µg/L)													
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	**17**	**22**	**2.7**	**2.4**	**2.1**	**2.9**	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	**0.63 J**	**1.1**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	0.75 U	0.75 U	**0.39 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
Carbon Tetrachloride	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	**1.0**	**2.1**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
Tetrachloroethene (PCE; PERC)	5	0.75 U	0.75 U	**1.6**	**1.8**	0.75 U	0.75 U	**1.5**	**3.7**	**5.6**	**3.8 J**	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**15.2**	**35.2**	**153**	**117**	**30**	**14.3**	**52.3**	**86.8**	**282**	**238**	0.75 U	0.75 U
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U
MNA Parameters													
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**310**	NA	**197**	NA	**267**	NA	**260**	NA	**246**	NA	**211**	NA
Chloride (mg/L)	NS	**4.9**	NA	**16.9**	NA	**3.9**	NA	**2.3**	NA	2.0 U	NA	**27.6**	NA
Nitrate (mg/L)	NS	**0.96**	NA	0.50 U	NA	**0.48**	NA	**0.74**	NA	**4.5**	NA	**0.66**	NA
Sulfate (mg/L)	NS	**14.3**	NA	**13.2**	NA	**9.8**	NA	**7.7 J**	NA	**7.2**	NA	**30.4 J**	NA
Methane (µg/L)	NS	**0.13 J**	NA	**1.1**	NA	**0.65**	NA	**1.4 J**	NA	0.25 U	NA	**0.17 J**	NA
Ethane (µg/L)	NS	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA
Ethene (µg/L)	NS	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	NA	0.75 U	NA
Total Organic Carbon (mg/L)	NS	**2.7**	NA	**9.5**	NA	**5**	NA	**3.9**	NA	**2.2**	NA	**2.5**	NA
Field Parameters													
Turbidity (NTU)	NS	9.02	3.1	40.1	3.8	35.4	19.4	85.7	26.3	3.79	40.1	13	15.1
ORP (MeV)	NS	118.6	159.7	88.7	298.7	93.0	297.8	184.8	136.1	115.6	178.4	134.3	169.4
Conductivity (mS/cm)	NS	0.257	0.462	0.301	0.394	0.244	0.428	0.264	0.36	0.224	0.36	0.273	0.405
Dissolved Oxygen (mg/L)	NS	16.42	9.99	18.46	6.33	14.23	8.82	17.61	9.46	16.55	11.11	12.71	9.07
Groundwater Elevation (ft)	NS	228.08	231.15	227.94	230.75	228.43	231.93	228.71	232.33	228.29	231.27	228.90	232.56

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Sta
J - Indicates an estimated value between the Method Detection
J+ - The result is an estimated quantity, likely to be biased high
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside

Table 3-3
Annual Site Wide Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	MW-24				MW-25		MW-26				MW-27		MW-36	
		11/10/2015	12/13/2016	3/21/2017	6/26/2017	11/16/2015	6/21/2017	11/17/2015	12/13/2016	3/21/2017	6/26/2017	11/11/2015	6/23/2017	12/2/2015	6/22/2017
		Downgradient				Upgradient		Downgradient				Downgradient		Upgradient	
VOCs (µg/L)															
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.81 J**	**0.73 J**	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.51 J**	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene (PCE; PERC)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.57 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**0.93 J**	**1.4**	**1.7**	**1.2**	**96.7**	**76.7**	0.75 U	0.75 U	0.75 U	0.75 U	**189**	**211**	**1.0**	**0.81 J**
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters															
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**168**	**198**	**205**	**195**	**198**	NA	**204**	**197**	**196**	**223**	**282**	NA	**197**	NA
Chloride (mg/L)	NS	**36.3**	**38.5**	**59.0**	**41.0**	**16.3**	NA	**45.2**	**44.9**	**53.4**	**133**	**13.8**	NA	**46.6**	NA
Nitrate (mg/L)	NS	**0.90**	0.060 U	0.060 U	0.20 U	**0.52**	NA	0.06 U	**0.040 J**	0.060 U	0.020 U	**1.2**	NA	0.06 U	NA
Sulfate (mg/L)	NS	**15.5**	**21.4**	**24.1**	**22.1**	**9.0**	NA	**25.1**	**24.6**	**29.4**	**20.9**	**22**	NA	**21.2 J,L**	NA
Methane (µg/L)	NS	**0.82**	**1.6**	**1.7 J+**	**2.2**	**0.45 J**	NA	**34.8**	**2.7**	**1.4 J+**	**2.1**	**0.24 J**	NA	**25.6**	NA
Ethane (µg/L)	NS	**0.34 J**	0.50 U	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	NA	**2.7**	NA
Ethene (µg/L)	NS	0.75 U	0.75 U	0.75 U	0.8 U	0.75 U	NA	0.75 U	0.75 U	0.75 U	0.8 U	0.75 U	NA	**1.2 J**	NA
Total Organic Carbon (mg/L)	NS	**3.5**	**1.9**	**1.0 J**	**0.79 J**	**5.6**	NA	**9.3**	**2.6**	**1.3 J**	**30.7**	**2.9**	NA	**1.7**	NA
Field Parameters															
Turbidity (NTU)	NS	9.33	13.9	16.3	35.2	30.9	1.5	68.3	21.8	31.9	0.4	86.8	1.9	66.7	6.3
ORP (MeV)	NS	-80.2	-93.2	-111.3	-108.6	85.4	97.5	-103.6	-28.9	-46.4	-26.9	169.9	310.7	-224.3	-71.7
Conductivity (mS/cm)	NS	0.327	0.57	0.438	0.365	0.201	0.446	0.324	0.59	0.469	0.63	0.411	0.429	0.282	0.422
Dissolved Oxygen (mg/L)	NS	0.94	0.44	0.55	1.2	11.25	4.6	0	0.33	0.27	0.62	21.89	5.3	5.29	1.08
Groundwater Elevation (ft)	NS	226.79	225.30	223.60	229.05	227.16	229.65	226.06	224.75	222.60	228.01	225.50	226.43	227.80	230.49

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Stan
J - Indicates an estimated value between the Method Detection
J+ - The result is an estimated quantity, likely to be biased high
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside

Table 3-3
Annual Site Wide Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	Confirmation Well Pair								Confirmation Well Pair							
		MW-28				MW-29				MW-30				MW-31			
		12/1/2015	12/14/2016	3/22/2017	6/27/2017	12/1/2015	12/14/2016	3/22/2017	6/27/2017	12/1/2015	12/13/2016	3/21/2017	6/26/2017	12/1/2015	12/14/2016	3/22/2017	6/26/2017
		Downgradient				Upgradient				Downgradient				Upgradient			
VOCs (µg/L)																	
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	1.0 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	**11.2**	**10.4**	**9.9**	**8.9 J+**	**12.4**	**14.0** J+	**10.4**	**11.8 J+**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	1.0 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	**0.46 J**	0.75 U	0.75 U	1.0 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	**1.0**	**0.77 J**	**0.88 J**	**1.0 J+**	**0.97 J**	3.8 U	**0.45 J**	**1.0 J+**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	**0.53 J**	**0.43 J**	**0.53 J**	**0.38 J**	**0.68 J**	3.8 U	**0.55 J**	**0.63 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	**0.61 J**	0.75 U	**0.62 J**	0.75 U	0.75 U	3.8 U	**0.63 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	**4.7**	**4.3**	**4.4**	**4.7 J+**	**4.9**	**6.1** J+	**3.1**	**5.8 J+**	0.75 U	0.75 U	**0.74 J**	**0.61 J**	0.75 U	0.75 U	**0.41 J**	**0.50 J**
Tetrachloroethene (PCE; PERC)	5	**33**	**44.6**	**42.4**	**36.3 J+**	**33.2**	**30.8** J+	**37.2**	**38.1 J+**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	**0.47 J**	**0.42 J**	**0.37 J**	0.75 U	3.8 U	**0.61 J**	**0.70 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**182**	**196**	**181**	**195**	**224**	**209** J+	**197**	**264**	**25.2**	**42.3**	**66.3**	**24.3**	**42.7**	**38.2**	**35.0**	**29.0**
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters																	
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**352**	**316**	**295**	**352**	**327**	**301**	**258**	**361**	**143**	**319**	**210**	**154**	**178**	**222**	**381**	**150**
Chloride (mg/L)	NS	**22.1**	**32.4**	**25.7**	**29.0**	**28.2**	**28.4**	**21.3**	**49.4**	**38.4**	**182**	**136**	**49.6**	**41.9**	**56.6**	**98.5**	**31.0**
Nitrate (mg/L)	NS	0.06 U	**0.06 J**	**0.44**	**1.5**	**0.1 J**	**0.26**	**0.52**	**1.3 J**	0.06 U	0.060 U	0.06 U	0.06 U	0.06 U	0.06 U	**0.04 J**	0.20 U
Sulfate (mg/L)	NS	**22.4**	**20.9**	**21.6**	**13.0**	**29.2**	**24.9**	**20.1**	**13.8**	**35.9**	**2.9**	0.5 U	2.0 U	**26.3**	**10.9**	**2.6**	**5.6**
Methane (µg/L)	NS	**3.4**	**3.0**	**0.94**	**1.0**	**13.9**	**0.62**	**1.1**	0.05 U	**47.4**	**146**	**870**	**3210**	**20.7**	**3.5**	**106**	**56.5**
Ethane (µg/L)	NS	0.50 U	**3.6**	**1.0**	0.50 U	**0.81 J**	0.50 U	0.5 U	0.50 U	**4.7**	**5.4**	**23.5**	**36.7**	**2.2**	**1.5**	**10.1**	**2.7**
Ethene (µg/L)	NS	0.75 U	**1.3 J**	**1.9**	0.75 U	**0.59 J**	0.75 U	0.75 U	0.75 U	**2.2**	**3.3**	**9.1**	**12.7**	**0.91 J**	**0.84 J**	**4.7**	**3.2**
Total Organic Carbon (mg/L)	NS	**1.9**	**2.3**	**0.81 J**	**0.76 J**	**2.3**	**1.4**	**0.91 J**	**0.92 J**	**2.2**	**225**	**139**	**75.2**	**2.1**	**43.9**	**257**	**2.8**
Field Parameters																	
Turbidity (NTU)	NS	209	1.5	2.07	-3	82.4	0.62	2.73	2.8	58.2	3.55	3.82	3	51.7	8.03	11.4	4.6
ORP (MeV)	NS	273.2	71.2	77.1	97.4	-25.1	60.9	46.1	120.2	-278.4	-166.3	-166.9	-173.3	-319.7	-163.1	-201.5	-283.2
Conductivity (mS/cm)	NS	0.324	0.366	0.52	0.554	0.325	0.354	0.424	0.619	0.21	1.41	0.74	0.32	0.243	0.348	0.85	0.28
Dissolved Oxygen (mg/L)	NS	6.75	3.94	5.2	7.59	4.29	6.17	9.26	7.12	3.7	0.29	0.17	0.48	1.29	0.28	0.22	0.7
Groundwater Elevation (ft)	NS	227.07	225.41	224.31	229.79	227.05	225.38	224.33	229.82	226.98	225.35	223.98	229.44	226.95	225.40	224.12	229.52

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Stai
J - Indicates an estimated value between the Method Detection
J+ - The result is an estimated quantity, likely to be biased high
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside

Table 3-3
Annual Site Wide Groundwater Sample Results
The Defense National Stockpile Center Scotia Depot

Analytes	NYSDEC Ambient Water Quality Standards and Guidance Value	Confirmation Well Pair								Confirmation Well Pair							
		MW-32				MW-33				MW-34				MW-35			
		11/30/2015	12/13/2016	3/21/2017	6/26/2017	11/24/2015	12/14/2016	3/22/2017	6/26/2017	11/24/2015	12/13/2016	3/21/2017	6/26/2017	11/24/2015	12/15/2016	3/22/2017	6/26/2017
		Downgradient				Upgradient				Downgradient				Upgradient			
VOCs (µg/L)																	
1,1,1,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane (1,1,1-TCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2,2-Tetrachloroethane	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,2-Trichloroethane	1	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethane (1,1-DCA)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene (1,1-DCE)	5	0.75 U	0.75 U	**0.40 J**	**0.48 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,2-Dichloroethane (EDC)	0.6	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene (cis-1,2-DCE)	5	0.75 U	0.75 U	**1.2**	**1.3**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene (PCE; PERC)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	**0.42 J**	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Toluene	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,2-Dichloroethene (trans-1,2-DCE)	5	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene (TCE)	5	**150**	**132**	**191**	**130**	**133**	**93.5**	**151**	**152**	**17.7**	**41.3**	**48.3**	**34.0**	**31.9**	**31.8**	**12.5**	**43.8 J+**
Vinyl Chloride (VC)	2	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
MNA Parameters																	
Alkalinity, Total (as $CaCO_3$) (mg/L)	NS	**196**	**277**	**214**	**129**	**172**	**218**	**194**	**205**	**99**	**191**	**597**	**201**	**181**	**223**	**51**	**202**
Chloride (mg/L)	NS	**35.6**	**138**	**84.6**	**38.0**	**41.8**	**43.2**	**29.2**	**22.8**	**48.5**	**62.3**	**461**	**15.7**	**42.2**	**53.9**	**2.0**	**17.1**
Nitrate (mg/L)	NS	0.06 U	0.060 U	**0.02 J**	0.20 U	0.06 U	0.060 U	**0.32**	**0.32**	**0.56**	**0.060 J**	0.060 U	0.20 U	0.06 U	**0.040 J**	**0.14 J**	**0.66**
Sulfate (mg/L)	NS	**21.1**	**2.8**	**0.68 J**	2.0 U	**25.1**	**8.2**	**15.0**	**11.8**	**64.3**	**23.8**	**0.56 J**	**13.4**	**48.1**	**7.2**	**3.5**	**13.6**
Methane (µg/L)	NS	**6.8**	**16.5**	**309**	**817**	**64**	**3.4**	**9.2**	**16.0**	**14.5**	**1.2**	**1780**	**12.4**	**13.8**	**0.90**	**5.8**	**7.2**
Ethane (µg/L)	NS	**0.5 J**	**1.5**	**19.3**	**35.9**	**7**	**0.25 J**	0.50 U	0.50 U	**2.2**	0.50 U	**17.3**	0.50 U	**2.9**	0.50 U	0.50 U	0.50 U
Ethene (µg/L)	NS	0.75 U	**1.8**	**10.3**	**15.6**	**3.6**	**0.48 J**	0.75 U	0.75 U	**1.8**	0.75 U	**4.4**	0.75 U	**1.6**	0.75 U	**0.32 J**	0.75 U
Total Organic Carbon (mg/L)	NS	**2.6**	**133**	**98.0**	**22.0**	**8.1**	**30.9**	**2.1**	**0.54 J**	**5.9**	**12**	**631**	**3.3**	**7.7**	**18.3**	**1.4**	**0.75** J
Field Parameters																	
Turbidity (NTU)	NS	180	5.92	4.01	5.1	23.1	9.31	11.7	3.4	44.7	3.23	4.59	-4	381	5.99	16.3	38.2
ORP (MeV)	NS	-234.2	-107.7	-140.7	-238.7	-471.2	-126.8	-64.3	44.9	-185.4	-8.4	-144.0	-139.4	-404	-167.9	-68.4	-10.6
Conductivity (mS/cm)	NS	0.239	1.18	0.64	0.261	0.247	0.303	0.386	0.35	0.361	0.63	2.28	0.332	0.287	0.329	0.078	0.324
Dissolved Oxygen (mg/L)	NS	0.64	1.81	1.77	2.5	0.92	0.41	2.5	2.99	6.9	1.12	0.12	0.46	0.79	0.41	6.63	3.67
Groundwater Elevation (ft)	NS	226.86	225.45	223.70	229.05	226.89	225.51	223.80	229.11	226.73	225.48	223.35	228.66	226.69	225.46	223.40	228.68

Notes:
MNA - Monitored Natural Attenuation
NS - no standard
Detected concentrations are in bold font.
Detections exceeding the NYSDEC Ambient Water Quality Stai
J - Indicates an estimated value between the Method Detection
J+ - The result is an estimated quantity, likely to be biased high
U - Indicates that the analyte was not detected (ND).
1 - TheTotal Alkalinity is titrated to a pH of 4.5 and reported as
2 - Analyte was analyzed past the 48 hour holding time.
3 - The QC sample type DUP for method RSK 175 was outside

APPENDIX A: Groundwater Sample Collection Field Forms

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-1 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-1 062317 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.87	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.06	feet
4. C = Column of Water in Casing:	11.81	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.93	gal
6. D2 = Pump Setting Depth (ft):	71	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0855	0900	0905	0910	0915	0920	0925
Water Level (0.33)	feet	65.00	65.01	65.01	65.00	65.00	65.00	65.00
Volume Purged	gal	0	0.2	0.37	0.55	0.7	0.87	1.0
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	310.7	204.7	~~197.8~~ 123.1	108.1	79.7	79.8	56.9
Dissolved Oxygen (+/- 10%)	%	116.4	110.1	106.5	105.1	106.1	109.3	103.2
Dissolved Oxygen (+/- 10%)	mg/L	10.76	10.45	10.16	10.04	10.17	10.05	~~10.~~ 9.98
Eh / ORP (+/- 10)	MeV	201.0	205.9	~~194.8~~	194.4	229.5	206.4	188.5
Specific Conductivity	mS/cm[c]	0.467	0.453	0.451	0.455	0.458	0.458	0.459
Conductivity (+/- 3%)	mS/cm	0.412	0.390	0.389	0.391	0.391	0.389	0.389
pH (+/- 0.1)	pH unit	8.01	7.81	8.02	8.02	7.92	7.74	8.26
Temp (+/- 0.5)	C	18.95	17.78	17.53	17.57	17.92	17.09	16.99
Color	Visual	Brown	Brown	Brown	Brown	Cloudy	Cloudy	Cloudy
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 0849

Sample Time: 0940

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-1 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-1 062317 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.87	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.06	feet
4. C = Column of Water in Casing:	11.81	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.93	gal
6. D2 = Pump Setting Depth (ft):	71.0	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0930	0935	0940				
Water Level (0.33)	feet	65.00	65.00	65.00				
Volume Purged	gal	1.2	1.37	1.5				
Flow Rate	mL / min	130	130	130				
Turbidity (+/- 10%)	NTU	46.8	46.7	45.6				
Dissolved Oxygen (+/- 10%)	%	102.3	10.3.3	103.1				
Dissolved Oxygen (+/- 10%)	mg/L	9.82	9.92	9.90				
Eh / ORP (+/- 10)	MeV	199.7	201.9	203.5				
Specific Conductivity	mS/cm[c]	0.460	0.464	0.464				
Conductivity (+/- 3%)	mS/cm	0.392	0.396	0.396				
pH (+/- 0.1)	pH unit	8.22	8.28	8.31				
Temp (+/- 0.5)	C	17.30	17.31	17.28				
Color	Visual	cloudy	cloudy	cloudy				
Odor	Olfactory	none	none	none				

Comments

Purge Start Time: 0849

Sample Time: 0940

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-2 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-2 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	77.79	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.18	feet
4. C = Column of Water in Casing:	12.11	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.97	gal
6. D2 = Pump Setting Depth (ft):	71.3	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0911	0916	0921	0926	0931	0936	0941
Water Level (0.33)	feet	65.12	65.12	65.13	65.13	65.13	65.13	65.13
Volume Purged	gal	0	0.37	0.7	1.2	1.7	2.2	2.5
Flow Rate	mL / min	260	260	260	260	260	260	260
Turbidity (+/- 10%)	NTU	62.2	31.3	30.3	21.1	26.1	19.3	10.8
Dissolved Oxygen (+/- 10%)	%	92.6	86.6	86.3	86.0	85.1	85.1	83.2
Dissolved Oxygen (+/- 10%)	mg/L	9.25	8.99	9.85	9.01	8.91	8.88	8.72
Eh / ORP (+/- 10)	MeV	81.7	82.3	87.7	80.7	95.4	116.0	143.5
Specific Conductivity	mS/cm^c	0.615	0.619	0.622	0.620	0.613	0.611	.616
Conductivity (+/- 3%)	mS/cm	0.490	0.484	0.481	0.480	0.475	0.475	.473
pH (+/- 0.1)	pH unit	6.85	6.80	6.86	7.28	7.31	7.23	7.08
Temp (+/- 0.5)	C	14.34	13.57	13.13	13.22	13.19	13.33	13.29
Color	Visual	Brown	Cloudy	Brown/cloudy	Cloudy	Cloudy	Cloudy	Cloudy
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 0905

Sample Time: 1051

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-2 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-2 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	77.29	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.18	feet
4. C = Column of Water in Casing:	12.11	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.97	gal
6. D2 = Pump Setting Depth (ft):	71.3	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0946	0951	0956	1001	1006	1011	1016
Water Level (0.33)	feet	~~65.13~~	65.13	65.13	65.13	65.13	65.14	65.13
Volume Purged	gal	2.8	3.25	3.7	4.15	4.4	4.65	5.0
Flow Rate	mL / min	260	260	260	260	260	260	260
Turbidity (+/- 10%)	NTU	12.5	16.8	12.0	9.0	26.4	15.1	3.0
Dissolved Oxygen (+/- 10%)	%	81.3	81.7	81.3	82.8	81.6	81.9	82.6
Dissolved Oxygen (+/- 10%)	mg/L	8.57	8.56	8.56	8.65	8.59	8.64	8.64
Eh / ORP (+/- 10)	MeV	162.7	~~194.7~~	209.2	229.0	249.4	267.6	281.0
Specific Conductivity	mS/cm[c]	0.608	0.605	0.608	0.61	0.612	0.612	0.612
Conductivity (+/- 3%)	mS/cm	0.467	0.469	0.471	0.474	0.473	0.470	0.476
pH (+/- 0.1)	pH unit	6.96	6.94	6.84	6.78	6.72	6.63	6.64
Temp (+/- 0.5)	C	12.96	13.19	13.13	13.27	13.18	12.86	13.2
Color	Visual	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 0905

Sample Time: 1051

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-2 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-2 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	77.29	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.18	feet
4. C = Column of Water in Casing:	12.11	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.97	gal
6. D2 = Pump Setting Depth (ft):	71.3	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1021	1026	1031	1036	1041	1046	1051
Water Level (0.33)	feet	65.13	65.13	65.13	65.13	65.13	65.13	65.13
Volume Purged	gal	5.4	6.0	6.3	6.65	6.9	7.3	7.65
Flow Rate	mL / min	260	260	260	260	260	260	260
Turbidity (+/- 10%)	NTU	1.7	@ 2.0	1.4	5.0	0.4	0	0
Dissolved Oxygen (+/- 10%)	%	81.0	82.6	80.9	81.3	81.3	82.1	81.3
Dissolved Oxygen (+/- 10%)	mg/L	8.47	8.81	8.50	8.59	8.51	8.68	8.63
Eh / ORP (+/- 10)	MeV	291.4	299.0	309.2	320.6	326.6	329.8	336.1
Specific Conductivity	mS/cm[c]	0.61	0.612	.612	.611	0.612	0.613	.610
Conductivity (+/- 3%)	mS/cm	0.473	0.476	.472	.468	0.475	0.476	.476
pH (+/- 0.1)	pH unit	6.64	6.64	6.6	6.64	6.6	6.62	6.60
Temp (+/- 0.5)	C	13.24	13.36	13.05	12.[illegible]70	13.13	13.39	13.32
Color	Visual	Cloudy	Cloudy	~~Cloudy~~/Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 0905

Sample Time: 1051

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-3 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-3 062317 QA/QC Collected? None

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	74.26	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.47	feet
4. C = Column of Water in Casing:	11.79	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.92	gal
6. D2 = Pump Setting Depth (ft):	68.4	feet
7. C2 = Column of water in Pump/Tubing (ft):	~	feet
8. Tubing Volume = C2(0.005737088)	~	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	835	840	845	850	855	900	905
Water Level (0.33)	feet	62.38	62.38	62.38	62.38	62.38	62.38	62.38
Volume Purged	gal	0	0.1	0.30	0.50	0.65	0.96	1.2
Flow Rate	mL / min	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	129.4	132.4	147.1	147.5	123.2	118.3	113.1
Dissolved Oxygen (+/- 10%)	%	109.7	110.4	100.2	99.2	98.7	97.6	97.9
Dissolved Oxygen (+/- 10%)	mg/L	10.08	10.01	9.61	9.55	9.53	9.46	9.44
Eh / ORP (+/- 10)	MeV	183.2	187.2	185.0	172.5	172.8	174.2	171.7
Specific Conductivity	mS/cm[c]	0.453	0.452	0.427	0.427	0.426	0.427	0.429
Conductivity (+/- 3%)	mS/cm	0.431	0.408	0.364	0.364	0.361	0.360	0.363
pH (+/- 0.1)	pH unit	7.31	7.34	7.25	7.53	7.50	7.40	7.40
Temp (+/- 0.5)	C	20.98	19.82	17.33	17.32	17.16	16.77	16.93
Color	Visual	Cloudy	cloudy	cloudy	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments

Purge Start Time: 830

Sample Time: 905

Emptied YSI Flow-thru cell to eliminate initial turbid water

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-4 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-4 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.86	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.01	feet
4. C = Column of Water in Casing:	11.85	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.93	gal
6. D2 = Pump Setting Depth (ft):	71.00	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650

Parameter	Units	Readings						
Time	24 hr	915	920	925	930	935	940	945
Water Level (0.33)	feet	64.98	64.98	64.98	64.98	64.98	64.98	64.98
Volume Purged	gal	0	0.1	0.20	0.30	0.60	1.00	1.20
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	76.9	60.7	87.2	46.4	44.4	30.9	144.5
Dissolved Oxygen (+/- 10%)	%	316.4	61.6	64.1	57.9	53.1	72.6	~~150~~ 74.8
Dissolved Oxygen (+/- 10%)	mg/L	30.37	6.00	6.33	5.70	5.30	7.13	7.37
Eh / ORP (+/- 10)	MeV	137.0	125.5	124.2	122.9	115.9	112.3	111.8
Specific Conductivity	mS/cm[c]	0.635	0.628	0.624	0.625	0.627	0625	0.626
Conductivity (+/- 3%)	mS/cm	0.539	0.526	0.515	0.518	0.522	0.512	0.520
pH (+/- 0.1)	pH unit	7.31	7.34	7.28	7.24	7.33	7.38	7.38
Temp (+/- 0.5)	C°	17.32	16.44	16.00	16.03	16.17	16.08	16.06
Color	Visual	Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments

Purge Start Time: 910

Sample Time: 1015

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: GEP-4 Date: 6/21 /2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: GEP-4 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(See Prev)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	950	955	1000	1005	1010	1015	
Water Level (0.33)	feet	64.98	64.98	64.98	64.98	64.98	64.98	
Volume Purged	gal	1.40	1.60	1.70	1.90	2.20	2.30	
Flow Rate	mL / min	130	130	130	130	130	130	
Turbidity (+/- 10%)	NTU	67.6	18.7	18.4	9.8	9.6	9.4	
Dissolved Oxygen (+/- 10%)	%	54.7	53.1	51.5	51.9	50.7	51.1	
Dissolved Oxygen (+/- 10%)	mg/L	5.42	5.22	5.03	5.07	5.03	5.05	
Eh / ORP (+/- 10)	MeV	111.6	112.1	110.1	109.4	109.4	109.9	
Specific Conductivity	mS/cm[c]	0.624	0.623	6.622	0.622	0.623	0.621	
Conductivity (+/- 3%)	mS/cm	0.514	0.516	0.515	0.517	0.515	0.510	
pH (+/- 0.1)	pH unit	7.37	7.36	7.39	7.39	7.39	7.39	
Temp (+/- 0.5)	C	15.76	15.99	16.12	16.24	16.00	15.69	
Color	Visual	clear	clear	clear	clear	clear	clear	
Odor	Olfactory	NO	NO	NO	NO	NO	NO	

Comments

Purge Start Time: 910

Sample Time:

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-B-3 Date: 6/22/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-B-3 062217 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	69.78	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	56.71	feet
4. C = Column of Water in Casing:	6.07	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	10.98	gal
6. D2 = Pump Setting Depth (ft):	59.71	feet
7. C2 = Column of water in Pump/Tubing (ft):	~	feet
8. Tubing Volume = C2(0.005737088)	~	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1042	1047	1052	1057	1102	1107	1112
Water Level (0.33)	feet	56.71	56.71	56.71	56.71	56.72	56.71	56.71
Volume Purged	gal	0	0.1	0.22	0.46	0.40	0.7	1.0
Flow Rate	mL / min	40	80	80	80	80	180	180
Turbidity (+/- 10%)	NTU	37.1	73.1	29.4	59.2	40.5	67.7	21.5
Dissolved Oxygen (+/- 10%)	%	110.0	116.2	129.7	135.1	123.9	109.0	103.8
Dissolved Oxygen (+/- 10%)	mg/L	9.50	10.44	11.40	11.88	11.10	10.28	10.38
Eh / ORP (+/- 10)	MeV	36.4	51.0	91.0	110.0	85.6	90.2	171.4
Specific Conductivity	mS/cm[c]	0.444	0.452	0.458	0.468	0.467	0.455	0.468
Conductivity (+/- 3%)	mS/cm	0.424	0.414	0.428	0.438	0428	~~0.40~~ 0.225	0.381
pH (+/- 0.1)	pH unit	7.73	8.14	7.75	7.48	8.29	8.16	6.97
Temp (+/- 0.5)	C	27.67	20.55	21.55	21.72	20.52	15.74	15.27
Color	Visual	clear	clear	Clear	clear	Clear	Clear	Clear
Odor	Olfactory	No	No	No	No	NO	none	none

Comments

Purge Start Time: 1035

Sample Time: 1196

* Lots of bubbles during purging
-1057: pump moved down ~1'. Bubbles stopped

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-B-3 Date: 6/22/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-B-3 062217 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	62.78	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	56.71	feet
4. C = Column of Water in Casing:	6.07	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	0.98	gal
6. D2 = Pump Setting Depth (ft):	59.71	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1117	1122	1127	1131	1136	1141	1146
Water Level (0.33)	feet	56.71	56.71	56.71	56.71	56.71	56.71	56.71
Volume Purged	gal	1.3	1.5	2.0	2.5	3.0	3.2	3.4
Flow Rate	mL / min	180	180	180	180	180	180	180
Turbidity (+/- 10%)	NTU	13.5	14.1	12.6	8.9	8.4	8.2	8.0
Dissolved Oxygen (+/- 10%)	%	99.1	93.0	103.0	101.0	101.3	101.7	100.3
Dissolved Oxygen (+/- 10%)	mg/L	9.28	9.13	10.07	10.06	10.13	10.13	10.10
Eh / ORP (+/- 10)	MeV	136.1	115.7	135.1	150.1	191.0	183.2	180.2
Specific Conductivity	mS/cm[c]	0.470	0.470	0.471	0.470	0.469	0.471	0.471
Conductivity (+/- 3%)	mS/cm	0.389	0.391	0.394	0.385	0.382	0.385	0.385
pH (+/- 0.1)	pH unit	7.76	8.31	8.37	8.37	8.56	8.50	8.51
Temp (+/- 0.5)	C	15.99	16.20	16.44	15.55	15.25	15.49	15.49
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	None	No	No	No	No	No

Comments

Purge Start Time: 1035

Sample Time: 1146

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-5 Date: 6/20/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-5 062017 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	74.8	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	63.82	feet
4. C = Column of Water in Casing:	10.98	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.79	gal
6. D2 = Pump Setting Depth (ft):	69.8	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6 to MDS

Parameter	Units	Readings							
Time	24 hr	1536	1541	1546	1551	1556	1601	1606	1611
Water Level (0.33)	feet	63.59	63.59	63.60	63.60	63.61	63.60	63.60	6
Volume Purged	gal	0	0.1	0.3	0.5	0.70	0.85	1.00	1.25
Flow Rate	mL / min	130	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	0.3	0.4	3.3	1.1	5.3	5.1	4.8	4.7
Dissolved Oxygen (+/- 10%)	%	126.4	123.5	125.0	127.30	122.0	122.7	122.2	122.8
Dissolved Oxygen (+/- 10%)	mg/L	12.00	11.50	12.10	~~12.~~12	12.28	12.41	12.41	12.41
Eh / ORP (+/- 10)	MeV	29.8	84.8	121.0	188.9	237.0	260.3	261.2	263.
Specific Conductivity	mS/cm[c]	0.876	0.872	0.875	0.875	0.875	0.876	0.873	0.871
Conductivity (+/- 3%)	mS/cm	0.752	0.773	0.738	0.711	0.709	0.704	0.700	0.701
pH (+/- 0.1)	pH unit	~~25~~6.7	6.81	6.56	6.19	6.19	6.19	6.14	6.19
Temp (+/- 0.5)	C	18.92	18.85	16.79	15.21	14.97	14.76	14.64	14.75
Color	Visual	clear	clear	Clear	clear	Clear	clear	Clear	Clear
Odor	Olfactory	No	No	No	No	No	No	No	No

Comments

Purge Start Time: 1530

Sample Time: 1611

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-6 Date: 6/20/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-6 062017 QA/QC Collected? MS/MSD

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	71.51	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.03	feet
4. C = Column of Water in Casing:	9.48	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.55	gal
6. D2 = Pump Setting Depth (ft):	66.75	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings					
Time	24 hr	1412	1417	1422	1427	1432	1437
Water Level (0.33)	feet	61.84	61.84	61.83	61.83	61.85	61.85
Volume Purged	gal	0	0.15	0.40	0.80	1.0	1.5
Flow Rate	mL / min	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	4.8	1.0	+3.2	4.3	4.1	3.9
Dissolved Oxygen (+/- 10%)	%	93.7	91.8	89.4	88.7	88.1	87.5
Dissolved Oxygen (+/- 10%)	mg/L	9.05	9.05	9.00	8.89	8.89	8.90
Eh / ORP (+/- 10)	MeV	136.0	128.4	123.1	121.8	121.6	121.4
Specific Conductivity	mS/cm[c]	0.533	0.528	0.523	0.522	0.523	0.523
Conductivity (+/- 3%)	mS/cm	0.454	0.433	0.424	0.422	0.422	0.419
pH (+/- 0.1)	pH unit	7.52	7.42	7.35	7.32	7.31	7.30
Temp (+/- 0.5)	C	17.64	15.93	15.02	14.92	14.81	14.57
Color	Visual	clear	clear	clear	clear	clear	Clear
Odor	Olfactory	None	No	No	No	No	NO

Comments

Purge Start Time: 1410

Sample Time: 1437

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-7 Date: 6/20/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-7 062017 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	69.92	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.96	feet
4. C = Column of Water in Casing:	7.46	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.22	gal
6. D2 = Pump Setting Depth (ft):	65.7	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1135	1140	1145	1150	1155	1200	1205
Water Level (0.33)	feet	62.14	62.10	62.12	62.11	62.12	62.12	62.14
Volume Purged	gal	0	0.2	0.3	0.40	0.50	0.70	0.85
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	75.5	22.6	23.5	21.6	58.6	51.5	68.8
Dissolved Oxygen (+/- 10%)	%	93.9	87.8	85.0	84.0	81.2	80.5	79.3
Dissolved Oxygen (+/- 10%)	mg/L	8.12	8.00	7.79	7.72	7.48	7.50	7.56
Eh / ORP (+/- 10)	MeV	156.2	136.0	133.1	132.7	131.2	130.6	131.8
Specific Conductivity	mS/cm[c]	0.820	0.830	0.828	0.824	0.823	0.825	0.827
Conductivity (+/- 3%)	mS/cm	0.787	0.753	0.741	0.735	0.736	0.726	0.713
pH (+/- 0.1)	pH unit	6.91	6.94	6.90	6.87	6.88	6.89	6.89
Temp (+/- 0.5)	C	21.33	20.06	19.43	19.33	19.45	18.71	17.83
Color	Visual	Cloudy	Cloudy	clear	clear	clear	clear	clear
Odor	Olfactory	no	NO	NO	NO	NO	NO	NO

Comments

Purge Start Time: 1130

Sample Time: 1240

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-7 Date: 6/20/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-7 062017 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	69.42	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.96	feet
4. C = Column of Water in Casing:	7.46	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.22	gal
6. D2 = Pump Setting Depth (ft):	65.7	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1210	1215	1220	1225	1230	1235	1240
Water Level (0.33)	feet	62.10	62.10	62.09	62.09	62.13	62.14	62.87
Volume Purged	gal	1.0	1.20	1.35	1.50	1.70	1.85	1.90
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	74.4	62.6	[illegible]16.9	16.2	7.0	7.2	7.4
Dissolved Oxygen (+/- 10%)	%	79.0	78.0	77.4	78.6	79.3	79.0	79.2
Dissolved Oxygen (+/- 10%)	mg/L	7.65	7.54	7.55	7.58	7.40	7.36	7.38
Eh / ORP (+/- 10)	MeV	133.1	132.6	131.8	131.0	128.1	126.5	126.4
Specific Conductivity	mS/cm^c	0.826	0.825	0.828	0.824	0.828	0.832	0.834
Conductivity (+/- 3%)	mS/cm	0.697	0.694	0.692	0.700	0.721	0.731	0.732
pH (+/- 0.1)	pH unit	6.88	6.92	6.94	6.96	7.01	7.04	7.04
Temp (+/- 0.5)	C	16.84	16.69	16.39	16.90	18.20	18.60	18.67
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments

Purge Start Time: 1135

Sample Time: 1240

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-9 Date: 6/20/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-9 062017 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	120.99	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.85	feet
4. C = Column of Water in Casing:	59.14	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	9.64	gal
6. D2 = Pump Setting Depth (ft):	116	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1416	1421	1426	1431	1936	1991	1996
Water Level (0.33)	feet	62.37	@ 62.36	62.41	62.38	62.38	62.38	62.38
Volume Purged	gal	0	0.2	0.4	0.6	0.8	1.0	1.1
Flow Rate	mL / min	150	155	155	155	155	155	150
Turbidity (+/- 10%)	NTU	2.8	33.2	0.4	0.3	0.3	0.1	0.0
Dissolved Oxygen (+/- 10%)	%	65.6	74.1	46.1	16.2	10.2	8.1	6.2
Dissolved Oxygen (+/- 10%)	mg/L	6.07	7.21	4.47	1.59	1.02	0.81	0.62
Eh / ORP (+/- 10)	MeV	11.4	19.9	23.1	21.9	19.3	19.6	7.9
Specific Conductivity	mS/cm[c]	0.491	0.482	0.478	0.477	0.475	0.474	0.474
Conductivity (+/- 3%)	mS/cm	0.430	0.406	0.396	0.392	0.390	0.386	0.386
pH (+/- 0.1)	pH unit	7.04	6.61	6.50	6.47	6.45	6.49	6.55
Temp (+/- 0.5)	C	18.28	16.89	16.15	15.70	15.57	15.18	15.23
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1403

Sample Time: 1956

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-9 Date: 6/ /2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-9 062017 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	120.99	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.85	feet
4. C = Column of Water in Casing:	59.14	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	9.64	gal
6. D2 = Pump Setting Depth (ft):	116	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1451	1956					
Water Level (0.33)	feet	62.38	62.38					
Volume Purged	gal	1.25	1.4					
Flow Rate	mL / min	150	150					
Turbidity (+/- 10%)	NTU	0.1	0.1					
Dissolved Oxygen (+/- 10%)	%	6.0	5.9					
Dissolved Oxygen (+/- 10%)	mg/L	0.60	0.59					
Eh / ORP (+/- 10)	MeV	1.6	-1					
Specific Conductivity	mS/cm[c]	0.474	~~0.475~~					
Conductivity (+/- 3%)	mS/cm	0.386	0.386					
pH (+/- 0.1)	pH unit	6.62	6.64					
Temp (+/- 0.5)	C	15.16	15.14					
Color	Visual	clear	clear					
Odor	Olfactory	none	none					

Comments

Purge Start Time: 1403

Sample Time: 1456

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-14 Date: 6/21 /2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-14 062117 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	78.54	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	64.88	feet
4. C = Column of Water in Casing:	13.66	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	2.23	gal
6. D2 = Pump Setting Depth (ft):	71	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1430	1435	1440	1445	1455	1500	1504
Water Level (0.33)	feet	64.85	64.85	64.85	64.85	64.85	64.85	64.85
Volume Purged	gal	0	0.2	0.4	0.5	0.7	0.9	1.2
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	14.8	12.7	96.8	13.7	12.6	9.7	9.7
Dissolved Oxygen (+/- 10%)	%	-36.1	-36.5	70.2	37.7	9.1	94.4	93.1
Dissolved Oxygen (+/- 10%)	mg/L	-3.5	-3.23	6.31	[redacted]362	0.79	8.75	8.70
Eh / ORP (+/- 10)	MeV	113.7	109.7	109.0	111.2	113.7	113.7	124.6
Specific Conductivity	mS/cm^c	0.569	0.567	0.558	0.557	0.555	0.559	0.560
Conductivity (+/- 3%)	mS/cm	0.566	0.528	0.507	0.493	0.522	0.501	0.494
pH (+/- 0.1)	pH unit	7.49	7.39	7.38	7.36	7.44	7.36	7.46
Temp (+/- 0.5)	C	24.60	21.41	20.13	19.02	21.85	19.45	18.79
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments

Purge Start Time: 1415

Sample Time: 1520

↑ DO jumping around from -99 to +999.99%

1450- stopped purging, tried recalibrating ODO

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-14 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-14 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(See prev. Page)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1510	1515	1520				
Water Level (0.33)	feet	64.85	64.85	64.85				
Volume Purged	gal	1.5	1.7	1.9				
Flow Rate	mL / min	130	130	130				
Turbidity (+/- 10%)	NTU	5.4	5.1	5.0				
Dissolved Oxygen (+/- 10%)	%	-32.4	-99.9	-99.9				
Dissolved Oxygen (+/- 10%)	mg/L	-3.25	-13.57	-13.54				
Eh / ORP (+/- 10)	MeV	121.3	122.9	122.6				
Specific Conductivity	mS/cm[c]	0.550	0.550	0.550				
Conductivity (+/- 3%)	mS/cm	0.480	0.479	0.479				
pH (+/- 0.1)	pH unit	7.31	7.28	7.28				
Temp (+/- 0.5)	C	18.09	18.17	18.26				
Color	Visual	Clear	Clear	Clear				
Odor	Olfactory	No	No	No				

Comments

Purge Start Time: 1415

Sample Time: 1520

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-15 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-15 062117 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth: (65-80 7.5)	81.79	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	63.07	feet
4. C = Column of Water in Casing:	18.72	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	3.05	gal
6. D2 = Pump Setting Depth (ft):	70.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YST 650 MDS

Parameter	Units	Readings						
Time	24 hr	1035	1040	1045	1050	1055	1100	1105
Water Level (0.33)	feet	63.06	63.06	63.06	63.06	63.06	63.05	63.05
Volume Purged	gal	0	0.2	0.4	0.60	0.85	0.95	1.20
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	37.6	3.2	2.0	0.20	1.4	2.6	2.9
Dissolved Oxygen (+/- 10%)	%	83.8	83.5	67.2	60.2	55.0	51.6	50.0
Dissolved Oxygen (+/- 10%)	mg/L	7.66	7.79	6.45	5.74	5.25	5.06	4.96
Eh / ORP (+/- 10)	MeV	107.2	106.9	111.5	111.8	112.1	112.0	114.6
Specific Conductivity	mS/cm^c	0.545	0.547	0.564	0.575	0.580	0.584	0.583
Conductivity (+/- 3%)	mS/cm	0.487	0.478	0.486	0.494	0.496	0.485	0.478
pH (+/- 0.1)	pH unit	7.79	7.72	7.55	7.53	7.51	7.51	7.45
Temp (+/- 0.5)	C	18.99	18.40	17.59	17.55	17.37	16.13	15.60
Color	Visual	cloudy	cloudy	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments

Purge Start Time: 1030

Sample Time: 1110

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-15 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-15 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(See PREV)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 600 MDS

Parameter	Units	Readings						
Time	24 hr	1110						
Water Level (0.33)	feet	63.05						
Volume Purged	gal	1.50						
Flow Rate	mL / min	130						
Turbidity (+/- 10%)	NTU	2.1						
Dissolved Oxygen (+/- 10%)	%	49.1						
Dissolved Oxygen (+/- 10%)	mg/L	4.90						
Eh / ORP (+/- 10)	MeV	114.6						
Specific Conductivity	mS/cm^c	0.580						
Conductivity (+/- 3%)	mS/cm	0.487						
pH (+/- 0.1)	pH unit	7.42						
Temp (+/- 0.5)	C	16.90						
Color	Visual	Clear						
Odor	Olfactory	No						

Comments

Purge Start Time: 1030

Sample Time: 1110

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-16 Date: 6/20/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-16 ~~061917~~ 062017 QA/QC Collected? Dup-1 062017 No ~~Dup-1 061917~~

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	69.53	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.27	feet
4. C = Column of Water in Casing:	8.83	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.44	gal
6. D2 = Pump Setting Depth (ft):	65	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1348	1353	1358	1403	1408	1413	1418
Water Level (0.33)	feet	60.72	60.65	60.66	60.66	60.66	60.66	60.66
Volume Purged	gal	0	0.4	0.5	0.6	0.7	0.8	0.9
Flow Rate	mL / min	280	90	90	90	90	90	90
Turbidity (+/- 10%)	NTU	9.4	6.8	5.8	2.9	9.3	7.1	9.0
Dissolved Oxygen (+/- 10%)	%	108.3	105.4	112.5	109.4	104.8	106.1	109.3
Dissolved Oxygen (+/- 10%)	mg/L	10.54	9.88	10.34	9.95	9.52	9.72	9.98
Eh / ORP (+/- 10)	MeV	144.9	149.5	160.7	166.1	178.3	190.4	206.2
Specific Conductivity	mS/cm[c]	0.579	0.574	0.572	0.573	0.575	0.576	0.576
Conductivity (+/- 3%)	mS/cm	0.486	0.503	0.510	0.517	0.519	0.521	0.529
pH (+/- 0.1)	pH unit	6.21	6.51	6.62	6.80	6.89	6.94	6.97
Temp (+/- 0.5)	C	16.63	18.58	19.35	19.91	20.00	20.01	20.78
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	no	no	no	no	no	no	no

Comments

Purge Start Time: 1345

Sample Time: 1005 on 6/20/17

Well not Sampled due to on-Set of heavy rain and lightning. Will be Sampled tomorrow.

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-16 Date: 6~~19~~20/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-16 ~~061917~~ 062017 QA/QC Collected? ~~Dup-1 061917~~ Dup-1 062017

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	69.53	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.7	feet
4. C = Column of Water in Casing:	8.83	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.44	gal
6. D2 = Pump Setting Depth (ft):	65	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings							
Time	24 hr	1423	1428	1433	1438	1443	1448	1453	1458
Water Level (0.33)	feet	60.65	60.66	60.68	60.67	60.68	60.68	60.68	60.68
Volume Purged	gal	1.0	1.1	1.2	1.35	1.5	1.6	1.75	2.0
Flow Rate	mL / min	90	90	90	90	95	95	95	100
Turbidity (+/- 10%)	NTU	0.3	10.5	19.5	21.9	26.7	7.2	7.6	7.8
Dissolved Oxygen (+/- 10%)	%	114.1	106.5	106.0	103.0	103.8	103.8	104.4	105.2
Dissolved Oxygen (+/- 10%)	mg/L	10.09	9.24	9.37	9.48	9.67	9.67	9.87	10.00
Eh / ORP (+/- 10)	MeV	224.9	239.4	275.3	313.8	326.4	330.4	331.4	338.4
Specific Conductivity	mS/cm[c]	0.576	0.562	0.581	0.581	0.581	0.580	0.580	0.580
Conductivity (+/- 3%)	mS/cm	0.540	0.549	0.539	0.517	0.511	0.501	0.501	0.500
pH (+/- 0.1)	pH unit	7.00	7.01	6.91	6.79	6.81	7.35	7.31	7.29
Temp (+/- 0.5)	C	21.72	21.87	21.08	19.26	18.69	17.88	17.88	17.71
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	No	No	No	No	No	No	No	No

Comments

Purge Start Time: 1345

Sample Time: 1005 on 6/20/17

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60490641

Monitoring Well Number: MW-16 Date: 6/20/17

Samplers: C. French, R. McCredy, T. Quackenbush

Sample Number: MW-16 062017 QA/QC Collected? Dup-1 062017

Purging / Sampling Method: Bladder pump / Low flow

1. L = Total Well Depth:	69.53	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.7	feet
4. C = Column of Water in Casing:	8.83	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.94	gal
6. D2 = Pump Setting Depth (ft):	65	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0842	0920	0925	0930	0935	0940	0945
Water Level (0.33)	feet	60.66	60.65	60.65	60.65	60.66	60.66	60.66
Volume Purged	gal	0.2	3.1	3.4	3.6	3.9	4.15	4.35
Flow Rate	mL / min	140	145	195	145	150	150	150
Turbidity (+/- 10%)	NTU	1.9	1.5	0.7	5.2	6.6	7.1	8.9
Dissolved Oxygen (+/- 10%)	%	97.4	109.9	109.8	107.3	105.4	105.7	109.9
Dissolved Oxygen (+/- 10%)	mg/L	9.67	10.63	10.59	10.87	10.71	10.61	10.57
Eh / ORP (+/- 10)	MeV	117.2	149.0	156.3	180.4	198.6	222.6	250.7
Specific Conductivity	mS/cm[c]	0.625	0.619	0.620	0.621	0.620	0.620	0.622
Conductivity (+/- 3%)	mS/cm	–	0.498	0.502	0.498	0.497	0.504	0.502
pH (+/- 0.1)	pH unit	7.03	6.61	6.65	6.59	6.63	6.67	6.58
Temp (+/- 0.5)	C	15.31	19.84	15.04	14.57	14.55	15.21	19.86
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments:

0845 - Parameters stopped being taken because of erratic & unrealistic numbers. purge allowed to continue. New YSI calibrated & set up on well

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60490691

Monitoring Well Number: MW-16 Date: 6/26/17

Samplers: C. French, R. McCready, T. Quackenbush

Sample Number: MW-16 062617 QA/QC Collected? # Dup-1 062617

Purging / Sampling Method: Bladder Pump

1. L = Total Well Depth:	69.53	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.7	feet
4. C = Column of Water in Casing:	8.83	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.44	gal
6. D2 = Pump Setting Depth (ft):	65.0	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0950	0955	1000	1005			
Water Level (0.33)	feet	60.66	60.66	60.66	60.66			
Volume Purged	gal	4.65	4.95	5.3	5.5			
Flow Rate	mL / min	150	150	150	150			
Turbidity (+/- 10%)	NTU	11.0	4.2	4.1	4.4			
Dissolved Oxygen (+/- 10%)	%	109.2	105.7	105.6	109.6			
Dissolved Oxygen (+/- 10%)	mg/L	10.65	10.89	10.91	10.82			
Eh / ORP (+/- 10)	MeV	276.0	289.5	294.3	298.7			
Specific Conductivity	mS/cm^c	0.622	0.619	0.619	0.619			
Conductivity (+/- 3%)	mS/cm	0.494	0.989	0.986	0.486			
pH (+/- 0.1)	pH unit	6.49	6.49	6.54	6.57			
Temp (+/- 0.5)	C	14.18	13.95	13.77	13.69			
Color	Visual	clear	clear	clear	clear			
Odor	Olfactory	none	none	none	none			

Comments: Sampled @ 1005

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-17 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-17 062317 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.15	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	64.09	feet
4. C = Column of Water in Casing:	12.06	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.97	gal
6. D2 = Pump Setting Depth (ft):	70	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6JO MDS

Parameter	Units	Readings						
Time	24 hr	1005	1010	1015	1020	1025	1030	1035
Water Level (0.33)	feet	64.00	64.00	64.00	64.00	64.00	64.00	64.00
Volume Purged	gal	0	0.20	0.40	0.60	0.80	1.00	1.20
Flow Rate	mL / min	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	87.2	86.7	73.8	57.8	49.5	6.4	7.6
Dissolved Oxygen (+/- 10%)	%	107.8	106.7	105.2	104.0	102.4	102.2	101.0
Dissolved Oxygen (+/- 10%)	mg/L	9.51	9.85	9.88	9.85	9.77	9.73	9.95
Eh / ORP (+/- 10)	MeV	157.2	166.2	169.6	168.0	165.7	170.0	163.7
Specific Conductivity	mS/cm[c]	0.543	0.530	0.528	0.526	0.524	0.524	0.528
Conductivity (+/- 3%)	mS/cm	0.504	0.472	0.460	0.454	0.451	0.451	0.460
pH (+/- 0.1)	pH unit	7.46	7.19	7.08	7.09	7.11	7.01	7.10
Temp (+/- 0.5)	C	21.34	19.51	18.40	17.92	17.70	17.74	18.90
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments

Purge Start Time: 1000

Sample Time: 1054

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-17 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-17 062317 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(see prev)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650

Parameter	Units	Readings						
Time	24 hr	1040	1045	1050				
Water Level (0.33)	feet	64.00	64.00	64.00				
Volume Purged	gal	1.40	1.60	1.80				
Flow Rate	mL / min	200	200	200				
Turbidity (+/- 10%)	NTU	3.1	3.4	3.1				
Dissolved Oxygen (+/- 10%)	%	107.0	107.4	106.8				
Dissolved Oxygen (+/- 10%)	mg/L	9.97	10.00	9.99				
Eh / ORP (+/- 10)	MeV	162.1	160.4	159.7				
Specific Conductivity	mS/cm[c]	0.529	0.528	0.528				
Conductivity (+/- 3%)	mS/cm	0.467	0.461	0.462				
pH (+/- 0.1)	pH unit	7.13	7.14	7.13				
Temp (+/- 0.5)	C	18.86	18.52	18.47				
Color	Visual	clear	clear	clear				
Odor	Olfactory	No	No	No				

Comments

Purge Start Time: 1000

Sample Time: 1050

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-18 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-18 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.69	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	64.49	feet
4. C = Column of Water in Casing:	12.2	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.99	gal
6. D2 = Pump Setting Depth (ft):	70.6	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1231	1236	1241	1246	1251	1256	1301
Water Level (0.33)	feet	64.45	64.45	64.45	64.44	64.45	64.45	64.45
Volume Purged	gal	.25	.60	1.0	1.35	1.75	2.05	2.35
Flow Rate	mL / min	265	265	265	265	265	265	265
Turbidity (+/- 10%)	NTU	8.7	9.0	11.3	8.5	7.0	6.5	5.8
Dissolved Oxygen (+/- 10%)	%	61.9	62.2	61.5	60.9	61.4	61.7	61.3
Dissolved Oxygen (+/- 10%)	mg/L	6.25	6.37	6.35	6.29	6.34	6.38	6.30
Eh / ORP (+/- 10)	MeV	121.0	158.6	189.8	217.9	241.2	257.1	271.2
Specific Conductivity	mS/cm[c]	0.507	0.504	0.502	0.501	0.502	0.502	0.502
Conductivity (+/- 3%)	mS/cm	0.412	0.491	0.395	0.394	0.396	0.394	0.396
pH (+/- 0.1)	pH unit	7.33	7.09	6.96	6.92	6.94	6.95	6.99
Temp (+/- 0.5)	C	15.16	14.31	14.40	13.80	13.88	13.71	14.00
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1223

Sample Time: 1321

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-18 Date: 6/21 /2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-18 062117 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.69	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	64.49	feet
4. C = Column of Water in Casing:	12.2	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.99	gal
6. D2 = Pump Setting Depth (ft):	70.6	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1306	1311	1316	1321			
Water Level (0.33)	feet	64.45	64.45	64.45	64.45			
Volume Purged	gal	2.65	2.95	3.25	3.6			
Flow Rate	mL / min	265	265	265	265			
Turbidity (+/- 10%)	NTU	5.4	4.9	4.4	3.8			
Dissolved Oxygen (+/- 10%)	%	61.3	61.4	61.5	61.2			
Dissolved Oxygen (+/- 10%)	mg/L	6.40	6.34	6.35	6.33			
Eh / ORP (+/- 10)	MeV	280.7	289.1	295.5	298.7			
Specific Conductivity	mS/cm[c]	0.501	0.500	0.500	0.501			
Conductivity (+/- 3%)	mS/cm	0.393	0.394	0.394	0.394			
pH (+/- 0.1)	pH unit	6.99	7.01	7.01	7.03			
Temp (+/- 0.5)	C	13.75	13.87	13.82	13.80			
Color	Visual	clear	clear	clear	clear			
Odor	Olfactory	none	none	none	none			

Comments

Purge Start Time: 1223

Sample Time: 1321

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-19 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-19 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.88	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.74	feet
4. C = Column of Water in Casing:	11.14	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.82	gal
6. D2 = Pump Setting Depth (ft):	71.4	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1424	1429	1434	1439	1444	1449	1454
Water Level (0.33)	feet	65.70	65.70	65.70	65.70	65.70	65.70	65.70
Volume Purged	gal	0	0.37	0.45	0.62	0.8	1.0	1.2
Flow Rate	mL / min	140	140	140	140	140	140	140
Turbidity (+/- 10%)	NTU	30.8	26.7	25.3	28.7	23.7	25.0	21.6
Dissolved Oxygen (+/- 10%)	%	103.6	100.1	98.2	92.9	89.0	90.1	87.6
Dissolved Oxygen (+/- 10%)	mg/L	9.57	9.78	9.68	9.22	8.93	9.00	8.71
Eh / ORP (+/- 10)	MeV	112.0	158.9	184.0	200.5	216.9	228.6	236.1
Specific Conductivity	mS/cm[c]	0.526	0.523	0.522	0.522	0.520	0.51	0.520
Conductivity (+/- 3%)	mS/cm	0.957	0.936	0.933	0.928	0.928	0.927	0.927
pH (+/- 0.1)	pH unit	7.84	7.38	7.39	7.48	7.64	7.71	7.74
Temp (+/- 0.5)	C	17.76	16.27	15.97	15.59	15.66	15.54	15.59
Color	Visual	Cloudy	Clearing	Clearing	Clearing	Clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1420

Sample Time: ~~1514~~ 1514

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-19 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-19 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	76.88	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	65.74	feet
4. C = Column of Water in Casing:	11.14	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.82	gal
6. D2 = Pump Setting Depth (ft):	71.4	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1459	1504	1509	1514			
Water Level (0.33)	feet	65.70	65.70	65.70	65.70			
Volume Purged	gal	1.35	1.5	1.7	1.9			
Flow Rate	mL / min	140	140	140	140			
Turbidity (+/- 10%)	NTU	23.0	19.8	19.0	19.4			
Dissolved Oxygen (+/- 10%)	%	88.7	91.1	89.6	88.6			
Dissolved Oxygen (+/- 10%)	mg/L	8.76	8.99	8.91	8.82			
Eh / ORP (+/- 10)	MeV	240.2	245.2	248.8	247.8			
Specific Conductivity	mS/cm[c]	0.520	0.522	0.523	0.524			
Conductivity (+/- 3%)	mS/cm	0.431	0.431	0.428	0.428			
pH (+/- 0.1)	pH unit	7.76	7.76	7.78	7.82			
Temp (+/- 0.5)	C	16.06	15.88	15.53	15.44			
Color	Visual	Clear	clear	clear	clear			
Odor	Olfactory	none	none	none	none			

Comments

Purge Start Time: 1420

Sample Time: 1514

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-20 Date: 6/22/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-20 062217 QA/QC Collected? None

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	79.10	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	69.22	feet
4. C = Column of Water in Casing:	9.88	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.61	gal
6. D2 = Pump Setting Depth (ft):	74.2	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1435	1440	1445	1450	1455	1500	1505
Water Level (0.33)	feet	69.15	69.15	69.15	69.15	69.15	69.15	69.15
Volume Purged	gal	0	0.2	0.40	0.55	0.70	0.90	1.10
Flow Rate	mL / min	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	27.2	27.7	32.8	39.3	30.9	28.4	26.3
Dissolved Oxygen (+/- 10%)	%	93.7	98.5	98.5	106.0	100.1	96.0	96.2
Dissolved Oxygen (+/- 10%)	mg/L	8.57	9.29	9.13	10.39	9.86	9.45	9.46
Eh / ORP (+/- 10)	MeV	33.4	48.4	73.8	90.4	121.5	130.5	136.1
Specific Conductivity	mS/cm	0.441	0.437	0.438	0.436	0.438	0.436	0.434
Conductivity (+/- 3%)	mS/cm	0.395	0.378	0.369	0.364	0.363	0.360	0.360
pH (+/- 0.1)	pH unit	8.30	8.11	7.90	7.88	7.68	7.72	7.83
Temp (+/- 0.5)	C	20.45	17.98	17.05	16.46	16.12	15.84	16.02
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments

Purge Start Time: 1420

Sample Time: 1505

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-22 Date: 6/22/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-22 062217 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	72.75	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	67.64	feet
4. C = Column of Water in Casing:	5.11	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	0.83	gal
6. D2 = Pump Setting Depth (ft):	70.25	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI MDS 650

Parameter	Units	Readings							
Time	24 hr	1311	1316	1321	1326	1331	1337	1341	1346
Water Level (0.33)	feet	67.53	67.53	67.53	67.53	67.53	65.53	65.53	65.5
Volume Purged	gal	0	0.1	0.30	0.50	0.63	0.75	0.90	1.1
Flow Rate	mL / min	130	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	5.8	6.9	12.7	46.8	43.1	42.1	40.5	40.1
Dissolved Oxygen (+/- 10%)	%	116.7	114.4	112.8	116.7	116.5	116.6	117.5	116.2
Dissolved Oxygen (+/- 10%)	mg/L	10.36	10.22	10.35	10.87	11.05	11.16	11.29	11.11
Eh / ORP (+/- 10)	MeV	188.5	193.6	191.0	183.3	180.8	179.9	179.5	178.6
Specific Conductivity	mS/cm[c]	0.451	0.432	0.428	0.425	0.424	0.424	0.423	0.42
Conductivity (+/- 3%)	mS/cm	0.425	0.399	0.388	0.373	0.366	0.363	0.360	0.360
pH (+/- 0.1)	pH unit	6.80	6.97	7.01	7.15	7.15	7.16	7.17	7.18
Temp (+/- 0.5)	C	22.36	20.82	20.16	18.63	17.79	17.29	17.16	17.3
Color	Visual	clear	clear	clear	clear	clear	clear	Clear	Clear
Odor	Olfactory	NO	No	NO	No	NO	No	No	NO

Comments

Purge Start Time: 1305

Sample Time: 1346

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-23 Date: 6/27/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-23 062217 QA/QC Collected? Dup-2 062217

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	80.98	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	67.98	feet
4. C = Column of Water in Casing:	13	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	2.12	gal
6. D2 = Pump Setting Depth (ft):	74.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0840	0845	0850	0855	0900	0905	0910
Water Level (0.33)	feet	67.94	67.94	67.95	67.94	67.94	67.94	67.94
Volume Purged	gal	0	0.45	0.6	0.75	0.95	1.15	1.3
Flow Rate	mL / min	260	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	360.2	427.6	40.3	35.7	37.6	31.5	27.7
Dissolved Oxygen (+/- 10%)	%	85.9	88.0	90.2	90.4	90.7	90.5	90.7
Dissolved Oxygen (+/- 10%)	mg/L	9.20	9.92	9.95	9.41	9.39	9.28	9.28
Eh / ORP (+/- 10)	MeV	121.7	119.3	100.7	102.8	109.0	~~10~~ 162.4	169.8
Specific Conductivity	mS/cm^c	0.492	0.491	0.492	0.492	0.493	0.493	0.494
Conductivity (+/- 3%)	mS/cm	0.372	0.372	0.382	0.384	0.387	0.390	0.391
pH (+/- 0.1)	pH unit	7.61	7.70	7.805	8.04	7.98	8 6.74	6.78
Temp (+/- 0.5)	C	12.20	12.32	13.33	13.54	13.83	~~13~~ 14.07	14.10
Color	Visual	Brown	Brown	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 0835

Sample Time: 0940

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-23 Date: 6/22/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-23 062217 QA/QC Collected? Dup-2 062217

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	80.98	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	67.98	feet
4. C = Column of Water in Casing:	13	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	2.12	gal
6. D2 = Pump Setting Depth (ft):	79.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0915	0920	0925	0930	0935	0940	
Water Level (0.33)	feet	67.94	67.94	67.94	67.94	67.94	67.94	
Volume Purged	gal	1.5	1.65	1.80	1.95	2.1	2.25	
Flow Rate	mL / min	130	130	130	130	130	130	
Turbidity (+/- 10%)	NTU	23.4	20.4	16.9	15.9	15.6	15.1	
Dissolved Oxygen (+/- 10%)	%	89.9	91.6	90.6	88.2	90.8	90.6	
Dissolved Oxygen (+/- 10%)	mg/L	9.18	9.32	9.16	8.87	9.11	9.07	
Eh / ORP (+/- 10)	MeV	169.0	131.0	156.1	160.3	163.4	169.4	
Specific Conductivity	mS/cm^c	0.493	0.492	0.494	0.492	0.495	0498	
Conductivity (+/- 3%)	mS/cm	0.393	0.394	0.397	0.398	0.402	0.405	
pH (+/- 0.1)	pH unit	6.82	6.87	6.88	6.67	6.64	6.60	
Temp (+/- 0.5)	C	14.95	14.64	14.83	14.97	15.23	15.23	
Color	Visual	Cloudy	Cloudy	clear	clear	Clear	Clear	
Odor	Olfactory	none	none	none	none	none	none	

Comments

Purge Start Time: 0835

Sample Time: 0940

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-24 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-24 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	103.4	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	63.4	feet
4. C = Column of Water in Casing:	40.0	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	13.58	gal
6. D2 = Pump Setting Depth (ft):	101.7	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 # 27942

Parameter	Units	Readings						
Time	24 hr	1020	1025	1030	1035	1040	1045	
Water Level (0.33)	feet	63.29	63.30	63.28	63.28	63.28	63.28	
Volume Purged	gal	0	.3	.6	.9	1.2	1.35	
Flow Rate	mL / min	220	220	220	220	220	220	
Turbidity (+/- 10%)	NTU	49.0	47.9	5.3	34.7	36.1	35.2	
Dissolved Oxygen (+/- 10%)	%	77.5	36.2	18.3	10.5	11.3	11.8	
Dissolved Oxygen (+/- 10%)	mg/L	7.82	3.65	1.89	1.08	1.18	1.2	
Eh / ORP (+/- 10)	MeV	-74.3	-91.9	-106.1	-110.1	-106.7	-108.6	
Specific Conductivity	mS/cm[c]	.466	.461	.461	.462	.460	.461	
Conductivity (+/- 3%)	mS/cm	.375	.361	.362	.363	.359	.363	
pH (+/- 0.1)	pH unit	8.28	8.02	7.92	7.88	7.76	7.78	
Temp (+/- 0.5)	C	14.64	13.62	13.87	13.79	13.55	14.01	
Color	Visual	Clear	clear	clear	clear	Clear	Clear	
Odor	Olfactory	none	none	none	none	none	none	

Comments

Purge Start Time: 1015

Sample Time: 1045

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-25 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-25 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	77.48	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.61	feet
4. C = Column of Water in Casing:	16.87	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.75	gal
6. D2 = Pump Setting Depth (ft):	72.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650

Parameter	Units	Readings						
Time	24 hr	1220	1225	1230	1235	1240	1245	1250
Water Level (0.33)	feet	60.56	60.56	60.56	60.56	60.56	60.56	60.55
Volume Purged	gal	0	0.2	0.40	0.50	0.60	0.70	0.90
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	0.7	0.5	0.4	1.7	32.4	1.1	2.9
Dissolved Oxygen (+/- 10%)	%	90.9	98.1	110.3	178.4	64.9	56.3	56.0
Dissolved Oxygen (+/- 10%)	mg/L	9.90	9.72	11.01	16.03	5.88	5.62	5.60
Eh / ORP (+/- 10)	MeV	125.3	119.6	101.4	99.7	98.6	99.3	99.7
Specific Conductivity	mS/cm[c]	0.466	0.472	0.475	0.475	0.477	0.477	0.479
Conductivity (+/- 3%)	mS/cm	0.430	0.431	0.434	0.434	0.431	0.416	0.423
pH (+/- 0.1)	pH unit	7.81	7.73	7.57	7.55	7.56	7.50	7.49
Temp (+/- 0.5)	C	21.22	20.60	20.55	20.60	20.00	18.33	18.91
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

ODO stopped jumping around as much

Comments

Purge Start Time: 1215

Sample Time: 1325

* ODO bouncing from 99% to -99.9%, recalibrated, still having some issue

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-25 Date: 6/21/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-25 062117 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(See Prev)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

4

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650

Parameter	Units	Readings						
Time	24 hr	1255	1300	1305	1310	1315	1320	1325
Water Level (0.33)	feet	60.56	60.56	60.56	6.56	6.56	6.56	6.56
Volume Purged	gal	1.1	1.40	1.65	1.80	2.00	2.2	2.5
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	2.3	2.3	1.7	1.2	1.7	1.2	1.5
Dissolved Oxygen (+/- 10%)	%	225.0	49.7	69.8	60.6	51.7	50.5	48.9
Dissolved Oxygen (+/- 10%)	mg/L	20.61	4.97	6.91	6.06	4.72	4.65	4.60
Eh / ORP (+/- 10)	MeV	98.0	97.7	97.5	96.9	96.5	96.8	97.5
Specific Conductivity	mS/cm[c]	0.485	0.487	0.496	0.500	0.501	0.502	0.501
Conductivity (+/- 3%)	mS/cm	0.434	0.436	0.438	0.450	0.451	0.447	0.446
pH (+/- 0.1)	pH unit	7.51	7.51	7.51	7.52	7.52	7.52	7.51
Temp (+/- 0.5)	C	19.59	19.51	19.49	19.77	19.70	19.60	19.25
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

↑ ODO jumping around again

Comments

Purge Start Time: 1215

Sample Time: 1325

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-26 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-26 062617 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth: (100 - 110)	108.79	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	58.44	feet
4. C = Column of Water in Casing:	50.35	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	8.20	gal
6. D2 = Pump Setting Depth (ft):	104	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	955	1000	1005	1010	1015	1020	1025
Water Level (0.33)	feet	58.25	58.25	58.25	58.25	58.25	58.25	58.25
Volume Purged	gal	0	0.30	0.50	0.75	1.00	1.25	1.35
Flow Rate	mL / min	200	200	200	200	220	220	220
Turbidity (+/- 10%)	NTU	7.2	9.0	16.6	4.0	0.4	1.7	3.4
Dissolved Oxygen (+/- 10%)	%	73.9	32.6	16.5	12.2	9.2	8.3	7.5
Dissolved Oxygen (+/- 10%)	mg/L	6.87	3.17	1.62	1.18	0.91	0.82	0.71
Eh / ORP (+/- 10)	MeV	52.5	44.2	24.6	10.6	-2.8	-5.7	-12.9
Specific Conductivity	mS/cm[c]	0.439	0.574	0.607	0.618	0.635	0.664	0.692
Conductivity (+/- 3%)	mS/cm	0.387	0.483	0.506	0.518	0.526	0.548	0.563
pH (+/- 0.1)	pH unit	7.17	7.20	7.17	7.27	7.21	7.24	7.16
Temp (+/- 0.5)	C	18.80	16.83	16.32	16.59	15.99	16.00	15.20
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments

Purge Start Time: 950

Sample Time: 1045

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-26 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-26 062617 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(see prev)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1030	1035	1040	1045			
Water Level (0.33)	feet	58.25	58.25	58.25	58.25			
Volume Purged	gal	1.50	1.60	1.75	1.90			
Flow Rate	mL / min	220	200	200	200			
Turbidity (+/- 10%)	NTU	8.0	3.3	1.0	0.4			
Dissolved Oxygen (+/- 10%)	%	7.1	6.7	6.4	6.2			
Dissolved Oxygen (+/- 10%)	mg/L	0.69	0.67	0.64	0.62			
Eh / ORP (+/- 10)	MeV	-13.8	-20.7	-26.2	-26.9			
Specific Conductivity	mS/cm[c]	0.713	0.727	0.747	0.752			
Conductivity (+/- 3%)	mS/cm	0.602	0.617	0.613	0.630			
pH (+/- 0.1)	pH unit	7.21	7.24	7.20	7.23			
Temp (+/- 0.5)	C	16.81	17.04	16.58	16.38			
Color	Visual	Clear	Clear	Clear	Clear			
Odor	Olfactory	NO	NO	NO	NO			

Comments

Purge Start Time: 950

Sample Time: 1045

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-27 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-27 062317 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	112.58	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.89	feet
4. C = Column of Water in Casing:	50.69	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	8.76	gal
6. D2 = Pump Setting Depth (ft):	107.6	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1059	1105	1110	1116	1121	1126	1131
Water Level (0.33)	feet	62.02	64.00	65.65	65.94	66.05	66.14	66.37
Volume Purged	gal	0	0.5	0.75	0.95	1.15	1.3	1.55
Flow Rate	mL / min	260	260	190	150	150	150	150
Turbidity (+/- 10%)	NTU	16.7	15.5	11.6	9.9	8.8	7.0	6.5
Dissolved Oxygen (+/- 10%)	%	68.2	50.2	42.6	42.6	43.1	45.8	46.2
Dissolved Oxygen (+/- 10%)	mg/L	6.09	4.96	4.20	4.08	4.12	4.36	4.60
Eh / ORP (+/- 10)	MeV	133.2	82.8	136.7	175.0	184.7	203.9	210.8
Specific Conductivity	mS/cm[c]	0.525	0.514	0.513	0.515	0.514	0.514	.514
Conductivity (+/- 3%)	mS/cm	0.488	0.425	0.427	0.439	0.491	0.442	.441
pH (+/- 0.1)	pH unit	8.66	8.75	8.44	8.29	8.37	7.97	8.28
Temp (+/- 0.5)	C	20.89	16.00	16.33	17.28	17.58	17.64	17.63
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1044

Sample Time: 1246

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-27 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-27 062317 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	112.58	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.89	feet
4. C = Column of Water in Casing:	50.69	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	8.26	gal
6. D2 = Pump Setting Depth (ft):	107.6	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1136	1141	1146	1151	1156	1201	1206
Water Level (0.33)	feet	66.37	66.45	66.53	66.66	66.66	~~66.65~~ 66.71	66.70
Volume Purged	gal	1.75	2.0	2.2	2.4	2.6	2.75	2.95
Flow Rate	mL / min	150	150	150	150	150	150	150
Turbidity (+/- 10%)	NTU	6.4	7.1	7.0	6.5	5.7	4.2	3.3
Dissolved Oxygen (+/- 10%)	%	49.5	60.7	51.4	51.8	52.3	53.3	53.6
Dissolved Oxygen (+/- 10%)	mg/L	4.67	4.82	4.89	4.94	4.97	~~4.50~~ 5.04	5.07
Eh / ORP (+/- 10)	MeV	220.4	233.9	241.3	247.9	254.9	261.8	268.0
Specific Conductivity	mS/cm[c]	0.513	0.512	0.512	0.511	0.511	0.511	0.512
Conductivity (+/- 3%)	mS/cm	0.444	0.441	0.440	0.440	0.441	0.443	0.442
pH (+/- 0.1)	pH unit	8.33	8.28	8.26	8.24	8.23	8.22	8.19
Temp (+/- 0.5)	C	17.99	17.69	17.61	17.66	17.85	18.05	17.89
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1044

Sample Time: 1246

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-27 Date: 6/23/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-27 062317 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	112.58	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.89	feet
4. C = Column of Water in Casing:	50.69	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	8.26	gal
6. D2 = Pump Setting Depth (ft):	107.6	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings							
Time	24 hr	1211	1216	1221	1226	1231	1236	1241	1246
Water Level (0.33)	feet	66.79	66.85	66.91	66.98	67.02	67.02	67.02	67.02
Volume Purged	gal	3.0	3.2	3.45	3.7	3.9	4.1	4.35	4.6
Flow Rate	mL / min	150	150	150	150	150	150	150	150
Turbidity (+/- 10%)	NTU	2.8	5.6	6.2	3.3	3.0	2.6	2.4	1.9
Dissolved Oxygen (+/- 10%)	%	53.7	53.4	53.6	54.6	54.9	54.9	55.1	54.8
Dissolved Oxygen (+/- 10%)	mg/L	5.08	5.08	5.13	5.23	5.27	5.29	5.30	5.30
Eh / ORP (+/- 10)	MeV	275.4	277.7	283.6	289.1	299.0	303.2	306.9	310.7
Specific Conductivity	mS/cm[c]	0.510	0.511	0.510	0.510	0.510	0.510	0.510	.509
Conductivity (+/- 3%)	mS/cm	0.442	0.440	0.436	0.435	0.434	0.432	0.433	.429
pH (+/- 0.1)	pH unit	8.13	8.15	8.10	8.08	7.97	7.86	7.93	7.87
Temp (+/- 0.5)	C	17.97	17.71	17.40	17.36	17.31	17.18	17.17	16.7
Color	Visual	clear	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none	none

Comments

Purge Start Time: 1044

Sample Time: 1246

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-28 Date: 6/27/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-28 062717 QA/QC Collected? Dup-4 062717

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	71.7	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.46	feet
4. C = Column of Water in Casing:	9.24	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.569	gal
6. D2 = Pump Setting Depth (ft):	69.2	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 #15946

Parameter	Units	Readings						
Time	24 hr	1003	1008	1013	1018	1023	1028	1033
Water Level (0.33)	feet	62.30	62.30	62.30	62.28	62.30	62.30	62.3
Volume Purged	gal	0	0.2	0.4	0.55	0.70	0.85	1.15
Flow Rate	mL / min	140	140	140	140	140	140	140
Turbidity (+/- 10%)	NTU	-11.0	-10.9	-10.7	-10.3	-9.7	-10.7	-10.6
Dissolved Oxygen (+/- 10%)	%	94.0	85.7	82.6	82.3	79.8	78.8	79.0
Dissolved Oxygen (+/- 10%)	mg/L	8.57	8.06	7.84	7.83	7.63	7.55	7.58
Eh / ORP (+/- 10)	MeV	159.3	150.6	142.6	136.5	128.6	123.6	119.2
Specific Conductivity	mS/cm[c]	0.788	0.794	0.791	0.787	0.786	0.785	.783
Conductivity (+/- 3%)	mS/cm	0.703	0.692	0.682	0.676	0.674	0.667	.669
pH (+/- 0.1)	pH unit	6.99	7.03	7.03	7.04	7.03	7.04	7.03
Temp (+/- 0.5)	C	20.2	18.37	17.9	17.82	17.54	17.08	17.31
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	None	none	Sulfur	Sulfur	Sulfur none	none	none

Comments

Purge Start Time: 1003

Sample Time: 1033

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-28 Date: 6/27/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-28 062717 QA/QC Collected? Dup-4 062717

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	71.7	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.46	feet
4. C = Column of Water in Casing:	9.24	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.57	gal
6. D2 = Pump Setting Depth (ft):	69.2	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 #27942

Parameter	Units	Readings					
Time	24 hr	1105	1110	1115	1120	1125	1130
Water Level (0.33)	feet	62.30	62.30	62.30	62.30	62.31	62.30
Volume Purged	gal	1.5	1.7	1.9	2.05	2.25	2.45
Flow Rate	mL / min	140	140	140	140	140	140
Turbidity (+/- 10%)	NTU	-2.7	-3.1	-3.6	-5.4	-2.7	-3.0
Dissolved Oxygen (+/- 10%)	%	*	→	→	→	76.5	79.3
Dissolved Oxygen (+/- 10%)	mg/L	*	→	→	→	7.26	7.59
Eh / ORP (+/- 10)	MeV	100.8	98.7	99.3	96.4	91.3	97.4
Specific Conductivity	mS/cm[c]	0.663	0.657	0.649	0.648	0.651	0.648
Conductivity (+/- 3%)	mS/cm	0.579	0.572	0.565	0.560	0.563	0.554
pH (+/- 0.1)	pH unit	7.63	7.37	7.09	7.06	7.04	7.05
Temp (+/- 0.5)	C	18.91	18.14	18.37	18.95	18.49	~~18.~~ 17.33
Color	Visual	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none

Comments

Purge Start Time: 1003

Sample Time: 1033

* DO readings unstable. Changing from -999.99 % to 100.0% rapidly 1124 - DO readings stabilize

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-29 Date: 6/27/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-29 062717 QA/QC Collected? MS/MSD

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	71.1	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.31	feet
4. C = Column of Water in Casing:	8.79	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.49	gal
6. D2 = Pump Setting Depth (ft):	~~65.5~~ 68.9	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 #15996

Parameter	Units	Readings						
Time	24 hr	1129	1134	1139	1144	1149	1154	1159
Water Level (0.33)	feet	62.18	62.18	62.18	62.16	62.17	62.20	62.16
Volume Purged	gal	0	0.2	0.4	0.6	0.9	1.1	1.25
Flow Rate	mL / min	~~300~~ 122	122	122	122	122	122	122
Turbidity (+/- 10%)	NTU	7.1	14.9	11.6	4.7	-1.1	-2.2	4.8
Dissolved Oxygen (+/- 10%)	%	79.3	69.6	66.2	65.5	66.9	66.8	67.4
Dissolved Oxygen (+/- 10%)	mg/L	7.43	6.95	6.73	6.69	6.83	6.81	6.89
Eh / ORP (+/- 10)	MeV	122.1	117.9	116.7	116.5	116.6	116.6	116.8
Specific Conductivity	mS/cm^c	0.816	0.804	0.798	0.793	0.789	.786	.786
Conductivity (+/- 3%)	mS/cm	0.685	0.651	0.636	0.633	0.627	.627	.625
pH (+/- 0.1)	pH unit	7.56	7.15	7.06	7.01	7.00	6.99	6.99
Temp (+/- 0.5)	C	17.60	15.18	14.43	14.38	14.26	14.12	14.16
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1129

Sample Time: 1229

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-29 Date: 6/27/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-29 062717 QA/QC Collected? MS/MSD

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	71.1	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.31	feet
4. C = Column of Water in Casing:	8.79	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	1.99	gal
6. D2 = Pump Setting Depth (ft):	68.6	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 #15946

Parameter	Units	Readings						
Time	24 hr	1204	1209	1214	1219	1224	1229	
Water Level (0.33)	feet	62.18	62.18	62.18	62.18	62.18	62.17	
Volume Purged	gal	1.5	1.7	2.0	2.2	2.35	2.5	
Flow Rate	mL / min	122	122	122	122	122	122	
Turbidity (+/- 10%)	NTU	7.6	10.2	14.6	0.3	0.2	2.8	
Dissolved Oxygen (+/- 10%)	%	67.8	66.8	67.0	70.0	70.1	69.4	
Dissolved Oxygen (+/- 10%)	mg/L	6.89	6.78	6.90	7.18	7.19	7.12	
Eh / ORP (+/- 10)	MeV	117.8	118.5	118.2	119.8	119.8	120.2	
Specific Conductivity	mS/cm[c]	0.785	0.783	.781	.782	.783	.782	
Conductivity (+/- 3%)	mS/cm	0.620	0.618	.615	.620	.620	.619	
pH (+/- 0.1)	pH unit	7.00	7.00	7.01	7.01	7.02	7.02	
Temp (+/- 0.5)	C	13.92	13.86	13.85	14.18	14.07	14.06	
Color	Visual	clear	clear	clear	clear	clear	clear	
Odor	Olfactory	none	none	none	none	none	none	

Comments

Purge Start Time: 1129

Sample Time: 1229

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-30 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-30 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	82-92	91.37 feet
2. D = Riser Diameter (I.D.):		0.17 feet
3. W = Static Depth to Water (TOC):		62.19 feet
4. C = Column of Water in Casing:		29.18 feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		4.75 gal
6. D2 = Pump Setting Depth (ft):		87.37 feet
7. C2 = Column of water in Pump/Tubing (ft):		- feet
8. Tubing Volume = C2(0.005737088)		- gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1340	1345	1350	1355	1400	1405	1410
Water Level (0.33)	feet	62.10	62.12	62.10	62.10	62.10	62.10	62.10
Volume Purged	gal	0	0.2	0.40	0.60	0.96	1.1	1.3
Flow Rate	mL / min	125	125	125	125	125	125	125
Turbidity (+/- 10%)	NTU	3.9	4.0	4.8	7.6	1.5	6.4	5.0
Dissolved Oxygen (+/- 10%)	%	41.8	24.5	12.9	8.1	6.1	5.4	5.1
Dissolved Oxygen (+/- 10%)	mg/L	4.22	2.54	1.35	0.85	0.65	0.57	0.54
Eh / ORP (+/- 10)	MeV	-91.9	-114.6	-147.1	-168.1	-179.4	-182.7	-178.5
Specific Conductivity	mS/cm[c]	0.279	0.275	0.274	0.274	0.299	0.342	0.366
Conductivity (+/- 3%)	mS/cm	0.228	0.220	0.214	0.215	0.231	0.263	0.281
pH (+/- 0.1)	pH unit	8.18	8.05	8.00	8.03	7.96	7.90	7.85
Temp (+/- 0.5)	C	16.37	14.41	13.67	13.15	13.03	12.94	12.75
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments

Purge Start Time: 1335

Sample Time: 1420

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-30 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-30 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(See Prev)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1415	1420	1425				
Water Level (0.33)	feet	62.10	62.10	62.10				
Volume Purged	gal	1.5	1.75	1.90				
Flow Rate	mL / min	125	125	125				
Turbidity (+/- 10%)	NTU	4.7	4.3	3.0				
Dissolved Oxygen (+/- 10%)	%	4.8	4.7	4.6				
Dissolved Oxygen (+/- 10%)	mg/L	0.51	0.50	0.48				
Eh / ORP (+/- 10)	MeV	-177.5	-174.0	-173.3				
Specific Conductivity	mS/cm[c]	0.400	0.414	0.419				
Conductivity (+/- 3%)	mS/cm	0.307	0.319	0.320				
pH (+/- 0.1)	pH unit	7.80	7.78	7.77				
Temp (+/- 0.5)	C	12.88	12.97	13.01				
Color	Visual	Clear	Clear	Clear				
Odor	Olfactory	No	No	No				

Comments

Purge Start Time: 1335

Sample Time: 1425

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-31 Date: 6/27/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-31 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	90.98	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.02	feet
4. C = Column of Water in Casing:	28.91	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	4.71	gal
6. D2 = Pump Setting Depth (ft):	86.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 920 #27942

Parameter	Units	Readings						
Time	24 hr	1293	1398	1353	1358	1403	1408	1413
Water Level 0.33	feet	61.96	61.98	61.97	61.9	61.95	61.95	61.95
Volume Purged	gal	0	0.2	0.37	0.45	0.65	0.75	0.9
Flow Rate	mL / min	150	150	150	150	150	150	150
Turbidity (+/- 10%)	NTU	10.2	8.5	7.2	9.4	9.0	8.2	7.6
Dissolved Oxygen (+/- 10%)	%	89.5	16.3	12.4	11.9	11.5	8.9	8.9
Dissolved Oxygen (+/- 10%)	mg/L	8.98	1.59	1.26	1.22	0.97	0.91	0.92
Eh / ORP (+/- 10)	MeV	+133.1	-224.7	-227.2	-249.	-248.9	-259.1	-268.3
Specific Conductivity	mS/cm[c]	0.387	0.359	0.357	0.354	0.353	0.352	0.350
Conductivity (+/- 3%)	mS/cm	0.327	0.286	0.284	0.281	0.280	0.278	0.275
pH (+/- 0.1)	pH unit	9.21	9.01	9.05	9.21	9.15	9.33	9.52
Temp (+/- 0.5)	C	17.65	14.42	14.33	14.23	14.21	13.96	13.82
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1331

Sample Time: 1433

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-31 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-31 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	90.93	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	62.02	feet
4. C = Column of Water in Casing:	28.91	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	4.71	gal
6. D2 = Pump Setting Depth (ft):	86.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 # 27942

Parameter	Units	Readings						
Time	24 hr	1418	1423	1428	1433			
Water Level (0.33)	feet	61.95	61.95	61.95	61.95			
Volume Purged	gal	1.05	1.2	1.3	1.45			
Flow Rate	mL / min	150	150	150	150			
Turbidity (+/- 10%)	NTU	6.3	~~8.8~~ 4.7	4.8	4.6			
Dissolved Oxygen (+/- 10%)	%	6.2	6.7	7.0	6.9			
Dissolved Oxygen (+/- 10%)	mg/L	0.64	0.67	0.72	0.70			
Eh / ORP (+/- 10)	MeV	-280.1	-279.7	-277.2	-283.2			
Specific Conductivity	mS/cm[c]	0.349	0.349	0.398	0.347			
Conductivity (+/- 3%)	mS/cm	0.276	0.277	0.279	0.280			
pH (+/- 0.1)	pH unit	9.79	9.78	9.72	9.79			
Temp (+/- 0.5)	C	19.07	19.18	19.51	19.60			
Color	Visual	clear	clear	clear	clear			
Odor	Olfactory	none	none	none	none			

Comments

Purge Start Time: 1231

Sample Time: 1433

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-32 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-32 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth: 82-92	91.45	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.70	feet
4. C = Column of Water in Casing:	30.75	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	5.01	gal
6. D2 = Pump Setting Depth (ft):	86.45	feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1125	1130	1135	1140	1145	1150	1155
Water Level (0.33)	feet	60.02	60.01	60.05	60.02	60.02	60.02	60.02
Volume Purged	gal	0	0.2	0.5	0.70	0.90	1.20	1.35
Flow Rate	mL / min	130	130	140	140	140	140	140
Turbidity (+/- 10%)	NTU	5.9	2.3	1.0	0.5	0.5	2.1	2.3
Dissolved Oxygen (+/- 10%)	%	58.2	25.8	12.9	11.6	15.2	18.2	19.1
Dissolved Oxygen (+/- 10%)	mg/L	5.71	2.63	1.31	1.18	1.55	1.87	1.96
Eh / ORP (+/- 10)	MeV	-118.3	-125.5	-136.0	-139.7	-134.2	-131.4	-136.5
Specific Conductivity	mS/cm^c	0.387	0.383	0.378	0.372	0.367	0.363	0.362
Conductivity (+/- 3%)	mS/cm	0.323	0.311	0.302	0.297	0.292	0.286	0.287
pH (+/- 0.1)	pH unit	7.58	7.33	7.19	7.25	7.31	7.34	7.35
Temp (+/- 0.5)	C	16.09	15.08	14.43	14.36	14.22	13.82	14.10
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	No	No	No	No	No

Comments

Purge Start Time: 1120

Sample Time: 1240

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-32 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-32 062617 QA/QC Collected? NO

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth: (See prev) feet
2. D = Riser Diameter (I.D.): 0.17 feet
3. W = Static Depth to Water (TOC): _____ feet
4. C = Column of Water in Casing: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. D2 = Pump Setting Depth (ft): _____ feet
7. C2 = Column of water in Pump/Tubing (ft): _____ feet
8. Tubing Volume = C2(0.005737088) _____ gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650 MDS

Parameter	Units	Readings						
Time	24 hr	1200	1209	1220	1225	1230	1235	1240
Water Level (0.33)	feet	60.02	60.02	60.02	60.02	60.02	60.02	60.02
Volume Purged	gal	1.70	1.82	1.99	2.10	2.25	2.50	2.70
Flow Rate	mL / min	140	140	140	140	140	145	145
Turbidity (+/- 10%)	NTU	3.1	7.4	2.5	1.7	1.6	1.8	1.8
Dissolved Oxygen (+/- 10%)	%	20.9	20.8	30.0	22.9	22.2	21.6	21.3
Dissolved Oxygen (+/- 10%)	mg/L	2.08	2.09	3.02	2.33	2.27	2.22	2.20
Eh / ORP (+/- 10)	MeV	-137.1	-139.2	-5.4	-113.7	-120.0	-120.4	-121.2
Specific Conductivity	mS/cm[c]	0.359	0.360	0.464	0.365	0.356	0.356	0.353
Conductivity (+/- 3%)	mS/cm	0.293	0.293	0.381	0.292	0.284	0.281	0.278
pH (+/- 0.1)	pH unit	7.44	7.44	7.10	7.16	7.18	7.25	7.29
Temp (+/- 0.5)	C	15.35	15.28	15.44	14.46	14.41	14.08	13.89
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NO	NO	NO	NO	NO	NO	NO

Comments * Recalibrated DO% & ORP @ 1205

Purge Start Time: 1120

Sample Time: 1240

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-32 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-32 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	(see prev)	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 650

Parameter	Units	other YSI	Readings				
Time	24 hr	1245	1260	1255			
Water Level (0.33)	feet	60.02	60.02	60.02			
Volume Purged	gal	2.90	3.00	3.20			
Flow Rate	mL / min	145	145	145			
Turbidity (+/- 10%)	NTU	7.2	5.0	5.1			
Dissolved Oxygen (+/- 10%)	%	31.2	23.7	24.2			
Dissolved Oxygen (+/- 10%)	mg/L	3.23	2.46	2.50			
Eh / ORP (+/- 10)	MeV	-173.6	-207.9	-238.7			
Specific Conductivity	mS/cm[c]	0.341	0.335	0.333			
Conductivity (+/- 3%)	mS/cm	0.268	0.262	0.261			
pH (+/- 0.1)	pH unit	9.09	9.14	9.28			
Temp (+/- 0.5)	C	13.73	13.76	13.73			
Color	Visual	Clear	Clear	Clear			
Odor	Olfactory	No	No	No			

Comments

Purge Start Time: 1120

Sample Time: 1240

* Switched to other YSI to see if ORP & DO% would be different

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-33 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-33 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	92.32	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.80	feet
4. C = Column of Water in Casing:	31.52	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	5.14	gal
6. D2 = Pump Setting Depth (ft):	87.3	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 # 27992

Parameter	Units	Readings						
Time	24 hr	1137	1142	1147	1152	1157	1202	1207
Water Level (0.33)	feet	60.65	60.65	60.65	60.65	60.65	60.65	
Volume Purged	gal	0	.25	.30	.4	.5	.75	.9
Flow Rate	mL / min	130	130	130	130	130	130	130
Turbidity (+/- 10%)	NTU	3.0	5.7	7.0	12.0	-1.0	3.1	4.1
Dissolved Oxygen (+/- 10%)	%	90.8	70.1	60.7	45.6	39.7	39.5	37.5
Dissolved Oxygen (+/- 10%)	mg/L	8.48	6.65	4.94	4.57	3.82	3.80	3.67
Eh / ORP (+/- 10)	MeV	-18.5	-18.2	-9.2	-7.8	-8.7	-15.2	-14.4
Specific Conductivity	mS/cm^c	.426	.420	.420	.420	.417	.420	.421
Conductivity (+/- 3%)	mS/cm	.370	.347	.351	.340	.341	.357	.350
pH (+/- 0.1)	pH unit	8.51	8.27	8.16	8.10	8.15	8.42	8.43
Temp (+/- 0.5)	C	17.71	15.94	16.52	14.99	16.48	17.07	16.08
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1125

Sample Time: 1241

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-33 Date: 6/ /2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-33 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	92.32	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	60.80	feet
4. C = Column of Water in Casing:	31.52	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	5.14	gal
6. D2 = Pump Setting Depth (ft):	87.3	feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920 # 27942

Parameter	Units	Readings						
Time	24 hr	1212	1217	1222	1227	1232	1237	1241
Water Level (0.33)	feet	~~60.65~~	60.65	60.65	60.65	60.65	60.65	60.65
Volume Purged	gal	1.05	1.25	1.35	1.5	1.6	1.7	1.8
Flow Rate	mL / min	~~150~~ 100	100	100	100	100	100	100
Turbidity (+/- 10%)	NTU	4.4	2.8	3.9	5.7	4.8	4.9	3.4
Dissolved Oxygen (+/- 10%)	%	34.5	33.6	32.8	32.0	31.2	30.6	30.6
Dissolved Oxygen (+/- 10%)	mg/L	3.42	3.31	3.24	3.15	3.06	2.99	2.99
Eh / ORP (+/- 10)	MeV	-11.2	0.3	8.9	19.2	35.1	40.6	44.9
Specific Conductivity	mS/cm[c]	.420	.419	.419	.419	.419	.419	.419
Conductivity (+/- 3%)	mS/cm	.347	.347	.347	.348	.349	.350	.350
pH (+/- 0.1)	pH unit	8.40	8.44	8.51	8.59	8.64	8.68	8.80
Temp (+/- 0.5)	C	15.89	16.00	15.99	16.06	16.29	16.35	16.39
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1137

Sample Time: 1241

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-34 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-34 062617 QA/QC Collected? DUP-3 062617

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth: (82-92)	88.70	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	58.39	feet
4. C = Column of Water in Casing:	30.31	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	4.94	gal
6. D2 = Pump Setting Depth (ft):	85.00	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings						
Time	24 hr	825	830	835	840	845	850	855
Water Level (0.33)	feet	58.40	58.40	58.35	58.35	58.35	58.35	58.35
Volume Purged	gal	0	0.5	1	1.45	1.95	2.25	2.7
Flow Rate	mL / min	260	260	260	260	260	260	260
Turbidity (+/- 10%)	NTU	1.7	0.7	8.1	-1.4	[illegible] 0.5	-1.3	-2.0
Dissolved Oxygen (+/- 10%)	%	8.1	8.1	7.2	6.1	5.6	5.3	5.0
Dissolved Oxygen (+/- 10%)	mg/L	2.88	0.85	.75	.64	.68	.55	.52
Eh / ORP (+/- 10)	MeV	-73.0	-95.6	-98.5	-108.9	-116.2	-120.4	-127.2
Specific Conductivity	mS/cm[c]	0.414	0.424	.423	.423	.421	.422	.422
Conductivity (+/- 3%)	mS/cm	0.330	0.332	.335	.330	.329	.329	.330
pH (+/- 0.1)	pH unit	6.94	6.79	6.84	6.94	7.03	7.1	7.15
Temp (+/- 0.5)	C	14.33	13.58	13.48	13.56	13.49	13.47	13.62
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	NO	No	no	no	no	no	no

Comments

Purge Start Time: 820

Sample Time: 0915

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-34 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-34 062617 QA/QC Collected? DUP-3 062617

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	88.70	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	58.39	feet
4. C = Column of Water in Casing:	30.31	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	4.94	gal
6. D2 = Pump Setting Depth (ft):	85.00	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using

Parameter	Units	Readings						
Time	24 hr	900	905	910	915			
Water Level (0.33)	feet	58.35	58.35	58.35	58.35			
Volume Purged	gal	3.85	3.5	3.85	4.2			
Flow Rate	mL / min	260	260	260	260			
Turbidity (+/- 10%)	NTU	-2.9	-3.5	-3.8	-4.0			
Dissolved Oxygen (+/- 10%)	%	4.9	4.7	4.6	4.4			
Dissolved Oxygen (+/- 10%)	mg/L	.51	.48	.47	.46			
Eh / ORP (+/- 10)	MeV	-131.2	-133.5	-137.4	-139.4			
Specific Conductivity	mS/cm[c]	.422	.422	.422	.422			
Conductivity (+/- 3%)	mS/cm	.330	.330	.331	.332			
pH (+/- 0.1)	pH unit	7.19	7.21	7.24	7.26			
Temp (+/- 0.5)	C	13.62	13.59	13.64	13.67			
Color	Visual	Clear	Clear	Clear	Clear			
Odor	Olfactory	no	no	no	no			

Comments

Purge Start Time: 0820

Sample Time: 915

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-35 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-35 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	92.28	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	58.28	feet
4. C = Column of Water in Casing:	34.0	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	5.5	gal
6. D2 = Pump Setting Depth (ft):	87.0	feet
7. C2 = Column of water in Pump/Tubing (ft):	—	feet
8. Tubing Volume = C2(0.005737088)	—	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0825	0830	0835	0840	0845	0850	0855
Water Level (0.33)	feet	58.15	58.10	58.13	58.12	58.12	58.12	~~58.12~~ 58.12
Volume Purged	gal	0	0.2	0.3	0.45	0.6	0.75	0.9
Flow Rate	mL / min	140	140	140	140	140	140	140
Turbidity (+/- 10%)	NTU	62.3	148.8	161.5	147.7	128.3	106.9	83.2
Dissolved Oxygen (+/- 10%)	%	87.3	65.2	48.9	42.2	39.5	38.1	37.8
Dissolved Oxygen (+/- 10%)	mg/L	8.83	6.69	5.05	@ 4.35	4.09	3.94	3.91
Eh / ORP (+/- 10)	MeV	187.5	151.0	92.4	66.2	47.5	34.7	25.3
Specific Conductivity	mS/cm^c	0.313	0.376	0.401	0.405	0.406	0.405	0.404
Conductivity (+/- 3%)	mS/cm	0.251	0.298	0.315	0.319	0.318	0.317	0.317
pH (+/- 0.1)	pH unit	8.06	7.86	7.71	7.65	7.65	7.66	7.66
Temp (+/- 0.5)	C	14.71	14.03	13.79	13.79	13.69	13.66	13.83
Color	Visual	cloudy	Brown	Brown	Brown	Brown	Brown	Brown
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 0818

Sample Time: 0925

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-35 Date: 6/26/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-35 062617 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	92.28	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	58.28	feet
4. C = Column of Water in Casing:	34	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	5.5	gal
6. D2 = Pump Setting Depth (ft):	87.0	feet
7. C2 = Column of water in Pump/Tubing (ft):	–	feet
8. Tubing Volume = C2(0.005737088)	–	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	0900	0905	0910	0915	0920	0925	
Water Level (0.33)	feet	58.12	58.12	58.12	58.12	58.12	58.12	
Volume Purged	gal	1.1	1.25	~~1.35~~ 1.35	1.5	1.65	1.75	
Flow Rate	mL / min	140	140	140	140	140	140	
Turbidity (+/- 10%)	NTU	69.1	60.1	53.7	41.9	37.3	38.7	
Dissolved Oxygen (+/- 10%)	%	37.6	37.4	36.9	36.6	36.5	36.5	
Dissolved Oxygen (+/- 10%)	mg/L	3.86	3.84	3.78	3.74	3.71	3.67	
Eh / ORP (+/- 10)	MeV	13.0	6.4	-0.3	-9.0	-8.7	-10.6	
Specific Conductivity	mS/cm[c]	0.404	0.403	0.403	0.403	0.402	0.402	
Conductivity (+/- 3%)	mS/cm	0.320	0.319	0.320	0.321	0.322	0.324	
pH (+/- 0.1)	pH unit	7.69	7.72	7.74	7.79	7.75	7.66	
Temp (+/- 0.5)	C	19.07	19.09	19.27	19.38	19.56	19.72	
Color	Visual	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	
Odor	Olfactory	none	none	none	none	none	none	

Comments

Purge Start Time: 0818

Sample Time: 0925

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-36 Date: 6/22/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-36 062217 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	79.94	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.87	feet
4. C = Column of Water in Casing:	17.57	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	2.86	gal
6. D2 = Pump Setting Depth (ft):	74.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1245	1250	1255	1300	1305	1310	1315
Water Level (0.33)	feet	61.80	61.84	61.83	61.81	61.81	61.81	61.81
Volume Purged	gal	0	0.25	0.5	0.65	0.75	1.15	1.45
Flow Rate	mL / min	140	140	160	185	185	185	185
Turbidity (+/- 10%)	NTU	39.9	26.4	20.4	18.9	15.1	16.1	14.7
Dissolved Oxygen (+/- 10%)	%	66.1	29.7	24.7	19.0	14.7	13.9	13.1
Dissolved Oxygen (+/- 10%)	mg/L	5.99	2.97	2.53	1.94	1.53	1.44	1.36
Eh / ORP (+/- 10)	MeV	38.4	62.1	63.8	72.7	32.0	15.9	-10.6
Specific Conductivity	mS/cm^c	0.551	0.538	0.535	0.535	0.537	0.537	0.538
Conductivity (+/- 3%)	mS/cm	0.500	0.436	0.425	0.425	0.418	0.418	0.419
pH (+/- 0.1)	pH unit	8.12	7.54	7.66	7.46	7.65	7.62	7.87
Temp (+/- 0.5)	C	20.03	19.96	19.22	19.14	13.38	13.43	13.47
Color	Visual	cloudy	clearing	clearing	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments

Purge Start Time: 1240

Sample Time: 1345

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form

Project Name and Number: Scotia Navy Depot 60440641

Monitoring Well Number: MW-36 Date: 6/22/2017

Samplers: Chris French, Ross McCredy & Tom Quackenbush

Sample Number: MW-36 062217 QA/QC Collected? No

Purging / Sampling Method: Bladder pump/Low Flow

1. L = Total Well Depth:	79.94	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	61.87	feet
4. C = Column of Water in Casing:	17.57	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.86	gal
6. D2 = Pump Setting Depth (ft):	74.5	feet
7. C2 = Column of water in Pump/Tubing (ft):	-	feet
8. Tubing Volume = C2(0.005737088)	-	gal

D (inches)	D (feet)
1-inch	0.08
1.5-inch	0.125
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.092	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6920

Parameter	Units	Readings						
Time	24 hr	1320	1325	1330	1335	1340	1345	
Water Level (0.33)	feet	61.82	61.81	61.81	61.81	61.81	61.81	
Volume Purged	gal	1.75	2.05	2.3	2.6	2.8	3.1	
Flow Rate	mL / min	185	185	185	185	185	185	
Turbidity (+/- 10%)	NTU	8.8	7.8	6.6	6.5	6.4	6.3	
Dissolved Oxygen (+/- 10%)	%	12.0	11.3	10.9	10.8	10.5	10.4	
Dissolved Oxygen (+/- 10%)	mg/L	1.24	1.18	1.13	1.13	1.09	1.08	
Eh / ORP (+/- 10)	MeV	-29.4	-43.1	-51.2	-62.4	-68.4	-71.7	
Specific Conductivity	mS/cm[c]	0.539	0.539	0.540	0.540	0.540	0.540	
Conductivity (+/- 3%)	mS/cm	0.422	0.420	0.421	0.420	0.420	0.422	
pH (+/- 0.1)	pH unit	7.86	7.94	7.96	7.97	8.02	8.05	
Temp (+/- 0.5)	C	13.56	13.96	13.53	(13.3)	13.42	13.54	
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	
Odor	Olfactory	none	none	none	none	none	none	

Comments

Purge Start Time: 1250

Sample Time: 1345

* Three consecutive readings within range indicates stabilization of that parameter.

APPENDIX B: Field Calibration Forms

Calibration Log

Date: 6/19/17 Time: 1315 Instrument: YSI 027942

pH_1	3.82	→ 4.00	ORP	240.8	→ 240.0
pH_2	7.02	→ 7.00	Cond.	1.396	→ 1.413
pH_3	10.07	→ 10.01	Turb.	-0.3	→ 0.0
				1259	126.0

Date: 6/20/17 Time: 800 Instrument: YSI 10045

pH_1	10.06	→ 10.00	ORP	238.3	→ 240.0
pH_2	3.98	→ 4.00	Cond.	1.400	→ 1.413
pH_3	6.95	→ 6.99	Turb.	~1.3 156.2	→ 0.0 126.0
			DO%	99.3	81.4

Date: 6/20/17 Time: 800 Instrument: YSI 027942

pH_1	7.45	→ 7.00	ORP	224.0	→ 240.0
pH_2	9.70	→ 10.01	Cond.	1.341	→ 1.413
pH_3	3.76	→ 3.99	Turb.		→

Date: 6/22/17 Time: 1200 Instrument: YSI 15946

pH_1	4.03	→ 4.00	ORP	236.1	→ 240
pH_2	7.03	→ 7.00	Cond.	1.8410	→ 1.413
pH_3	9.96	→ 10.00	Turb.	—	→ —

Date: 6/26/17 Time: 1200 Instrument: 15946

pH_1	4.03	→ 4.00	ORP	233.9	→ 240.0
pH_2	7.10	→ 7.00	Cond.	1.403	→ 1.413
pH_3	10.11	→ 10.00	Turb.	—	→ —
			DO%	100.2	100.0

Date: 6/26/17 Time: 1255 Instrument: 27942

pH_1	4.07	→ 4.00	ORP	231.4	→ 240.0
pH_2	7.15	→ 7.00	Cond.	1.406	→ 1.413
pH_3	9.91	→ 10.00	Turb.	—	→ —

Date: 6/26/17 Time: 1500 Instrument: 27942 (Bump test)

pH_1		→	ORP	224.6	→ 240 mV Standard
pH_2		→	Cond.		→
pH_3		→	Turb.		→

DO: 99.5% / 8.48 mg/L in Atmosphere

Date: 6/26/17 Time: 1500 Instrument: 15946 (Bump test)

pH_1		→	ORP	249.1	→ 240 mV Standard
pH_2		→	Cond.		→
pH_3		→	Turb.		→

DO: 103.4% / 9.02 mg/L Atmosphere

Standards:

pH_1 =	4	ORP =	240 mV
pH_2 =	7	Cond. =	1.413 mS/cm
pH_3 =	10	Turbidity =	0 & 126 NTU

Calibration Log

Date: 6/27/17 Time: 1040 Instrument: YSI 6920 #27942

DO: 102.3 → 100.0
761.746 mmHg
19.76 °C

pH_1	4.07	→ 4.00	ORP	252.1	→ 240.0
pH_2	10.29	→ 10.00	Cond.	1.374	→ 1.413
pH_3	7.05	→ 7.00	Turb.	2.1	→ 0
				140.2	→ 126.0

Date: Time: Instrument:

pH_1		→	ORP		→
pH_2		→	Cond.		→
pH_3		→	Turb.		→

Date: Time: Instrument:

pH_1		→	ORP		→
pH_2		→	Cond.		→
pH_3		→	Turb.		→

Date: Time: Instrument:

pH_1		→	ORP		→
pH_2		→	Cond.		→
pH_3		→	Turb.		→

Date: Time: Instrument:

pH_1		→	ORP		→
pH_2		→	Cond.		→
pH_3		→	Turb.		→

Date: Time: Instrument:

pH_1		→	ORP		→
pH_2		→	Cond.		→
pH_3		→	Turb.		→

Date: Time: Instrument:

pH_1		→	ORP		→
pH_2		→	Cond.		→
pH_3		→	Turb.		→

Date: Time: Instrument:

pH_1		→	ORP		→
pH_2		→	Cond.		→
pH_3		→	Turb.		→

Standards:

pH_1 = 4
pH_2 = 7
pH_3 = 10

ORP = 240 mV
Cond. = 1.413 mS/cm
Turbidity = 0 & 126 NTU

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
7332 S. Alton Way, Bldg. 13, Suite E.
Centennial, CO 80112
Toll-free: (866) 960-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27942
Description YSI 6920 V2
Calibrated 6/14/2017 4:32:41PM

Manufacturer YSI
Model Number 6920 V2
Serial Number/ Lot Number 12D1002218
Location Colorado
Department

State Certified
Status Pass
Temp °C 23
Humidity % 16

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.27	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.38	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.21	10.00	0.00%	Pass

Group # 2
Group Name Turbidity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	4.50	0.00	0.00%	Pass
126.00 / 126.00	NTU	126.00	NTU	102.70	126.00	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	211.90	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	78.50	100.00	0.00%	Pass

Group # 5
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pas

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
7332 S. Alton Way, Bldg. 13, Suite E.
Centennial, CO 80112
Toll-free: (866) 960-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27942
Description YSI 6920 V2
Calibrated 6/14/2017 4:32:41PM

Group # 5
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.557	1.413	0.00%	Pass

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
CO 1.413 COND STD 7GA313	1413 COND STND	Aurical	3-1413-8	7GA313		1/31/2018
CO AUTO CAL SOLUTION 0 NTU/PH 4	CO Auto Cal Solution 0 NTU/PH 4 C691444	Aurical	8483			9/1/2017
CO ORP 240 MV 9912	ORP SOLUTION 240 mV	Hanna		9912		3/1/2021
CO PH 10 6GE377	CO PH 10	Aurical	2-0400r-8	6GE377		11/1/2017
CO PH 4 6GE985	CO PH 4	Aurical	2-0400R-8	6GE985		5/1/2018
CO PH 7 6GF077	CO PH 7	Aurical	2-0700Y-8	6GF077		6/1/2018
CO TURBIDITY 126 NTU 17B794089	CO TURBIDITY 126 NTU 17B794089	YSI	6073G			2/28/2018

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Mike Haduck

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC

7332 S. Alton Way, Bldg. 13, Suite E.
Centennial, CO 80112
Toll-free: (866) 960-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 27942
Description YSI 6920 V2
Calibrated 6/14/2017 4:32:41PM

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
7332 S. Alton Way, Bldg. 13, Suite E.
Centennial, CO 80112
Toll-free: (866) 960-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 10045
Description YSI 6920 V2
Calibrated 6/14/2017 4:31:23PM

Manufacturer YSI
Model Number 6920 V2
Serial Number/ Lot Number 07F100011
Location Colorado
Department

State Certified
Status Pass
Temp °C 23
Humidity % 16

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.34	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.12	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.04	10.00	0.00%	Pass

Group # 2
Group Name Turbidity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	1.90	0.00	0.00%	Pass
126.00 / 126.00	NTU	126.00	NTU	194.40	126.00	0.00%	Pass

Group # 3
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.557	1.413	0.00%	Pass

Group # 4
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	211.90	240.00	0.00%	Pass

Group # 5
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
7332 S. Alton Way, Bldg. 13, Suite E.
Centennial, CO 80112
Toll-free: (866) 960-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 10045
Description YSI 6920 V2
Calibrated 6/14/2017 4:31:23PM

Group # 5
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	78.50	100.00	0.00%	Pass

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
CO 1.413 COND STD 7GA313	1413 COND STND	Aurical	3-1413-8	7GA313		1/31/2018
CO AUTO CAL SOLUTION 0 NTU/PH 4	CO Auto Cal Solution 0 NTU/PH 4 C691444	Aurical	8483			9/1/2017
CO ORP 240 MV 9912	ORP SOLUTION 240 mV	Hanna		9912		3/1/2021
CO PH 10 6GE377	CO PH 10	Aurical	2-0400r-8	6GE377		11/1/2017
CO PH 4 6GE985	CO PH 4	Aurical	2-0400R-8	6GE985		5/1/2018
CO PH 7 6GF077	CO PH 7	Aurical	2-0700Y-8	6GF077		6/1/2018
CO TURBIDITY 126 NTU 17B794089	CO TURBIDITY 126 NTU 17B794089	YSI	6073G			2/28/2018

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Mike Haduck

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC

7332 S. Alton Way, Bldg. 13, Suite E.
Centennial, CO 80112
Toll-free: (866) 960-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 10045
Description YSI 6920 V2
Calibrated 6/14/2017 4:31:23PM

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 15946
Description YSI 6920 V2
Calibrated 6/19/2017 10:39:30AM

Manufacturer YSI
Model Number 6920 V2
Serial Number/ Lot Number 10D101499
Location New Jersey
Department

State Certified
Status Pass
Temp °C 25.2
Humidity % 56

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	6.90	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.06	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	10.12	10.00	0.00%	Pass

Group # 2
Group Name Turbidity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	0.00	0.00	0.00%	Pass
126.00 / 126.00	NTU	126.00	NTU	122.30	125.90	-0.08%	Pass

Group # 3
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.402	1.414	0.07%	Pass

Group # 4
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	236.30	240.00	0.00%	Pass

Group # 5
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 15946
Description YSI 6920 V2
Calibrated 6/19/2017 10:39:30AM

Group # 5
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	98.60	99.90	-0.10%	Pass

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NJ COND 1413: 6GL243	1413 conductivity standard	AquaPhoenix Scientific	1413	6GL243	1/9/2017	12/31/2017
NJ ORP 240: 0207	ORP solution 240mv	Hanna	240Mv	0207	1/9/2017	5/31/2021
NJ PH 10: 6GL207	BUFFER, PH10 BLUE	AquaPhoenix Scientific	PH10	6GL207	1/9/2017	12/31/2018
NJ PH 4: 6GL126	BUFFER, PH4 RED	AquaPhoenix Scientific	PH4	6GL126	1/9/2017	12/31/2018
NJ PH 7: 6GL570	BUFFER, PH7 YELLOW	AquaPhoenix Scientific	PH7	6GL570	1/9/2017	12/31/2018
NJ TURB 0.0 NTU LOT: C692328	0.0 NTU STANDARD	GFS	0.0 NTU	C692328	3/14/2017	11/30/2017
NJ TURB 126 C796155	126 NTU STANDARD	GFS	126 NTU	C796155	5/22/2017	4/30/2018

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated William Bass

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

APPENDIX C: Laboratory Reports

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

July 1, 2017

Mr. John Santacroce
AECOM - LATHAM NY
40 British American Blvd.
Albany, NY 12210

Certificate of Analysis

Project Name:	**2015-SCOTIA NAVY DEPOT-PO**	Workorder:	**2240568**
Purchase Order:	**66432/60440641.11**	Workorder ID:	**ASN020|2015-SCOTIA NAVY DEPOT-**

Dear Mr. Santacroce:

Enclosed are the analytical results for samples received by the laboratory on Thursday, June 22, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Kelly Lurie , Mr. Scott Underhill

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Vicki Forney

Mrs. Vicki A. Forney
Project Coordinator

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2240568001	MW-16 062017	Ground Water	6/20/2017 10:05	6/22/2017 08:55	Collected by Client
2240568002	MW-7 062017	Ground Water	6/20/2017 12:40	6/22/2017 08:55	Collected by Client
2240568003	MW-6 062017	Ground Water	6/20/2017 14:37	6/22/2017 08:55	Collected by Client
2240568004	MW-9 062017	Ground Water	6/20/2017 14:56	6/22/2017 08:55	Collected by Client
2240568005	DUP-1 062017	Ground Water	6/20/2017 00:00	6/22/2017 08:55	Collected by Client
2240568006	Trip Blank	Ground Water	6/22/2017 08:55	6/22/2017 08:55	Collected by Client

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568001** Date Collected: 6/20/2017 10:05 Matrix: Ground Water

Sample ID: **MW-16 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,1-Trichloroethane	0.50J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118			SW846 8260C		6/29/17 18:12	TMP	A
4-Bromofluorobenzene (S)	93.5		%	85 - 114			SW846 8260C		6/29/17 18:12	TMP	A
Dibromofluoromethane (S)	88.2		%	80 - 119			SW846 8260C		6/29/17 18:12	TMP	A
Toluene-d8 (S)	94		%	89 - 112			SW846 8260C		6/29/17 18:12	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 01:12	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 01:12	EGO	C
Methane	0.19J	J,1	ug/L	0.50	0.25	0.13	RSK 175		6/28/17 01:12	EGO	C
WET CHEMISTRY											
Alkalinity, Total	322	2	mg/L	5	5	0.8	S2320B-97		6/29/17 19:08	MSA	H
Chloride	20.2		mg/L	2.0	0.50	0.16	EPA 300.0		6/22/17 09:42	CHW	G
Nitrate-N	3.7		mg/L	0.20	0.060	0.020	EPA 300.0		6/22/17 09:42	CHW	G
Sulfate	75.5		mg/L	2.0	0.50	0.20	EPA 300.0		6/22/17 09:42	CHW	G
Total Organic Carbon (TOC)	0.67J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/26/17 10:15	PAG	G

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568002** Date Collected: 6/20/2017 12:40 Matrix: Ground Water

Sample ID: **MW-7 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:34	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	100		%	81 - 118			SW846 8260C			6/29/17 18:34	TMP	A
4-Bromofluorobenzene (S)	95.1		%	85 - 114			SW846 8260C			6/29/17 18:34	TMP	A
Dibromofluoromethane (S)	86.6		%	80 - 119			SW846 8260C			6/29/17 18:34	TMP	A
Toluene-d8 (S)	93.4		%	89 - 112			SW846 8260C			6/29/17 18:34	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568003** Date Collected: 6/20/2017 14:37 Matrix: Ground Water

Sample ID: **MW-6 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
cis-1,2-Dichloroethene	0.39J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
1,1,1-Trichloroethane	0.77J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
Trichloroethene	26.0		ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 18:57	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	100		%	81 - 118	SW846 8260C			6/29/17 18:57	TMP	A
4-Bromofluorobenzene (S)	93.4		%	85 - 114	SW846 8260C			6/29/17 18:57	TMP	A
Dibromofluoromethane (S)	86.3		%	80 - 119	SW846 8260C			6/29/17 18:57	TMP	A
Toluene-d8 (S)	92.1		%	89 - 112	SW846 8260C			6/29/17 18:57	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568004** Date Collected: 6/20/2017 14:56 Matrix: Ground Water

Sample ID: **MW-9 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 19:20	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	98.8		%	81 - 118			SW846 8260C			6/29/17 19:20	TMP	A
4-Bromofluorobenzene (S)	95.1		%	85 - 114			SW846 8260C			6/29/17 19:20	TMP	A
Dibromofluoromethane (S)	87		%	80 - 119			SW846 8260C			6/29/17 19:20	TMP	A
Toluene-d8 (S)	92.5		%	89 - 112			SW846 8260C			6/29/17 19:20	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568005** Date Collected: 6/20/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-1 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,1-Trichloroethane	0.50J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.5		%	81 - 118	SW846 8260C		6/29/17 19:42	TMP	A
4-Bromofluorobenzene (S)	95.4		%	85 - 114	SW846 8260C		6/29/17 19:42	TMP	A
Dibromofluoromethane (S)	88.2		%	80 - 119	SW846 8260C		6/29/17 19:42	TMP	A
Toluene-d8 (S)	94.6		%	89 - 112	SW846 8260C		6/29/17 19:42	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568006** Date Collected: 6/22/2017 08:55 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.1		%	81 - 118	SW846 8260C			6/29/17 13:38	TMP	A
4-Bromofluorobenzene (S)	94.7		%	85 - 114	SW846 8260C			6/29/17 13:38	TMP	A
Dibromofluoromethane (S)	86.4		%	80 - 119	SW846 8260C			6/29/17 13:38	TMP	A
Toluene-d8 (S)	92.2		%	89 - 112	SW846 8260C			6/29/17 13:38	TMP	A

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Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2240568001	1	MW-16 062017	RSK 175	Methane
The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 56.6 and the upper control limit is 20.				
2240568001	2	MW-16 062017	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

QC Batch: SVGC/45820 **Analysis Method:** RSK 175

QC Batch Method: RSK 175

Associated Lab Samples: 2240568001

METHOD BLANK: 2563120

Parameter	Blank Result	Units	Reporting Limit
Ethane	0.50U	ug/L	1.0
Ethene	0.75U	ug/L	1.5
Methane	0.31J	ug/L	0.50

SAMPLE DUPLICATE: 2563121 ORIGINAL: 2240568001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Ethane	0	ug/L	0	NC	20
Ethene	0	ug/L	0	NC	20
Methane	.19	ug/L	.34	56.6*	20

SAMPLE DUPLICATE: 2563122 ORIGINAL: 2241674008

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Ethane	2.71	ug/L	2.78	2.55	20
Ethene	3.21	ug/L	3.3	2.76	20
Methane	56.47	ug/L	57.67	2.1	20

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QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43775 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2240568001, 2240568002, 2240568003, 2240568004, 2240568005, 2240568006

METHOD BLANK: 2564208

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	97.8	%	81 - 118
4-Bromofluorobenzene (S)	91.9	%	85 - 114
Dibromofluoromethane (S)	86.9	%	80 - 119
Toluene-d8 (S)	91.7	%	89 - 112

LABORATORY CONTROL SAMPLE: 2564209

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	92	ug/L	20	18.4	72 - 136
1,1-Dichloroethane	90.5	ug/L	20	18.1	77 - 125
1,2-Dichloroethane	85.4	ug/L	20	17.1	73 - 128
1,1-Dichloroethene	98.2	ug/L	20	19.6	71 - 131
cis-1,2-Dichloroethene	89.3	ug/L	20	17.9	78 - 123
trans-1,2-Dichloroethene	95.1	ug/L	20	19.0	75 - 124
1,1,1,2-Tetrachloroethane	94.4	ug/L	20	18.9	78 - 124
1,1,2,2-Tetrachloroethane	91.4	ug/L	20	18.3	71 - 121
Tetrachloroethene	91.2	ug/L	20	18.2	74 - 129
Toluene	97.9	ug/L	20	19.6	80 - 121
1,1,1-Trichloroethane	89.2	ug/L	20	17.8	74 - 131
1,1,2-Trichloroethane	89.3	ug/L	20	17.9	80 - 119
Trichloroethene	91	ug/L	20	18.2	79 - 123

QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Vinyl Chloride	90.7	ug/L	20	18.1	58 - 137
1,2-Dichloroethane-d4 (S)	93.5	%			81 - 118
4-Bromofluorobenzene (S)	91.8	%			85 - 114
Dibromofluoromethane (S)	85.8	%			80 - 119
Toluene-d8 (S)	90.4	%			89 - 112

MATRIX SPIKE: 2564416 DUPLICATE: 2564417 ORIGINAL: 2240568003

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	20.9034	21.0507	105	105	72 - 136	.7	30
1,1-Dichloroethane	0	ug/L	20	20.7901	21.259	104	106	77 - 125	2.23	30
1,2-Dichloroethane	0	ug/L	20	19.8415	19.1914	99.2	96	73 - 128	3.33	30
1,1-Dichloroethene	0	ug/L	20	23.1958	23.4313	116	117	71 - 131	1.01	30
cis-1,2-Dichloroethene	.39207	ug/L	20	21.0585	21.1478	103	104	78 - 123	.42	30
trans-1,2-Dichloroethene	0	ug/L	20	22.2448	21.7657	111	109	75 - 124	2.18	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	20.0647	20.0276	100	100	78 - 124	.19	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	19.7371	19.3739	98.7	96.9	71 - 121	1.86	30
Tetrachloroethene	0	ug/L	20	19.4002	19.7724	97	98.9	74 - 129	1.9	30
Toluene	0	ug/L	20	21.1849	21.4458	106	107	80 - 121	1.22	30
1,1,1-Trichloroethane	.76554	ug/L	20	21.4767	21.6883	104	105	74 - 131	.98	30
1,1,2-Trichloroethane	0	ug/L	20	19.6462	19.5243	98.2	97.6	80 - 119	.62	30
Trichloroethene	26.0443	ug/L	20	47.5997	48.3559	108	112	79 - 123	1.58	30
Vinyl Chloride	0	ug/L	20	23.798	23.6185	119	118	58 - 137	.76	30
1,2-Dichloroethane-d4 (S)	97.3	%				97.3	93.9	81 - 118		
4-Bromofluorobenzene (S)	94.6	%				94.6	91.4	85 - 114		
Dibromofluoromethane (S)	90.1	%				90.1	89.1	80 - 119		
Toluene-d8 (S)	92.2	%				92.2	91.3	89 - 112		

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QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189183 **Analysis Method:** EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: 2240568001

LABORATORY CONTROL SAMPLE: 2560605

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Chloride	99.6	mg/L	20	19.9	87 - 111
Nitrate-N	98.8	mg/L	2.5	2.5	88 - 111
Sulfate	98.8	mg/L	20	19.8	87 - 112

METHOD BLANK: 2561312

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.16J	mg/L	1.0
Nitrate-N	0.030U	mg/L	0.10
Sulfate	0.25U	mg/L	1.0

METHOD BLANK: 2561314

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.18J	mg/L	1.0
Nitrate-N	0.030U	mg/L	0.10
Sulfate	0.25U	mg/L	1.0

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QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189294 **Analysis Method:** S5310B-00

QC Batch Method: 415.1/9060/5310B

Associated Lab Samples: 2240568001

METHOD BLANK: 2561945

Parameter	Blank Result	Units	Reporting Limit
Total Organic Carbon (TOC)	0.50U	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2561946

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Total Organic Carbon (TOC)	94	mg/L	1	0.94J	85 - 115

MATRIX SPIKE: 2561947 DUPLICATE: 2561948 ORIGINAL: 2241233002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	2.105	mg/L	6	8.081	8.076	99.6	99.5	85 - 115	.06	20

MATRIX SPIKE: 2561949 DUPLICATE: 2561950 ORIGINAL: 2240944005

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	.453	mg/L	6	6.836	6.896	106	107	85 - 115	.87	20

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QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189460 **Analysis Method:** S2320B-97

QC Batch Method: S2320B-97

Associated Lab Samples: 2240568001

METHOD BLANK: 2563823

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	0.8J	mg/L	5

SAMPLE DUPLICATE: 2563828 ORIGINAL: 2240065001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	294.03738	mg/L	296.29663	.77	20

METHOD BLANK: 2563831

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563832 ORIGINAL: 2240065007

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	353.76736	mg/L	353.98969	.06	20

METHOD BLANK: 2563835

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2563836 ORIGINAL: 2240294001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD

QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Alkalinity, Total	11.2908	mg/L	11.38041	.79	20

METHOD BLANK: 2563839

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563840 ORIGINAL: 2240390001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	248.5239	mg/L	250.80768	.91	20

METHOD BLANK: 2563843

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563844 ORIGINAL: 2240390007

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	304.23474	mg/L	297.21426	2.33	20

METHOD BLANK: 2563847

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563848 ORIGINAL: 2240579002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	1685.5798	mg/L	1679.1334	.38	20

QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2563851

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563852 ORIGINAL: 2240579012

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	89.55153	mg/L	88.90566	.72	20

METHOD BLANK: 2563855

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563856 ORIGINAL: 2240944001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	393.44736	mg/L	374.78769	4.86	20

METHOD BLANK: 2563859

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563860 ORIGINAL: 2240944002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	362.20197	mg/L	354.17712	2.24	20

QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2563863

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563864 ORIGINAL: 2240944003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	321.12653	mg/L	326.44897	1.64	20

METHOD BLANK: 2563867

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563868 ORIGINAL: 2240948002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	254.48465	mg/L	265.28781	4.16	20

METHOD BLANK: 2563871

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2563872 ORIGINAL: 2240948003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	170.76804	mg/L	176.21523	3.14	20

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QUALITY CONTROL DATA

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2563875

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	5U	mg/L	5

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2240568001	MW-16 062017			EPA 300.0	WETC/189183
2240568001	MW-16 062017			S5310B-00	WETC/189294
2240568001	MW-16 062017			RSK 175	SVGC/45820
2240568001	MW-16 062017			S2320B-97	WETC/189460
2240568001	MW-16 062017			SW846 8260C	VOMS/43775
2240568002	MW-7 062017			SW846 8260C	VOMS/43775
2240568003	MW-6 062017			SW846 8260C	VOMS/43775
2240568004	MW-9 062017			SW846 8260C	VOMS/43775
2240568005	DUP-1 062017			SW846 8260C	VOMS/43775
2240568006	Trip Blank			SW846 8260C	VOMS/43775

Saturday, July 01, 2017 5:24:18 PM
Page 22 of 22

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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2240568

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM 40 British American Blvd Latham NY 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 | 1 | 1 | 0 | 0

NUMBER OF CONTAINERS

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	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)	REMARKS/ ALTERNATE DESCRIPTION
MW-16 062017		6/20/17	1005	GW	X	X	X	X	X			
MW-7 062017			1240		X							
MW-6 062017			1437		X							Extra volume collected for MS/MSD
MW-3 062017			1456		X							
Dup-1 062017			—		X							
Trip Blank		—	—	AQ	X							

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/C
Metals

See QAPP ☒

STATE WHERE SAMPLE

	Y	N	Initials: DNN	Cooler Temp: 4 °C
Custody Seals Present?	✓			
(if present) Seals Intact?	✓		Cooler #:	
Received on Ice?	✓			
COC/Lbls Complete	✓		Therm ID: 201	
Cont in Good Cond?	✓			
Correct Containers?	✓		Ship Carrier:	
Correct Samp Vol?	✓			
Correct Preservation?	✓		FedEx UPS	
Headspace/Volatiles?		✓	DHL	

Tracking #: 6470 8360 1045

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 1 day ___ 2 day ___ 3 day
___ 4 day ___ 5 day
Standard
REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
___ I. Results Only See QAPP
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data See QAPP
Edata X Yes ___ No

INVOICE INFORMATION
PO # 60440641
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham, NY 12110

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Chris French	Signature: Brian McGuirk	Signature: Brian McGuirk	Signature:
Printed Name: Chris French	Printed Name: Brian McGuirk	Printed Name: Brian McGuirk	Printed Name:
Firm: AECOM	Firm: ALS	Firm: ALS	Firm:
Date/Time: 6/20/17 1515	Date/Time: 6/20/17 2015	Date/Time: 6/21/17 1700	Date/Time:
Signature:	Signature: Brian Neal	Signature:	Signature:
Printed Name:	Printed Name: Brian Neal	Printed Name:	Printed Name:
Firm:	Firm: ALS	Firm:	Firm:
Date/Time:	Date/Time: 6/22/17 845	Date/Time:	Date/Time:

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

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July 5, 2017

Mr. John Santacroce
AECOM - LATHAM NY
40 British American Blvd.
Albany, NY 12210

Certificate of Analysis

Project Name:	**2015-SCOTIA NAVY DEPOT-PO**	Workorder:	**2240572**
Purchase Order:	**66432/60440641.11**	Workorder ID:	**ASN021|2015-SCOTIA NAVY DEPOT-**

Dear Mr. Santacroce:

Enclosed are the analytical results for samples received by the laboratory on Thursday, June 22, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Kelly Lurie , Mr. Scott Underhill

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Vicki Forney

Mrs. Vicki A. Forney
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2240572001	MW-5 062017	Ground Water	6/20/2017 16:11	6/22/2017 08:55	Collected by Client
2240572002	GEP-4 062117	Ground Water	6/21/2017 10:15	6/22/2017 08:55	Collected by Client
2240572003	GEP-2 062112	Ground Water	6/21/2017 10:51	6/22/2017 08:55	Collected by Client
2240572004	MW-15 062117	Ground Water	6/21/2017 11:10	6/22/2017 08:55	Collected by Client
2240572005	MW-18 062117	Ground Water	6/21/2017 13:21	6/22/2017 08:55	Collected by Client
2240572006	MW-25 062117	Ground Water	6/21/2017 13:25	6/22/2017 08:55	Collected by Client
2240572007	MW-19 062117	Ground Water	6/21/2017 15:14	6/22/2017 08:55	Collected by Client
2240572008	MW-14 062117	Ground Water	6/21/2017 15:20	6/22/2017 08:55	Collected by Client
2240572009	Trip Blank	Ground Water	6/22/2017 08:55	6/22/2017 08:55	Collected by Client

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572001** Date Collected: 6/20/2017 16:11 Matrix: Ground Water

Sample ID: **MW-5 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
1,1,1-Trichloroethane	0.41J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
Trichloroethene	0.58J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:59	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	97.5		%	81 - 118	SW846 8260C			6/30/17 00:59	CJG	A
4-Bromofluorobenzene (S)	94.4		%	85 - 114	SW846 8260C			6/30/17 00:59	CJG	A
Dibromofluoromethane (S)	85.8		%	80 - 119	SW846 8260C			6/30/17 00:59	CJG	A
Toluene-d8 (S)	94.4		%	89 - 112	SW846 8260C			6/30/17 00:59	CJG	A

Vicki Forney

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572002** Date Collected: 6/21/2017 10:15 Matrix: Ground Water

Sample ID: **GEP-4 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Tetrachloroethene	0.80J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,1-Trichloroethane	4.7		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Trichloroethene	72.4		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C			6/30/17 01:22	CJG	A
4-Bromofluorobenzene (S)	94.4		%	85 - 114	SW846 8260C			6/30/17 01:22	CJG	A
Dibromofluoromethane (S)	85.6		%	80 - 119	SW846 8260C			6/30/17 01:22	CJG	A
Toluene-d8 (S)	93.1		%	89 - 112	SW846 8260C			6/30/17 01:22	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572003** Date Collected: 6/21/2017 10:51 Matrix: Ground Water

Sample ID: **GEP-2 062112** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
1,1-Dichloroethane	0.68J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
1,1-Dichloroethene	1.1		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
cis-1,2-Dichloroethene	1.8		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
Tetrachloroethene	3.2		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
1,1,1-Trichloroethane	16.3		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
Trichloroethene	167		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 19:23	TMP	B

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118	SW846 8260C			7/3/17 19:23	TMP	B
4-Bromofluorobenzene (S)	112		%	85 - 114	SW846 8260C			7/3/17 19:23	TMP	B
Dibromofluoromethane (S)	94.9		%	80 - 119	SW846 8260C			7/3/17 19:23	TMP	B
Toluene-d8 (S)	99		%	89 - 112	SW846 8260C			7/3/17 19:23	TMP	B

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572004** Date Collected: 6/21/2017 11:10 Matrix: Ground Water

Sample ID: **MW-15 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Tetrachloroethene	0.66J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,1-Trichloroethane	3.8		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Trichloroethene	122	1,2	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118			SW846 8260C		6/30/17 02:07	CJG	A
4-Bromofluorobenzene (S)	94		%	85 - 114			SW846 8260C		6/30/17 02:07	CJG	A
Dibromofluoromethane (S)	87.1		%	80 - 119			SW846 8260C		6/30/17 02:07	CJG	A
Toluene-d8 (S)	92.4		%	89 - 112			SW846 8260C		6/30/17 02:07	CJG	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 01:46	EGO	D
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 01:46	EGO	D
Methane	0.25J	J	ug/L	0.50	0.25	0.13	RSK 175		6/28/17 01:46	EGO	D
WET CHEMISTRY											
Alkalinity, Total	217	3	mg/L	5	5	0.8	S2320B-97		6/29/17 19:19	MSA	I
Chloride	40.1		mg/L	2.0	0.50	0.16	EPA 300.0		6/23/17 10:54	CHW	H
Nitrate-N	0.52		mg/L	0.20	0.060	0.020	EPA 300.0		6/23/17 10:54	CHW	H
Sulfate	20.5		mg/L	2.0	0.50	0.20	EPA 300.0		6/23/17 10:54	CHW	H
Total Organic Carbon (TOC)	0.21J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/26/17 10:15	PAG	H

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572005** Date Collected: 6/21/2017 13:21 Matrix: Ground Water

Sample ID: **MW-18 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Tetrachloroethene	1.8		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,1-Trichloroethane	2.4		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Trichloroethene	117		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118	SW846 8260C		6/30/17 02:29	CJG	A
4-Bromofluorobenzene (S)	94.9		%	85 - 114	SW846 8260C		6/30/17 02:29	CJG	A
Dibromofluoromethane (S)	87.8		%	80 - 119	SW846 8260C		6/30/17 02:29	CJG	A
Toluene-d8 (S)	93.1		%	89 - 112	SW846 8260C		6/30/17 02:29	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572006** Date Collected: 6/21/2017 13:25 Matrix: Ground Water

Sample ID: **MW-25 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Trichloroethene	76.7		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118	SW846 8260C		6/30/17 02:52	CJG	A
4-Bromofluorobenzene (S)	94.1		%	85 - 114	SW846 8260C		6/30/17 02:52	CJG	A
Dibromofluoromethane (S)	88.1		%	80 - 119	SW846 8260C		6/30/17 02:52	CJG	A
Toluene-d8 (S)	91.9		%	89 - 112	SW846 8260C		6/30/17 02:52	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572007** Date Collected: 6/21/2017 15:14 Matrix: Ground Water

Sample ID: **MW-19 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,1-Trichloroethane	2.9		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Trichloroethene	14.3		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118	SW846 8260C		6/30/17 03:15	CJG	A
4-Bromofluorobenzene (S)	96.4		%	85 - 114	SW846 8260C		6/30/17 03:15	CJG	A
Dibromofluoromethane (S)	87.8		%	80 - 119	SW846 8260C		6/30/17 03:15	CJG	A
Toluene-d8 (S)	93.4		%	89 - 112	SW846 8260C		6/30/17 03:15	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572008** Date Collected: 6/21/2017 15:20 Matrix: Ground Water

Sample ID: **MW-14 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
cis-1,2-Dichloroethene	0.85J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
Tetrachloroethene	10.5		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
1,1,1-Trichloroethane	1.2		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
Trichloroethene	2.4		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 03:37	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C			6/30/17 03:37	CJG	A
4-Bromofluorobenzene (S)	94.7		%	85 - 114	SW846 8260C			6/30/17 03:37	CJG	A
Dibromofluoromethane (S)	86.1		%	80 - 119	SW846 8260C			6/30/17 03:37	CJG	A
Toluene-d8 (S)	92.2		%	89 - 112	SW846 8260C			6/30/17 03:37	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572009** Date Collected: 6/22/2017 08:55 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:36	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118			SW846 8260C			6/30/17 00:36	CJG	A
4-Bromofluorobenzene (S)	97		%	85 - 114			SW846 8260C			6/30/17 00:36	CJG	A
Dibromofluoromethane (S)	87.6		%	80 - 119			SW846 8260C			6/30/17 00:36	CJG	A
Toluene-d8 (S)	94.6		%	89 - 112			SW846 8260C			6/30/17 00:36	CJG	A

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2240572004	1	MW-15 062117	SW846 8260C	Trichloroethene
The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Trichloroethene. The % Recovery was reported as 70.3 and the control limits were 79 to 123.				
2240572004	2	MW-15 062117	SW846 8260C	Trichloroethene
The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Trichloroethene. The % Recovery was reported as 71.4 and the control limits were 79 to 123.				
2240572004	3	MW-15 062117	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

QC Batch: SVGC/45820 **Analysis Method:** RSK 175

QC Batch Method: RSK 175

Associated Lab Samples: 2240572004

METHOD BLANK: 2563120

Parameter	Blank Result	Units	Reporting Limit
Ethane	0.50U	ug/L	1.0
Ethene	0.75U	ug/L	1.5
Methane	0.31J	ug/L	0.50

SAMPLE DUPLICATE: 2563121 ORIGINAL: 2240568001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Ethane	0	ug/L	0	NC	20
Ethene	0	ug/L	0	NC	20
Methane	.19	ug/L	.34	56.6*	20

SAMPLE DUPLICATE: 2563122 ORIGINAL: 2241674008

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Ethane	2.71	ug/L	2.78	2.55	20
Ethene	3.21	ug/L	3.3	2.76	20
Methane	56.47	ug/L	57.67	2.1	20

QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43785 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2240572001, 2240572002, 2240572003, 2240572004, 2240572005, 2240572006, 2240572007, 2240572008, 2240572009

METHOD BLANK: 2564628

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	96.9	%	81 - 118
4-Bromofluorobenzene (S)	92.7	%	85 - 114
Dibromofluoromethane (S)	84.5	%	80 - 119
Toluene-d8 (S)	91	%	89 - 112

LABORATORY CONTROL SAMPLE: 2564629

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	90.6	ug/L	20	18.1	72 - 136
1,1-Dichloroethane	96.9	ug/L	20	19.4	77 - 125
1,2-Dichloroethane	93.9	ug/L	20	18.8	73 - 128
1,1-Dichloroethene	105	ug/L	20	21.0	71 - 131
cis-1,2-Dichloroethene	97.3	ug/L	20	19.5	78 - 123
trans-1,2-Dichloroethene	100	ug/L	20	20.1	75 - 124
1,1,1,2-Tetrachloroethane	95.4	ug/L	20	19.1	78 - 124
1,1,2,2-Tetrachloroethane	94.5	ug/L	20	18.9	71 - 121
Tetrachloroethene	90.4	ug/L	20	18.1	74 - 129
Toluene	100	ug/L	20	20.1	80 - 121
1,1,1-Trichloroethane	93.9	ug/L	20	18.8	74 - 131
1,1,2-Trichloroethane	93.8	ug/L	20	18.8	80 - 119
Trichloroethene	94.5	ug/L	20	18.9	79 - 123

QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Vinyl Chloride	94.8	ug/L	20	19.0	58 - 137
1,2-Dichloroethane-d4 (S)	98.6	%			81 - 118
4-Bromofluorobenzene (S)	92.1	%			85 - 114
Dibromofluoromethane (S)	88.1	%			80 - 119
Toluene-d8 (S)	90.8	%			89 - 112

MATRIX SPIKE: 2564759 DUPLICATE: 2564760 ORIGINAL: 2240572004

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	20.2456	20.5023	101	103	72 - 136	1.26	30
1,1-Dichloroethane	0	ug/L	20	21.1632	20.8811	106	104	77 - 125	1.34	30
1,2-Dichloroethane	0	ug/L	20	19.6496	19.4085	98.2	97	73 - 128	1.23	30
1,1-Dichloroethene	.32284	ug/L	20	23.9662	23.8752	118	118	71 - 131	.38	30
cis-1,2-Dichloroethene	0	ug/L	20	20.6008	20.9033	103	105	78 - 123	1.46	30
trans-1,2-Dichloroethene	0	ug/L	20	22.7381	22.7295	114	114	75 - 124	.04	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	19.4947	19.8245	97.5	99.1	78 - 124	1.68	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	19.7545	19.7808	98.8	98.9	71 - 121	.13	30
Tetrachloroethene	.66078	ug/L	20	20.0919	20.8471	97.2	101	74 - 129	3.69	30
Toluene	0	ug/L	20	21.6964	21.6638	108	108	80 - 121	.15	30
1,1,1-Trichloroethane	3.78659	ug/L	20	23.644	24.0627	99.3	101	74 - 131	1.76	30
1,1,2-Trichloroethane	0	ug/L	20	19.7087	19.6181	98.5	98.1	80 - 119	.46	30
Trichloroethene	122.242	ug/L	20	136.295	136.517	NC	NC	79 - 123	.16	30
Vinyl Chloride	0	ug/L	20	20.0439	19.6195	100	98.1	58 - 137	2.14	30
1,2-Dichloroethane-d4 (S)	93.3	%				93.3	97.6	81 - 118		
4-Bromofluorobenzene (S)	91.9	%				91.9	90.9	85 - 114		
Dibromofluoromethane (S)	86.2	%				86.2	87.8	80 - 119		
Toluene-d8 (S)	90.1	%				90.1	91.2	89 - 112		

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QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43807 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2240572003

METHOD BLANK: 2566003

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	113	%	81 - 118
4-Bromofluorobenzene (S)	113	%	85 - 114
Dibromofluoromethane (S)	94	%	80 - 119
Toluene-d8 (S)	99.2	%	89 - 112

LABORATORY CONTROL SAMPLE: 2566004

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	98.6	ug/L	20	19.7	72 - 136
1,1-Dichloroethane	101	ug/L	20	20.3	77 - 125
1,2-Dichloroethane	95.2	ug/L	20	19.0	73 - 128
1,1-Dichloroethene	113	ug/L	20	22.5	71 - 131
cis-1,2-Dichloroethene	106	ug/L	20	21.2	78 - 123
trans-1,2-Dichloroethene	109	ug/L	20	21.7	75 - 124
1,1,1,2-Tetrachloroethane	100	ug/L	20	20.0	78 - 124
1,1,2,2-Tetrachloroethane	98.2	ug/L	20	19.6	71 - 121
Tetrachloroethene	96.3	ug/L	20	19.3	74 - 129
Toluene	103	ug/L	20	20.7	80 - 121
1,1,1-Trichloroethane	98.7	ug/L	20	19.7	74 - 131
1,1,2-Trichloroethane	96.5	ug/L	20	19.3	80 - 119
Trichloroethene	98.3	ug/L	20	19.7	79 - 123

QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Vinyl Chloride	91.3	ug/L	20	18.3	58 - 137
1,2-Dichloroethane-d4 (S)	104	%			81 - 118
4-Bromofluorobenzene (S)	112	%			85 - 114
Dibromofluoromethane (S)	94.8	%			80 - 119
Toluene-d8 (S)	98	%			89 - 112

MATRIX SPIKE: 2566191 DUPLICATE: 2566192 ORIGINAL: 2241674006

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	21.243	19.9754	106	99.9	72 - 136	6.15	30
1,1-Dichloroethane	0	ug/L	20	21.8391	20.7828	109	104	77 - 125	4.96	30
1,2-Dichloroethane	0	ug/L	20	19.8609	18.9109	99.3	94.6	73 - 128	4.9	30
1,1-Dichloroethene	0	ug/L	20	24.3646	23.3216	122	117	71 - 131	4.37	30
cis-1,2-Dichloroethene	0	ug/L	20	23.1462	22.2473	116	111	78 - 123	3.96	30
trans-1,2-Dichloroethene	0	ug/L	20	23.899	22.3231	119	112	75 - 124	6.82	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	20.1224	19.8273	101	99.1	78 - 124	1.48	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	20.48	20.8194	102	104	71 - 121	1.64	30
Tetrachloroethene	0	ug/L	20	19.1185	18.8493	95.6	94.2	74 - 129	1.42	30
Toluene	0	ug/L	20	20.7909	20.111	104	101	80 - 121	3.32	30
1,1,1-Trichloroethane	0	ug/L	20	21.3777	20.5456	107	103	74 - 131	3.97	30
1,1,2-Trichloroethane	0	ug/L	20	19.0145	18.6582	95.1	93.3	80 - 119	1.89	30
Trichloroethene	152.439	ug/L	20	176.096	166.682	NC	NC	79 - 123	5.49	30
Vinyl Chloride	0	ug/L	20	24.1759	22.3778	121	112	58 - 137	7.72	30
1,2-Dichloroethane-d4 (S)	116	%				116	111	81 - 118		
4-Bromofluorobenzene (S)	109	%				109	108	85 - 114		
Dibromofluoromethane (S)	94.9	%				94.9	93.4	80 - 119		
Toluene-d8 (S)	92.3	%				92.3	93.8	89 - 112		

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QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189185 **Analysis Method:** EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: 2240572004

LABORATORY CONTROL SAMPLE: 2560615

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Chloride	100	mg/L	20	20.1	87 - 111
Nitrate-N	102	mg/L	2.5	2.5	88 - 111
Sulfate	101	mg/L	20	20.2	87 - 112

METHOD BLANK: 2561316

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.12J	mg/L	1.0
Nitrate-N	0.030U	mg/L	0.10
Sulfate	0.25U	mg/L	1.0

METHOD BLANK: 2561318

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.13J	mg/L	1.0
Nitrate-N	0.030U	mg/L	0.10
Sulfate	0.25U	mg/L	1.0

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QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189294 **Analysis Method:** S5310B-00

QC Batch Method: 415.1/9060/5310B

Associated Lab Samples: 2240572004

METHOD BLANK: 2561945

Parameter	Blank Result	Units	Reporting Limit
Total Organic Carbon (TOC)	0.50U	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2561946

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Total Organic Carbon (TOC)	94	mg/L	1	0.94J	85 - 115

MATRIX SPIKE: 2561947 DUPLICATE: 2561948 ORIGINAL: 2241233002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	2.105	mg/L	6	8.081	8.076	99.6	99.5	85 - 115	.06	20

MATRIX SPIKE: 2561949 DUPLICATE: 2561950 ORIGINAL: 2240944005

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	.453	mg/L	6	6.836	6.896	106	107	85 - 115	.87	20

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QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189460 **Analysis Method:** S2320B-97

QC Batch Method: S2320B-97

Associated Lab Samples: 2240572004

METHOD BLANK: 2563823

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	0.8J	mg/L	5

SAMPLE DUPLICATE: 2563828 ORIGINAL: 2240065001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	294.03738	mg/L	296.29663	.77	20

METHOD BLANK: 2563831

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563832 ORIGINAL: 2240065007

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	353.76736	mg/L	353.98969	.06	20

METHOD BLANK: 2563835

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2563836 ORIGINAL: 2240294001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD

QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Alkalinity, Total	11.2908	mg/L	11.38041	.79	20

METHOD BLANK: 2563839

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563840 ORIGINAL: 2240390001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	248.5239	mg/L	250.80768	.91	20

METHOD BLANK: 2563843

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563844 ORIGINAL: 2240390007

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	304.23474	mg/L	297.21426	2.33	20

METHOD BLANK: 2563847

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563848 ORIGINAL: 2240579002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	1685.5798	mg/L	1679.1334	.38	20

QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2563851

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563852 ORIGINAL: 2240579012

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	89.55153	mg/L	88.90566	.72	20

METHOD BLANK: 2563855

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563856 ORIGINAL: 2240944001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	393.44736	mg/L	374.78769	4.86	20

METHOD BLANK: 2563859

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563860 ORIGINAL: 2240944002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	362.20197	mg/L	354.17712	2.24	20

QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2563863

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563864 ORIGINAL: 2240944003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	321.12653	mg/L	326.44897	1.64	20

METHOD BLANK: 2563867

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2563868 ORIGINAL: 2240948002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	254.48465	mg/L	265.28781	4.16	20

METHOD BLANK: 2563871

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2563872 ORIGINAL: 2240948003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	170.76804	mg/L	176.21523	3.14	20

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QUALITY CONTROL DATA

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2563875

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	5U	mg/L	5

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2240572004	MW-15 062117			EPA 300.0	WETC/189185
2240572004	MW-15 062117			S5310B-00	WETC/189294
2240572004	MW-15 062117			RSK 175	SVGC/45820
2240572004	MW-15 062117			S2320B-97	WETC/189460
2240572001	MW-5 062017			SW846 8260C	VOMS/43785
2240572002	GEP-4 062117			SW846 8260C	VOMS/43785
2240572004	MW-15 062117			SW846 8260C	VOMS/43785
2240572005	MW-18 062117			SW846 8260C	VOMS/43785
2240572006	MW-25 062117			SW846 8260C	VOMS/43785
2240572007	MW-19 062117			SW846 8260C	VOMS/43785
2240572008	MW-14 062117			SW846 8260C	VOMS/43785
2240572009	Trip Blank			SW846 8260C	VOMS/43785
2240572003	GEP-2 062112			SW846 8260C	VOMS/43807

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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2240572

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM 40 British American Blvd Latham NY 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 | 1 | 1 | 0 | 0

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP $260 C	GC/MS SVOAs ◦ 8270 ◦ 625 RSK 175	GC VOAs ◦ 8021 ◦ 601/602 TOC	PESTICIDES ◦ 8081 ◦ 608 Alkalinity	PCBs ◦ 8082 ◦ 608 Cl, SO4, NO2	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)
MW-5 062017 (DUP)		6/20/17	1611	GW	X							
(CLP) GEP-4 062117		6/21/17	1015		X							
GEP-2 062117			1051		X							
MW-15 062117			1110		X	X	X	X	X			
MW-18 062117			1321		X							
MW-25 062117			1325		X							
MW-19 062117			1514		X							
MW-14 062117			1520		X							
Trip Blank		—	—	AQ	X							

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 _____

REMARKS/ ALTERNATE DESCRIPTION

	Y	N	Initials	Cooler Temp:
Custody Seals Present?			DMN	2.1 °C
(if present) Seals Intact?				Cooler #:
Received on Ice?				
COC/Labels Complete				Therm ID: 2
Cont in Good Cond?				
Correct Containers?				Ship Carrier:
Correct Samp Vol?				FedEx UPS
Correct Preservation?				DHL
Headspace/Volatiles?				

Tracking #: 6470 8310 1041

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☒

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
Standard
REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
____ I. Results Only See QAPP
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data See QAPP
Edata ✓ Yes ____ No

INVOICE INFORMATION
PO # 60440641
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham NY 12110

RELINQUISHED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature: Brian McGuirk	Signature:	Signature	Signature
Printed Name: Chris French	Printed Name: BRIAN McGUIRK	Printed Name: David Nosi	Printed Name	Printed Name
Firm: AECOM	Firm: ALS	Firm: ALS	Firm	Firm
Date/Time: 6/21/17 1535	Date/Time: 6/22/17 1342	Date/Time: 6/22/17 9:55	Date/Time	Date/Time

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

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July 5, 2017

Mr. John Santacroce
AECOM - LATHAM NY
40 British American Blvd.
Albany, NY 12210

Certificate of Analysis

Project Name:	**2015-SCOTIA NAVY DEPOT-PO**	Workorder:	**2241456**
Purchase Order:	**66432/60440641.11**	Workorder ID:	**2015-SCOTIA NAVY DEPOT-PO 6044**

Dear Mr. Santacroce:

Enclosed are the analytical results for samples received by the laboratory on Saturday, June 24, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Kelly Lurie , Mr. Scott Underhill

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Vicki Forney

Mrs. Vicki A. Forney
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2241456001	MW-23 062217	Ground Water	6/22/2017 09:40	6/24/2017 09:38	Collected by Client
2241456002	MWB-23 062217	Ground Water	6/22/2017 11:46	6/24/2017 09:38	Collected by Client
2241456003	MW-36 062217	Ground Water	6/22/2017 13:45	6/24/2017 09:38	Collected by Client
2241456004	MW-22 062217	Ground Water	6/22/2017 13:46	6/24/2017 09:38	Collected by Client
2241456005	MW-20 062217	Ground Water	6/22/2017 15:05	6/24/2017 09:38	Collected by Client
2241456006	DUP-2 062217	Ground Water	6/22/2017 00:00	6/24/2017 09:38	Collected by Client
2241456007	GEP-3 062317	Ground Water	6/23/2017 09:05	6/24/2017 09:38	Collected by Client
2241456008	GEP-1 062317	Ground Water	6/23/2017 09:40	6/24/2017 09:38	Collected by Client
2241456009	MW-17 062317	Ground Water	6/23/2017 10:50	6/24/2017 09:38	Collected by Client
2241456010	MW-27 062317	Ground Water	6/23/2017 12:46	6/24/2017 09:38	Collected by Client
2241456011	Trip Blank	Ground Water	6/24/2017 09:38	6/24/2017 09:38	Collected by Client

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SAMPLE SUMMARY

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456001** Date Collected: 6/22/2017 09:40 Matrix: Ground Water

Sample ID: **MW-23 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:00	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	105		%	81 - 118			SW846 8260C			6/30/17 04:00	CJG	A
4-Bromofluorobenzene (S)	95.4		%	85 - 114			SW846 8260C			6/30/17 04:00	CJG	A
Dibromofluoromethane (S)	88.7		%	80 - 119			SW846 8260C			6/30/17 04:00	CJG	A
Toluene-d8 (S)	92.8		%	89 - 112			SW846 8260C			6/30/17 04:00	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456002** Date Collected: 6/22/2017 11:46 Matrix: Ground Water

Sample ID: **MWB-23 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Tetrachloroethene	3.9		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	102		%	81 - 118	SW846 8260C		6/30/17 04:23	CJG	A
4-Bromofluorobenzene (S)	95.9		%	85 - 114	SW846 8260C		6/30/17 04:23	CJG	A
Dibromofluoromethane (S)	86.9		%	80 - 119	SW846 8260C		6/30/17 04:23	CJG	A
Toluene-d8 (S)	93.6		%	89 - 112	SW846 8260C		6/30/17 04:23	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456003** Date Collected: 6/22/2017 13:45 Matrix: Ground Water

Sample ID: **MW-36 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
Trichloroethene	0.81J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 04:46	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C			6/30/17 04:46	CJG	A
4-Bromofluorobenzene (S)	95		%	85 - 114	SW846 8260C			6/30/17 04:46	CJG	A
Dibromofluoromethane (S)	86.7		%	80 - 119	SW846 8260C			6/30/17 04:46	CJG	A
Toluene-d8 (S)	92.3		%	89 - 112	SW846 8260C			6/30/17 04:46	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456004** Date Collected: 6/22/2017 13:46 Matrix: Ground Water

Sample ID: **MW-22 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
1,1-Dichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
1,2-Dichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
1,1-Dichloroethene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
cis-1,2-Dichloroethene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
trans-1,2-Dichloroethene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
1,1,1,2-Tetrachloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
1,1,2,2-Tetrachloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
Tetrachloroethene	3.8J	J	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
Toluene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
1,1,1-Trichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
1,1,2-Trichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
Trichloroethene	238		ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B
Vinyl Chloride	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C			7/3/17 19:46	TMP	B

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	112		%	81 - 118	SW846 8260C			7/3/17 19:46	TMP	B
4-Bromofluorobenzene (S)	114		%	85 - 114	SW846 8260C			7/3/17 19:46	TMP	B
Dibromofluoromethane (S)	93.9		%	80 - 119	SW846 8260C			7/3/17 19:46	TMP	B
Toluene-d8 (S)	97.9		%	89 - 112	SW846 8260C			7/3/17 19:46	TMP	B

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456005** Date Collected: 6/22/2017 15:05 Matrix: Ground Water

Sample ID: **MW-20 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
Tetrachloroethene	3.7		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
Trichloroethene	86.8		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:31	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.5		%	81 - 118			SW846 8260C			6/30/17 05:31	CJG	A
4-Bromofluorobenzene (S)	94.8		%	85 - 114			SW846 8260C			6/30/17 05:31	CJG	A
Dibromofluoromethane (S)	85.6		%	80 - 119			SW846 8260C			6/30/17 05:31	CJG	A
Toluene-d8 (S)	93		%	89 - 112			SW846 8260C			6/30/17 05:31	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456006** Date Collected: 6/22/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-2 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:54	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	98.7		%	81 - 118	SW846 8260C		6/30/17 05:54	CJG	A
4-Bromofluorobenzene (S)	93.2		%	85 - 114	SW846 8260C		6/30/17 05:54	CJG	A
Dibromofluoromethane (S)	84.7		%	80 - 119	SW846 8260C		6/30/17 05:54	CJG	A
Toluene-d8 (S)	92		%	89 - 112	SW846 8260C		6/30/17 05:54	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456007** Date Collected: 6/23/2017 09:05 Matrix: Ground Water

Sample ID: **GEP-3 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
Tetrachloroethene	0.57J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
1,1,1-Trichloroethane	1.2		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
Trichloroethene	131		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 06:16	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	105		%	81 - 118	SW846 8260C			6/30/17 06:16	CJG	A
4-Bromofluorobenzene (S)	94.3		%	85 - 114	SW846 8260C			6/30/17 06:16	CJG	A
Dibromofluoromethane (S)	88.3		%	80 - 119	SW846 8260C			6/30/17 06:16	CJG	A
Toluene-d8 (S)	95.1		%	89 - 112	SW846 8260C			6/30/17 06:16	CJG	A

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456008** Date Collected: 6/23/2017 09:40 Matrix: Ground Water

Sample ID: **GEP-1 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
Tetrachloroethene	0.45J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
1,1,1-Trichloroethane	3.3		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
Trichloroethene	152		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:09	TMP	B

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	114		%	81 - 118	SW846 8260C		7/3/17 20:09	TMP	B
4-Bromofluorobenzene (S)	115	1	%	85 - 114	SW846 8260C		7/3/17 20:09	TMP	B
Dibromofluoromethane (S)	94.8		%	80 - 119	SW846 8260C		7/3/17 20:09	TMP	B
Toluene-d8 (S)	98.5		%	89 - 112	SW846 8260C		7/3/17 20:09	TMP	B

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456009** Date Collected: 6/23/2017 10:50 Matrix: Ground Water

Sample ID: **MW-17 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1-Dichloroethane	1.1		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
cis-1,2-Dichloroethene	2.1		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,1-Trichloroethane	22.0		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Trichloroethene	35.2		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.6		%	81 - 118	SW846 8260C		6/30/17 07:02	CJG	A
4-Bromofluorobenzene (S)	93.7		%	85 - 114	SW846 8260C		6/30/17 07:02	CJG	A
Dibromofluoromethane (S)	86.1		%	80 - 119	SW846 8260C		6/30/17 07:02	CJG	A
Toluene-d8 (S)	93		%	89 - 112	SW846 8260C		6/30/17 07:02	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456010** Date Collected: 6/23/2017 12:46 Matrix: Ground Water

Sample ID: **MW-27 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1-Dichloroethene	0.51J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,2-Trichloroethane	0.73J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
Trichloroethene	211		ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 20:32	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C		6/30/17 07:24	CJG	A
1,2-Dichloroethane-d4 (S)	113		%	81 - 118	SW846 8260C		7/3/17 20:32	TMP	B
4-Bromofluorobenzene (S)	111		%	85 - 114	SW846 8260C		7/3/17 20:32	TMP	B
4-Bromofluorobenzene (S)	94.4		%	85 - 114	SW846 8260C		6/30/17 07:24	CJG	A
Dibromofluoromethane (S)	94.1		%	80 - 119	SW846 8260C		7/3/17 20:32	TMP	B
Dibromofluoromethane (S)	86.7		%	80 - 119	SW846 8260C		6/30/17 07:24	CJG	A
Toluene-d8 (S)	94.1		%	89 - 112	SW846 8260C		6/30/17 07:24	CJG	A
Toluene-d8 (S)	97.3		%	89 - 112	SW846 8260C		7/3/17 20:32	TMP	B

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456011** Date Collected: 6/24/2017 09:38 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 00:13	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	97.8		%	81 - 118			SW846 8260C			6/30/17 00:13	CJG	A
4-Bromofluorobenzene (S)	93.5		%	85 - 114			SW846 8260C			6/30/17 00:13	CJG	A
Dibromofluoromethane (S)	85.8		%	80 - 119			SW846 8260C			6/30/17 00:13	CJG	A
Toluene-d8 (S)	93.4		%	89 - 112			SW846 8260C			6/30/17 00:13	CJG	A

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2241456008	1	GEP-1 062317	SW846 8260C	4-Bromofluorobenzene

The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 115 and the control limits were 85 to 114. This result was reported at a dilution of 1.

QUALITY CONTROL DATA

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

QC Batch: VOMS/43785 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2241456001, 2241456002, 2241456003, 2241456004, 2241456005, 2241456006, 2241456007, 2241456008, 2241456009, 2241456010, 2241456011

METHOD BLANK: 2564628

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	96.9	%	81 - 118
4-Bromofluorobenzene (S)	92.7	%	85 - 114
Dibromofluoromethane (S)	84.5	%	80 - 119
Toluene-d8 (S)	91	%	89 - 112

LABORATORY CONTROL SAMPLE: 2564629

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	90.6	ug/L	20	18.1	72 - 136
1,1-Dichloroethane	96.9	ug/L	20	19.4	77 - 125
1,2-Dichloroethane	93.9	ug/L	20	18.8	73 - 128
1,1-Dichloroethene	105	ug/L	20	21.0	71 - 131
cis-1,2-Dichloroethene	97.3	ug/L	20	19.5	78 - 123
trans-1,2-Dichloroethene	100	ug/L	20	20.1	75 - 124
1,1,1,2-Tetrachloroethane	95.4	ug/L	20	19.1	78 - 124
1,1,2,2-Tetrachloroethane	94.5	ug/L	20	18.9	71 - 121
Tetrachloroethene	90.4	ug/L	20	18.1	74 - 129
Toluene	100	ug/L	20	20.1	80 - 121
1,1,1-Trichloroethane	93.9	ug/L	20	18.8	74 - 131
1,1,2-Trichloroethane	93.8	ug/L	20	18.8	80 - 119
Trichloroethene	94.5	ug/L	20	18.9	79 - 123

QUALITY CONTROL DATA

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Vinyl Chloride	94.8	ug/L	20	19.0	58 - 137
1,2-Dichloroethane-d4 (S)	98.6	%			81 - 118
4-Bromofluorobenzene (S)	92.1	%			85 - 114
Dibromofluoromethane (S)	88.1	%			80 - 119
Toluene-d8 (S)	90.8	%			89 - 112

MATRIX SPIKE: 2564759 DUPLICATE: 2564760 ORIGINAL: 2240572004

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	20.2456	20.5023	101	103	72 - 136	1.26	30
1,1-Dichloroethane	0	ug/L	20	21.1632	20.8811	106	104	77 - 125	1.34	30
1,2-Dichloroethane	0	ug/L	20	19.6496	19.4085	98.2	97	73 - 128	1.23	30
1,1-Dichloroethene	.32284	ug/L	20	23.9662	23.8752	118	118	71 - 131	.38	30
cis-1,2-Dichloroethene	0	ug/L	20	20.6008	20.9033	103	105	78 - 123	1.46	30
trans-1,2-Dichloroethene	0	ug/L	20	22.7381	22.7295	114	114	75 - 124	.04	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	19.4947	19.8245	97.5	99.1	78 - 124	1.68	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	19.7545	19.7808	98.8	98.9	71 - 121	.13	30
Tetrachloroethene	.66078	ug/L	20	20.0919	20.8471	97.2	101	74 - 129	3.69	30
Toluene	0	ug/L	20	21.6964	21.6638	108	108	80 - 121	.15	30
1,1,1-Trichloroethane	3.78659	ug/L	20	23.644	24.0627	99.3	101	74 - 131	1.76	30
1,1,2-Trichloroethane	0	ug/L	20	19.7087	19.6181	98.5	98.1	80 - 119	.46	30
Trichloroethene	122.242	ug/L	20	136.295	136.517	NC	NC	79 - 123	.16	30
Vinyl Chloride	0	ug/L	20	20.0439	19.6195	100	98.1	58 - 137	2.14	30
1,2-Dichloroethane-d4 (S)	93.3	%				93.3	97.6	81 - 118		
4-Bromofluorobenzene (S)	91.9	%				91.9	90.9	85 - 114		
Dibromofluoromethane (S)	86.2	%				86.2	87.8	80 - 119		
Toluene-d8 (S)	90.1	%				90.1	91.2	89 - 112		

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QUALITY CONTROL DATA

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

QC Batch: VOMS/43807 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2241456004, 2241456008, 2241456010

METHOD BLANK: 2566003

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	113	%	81 - 118
4-Bromofluorobenzene (S)	113	%	85 - 114
Dibromofluoromethane (S)	94	%	80 - 119
Toluene-d8 (S)	99.2	%	89 - 112

LABORATORY CONTROL SAMPLE: 2566004

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	98.6	ug/L	20	19.7	72 - 136
1,1-Dichloroethane	101	ug/L	20	20.3	77 - 125
1,2-Dichloroethane	95.2	ug/L	20	19.0	73 - 128
1,1-Dichloroethene	113	ug/L	20	22.5	71 - 131
cis-1,2-Dichloroethene	106	ug/L	20	21.2	78 - 123
trans-1,2-Dichloroethene	109	ug/L	20	21.7	75 - 124
1,1,1,2-Tetrachloroethane	100	ug/L	20	20.0	78 - 124
1,1,2,2-Tetrachloroethane	98.2	ug/L	20	19.6	71 - 121
Tetrachloroethene	96.3	ug/L	20	19.3	74 - 129
Toluene	103	ug/L	20	20.7	80 - 121
1,1,1-Trichloroethane	98.7	ug/L	20	19.7	74 - 131
1,1,2-Trichloroethane	96.5	ug/L	20	19.3	80 - 119
Trichloroethene	98.3	ug/L	20	19.7	79 - 123

QUALITY CONTROL DATA

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Vinyl Chloride	91.3	ug/L	20	18.3	58 - 137
1,2-Dichloroethane-d4 (S)	104	%			81 - 118
4-Bromofluorobenzene (S)	112	%			85 - 114
Dibromofluoromethane (S)	94.8	%			80 - 119
Toluene-d8 (S)	98	%			89 - 112

MATRIX SPIKE: 2566191 DUPLICATE: 2566192 ORIGINAL: 2241674006

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	21.243	19.9754	106	99.9	72 - 136	6.15	30
1,1-Dichloroethane	0	ug/L	20	21.8391	20.7828	109	104	77 - 125	4.96	30
1,2-Dichloroethane	0	ug/L	20	19.8609	18.9109	99.3	94.6	73 - 128	4.9	30
1,1-Dichloroethene	0	ug/L	20	24.3646	23.3216	122	117	71 - 131	4.37	30
cis-1,2-Dichloroethene	0	ug/L	20	23.1462	22.2473	116	111	78 - 123	3.96	30
trans-1,2-Dichloroethene	0	ug/L	20	23.899	22.3231	119	112	75 - 124	6.82	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	20.1224	19.8273	101	99.1	78 - 124	1.48	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	20.48	20.8194	102	104	71 - 121	1.64	30
Tetrachloroethene	0	ug/L	20	19.1185	18.8493	95.6	94.2	74 - 129	1.42	30
Toluene	0	ug/L	20	20.7909	20.111	104	101	80 - 121	3.32	30
1,1,1-Trichloroethane	0	ug/L	20	21.3777	20.5456	107	103	74 - 131	3.97	30
1,1,2-Trichloroethane	0	ug/L	20	19.0145	18.6582	95.1	93.3	80 - 119	1.89	30
Trichloroethene	152.439	ug/L	20	176.096	166.682	NC	NC	79 - 123	5.49	30
Vinyl Chloride	0	ug/L	20	24.1759	22.3778	121	112	58 - 137	7.72	30
1,2-Dichloroethane-d4 (S)	116	%				116	111	81 - 118		
4-Bromofluorobenzene (S)	109	%				109	108	85 - 114		
Dibromofluoromethane (S)	94.9	%				94.9	93.4	80 - 119		
Toluene-d8 (S)	92.3	%				92.3	93.8	89 - 112		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2241456001	MW-23 062217			SW846 8260C	VOMS/43785
2241456002	MWB-23 062217			SW846 8260C	VOMS/43785
2241456003	MW-36 062217			SW846 8260C	VOMS/43785
2241456005	MW-20 062217			SW846 8260C	VOMS/43785
2241456006	DUP-2 062217			SW846 8260C	VOMS/43785
2241456007	GEP-3 062317			SW846 8260C	VOMS/43785
2241456009	MW-17 062317			SW846 8260C	VOMS/43785
2241456010	MW-27 062317			SW846 8260C	VOMS/43785
2241456011	Trip Blank			SW846 8260C	VOMS/43785
2241456004	MW-22 062217			SW846 8260C	VOMS/43807
2241456008	GEP-1 062317			SW846 8260C	VOMS/43807
2241456010	MW-27 062317			SW846 8260C	VOMS/43807

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

22

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

* 2 2 4 1 4 5 6 *

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM, 40 British American Blvd, Latham, NY 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 1 1 0 0

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 624 • CLP 8260C	GC/MS SVOAs • 8270 • 625 RSK 175	GC VOAs • 8021 • 601/602 TOC	PESTICIDES • 8081 • 608 Alkalinity	PCBs • 8082 • 608 Cl, SO_4, NO_2	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	REMARKS/ ALTERNATE DESCRIPTION
MW-23 062217		6/22/17	0940	GW	2	X							
MWB-3 062217			1146			X							
MW-36 062217			1395			X							
MW-22 062217			1346			X							
MW-20 062217			1505			X							
Dup-2 062217			—			X							Duplicate Sample
GEP-3 062317		6/23/17	0905			X							
GEP-1 062317			0940			X							
MW-17 062317			1050			X							
MW-27 062317			1246			X							
Trip Blank		—	—	AQ		X							

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

	Y	N	Initials	Cooler Temp:
Custody Seals Present?				3 °C
(if present) Seals Intact?				Cooler #:
Received on Ice?	✓			
COC/Lbls Complete	✓			Temp BD: 291
Cont in Good Cond?	✓			
Correct Containers?	✓			Ship Carrier:
Correct Samp Vol?	✓			FedEx UPS
Correct Preservation?	✓			DHL
Headspace/Volatiles?		✓		

Tracking #:

SPECIAL INSTRUCTIONS/COMMENTS
Metals

6/22/17 1942 8022462832 43

See QAPP ☒

STATE WHERE SAMPLES WERE COLLECTED: New York

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 1 day ___ 2 day ___ 3 day
___ 4 day ___ 5 day
Standard
REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
___ I. Results Only See QAPP
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
See QAPP
Edata ✓ Yes ___ No

INVOICE INFORMATION
~~60440641~~
PO # ~~John Smith~~ 60440641
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham NY 12110

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature	Signature
Printed Name: Chris French	Printed Name: DINA AYERS	Printed Name: DINA AYERS	Printed Name: Allen Nunnis	Printed Name	Printed Name
Firm: AECOM	Firm: ALS	Firm: ALS	Firm: ALS	Firm	Firm
Date/Time: 6/23/17 1410	Date/Time: 6/23/17 1410	Date/Time: 6/23/17 17:00	Date/Time: 6/24 938	Date/Time	Date/Time

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

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

July 10, 2017

Mr. John Santacroce
AECOM - LATHAM NY
40 British American Blvd.
Albany, NY 12210

Certificate of Analysis

Project Name:	**2015-SCOTIA NAVY DEPOT-PO**	Workorder:	**2241674**
Purchase Order:	**66432/60440641.11**	Workorder ID:	**ASN022|2015-SCOTIA NAVY DEPOT-**

Dear Mr. Santacroce:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, June 27, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Kelly Lurie , Mr. Scott Underhill

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Vicki Forney

Mrs. Vicki A. Forney
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2241674001	MW-34 062617	Ground Water	6/26/2017 09:15	6/27/2017 08:46	Collected by Client
2241674002	MW-35 062617	Ground Water	6/26/2017 09:25	6/27/2017 08:46	Collected by Client
2241674003	MW-26 062617	Ground Water	6/26/2017 10:45	6/27/2017 08:46	Collected by Client
2241674004	MW-24 062617	Ground Water	6/26/2017 10:45	6/27/2017 08:46	Collected by Client
2241674005	MW-32 062617	Ground Water	6/26/2017 12:40	6/27/2017 08:46	Collected by Client
2241674006	MW-33 062617	Ground Water	6/26/2017 12:41	6/27/2017 08:46	Collected by Client
2241674007	MW-30 062617	Ground Water	6/26/2017 14:25	6/27/2017 08:46	Collected by Client
2241674008	MW-31 062617	Ground Water	6/26/2017 19:33	6/27/2017 08:46	Collected by Client
2241674009	DUP-3 062617	Ground Water	6/26/2017 00:00	6/27/2017 08:46	Collected by Client
2241674010	Trip Blank	Ground Water	6/27/2017 08:46	6/27/2017 08:46	Collected by Client

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SAMPLE SUMMARY

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Sample Comments

Lab ID: 2241674001 **Sample ID:** MW-34 062617 **Sample Type:** SAMPLE

The sample was un-protected to correct the analysis date. MLM 7/7/17

Lab ID: 2241674003 **Sample ID:** MW-26 062617 **Sample Type:** SAMPLE

The sample was un-protected to correct the analysis date. MLM 7/7/17

Lab ID: 2241674008 **Sample ID:** MW-31 062617 **Sample Type:** SAMPLE

The sample was un-reported to correct the analysis date. MLM 7/7/17

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674001** Date Collected: 6/26/2017 09:15 Matrix: Ground Water

Sample ID: **MW-34 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
Trichloroethene	34.0		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:55	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	116		%	81 - 118			SW846 8260C			7/3/17 20:55	TMP	A
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C			7/3/17 20:55	TMP	A
Dibromofluoromethane (S)	93.3		%	80 - 119			SW846 8260C			7/3/17 20:55	TMP	A
Toluene-d8 (S)	96.9		%	89 - 112			SW846 8260C			7/3/17 20:55	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175			6/28/17 02:18	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175			6/28/17 02:18	EGO	C
Methane	12.4		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 02:18	EGO	C
WET CHEMISTRY												
Alkalinity, Total	201	1	mg/L	5	5	0.8	S2320B-97			7/1/17 21:35	MSA	H
Chloride	15.7		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 04:48	CHW	G
Nitrate-N	0.040J	J	mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 04:48	CHW	G
Sulfate	13.4		mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 04:48	CHW	G
Total Organic Carbon (TOC)	3.3		mg/L	1.0	0.50	0.18	S5310B-00			7/3/17 09:54	PAG	E

Vicki Forney

Mrs. Vicki A. Forney
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674002** Date Collected: 6/26/2017 09:25 Matrix: Ground Water

Sample ID: **MW-35 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
Trichloroethene	43.8		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 21:17	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	117		%	81 - 118			SW846 8260C			7/3/17 21:17	TMP	A
4-Bromofluorobenzene (S)	116	1	%	85 - 114			SW846 8260C			7/3/17 21:17	TMP	A
Dibromofluoromethane (S)	94.7		%	80 - 119			SW846 8260C			7/3/17 21:17	TMP	A
Toluene-d8 (S)	97.9		%	89 - 112			SW846 8260C			7/3/17 21:17	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175			6/28/17 02:34	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175			6/28/17 02:34	EGO	C
Methane	7.2		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 02:34	EGO	C
WET CHEMISTRY												
Alkalinity, Total	202	2	mg/L	5	5	0.8	S2320B-97			7/1/17 21:46	MSA	H
Chloride	17.1		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 05:00	CHW	G
Nitrate-N	0.66		mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 05:00	CHW	G
Sulfate	13.6		mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 05:00	CHW	G
Total Organic Carbon (TOC)	0.75J	J	mg/L	1.0	0.50	0.18	S5310B-00			6/28/17 10:36	PAG	E

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674003** Date Collected: 6/26/2017 10:45 Matrix: Ground Water

Sample ID: **MW-26 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C		7/3/17 21:40	TMP	A
4-Bromofluorobenzene (S)	111		%	85 - 114			SW846 8260C		7/3/17 21:40	TMP	A
Dibromofluoromethane (S)	93.2		%	80 - 119			SW846 8260C		7/3/17 21:40	TMP	A
Toluene-d8 (S)	97.6		%	89 - 112			SW846 8260C		7/3/17 21:40	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 02:50	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 02:50	EGO	C
Methane	2.1		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 02:50	EGO	C
WET CHEMISTRY											
Alkalinity, Total	223	1	mg/L	5	5	0.8	S2320B-97		7/1/17 21:58	MSA	H
Chloride	133		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 05:12	CHW	G
Nitrate-N	0.020J	J	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 05:12	CHW	G
Sulfate	20.9		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 05:12	CHW	G
Total Organic Carbon (TOC)	30.7		mg/L	10.0	5.0	1.8	S5310B-00		6/29/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674004** Date Collected: 6/26/2017 10:45 Matrix: Ground Water

Sample ID: **MW-24 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
Trichloroethene	1.2		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:03	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C			7/3/17 22:03	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114			SW846 8260C			7/3/17 22:03	TMP	A
Dibromofluoromethane (S)	92.8		%	80 - 119			SW846 8260C			7/3/17 22:03	TMP	A
Toluene-d8 (S)	96.5		%	89 - 112			SW846 8260C			7/3/17 22:03	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175			6/28/17 03:06	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175			6/28/17 03:06	EGO	C
Methane	2.2		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 03:06	EGO	C
WET CHEMISTRY												
Alkalinity, Total	195	1	mg/L	5	5	0.8	S2320B-97			7/1/17 22:09	MSA	H
Chloride	41.0		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 05:24	CHW	G
Nitrate-N	0.040J	J	mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 05:24	CHW	G
Sulfate	22.1		mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 05:24	CHW	G
Total Organic Carbon (TOC)	0.79J	J	mg/L	1.0	0.50	0.18	S5310B-00			6/28/17 10:36	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674005** Date Collected: 6/26/2017 12:40 Matrix: Ground Water

Sample ID: **MW-32 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
1,1-Dichloroethene	0.48J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
cis-1,2-Dichloroethene	1.3		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
Trichloroethene	130		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:25	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C			7/3/17 22:25	TMP	A
4-Bromofluorobenzene (S)	110		%	85 - 114			SW846 8260C			7/3/17 22:25	TMP	A
Dibromofluoromethane (S)	93.9		%	80 - 119			SW846 8260C			7/3/17 22:25	TMP	A
Toluene-d8 (S)	95.5		%	89 - 112			SW846 8260C			7/3/17 22:25	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	35.9		ug/L	1.0	0.50	0.25	RSK 175			6/28/17 03:22	EGO	C
Ethene	15.6		ug/L	1.5	0.75	0.31	RSK 175			6/28/17 03:22	EGO	C
Methane	817		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 03:22	EGO	C
WET CHEMISTRY												
Alkalinity, Total	129	1	mg/L	5	5	0.8	S2320B-97			7/1/17 22:21	MSA	H
Chloride	38.0		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 05:36	CHW	G
Nitrate-N	0.020J	J	mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 05:36	CHW	G
Sulfate	0.50J	J	mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 05:36	CHW	G
Total Organic Carbon (TOC)	22.0		mg/L	10.0	5.0	1.8	S5310B-00			7/3/17 09:54	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674006** Date Collected: 6/26/2017 12:41 Matrix: Ground Water

Sample ID: **MW-33 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
Trichloroethene	152	1	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 22:48	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C			7/3/17 22:48	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114			SW846 8260C			7/3/17 22:48	TMP	A
Dibromofluoromethane (S)	93.7		%	80 - 119			SW846 8260C			7/3/17 22:48	TMP	A
Toluene-d8 (S)	97.7		%	89 - 112			SW846 8260C			7/3/17 22:48	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175			6/28/17 03:42	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175			6/28/17 03:42	EGO	C
Methane	16.0		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 03:42	EGO	C
WET CHEMISTRY												
Alkalinity, Total	205	2	mg/L	5	5	0.8	S2320B-97			7/1/17 22:32	MSA	H
Chloride	22.8		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 05:48	CHW	G
Nitrate-N	0.32		mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 05:48	CHW	G
Sulfate	11.8		mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 05:48	CHW	G
Total Organic Carbon (TOC)	0.54J	J	mg/L	1.0	0.50	0.18	S5310B-00			6/28/17 10:36	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674007** Date Collected: 6/26/2017 14:25 Matrix: Ground Water

Sample ID: **MW-30 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
cis-1,2-Dichloroethene	0.61J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
Trichloroethene	24.3		ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 23:11	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C			7/3/17 23:11	TMP	A
4-Bromofluorobenzene (S)	111		%	85 - 114			SW846 8260C			7/3/17 23:11	TMP	A
Dibromofluoromethane (S)	91.7		%	80 - 119			SW846 8260C			7/3/17 23:11	TMP	A
Toluene-d8 (S)	96.8		%	89 - 112			SW846 8260C			7/3/17 23:11	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	36.7		ug/L	1.0	0.50	0.25	RSK 175			6/28/17 03:58	EGO	C
Ethene	12.7		ug/L	1.5	0.75	0.31	RSK 175			6/28/17 03:58	EGO	C
Methane	3210		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 03:58	EGO	C
WET CHEMISTRY												
Alkalinity, Total	154	1	mg/L	5	5	0.8	S2320B-97			7/1/17 22:43	MSA	H
Chloride	49.6		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 05:59	CHW	G
Nitrate-N	0.060U	U	mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 05:59	CHW	G
Sulfate	0.32J	J	mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 05:59	CHW	G
Total Organic Carbon (TOC)	75.2		mg/L	50.0	25.0	9.2	S5310B-00			6/28/17 10:36	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674008** Date Collected: 6/26/2017 19:33 Matrix: Ground Water

Sample ID: **MW-31 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
cis-1,2-Dichloroethene	0.50J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
Trichloroethene	29.0		ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:48	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	116		%	81 - 118			SW846 8260C			7/5/17 13:48	TMP	A
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C			7/5/17 13:48	TMP	A
Dibromofluoromethane (S)	92		%	80 - 119			SW846 8260C			7/5/17 13:48	TMP	A
Toluene-d8 (S)	98.3		%	89 - 112			SW846 8260C			7/5/17 13:48	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	2.7		ug/L	1.0	0.50	0.25	RSK 175			6/28/17 04:34	EGO	C
Ethene	3.2		ug/L	1.5	0.75	0.31	RSK 175			6/28/17 04:34	EGO	C
Methane	56.5		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 04:34	EGO	C
WET CHEMISTRY												
Alkalinity, Total	150	1	mg/L	5	5	0.8	S2320B-97			7/1/17 22:55	MSA	H
Chloride	31.0		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 06:11	CHW	G
Nitrate-N	0.020J	J	mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 06:11	CHW	G
Sulfate	5.6		mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 06:11	CHW	G
Total Organic Carbon (TOC)	2.8		mg/L	2.0	1.0	0.37	S5310B-00			6/29/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674009** Date Collected: 6/26/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-3 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
Trichloroethene	33.6		ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/7/17 15:54	TMP	B
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	81 - 118			SW846 8260C			7/7/17 15:54	TMP	B
4-Bromofluorobenzene (S)	110		%	85 - 114			SW846 8260C			7/7/17 15:54	TMP	B
Dibromofluoromethane (S)	90.3		%	80 - 119			SW846 8260C			7/7/17 15:54	TMP	B
Toluene-d8 (S)	94.7		%	89 - 112			SW846 8260C			7/7/17 15:54	TMP	B
LIGHT HYDROCARBON GASES												
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175			6/28/17 02:01	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175			6/28/17 02:01	EGO	C
Methane	14.0		ug/L	0.50	0.25	0.13	RSK 175			6/28/17 02:01	EGO	C
WET CHEMISTRY												
Alkalinity, Total	192	2	mg/L	5	5	0.8	S2320B-97			7/1/17 23:06	MSA	H
Chloride	15.7		mg/L	2.0	0.50	0.16	EPA 300.0			6/28/17 07:23	CHW	G
Nitrate-N	0.040J	J	mg/L	0.20	0.060	0.020	EPA 300.0			6/28/17 07:23	CHW	G
Sulfate	13.4		mg/L	2.0	0.50	0.20	EPA 300.0			6/28/17 07:23	CHW	G
Total Organic Carbon (TOC)	3.5		mg/L	1.0	0.50	0.18	S5310B-00			7/3/17 09:54	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674010** Date Collected: 6/27/2017 08:46 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
Toluene	0.37J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:25	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118	SW846 8260C			7/5/17 13:25	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114	SW846 8260C			7/5/17 13:25	TMP	A
Dibromofluoromethane (S)	94.1		%	80 - 119	SW846 8260C			7/5/17 13:25	TMP	A
Toluene-d8 (S)	96.3		%	89 - 112	SW846 8260C			7/5/17 13:25	TMP	A

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2241674001	1	MW-34 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674002	1	MW-35 062617	SW846 8260C	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 116 and the control limits were 85 to 114. This result was reported at a dilution of 1.				
2241674002	2	MW-35 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674003	1	MW-26 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674004	1	MW-24 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674005	1	MW-32 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674006	1	MW-33 062617	SW846 8260C	Trichloroethene
The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Trichloroethene. The % Recovery was reported as 71.2 and the control limits were 79 to 123.				
2241674006	2	MW-33 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674007	1	MW-30 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674008	1	MW-31 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674009	2	DUP-3 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: SVGC/45820 **Analysis Method:** RSK 175

QC Batch Method: RSK 175

Associated Lab Samples: 2241674001, 2241674002, 2241674003, 2241674004, 2241674005, 2241674006, 2241674007, 2241674008, 2241674009

METHOD BLANK: 2563120

Parameter	Blank Result	Units	Reporting Limit
Ethane	0.50U	ug/L	1.0
Ethene	0.75U	ug/L	1.5
Methane	0.31J	ug/L	0.50

SAMPLE DUPLICATE: 2563121 ORIGINAL: 2240568001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Ethane	0	ug/L	0	NC	20
Ethene	0	ug/L	0	NC	20
Methane	.19	ug/L	.34	56.6*	20

SAMPLE DUPLICATE: 2563122 ORIGINAL: 2241674008

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Ethane	2.71	ug/L	2.78	2.55	20
Ethene	3.21	ug/L	3.3	2.76	20
Methane	56.47	ug/L	57.67	2.1	20

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43807 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2241674001, 2241674002, 2241674003, 2241674004, 2241674005, 2241674006, 2241674007

METHOD BLANK: 2566003

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	113	%	81 - 118
4-Bromofluorobenzene (S)	113	%	85 - 114
Dibromofluoromethane (S)	94	%	80 - 119
Toluene-d8 (S)	99.2	%	89 - 112

LABORATORY CONTROL SAMPLE: 2566004

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	98.6	ug/L	20	19.7	72 - 136
1,1-Dichloroethane	101	ug/L	20	20.3	77 - 125
1,2-Dichloroethane	95.2	ug/L	20	19.0	73 - 128
1,1-Dichloroethene	113	ug/L	20	22.5	71 - 131
cis-1,2-Dichloroethene	106	ug/L	20	21.2	78 - 123
trans-1,2-Dichloroethene	109	ug/L	20	21.7	75 - 124
1,1,1,2-Tetrachloroethane	100	ug/L	20	20.0	78 - 124
1,1,2,2-Tetrachloroethane	98.2	ug/L	20	19.6	71 - 121
Tetrachloroethene	96.3	ug/L	20	19.3	74 - 129
Toluene	103	ug/L	20	20.7	80 - 121
1,1,1-Trichloroethane	98.7	ug/L	20	19.7	74 - 131
1,1,2-Trichloroethane	96.5	ug/L	20	19.3	80 - 119
Trichloroethene	98.3	ug/L	20	19.7	79 - 123

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Vinyl Chloride	91.3	ug/L	20	18.3	58 - 137
1,2-Dichloroethane-d4 (S)	104	%			81 - 118
4-Bromofluorobenzene (S)	112	%			85 - 114
Dibromofluoromethane (S)	94.8	%			80 - 119
Toluene-d8 (S)	98	%			89 - 112

MATRIX SPIKE: 2566191 DUPLICATE: 2566192 ORIGINAL: 2241674006

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	21.243	19.9754	106	99.9	72 - 136	6.15	30
1,1-Dichloroethane	0	ug/L	20	21.8391	20.7828	109	104	77 - 125	4.96	30
1,2-Dichloroethane	0	ug/L	20	19.8609	18.9109	99.3	94.6	73 - 128	4.9	30
1,1-Dichloroethene	0	ug/L	20	24.3646	23.3216	122	117	71 - 131	4.37	30
cis-1,2-Dichloroethene	0	ug/L	20	23.1462	22.2473	116	111	78 - 123	3.96	30
trans-1,2-Dichloroethene	0	ug/L	20	23.899	22.3231	119	112	75 - 124	6.82	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	20.1224	19.8273	101	99.1	78 - 124	1.48	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	20.48	20.8194	102	104	71 - 121	1.64	30
Tetrachloroethene	0	ug/L	20	19.1185	18.8493	95.6	94.2	74 - 129	1.42	30
Toluene	0	ug/L	20	20.7909	20.111	104	101	80 - 121	3.32	30
1,1,1-Trichloroethane	0	ug/L	20	21.3777	20.5456	107	103	74 - 131	3.97	30
1,1,2-Trichloroethane	0	ug/L	20	19.0145	18.6582	95.1	93.3	80 - 119	1.89	30
Trichloroethene	152.439	ug/L	20	176.096	166.682	NC	NC	79 - 123	5.49	30
Vinyl Chloride	0	ug/L	20	24.1759	22.3778	121	112	58 - 137	7.72	30
1,2-Dichloroethane-d4 (S)	116	%				116	111	81 - 118		
4-Bromofluorobenzene (S)	109	%				109	108	85 - 114		
Dibromofluoromethane (S)	94.9	%				94.9	93.4	80 - 119		
Toluene-d8 (S)	92.3	%				92.3	93.8	89 - 112		

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43814 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2241674008, 2241674009, 2241674010

METHOD BLANK: 2566612

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	115	%	81 - 118
4-Bromofluorobenzene (S)	113	%	85 - 114
Dibromofluoromethane (S)	91.7	%	80 - 119
Toluene-d8 (S)	96.5	%	89 - 112

LABORATORY CONTROL SAMPLE: 2566613

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	98.2	ug/L	20	19.6	72 - 136
1,1-Dichloroethane	99.9	ug/L	20	20.0	77 - 125
1,2-Dichloroethane	94.7	ug/L	20	18.9	73 - 128
1,1-Dichloroethene	113	ug/L	20	22.6	71 - 131
cis-1,2-Dichloroethene	107	ug/L	20	21.4	78 - 123
trans-1,2-Dichloroethene	109	ug/L	20	21.9	75 - 124
1,1,1,2-Tetrachloroethane	95.7	ug/L	20	19.1	78 - 124
1,1,2,2-Tetrachloroethane	101	ug/L	20	20.1	71 - 121
Tetrachloroethene	87.1	ug/L	20	17.4	74 - 129
Toluene	97.4	ug/L	20	19.5	80 - 121
1,1,1-Trichloroethane	97.7	ug/L	20	19.5	74 - 131
1,1,2-Trichloroethane	93.9	ug/L	20	18.8	80 - 119
Trichloroethene	97.8	ug/L	20	19.6	79 - 123

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Vinyl Chloride	93.4	ug/L	20	18.7	58 - 137
1,2-Dichloroethane-d4 (S)	108	%			81 - 118
4-Bromofluorobenzene (S)	112	%			85 - 114
Dibromofluoromethane (S)	96.8	%			80 - 119
Toluene-d8 (S)	96.4	%			89 - 112

MATRIX SPIKE: 2566851 DUPLICATE: 2566852 ORIGINAL: 2241998002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	22.1625	21.5166	111	108	72 - 136	2.96	30
1,1-Dichloroethane	1.03009	ug/L	20	22.0029	21.5063	105	102	77 - 125	2.28	30
1,2-Dichloroethane	0	ug/L	20	19.9613	19.3153	99.8	96.6	73 - 128	3.29	30
1,1-Dichloroethene	.62857	ug/L	20	23.9699	23.6195	117	115	71 - 131	1.47	30
cis-1,2-Dichloroethene	5.82472	ug/L	20	27.8276	27.1333	110	107	78 - 123	2.53	30
trans-1,2-Dichloroethene	.69996	ug/L	20	23.4204	23.735	114	115	75 - 124	1.33	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	19.9485	19.6633	99.7	98.3	78 - 124	1.44	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	20.2742	19.9993	101	100	71 - 121	1.37	30
Tetrachloroethene	38.119	ug/L	20	53.2719	52.9992	75.8	74.4	74 - 129	.51	30
Toluene	0	ug/L	20	20.4102	20.7635	102	104	80 - 121	1.72	30
1,1,1-Trichloroethane	11.7974	ug/L	20	32.5452	32.0644	104	101	74 - 131	1.49	30
1,1,2-Trichloroethane	0	ug/L	20	18.8233	18.9182	94.1	94.6	80 - 119	.5	30
Vinyl Chloride	0	ug/L	20	23.9424	24.4392	120	122	58 - 137	2.05	30
1,2-Dichloroethane-d4 (S)	114	%				114	106	81 - 118		
4-Bromofluorobenzene (S)	108	%				108	110	85 - 114		
Dibromofluoromethane (S)	95.1	%				95.1	94.9	80 - 119		
Toluene-d8 (S)	92.7	%				92.7	94.7	89 - 112		

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43838 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2241674009

METHOD BLANK: 2568295

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	109	%	81 - 118
4-Bromofluorobenzene (S)	112	%	85 - 114
Dibromofluoromethane (S)	88.4	%	80 - 119
Toluene-d8 (S)	93.8	%	89 - 112

LABORATORY CONTROL SAMPLE: 2568296

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	96.9	ug/L	20	19.4	72 - 136
1,1-Dichloroethane	102	ug/L	20	20.5	77 - 125
1,2-Dichloroethane	95	ug/L	20	19.0	73 - 128
1,1-Dichloroethene	115	ug/L	20	23.1	71 - 131
cis-1,2-Dichloroethene	107	ug/L	20	21.5	78 - 123
trans-1,2-Dichloroethene	111	ug/L	20	22.2	75 - 124
1,1,1,2-Tetrachloroethane	92	ug/L	20	18.4	78 - 124
1,1,2,2-Tetrachloroethane	96.5	ug/L	20	19.3	71 - 121
Tetrachloroethene	85.9	ug/L	20	17.2	74 - 129
Toluene	95	ug/L	20	19.0	80 - 121
1,1,1-Trichloroethane	98.8	ug/L	20	19.8	74 - 131
1,1,2-Trichloroethane	91.2	ug/L	20	18.2	80 - 119
Trichloroethene	98.8	ug/L	20	19.8	79 - 123

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Vinyl Chloride	97.3	ug/L	20	19.5	58 - 137
1,2-Dichloroethane-d4 (S)	112	%			81 - 118
4-Bromofluorobenzene (S)	111	%			85 - 114
Dibromofluoromethane (S)	95.3	%			80 - 119
Toluene-d8 (S)	93.9	%			89 - 112

MATRIX SPIKE: 2568494 DUPLICATE: 2568495 ORIGINAL: 2241998002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	100	111.259	106.385	111	106	72 - 136	4.48	30
1,1-Dichloroethane	0	ug/L	100	111.702	108.636	112	109	77 - 125	2.78	30
1,2-Dichloroethane	0	ug/L	100	102.865	96.9445	103	96.9	73 - 128	5.93	30
1,1-Dichloroethene	0	ug/L	100	132.35	125.368	132*	125	71 - 131	5.42	30
cis-1,2-Dichloroethene	5.43696	ug/L	100	121.62	116.894	116	111	78 - 123	3.96	30
trans-1,2-Dichloroethene	0	ug/L	100	123.357	119.7	123	120	75 - 124	3.01	30
1,1,1,2-Tetrachloroethane	0	ug/L	100	98.4376	93.6228	98.4	93.6	78 - 124	5.01	30
1,1,2,2-Tetrachloroethane	0	ug/L	100	99.4469	97.6578	99.4	97.7	71 - 121	1.82	30
Tetrachloroethene	34.842	ug/L	100	129.595	123.829	94.8	89	74 - 129	4.55	30
Toluene	0	ug/L	100	104.958	99.0426	105	99	80 - 121	5.8	30
1,1,1-Trichloroethane	11.4799	ug/L	100	119.444	114.584	108	103	74 - 131	4.15	30
1,1,2-Trichloroethane	0	ug/L	100	95.3996	90.8556	95.4	90.9	80 - 119	4.88	30
Trichloroethene	263.855	ug/L	100	379.484	362.581	116	98.7	79 - 123	4.56	30
Vinyl Chloride	0	ug/L	100	121.203	111.512	121	112	58 - 137	8.33	30
1,2-Dichloroethane-d4 (S)	114	%				114	107	81 - 118		
4-Bromofluorobenzene (S)	107	%				107	109	85 - 114		
Dibromofluoromethane (S)	93.6	%				93.6	94.2	80 - 119		
Toluene-d8 (S)	93	%				93	92.7	89 - 112		

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QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189396 **Analysis Method:** EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: 2241674001, 2241674002, 2241674003, 2241674004, 2241674005, 2241674006, 2241674007, 2241674008, 2241674009

METHOD BLANK: 2563123

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.22J	mg/L	1.0
Nitrate-N	0.020J	mg/L	0.10
Sulfate	0.12J	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2563125

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Chloride	97.2	mg/L	20	19.4	87 - 111
Nitrate-N	96.8	mg/L	2.5	2.4	88 - 111
Sulfate	97.2	mg/L	20	19.4	87 - 112

MATRIX SPIKE: 2563526 DUPLICATE: 2563527 ORIGINAL: 2241674008

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Chloride	30.98	mg/L	40	70.68	70.66	99.3	99.2	87 - 111	.03	15
Nitrate-N	.02	mg/L	5	5.16	5.1	103	102	88 - 111	1.17	15
Sulfate	5.58	mg/L	40	46.12	45.9	101	101	87 - 112	.48	15

METHOD BLANK: 2563529

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.20J	mg/L	1.0
Nitrate-N	0.020J	mg/L	0.10
Sulfate	0.18J	mg/L	1.0

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QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2563976

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.20J	mg/L	1.0
Nitrate-N	0.020J	mg/L	0.10
Sulfate	0.12J	mg/L	1.0

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QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189443 **Analysis Method:** S5310B-00

QC Batch Method: 415.1/9060/5310B

Associated Lab Samples: 2241674001, 2241674002, 2241674003, 2241674004, 2241674005, 2241674006, 2241674007, 2241674008, 2241674009

METHOD BLANK: 2563637

Parameter	Blank Result	Units	Reporting Limit
Total Organic Carbon (TOC)	0.50U	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2563638

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Total Organic Carbon (TOC)	103	mg/L	1	1.0	85 - 115

MATRIX SPIKE: 2563639 DUPLICATE: 2563640 ORIGINAL: 2241674002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	.745	mg/L	6	6.744	6.674	100	98.8	85 - 115	1.04	20

MATRIX SPIKE: 2563641 DUPLICATE: 2563642 ORIGINAL: 2241264007

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	14.915	mg/L	30	44.27	44.31	97.9	98	85 - 115	.09	20

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189500 **Analysis Method:** S5310B-00

QC Batch Method: 415.1/9060/5310B

Associated Lab Samples: 2241674001, 2241674003, 2241674008

METHOD BLANK: 2564328

Parameter	Blank Result	Units	Reporting Limit
Total Organic Carbon (TOC)	0.50U	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2564329

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Total Organic Carbon (TOC)	97	mg/L	1	0.97J	85 - 115

MATRIX SPIKE: 2564330 DUPLICATE: 2564331 ORIGINAL: 2241609002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	26.06	mg/L	60	86.39	86.4	101	101	85 - 115	.01	20

MATRIX SPIKE: 2564332 DUPLICATE: 2564333 ORIGINAL: 2241854004

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	1.84	mg/L	6	7.859	7.822	100	99.7	85 - 115	.47	20

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QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189525 **Analysis Method:** S2320B-97

QC Batch Method: S2320B-97

Associated Lab Samples: 2241674001, 2241674002, 2241674003, 2241674004, 2241674005, 2241674006, 2241674007, 2241674008, 2241674009

METHOD BLANK: 2564650

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564655 ORIGINAL: 2241153001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	222.35703	mg/L	219.2886	1.39	20

METHOD BLANK: 2564658

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564659 ORIGINAL: 2241155001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	74.54304	mg/L	77.39586	3.76	20

METHOD BLANK: 2564662

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2564663 ORIGINAL: 2241205001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Alkalinity, Total	239.17186	mg/L	243.07587	1.62	20

METHOD BLANK: 2564666

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564667 ORIGINAL: 2241205002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	341.77817	mg/L	326.59561	4.54	20

METHOD BLANK: 2564670

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564671 ORIGINAL: 2241205003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	214.8161	mg/L	204.61797	4.86	20

METHOD BLANK: 2564674

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564675 ORIGINAL: 2241205004

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	272.92346	mg/L	270.14981	1.02	20

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2564678

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564679 ORIGINAL: 2241205005

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	234.39536	mg/L	228.81197	2.41	20

METHOD BLANK: 2564682

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564683 ORIGINAL: 2241205006

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	233.30042	mg/L	216.33066	7.55	20

METHOD BLANK: 2564686

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564687 ORIGINAL: 2241205007

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	241.55328	mg/L	238.98088	1.07	20

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2564690

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2564691 ORIGINAL: 2241205008

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	306.87695	mg/L	293.79343	4.36	20

METHOD BLANK: 2564694

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2564695 ORIGINAL: 2241205009

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	240.91833	mg/L	228.8349	5.14	20

METHOD BLANK: 2564698

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2564699 ORIGINAL: 2241205010

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	147.06915	mg/L	160.62634	8.81	20

QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

METHOD BLANK: 2564702

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2564703 ORIGINAL: 2241205011

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	3.49864	mg/L	3.69445	5.44	20

METHOD BLANK: 2564706

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	5U	mg/L	5

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QUALITY CONTROL DATA

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189660 **Analysis Method:** S5310B-00

QC Batch Method: 415.1/9060/5310B

Associated Lab Samples: 2241674001, 2241674005, 2241674009

METHOD BLANK: 2566017

Parameter	Blank Result	Units	Reporting Limit
Total Organic Carbon (TOC)	0.50U	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2566018

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Total Organic Carbon (TOC)	102	mg/L	1	1.0	85 - 115

MATRIX SPIKE: 2566019 DUPLICATE: 2566020 ORIGINAL: 2242531001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	.33	mg/L	6	6.272	6.282	99	99.2	85 - 115	.16	20

MATRIX SPIKE: 2566021 DUPLICATE: 2566022 ORIGINAL: 2242271001

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	.176	mg/L	6	6.173	6.2	100	100	85 - 115	.44	20

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2241674001	MW-34 062617			RSK 175	SVGC/45820
2241674002	MW-35 062617			RSK 175	SVGC/45820
2241674003	MW-26 062617			RSK 175	SVGC/45820
2241674004	MW-24 062617			RSK 175	SVGC/45820
2241674005	MW-32 062617			RSK 175	SVGC/45820
2241674006	MW-33 062617			RSK 175	SVGC/45820
2241674007	MW-30 062617			RSK 175	SVGC/45820
2241674008	MW-31 062617			RSK 175	SVGC/45820
2241674009	DUP-3 062617			RSK 175	SVGC/45820
2241674001	MW-34 062617			EPA 300.0	WETC/189396
2241674002	MW-35 062617			EPA 300.0	WETC/189396
2241674003	MW-26 062617			EPA 300.0	WETC/189396
2241674004	MW-24 062617			EPA 300.0	WETC/189396
2241674005	MW-32 062617			EPA 300.0	WETC/189396
2241674006	MW-33 062617			EPA 300.0	WETC/189396
2241674007	MW-30 062617			EPA 300.0	WETC/189396
2241674008	MW-31 062617			EPA 300.0	WETC/189396
2241674009	DUP-3 062617			EPA 300.0	WETC/189396
2241674002	MW-35 062617			S5310B-00	WETC/189443
2241674004	MW-24 062617			S5310B-00	WETC/189443
2241674006	MW-33 062617			S5310B-00	WETC/189443
2241674007	MW-30 062617			S5310B-00	WETC/189443
2241674003	MW-26 062617			S5310B-00	WETC/189500
2241674008	MW-31 062617			S5310B-00	WETC/189500
2241674001	MW-34 062617			S2320B-97	WETC/189525
2241674002	MW-35 062617			S2320B-97	WETC/189525
2241674003	MW-26 062617			S2320B-97	WETC/189525
2241674004	MW-24 062617			S2320B-97	WETC/189525

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2241674005	MW-32 062617			S2320B-97	WETC/189525
2241674006	MW-33 062617			S2320B-97	WETC/189525
2241674007	MW-30 062617			S2320B-97	WETC/189525
2241674008	MW-31 062617			S2320B-97	WETC/189525
2241674009	DUP-3 062617			S2320B-97	WETC/189525
2241674001	MW-34 062617			SW846 8260C	VOMS/43807
2241674002	MW-35 062617			SW846 8260C	VOMS/43807
2241674003	MW-26 062617			SW846 8260C	VOMS/43807
2241674004	MW-24 062617			SW846 8260C	VOMS/43807
2241674005	MW-32 062617			SW846 8260C	VOMS/43807
2241674006	MW-33 062617			SW846 8260C	VOMS/43807
2241674007	MW-30 062617			SW846 8260C	VOMS/43807
2241674001	MW-34 062617			S5310B-00	WETC/189660
2241674005	MW-32 062617			S5310B-00	WETC/189660
2241674009	DUP-3 062617			S5310B-00	WETC/189660
2241674008	MW-31 062617			SW846 8260C	VOMS/43814
2241674010	Trip Blank			SW846 8260C	VOMS/43814
2241674009	DUP-3 062617			SW846 8260C	VOMS/43838

Monday, July 10, 2017 7:10:33 PM
Page 35 of 35

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUES

33480

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* 2 2 4 1 6 7 4 *

OF 1

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM, 40 British American Blvd, Latham, NY, 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 | 1 | 1 | 0 | 0

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)	METALS
MW-34 062617		6/26/17	0915	GW	8	X	X	X	X	X		
MW-35 062617			0925			X	X	X	X	X		
MW-26 062617			1045			X	X	X	X	X		
MW-24 062617			1095			X	X	X	X	X		
MW-32 062617			1240			X	X	X	X	X		
MW-33 062617			1241			X	X	X	X	X		
MW-30 062617			1425			X	X	X	X	X		
MW-31 062617			1933			X	X	X	X	X		
Dup-3 062617		↓	—	↓	↓	X	X	X	X	X		
Trip Blank		—	—	AQ	2	X						

Cooler Temp: 2.0 °C (Initials: DW) | Cooler #: | Therm ID: 291 | Ship Carrier: UPS / FedEx / DHL | Tracking #: 7970 0934 3529

Custody Seals Present? Y N
(if present) Seals Intact? Y N
Received on Ice? Y N
COC/Lbls Complete Y N
Cont in Good Cond? Y N
Correct Containers? Y N
Correct Samp Vol? Y N
Correct Preservation? Y N
Headspace/Volatiles? Y N

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 _____

REMARKS/ ALTERNATE DESCRIPTION: Duplicate Sample

SPECIAL INSTRUCTIONS/COMMENTS
Metals

Mark as another MW-26
DW 6/27/17

6/27/17 1828

See QAPP ☒

STATE WHERE SAMPLES WERE COLLECTED: New York

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
Standard
REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
____ I. Results Only See QAPP
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data See QAPP
Edata ✓ Yes ____ No

INVOICE INFORMATION
PO # 60440641
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham NY 12110

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Chris French	Printed Name: BRIAN McGUIRK	Printed Name: BRIAN McGUIRK	Printed Name:	Printed Name:	Printed Name:
Firm: AECOM	Firm: ALS	Firm: ALS	Firm:	Firm:	Firm:
Date/Time: 6/26/17 1515	Date/Time: 6/27/17 13:25	Date/Time: 6/27/17 16:15	Date/Time: 6/27/17 1846	Date/Time:	Date/Time:

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

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July 10, 2017

Mr. John Santacroce
AECOM - LATHAM NY
40 British American Blvd.
Albany, NY 12210

Certificate of Analysis

Project Name:	**2015-SCOTIA NAVY DEPOT-PO**	Workorder:	**2241998**
Purchase Order:	**66432/60440641.11**	Workorder ID:	**ASN023|2015-SCOTIA NAVY DEPOT-**

Dear Mr. Santacroce:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, June 28, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Kelly Lurie , Mr. Scott Underhill

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Vicki Forney

Mrs. Vicki A. Forney
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2241998001	MW-28 062717	Ground Water	6/27/2017 10:33	6/28/2017 08:34	Collected by Client
2241998002	MW-29 062717	Ground Water	6/27/2017 12:29	6/28/2017 08:34	Collected by Client
2241998003	DUP-4 062717	Ground Water	6/27/2017 00:00	6/28/2017 08:34	Collected by Client
2241998004	Trip Blank	Ground Water	6/28/2017 08:34	6/28/2017 08:34	Collected by Client

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SAMPLE SUMMARY

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998001** Date Collected: 6/27/2017 10:33 Matrix: Ground Water

Sample ID: **MW-28 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1-Dichloroethane	1.0		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1-Dichloroethene	0.38J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
cis-1,2-Dichloroethene	4.7		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
trans-1,2-Dichloroethene	0.37J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Tetrachloroethene	36.3		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,1-Trichloroethane	8.9		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Trichloroethene	195		ug/L	5.0	3.8	1.7	SW846 8260C		7/7/17 14:46	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	81 - 118			SW846 8260C		7/7/17 14:46	TMP	B
1,2-Dichloroethane-d4 (S)	119	1	%	81 - 118			SW846 8260C		7/5/17 14:11	TMP	A
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C		7/7/17 14:46	TMP	B
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C		7/5/17 14:11	TMP	A
Dibromofluoromethane (S)	96.2		%	80 - 119			SW846 8260C		7/5/17 14:11	TMP	A
Dibromofluoromethane (S)	89.5		%	80 - 119			SW846 8260C		7/7/17 14:46	TMP	B
Toluene-d8 (S)	95.3		%	89 - 112			SW846 8260C		7/7/17 14:46	TMP	B
Toluene-d8 (S)	97.6		%	89 - 112			SW846 8260C		7/5/17 14:11	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/30/17 04:03	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/30/17 04:03	EGO	C
Methane	1.0		ug/L	0.50	0.25	0.13	RSK 175		6/30/17 04:03	EGO	C
WET CHEMISTRY											
Alkalinity, Total	352	2	mg/L	5	5	0.8	S2320B-97		7/3/17 10:26	MSA	H
Chloride	29.0		mg/L	2.0	0.50	0.16	EPA 300.0		6/29/17 04:46	CHW	G
Nitrate-N	1.5		mg/L	0.20	0.060	0.020	EPA 300.0		6/29/17 04:46	CHW	G
Sulfate	13.0		mg/L	2.0	0.50	0.20	EPA 300.0		6/29/17 04:46	CHW	G
Total Organic Carbon (TOC)	0.76J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/9/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998001** Date Collected: 6/27/2017 10:33 Matrix: Ground Water

Sample ID: **MW-28 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	*Cntr*

Vicki Forney

Mrs. Vicki A. Forney
Project Coordinator

ALS Environmental

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998002** Date Collected: 6/27/2017 12:29 Matrix: Ground Water

Sample ID: **MW-29 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1-Dichloroethane	1.0		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1-Dichloroethene	0.63J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
cis-1,2-Dichloroethene	5.8		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
trans-1,2-Dichloroethene	0.70J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Tetrachloroethene	38.1		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,1-Trichloroethane	11.8		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Trichloroethene	264		ug/L	5.0	3.8	1.7	SW846 8260C		7/7/17 15:31	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	121	1	%	81 - 118			SW846 8260C		7/5/17 15:18	TMP	A
1,2-Dichloroethane-d4 (S)	113		%	81 - 118			SW846 8260C		7/7/17 15:31	TMP	B
4-Bromofluorobenzene (S)	115	2	%	85 - 114			SW846 8260C		7/5/17 15:18	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114			SW846 8260C		7/7/17 15:31	TMP	B
Dibromofluoromethane (S)	96		%	80 - 119			SW846 8260C		7/5/17 15:18	TMP	A
Dibromofluoromethane (S)	90.3		%	80 - 119			SW846 8260C		7/7/17 15:31	TMP	B
Toluene-d8 (S)	96.6		%	89 - 112			SW846 8260C		7/5/17 15:18	TMP	A
Toluene-d8 (S)	93.6		%	89 - 112			SW846 8260C		7/7/17 15:31	TMP	B
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/30/17 04:18	EGO	G
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/30/17 04:18	EGO	G
Methane	0.20J	J,3	ug/L	0.50	0.25	0.13	RSK 175		6/30/17 04:18	EGO	G
WET CHEMISTRY											
Alkalinity, Total	361	4	mg/L	5	5	0.8	S2320B-97		7/3/17 09:07	MSA	V
Chloride	49.4		mg/L	2.0	0.50	0.16	EPA 300.0		6/30/17 05:53	CHW	S
Nitrate-N	1.3	5	mg/L	0.20	0.060	0.020	EPA 300.0		6/30/17 05:53	CHW	S
Sulfate	13.8		mg/L	2.0	0.50	0.20	EPA 300.0		7/6/17 04:48	CHW	S
Total Organic Carbon (TOC)	0.92J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/9/17 10:29	C_W	M

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998002** Date Collected: 6/27/2017 12:29 Matrix: Ground Water

Sample ID: **MW-29 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	*Cntr*

Vicki Forney

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998003** Date Collected: 6/27/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-4 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
1,1-Dichloroethane	1.1		ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
1,1-Dichloroethene	0.36J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
cis-1,2-Dichloroethene	4.7		ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
trans-1,2-Dichloroethene	0.38J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
Tetrachloroethene	35.2		ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
1,1,1-Trichloroethane	9.1		ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
Trichloroethene	196		ug/L	5.0	3.8	1.7	SW846 8260C			7/7/17 15:09	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 14:56	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	114		%	81 - 118			SW846 8260C			7/7/17 15:09	TMP	B
1,2-Dichloroethane-d4 (S)	120	1	%	81 - 118			SW846 8260C			7/5/17 14:56	TMP	A
4-Bromofluorobenzene (S)	116	2	%	85 - 114			SW846 8260C			7/5/17 14:56	TMP	A
4-Bromofluorobenzene (S)	109		%	85 - 114			SW846 8260C			7/7/17 15:09	TMP	B
Dibromofluoromethane (S)	95		%	80 - 119			SW846 8260C			7/5/17 14:56	TMP	A
Dibromofluoromethane (S)	92.5		%	80 - 119			SW846 8260C			7/7/17 15:09	TMP	B
Toluene-d8 (S)	94.8		%	89 - 112			SW846 8260C			7/7/17 15:09	TMP	B
Toluene-d8 (S)	96.1		%	89 - 112			SW846 8260C			7/5/17 14:56	TMP	A
LIGHT HYDROCARBON GASES												
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175			6/30/17 04:50	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175			6/30/17 04:50	EGO	C
Methane	1.0		ug/L	0.50	0.25	0.13	RSK 175			6/30/17 04:50	EGO	C
WET CHEMISTRY												
Alkalinity, Total	340	3	mg/L	5	5	0.8	S2320B-97			7/3/17 11:28	MSA	H
Chloride	29.5		mg/L	2.0	0.50	0.16	EPA 300.0			6/29/17 05:10	CHW	G
Nitrate-N	1.5		mg/L	0.20	0.060	0.020	EPA 300.0			6/29/17 05:10	CHW	G
Sulfate	13.2		mg/L	2.0	0.50	0.20	EPA 300.0			6/29/17 05:10	CHW	G
Total Organic Carbon (TOC)	0.91J	J	mg/L	1.0	0.50	0.18	S5310B-00			6/9/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998003** Date Collected: 6/27/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-4 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	*Cntr*

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998004** Date Collected: 6/28/2017 08:34 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/5/17 13:02	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	81 - 118	SW846 8260C			7/5/17 13:02	TMP	A
4-Bromofluorobenzene (S)	111		%	85 - 114	SW846 8260C			7/5/17 13:02	TMP	A
Dibromofluoromethane (S)	89.4		%	80 - 119	SW846 8260C			7/5/17 13:02	TMP	A
Toluene-d8 (S)	96.2		%	89 - 112	SW846 8260C			7/5/17 13:02	TMP	A

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2241998001	1	MW-28 062717	SW846 8260C	1,2-Dichloroethane-d4
The surrogate 1,2-Dichloroethane-d4 for method SW846 8260C was outside of control limits. The % Recovery was reported as 119 and the control limits were 81 to 118. This result was reported at a dilution of 1.				
2241998001	2	MW-28 062717	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241998002	1	MW-29 062717	SW846 8260C	1,2-Dichloroethane-d4
The surrogate 1,2-Dichloroethane-d4 for method SW846 8260C was outside of control limits. The % Recovery was reported as 121 and the control limits were 81 to 118. This result was reported at a dilution of 1.				
2241998002	2	MW-29 062717	SW846 8260C	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 115 and the control limits were 85 to 114. This result was reported at a dilution of 1.				
2241998002	3	MW-29 062717	RSK 175	Methane
The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 33.3 and the upper control limit is 20.				
2241998002	4	MW-29 062717	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241998002	5	MW-29 062717	EPA 300.0	Nitrate-N
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
2241998003	1	DUP-4 062717	SW846 8260C	1,2-Dichloroethane-d4
The surrogate 1,2-Dichloroethane-d4 for method SW846 8260C was outside of control limits. The % Recovery was reported as 120 and the control limits were 81 to 118. This result was reported at a dilution of 1.				
2241998003	2	DUP-4 062717	SW846 8260C	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 116 and the control limits were 85 to 114. This result was reported at a dilution of 1.				
2241998003	3	DUP-4 062717	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: SVGC/45852 **Analysis Method:** RSK 175

QC Batch Method: RSK 175

Associated Lab Samples: 2241998001, 2241998002, 2241998003

METHOD BLANK: 2564777

Parameter	Blank Result	Units	Reporting Limit
Ethane	0.50U	ug/L	1.0
Ethene	0.75U	ug/L	1.5
Methane	0.35J	ug/L	0.50

SAMPLE DUPLICATE: 2564778 ORIGINAL: 2241998002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Ethane	0	ug/L	0	NC	20
Ethene	0	ug/L	0	NC	20
Methane	.2	ug/L	.28	33.3*	20

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QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43814 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2241998001, 2241998002, 2241998003, 2241998004

METHOD BLANK: 2566612

Parameter	Blank Result	Units	Reporting Limit
Carbon Tetrachloride	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
Trichloroethene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	115	%	81 - 118
4-Bromofluorobenzene (S)	113	%	85 - 114
Dibromofluoromethane (S)	91.7	%	80 - 119
Toluene-d8 (S)	96.5	%	89 - 112

LABORATORY CONTROL SAMPLE: 2566613

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Carbon Tetrachloride	98.2	ug/L	20	19.6	72 - 136
1,1-Dichloroethane	99.9	ug/L	20	20.0	77 - 125
1,2-Dichloroethane	94.7	ug/L	20	18.9	73 - 128
1,1-Dichloroethene	113	ug/L	20	22.6	71 - 131
cis-1,2-Dichloroethene	107	ug/L	20	21.4	78 - 123
trans-1,2-Dichloroethene	109	ug/L	20	21.9	75 - 124
1,1,1,2-Tetrachloroethane	95.7	ug/L	20	19.1	78 - 124
1,1,2,2-Tetrachloroethane	101	ug/L	20	20.1	71 - 121
Tetrachloroethene	87.1	ug/L	20	17.4	74 - 129
Toluene	97.4	ug/L	20	19.5	80 - 121
1,1,1-Trichloroethane	97.7	ug/L	20	19.5	74 - 131
1,1,2-Trichloroethane	93.9	ug/L	20	18.8	80 - 119
Trichloroethene	97.8	ug/L	20	19.6	79 - 123

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Vinyl Chloride	93.4	ug/L	20	18.7	58 - 137
1,2-Dichloroethane-d4 (S)	108	%			81 - 118
4-Bromofluorobenzene (S)	112	%			85 - 114
Dibromofluoromethane (S)	96.8	%			80 - 119
Toluene-d8 (S)	96.4	%			89 - 112

MATRIX SPIKE: 2566851 DUPLICATE: 2566852 ORIGINAL: 2241998002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Carbon Tetrachloride	0	ug/L	20	22.1625	21.5166	111	108	72 - 136	2.96	30
1,1-Dichloroethane	1.03009	ug/L	20	22.0029	21.5063	105	102	77 - 125	2.28	30
1,2-Dichloroethane	0	ug/L	20	19.9613	19.3153	99.8	96.6	73 - 128	3.29	30
1,1-Dichloroethene	.62857	ug/L	20	23.9699	23.6195	117	115	71 - 131	1.47	30
cis-1,2-Dichloroethene	5.82472	ug/L	20	27.8276	27.1333	110	107	78 - 123	2.53	30
trans-1,2-Dichloroethene	.69996	ug/L	20	23.4204	23.735	114	115	75 - 124	1.33	30
1,1,1,2-Tetrachloroethane	0	ug/L	20	19.9485	19.6633	99.7	98.3	78 - 124	1.44	30
1,1,2,2-Tetrachloroethane	0	ug/L	20	20.2742	19.9993	101	100	71 - 121	1.37	30
Tetrachloroethene	38.119	ug/L	20	53.2719	52.9992	75.8	74.4	74 - 129	.51	30
Toluene	0	ug/L	20	20.4102	20.7635	102	104	80 - 121	1.72	30
1,1,1-Trichloroethane	11.7974	ug/L	20	32.5452	32.0644	104	101	74 - 131	1.49	30
1,1,2-Trichloroethane	0	ug/L	20	18.8233	18.9182	94.1	94.6	80 - 119	.5	30
Vinyl Chloride	0	ug/L	20	23.9424	24.4392	120	122	58 - 137	2.05	30
1,2-Dichloroethane-d4 (S)	114	%				114	106	81 - 118		
4-Bromofluorobenzene (S)	108	%				108	110	85 - 114		
Dibromofluoromethane (S)	95.1	%				95.1	94.9	80 - 119		
Toluene-d8 (S)	92.7	%				92.7	94.7	89 - 112		

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QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: VOMS/43838 **Analysis Method:** SW846 8260C

QC Batch Method: SW846 8260C

Associated Lab Samples: 2241998001, 2241998002, 2241998003

METHOD BLANK: 2568295

Parameter	Blank Result	Units	Reporting Limit
Trichloroethene	0.75U	ug/L	1.0
1,1,1,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,1-Trichloroethane	0.75U	ug/L	1.0
1,1,2,2-Tetrachloroethane	0.75U	ug/L	1.0
1,1,2-Trichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethane	0.75U	ug/L	1.0
1,1-Dichloroethene	0.75U	ug/L	1.0
1,2-Dichloroethane	0.75U	ug/L	1.0
Carbon Tetrachloride	0.75U	ug/L	1.0
Tetrachloroethene	0.75U	ug/L	1.0
Toluene	0.75U	ug/L	1.0
Vinyl Chloride	0.75U	ug/L	1.0
cis-1,2-Dichloroethene	0.75U	ug/L	1.0
trans-1,2-Dichloroethene	0.75U	ug/L	1.0
1,2-Dichloroethane-d4 (S)	109	%	81 - 118
4-Bromofluorobenzene (S)	112	%	85 - 114
Dibromofluoromethane (S)	88.4	%	80 - 119
Toluene-d8 (S)	93.8	%	89 - 112

LABORATORY CONTROL SAMPLE: 2568296

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Trichloroethene	98.8	ug/L	20	19.8	79 - 123
1,1,1,2-Tetrachloroethane	92	ug/L	20	18.4	78 - 124
1,1,1-Trichloroethane	98.8	ug/L	20	19.8	74 - 131
1,1,2,2-Tetrachloroethane	96.5	ug/L	20	19.3	71 - 121
1,1,2-Trichloroethane	91.2	ug/L	20	18.2	80 - 119
1,1-Dichloroethane	102	ug/L	20	20.5	77 - 125
1,1-Dichloroethene	115	ug/L	20	23.1	71 - 131
1,2-Dichloroethane	95	ug/L	20	19.0	73 - 128
Carbon Tetrachloride	96.9	ug/L	20	19.4	72 - 136
Tetrachloroethene	85.9	ug/L	20	17.2	74 - 129
Toluene	95	ug/L	20	19.0	80 - 121
Vinyl Chloride	97.3	ug/L	20	19.5	58 - 137
cis-1,2-Dichloroethene	107	ug/L	20	21.5	78 - 123

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

trans-1,2-Dichloroethene	111	ug/L	20	22.2	75 - 124
1,2-Dichloroethane-d4 (S)	112	%			81 - 118
4-Bromofluorobenzene (S)	111	%			85 - 114
Dibromofluoromethane (S)	95.3	%			80 - 119
Toluene-d8 (S)	93.9	%			89 - 112

MATRIX SPIKE: 2568494 DUPLICATE: 2568495 ORIGINAL: 2241998002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Trichloroethene	263.855	ug/L	100	379.484	362.581	116	98.7	79 - 123	4.56	30
1,1,1,2-Tetrachloroethane	0	ug/L	100	98.4376	93.6228	98.4	93.6	78 - 124	5.01	30
1,1,1-Trichloroethane	11.4799	ug/L	100	119.444	114.584	108	103	74 - 131	4.15	30
1,1,2,2-Tetrachloroethane	0	ug/L	100	99.4469	97.6578	99.4	97.7	71 - 121	1.82	30
1,1,2-Trichloroethane	0	ug/L	100	95.3996	90.8556	95.4	90.9	80 - 119	4.88	30
1,1-Dichloroethane	0	ug/L	100	111.702	108.636	112	109	77 - 125	2.78	30
1,1-Dichloroethene	0	ug/L	100	132.35	125.368	132*	125	71 - 131	5.42	30
1,2-Dichloroethane	0	ug/L	100	102.865	96.9445	103	96.9	73 - 128	5.93	30
Carbon Tetrachloride	0	ug/L	100	111.259	106.385	111	106	72 - 136	4.48	30
Tetrachloroethene	34.842	ug/L	100	129.595	123.829	94.8	89	74 - 129	4.55	30
Toluene	0	ug/L	100	104.958	99.0426	105	99	80 - 121	5.8	30
Vinyl Chloride	0	ug/L	100	121.203	111.512	121	112	58 - 137	8.33	30
cis-1,2-Dichloroethene	5.43696	ug/L	100	121.62	116.894	116	111	78 - 123	3.96	30
trans-1,2-Dichloroethene	0	ug/L	100	123.357	119.7	123	120	75 - 124	3.01	30
1,2-Dichloroethane-d4 (S)	114	%				114	107	81 - 118		
4-Bromofluorobenzene (S)	107	%				107	109	85 - 114		
Dibromofluoromethane (S)	93.6	%				93.6	94.2	80 - 119		
Toluene-d8 (S)	93	%				93	92.7	89 - 112		

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189465 **Analysis Method:** EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: 2241998001, 2241998002, 2241998003

METHOD BLANK: 2563977

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.18J	mg/L	1.0
Nitrate-N	0.010J	mg/L	0.10
Sulfate	0.10J	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2563979

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Chloride	96.5	mg/L	20	19.3	87 - 111
Nitrate-N	96.4	mg/L	2.5	2.4	88 - 111
Sulfate	97	mg/L	20	19.4	87 - 112

METHOD BLANK: 2564812

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.18J	mg/L	1.0
Nitrate-N	0.010J	mg/L	0.10
Sulfate	0.12J	mg/L	1.0

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QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189501 **Analysis Method:** S5310B-00

QC Batch Method: 415.1/9060/5310B

Associated Lab Samples: 2241998001, 2241998002, 2241998003

METHOD BLANK: 2564359

Parameter	Blank Result	Units	Reporting Limit
Total Organic Carbon (TOC)	0.50U	mg/L	1.0

LABORATORY CONTROL SAMPLE: 2564360

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Total Organic Carbon (TOC)	97	mg/L	1	0.97J	85 - 115

MATRIX SPIKE: 2564361 DUPLICATE: 2564362 ORIGINAL: 2241998002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Total Organic Carbon (TOC)	.918	mg/L	6	6.872	6.94	99.2	100	85 - 115	.98	20

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189537 **Analysis Method:** EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: 2241998002

METHOD BLANK: 2564836

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.15J	mg/L	1.0
Nitrate-N	0.010J	mg/L	0.10

LABORATORY CONTROL SAMPLE: 2564838

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Chloride	96.6	mg/L	20	19.3	87 - 111
Nitrate-N	96.4	mg/L	2.5	2.4	88 - 111

MATRIX SPIKE: 2564840 DUPLICATE: 2564841 ORIGINAL: 2241998002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Chloride	49.36	mg/L	40	88.5	88.82	97.9	98.6	87 - 111	.36	15
Nitrate-N	1.34	mg/L	5	6.18	6.22	96.8	97.6	88 - 111	.65	15

METHOD BLANK: 2564843

Parameter	Blank Result	Units	Reporting Limit
Chloride	0.16J	mg/L	1.0
Nitrate-N	0.010J	mg/L	0.10

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QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189601 **Analysis Method:** S2320B-97

QC Batch Method: S2320B-97

Associated Lab Samples: 2241998001, 2241998002, 2241998003

METHOD BLANK: 2565372

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2565377 ORIGINAL: 2241206001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	407.86169	mg/L	406.45221	.35	20

METHOD BLANK: 2565380

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

METHOD BLANK: 2565384

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2565385 ORIGINAL: 2241841006

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	133.16672	mg/L	128.74612	3.38	20

METHOD BLANK: 2565388

Parameter	Blank Result	Units	Reporting Limit

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2565389 ORIGINAL: 2241998002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	360.63147	mg/L	359.74487	.25	20

METHOD BLANK: 2565392

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2565393 ORIGINAL: 2242040001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	191.76982	mg/L	189.94916	.95	20

METHOD BLANK: 2565396

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

SAMPLE DUPLICATE: 2565397 ORIGINAL: 2242356001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	209.92249	mg/L	211.75446	.87	20

METHOD BLANK: 2565400

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	2J	mg/L	5

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

SAMPLE DUPLICATE: 2565401 ORIGINAL: 2242356003

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	217.99799	mg/L	196.78094	10.2	20

METHOD BLANK: 2565404

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	3J	mg/L	5

SAMPLE DUPLICATE: 2565405 ORIGINAL: 2242384002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	434.70401	mg/L	435.61319	.21	20

METHOD BLANK: 2565408

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2565409 ORIGINAL: 2242385001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	10.11394	mg/L	9.39311	7.39	20

METHOD BLANK: 2565412

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

SAMPLE DUPLICATE: 2565413 ORIGINAL: 2242518001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	246.69556	mg/L	237.67082	3.73	20

METHOD BLANK: 2565416

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2565417 ORIGINAL: 2242565001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	70.69667	mg/L	74.46231	5.19	20

METHOD BLANK: 2565420

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

SAMPLE DUPLICATE: 2565421 ORIGINAL: 2242746001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	211.14268	mg/L	200.53162	5.16	20

METHOD BLANK: 2565424

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	1J	mg/L	5

QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

SAMPLE DUPLICATE: 2565425 ORIGINAL: 2242746002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Alkalinity, Total	193.92943	mg/L	206.93445	6.49	20

METHOD BLANK: 2565837

Parameter	Blank Result	Units	Reporting Limit
Alkalinity, Total	5U	mg/L	5

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QUALITY CONTROL DATA

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

QC Batch: WETC/189745 **Analysis Method:** EPA 300.0

QC Batch Method: EPA 300.0

Associated Lab Samples: 2241998002

METHOD BLANK: 2567183

Parameter	Blank Result	Units	Reporting Limit
Sulfate	0.25U	mg/L	1.0
Chloride	0.15J	mg/L	1.0
Nitrate-N	0.030U	mg/L	0.10

LABORATORY CONTROL SAMPLE: 2567185

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Sulfate	98.8	mg/L	20	19.8	87 - 112
Chloride	97.3	mg/L	20	19.5	87 - 111
Nitrate-N	98.8	mg/L	2.5	2.5	88 - 111

MATRIX SPIKE: 2567187 DUPLICATE: 2567188 ORIGINAL: 2241998002

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Sulfate	13.84	mg/L	40	53.52	54	99.2	100	87 - 112	.89	15

METHOD BLANK: 2567190

Parameter	Blank Result	Units	Reporting Limit
Sulfate	0.25U	mg/L	1.0
Chloride	0.13J	mg/L	1.0
Nitrate-N	0.030U	mg/L	0.10

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2241998001	MW-28 062717			EPA 300.0	WETC/189465
2241998003	DUP-4 062717			EPA 300.0	WETC/189465
2241998001	MW-28 062717			S5310B-00	WETC/189501
2241998002	MW-29 062717			S5310B-00	WETC/189501
2241998003	DUP-4 062717			S5310B-00	WETC/189501
2241998001	MW-28 062717			RSK 175	SVGC/45852
2241998002	MW-29 062717			RSK 175	SVGC/45852
2241998003	DUP-4 062717			RSK 175	SVGC/45852
2241998002	MW-29 062717			EPA 300.0	WETC/189537
2241998001	MW-28 062717			S2320B-97	WETC/189601
2241998002	MW-29 062717			S2320B-97	WETC/189601
2241998003	DUP-4 062717			S2320B-97	WETC/189601
2241998001	MW-28 062717			SW846 8260C	VOMS/43814
2241998002	MW-29 062717			SW846 8260C	VOMS/43814
2241998003	DUP-4 062717			SW846 8260C	VOMS/43814
2241998004	Trip Blank			SW846 8260C	VOMS/43814
2241998002	MW-29 062717			EPA 300.0	WETC/189745
2241998001	MW-28 062717			SW846 8260C	VOMS/43838
2241998002	MW-29 062717			SW846 8260C	VOMS/43838
2241998003	DUP-4 062717			SW846 8260C	VOMS/43838

Page 27 of 27
Monday, July 10, 2017 7:20:53 PM
ALS

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CHAIN OF CU... REQUEST FOR...

ALL SHADED AREAS MUST BE COM... SAMPLER. INSTRUCTIONS...

2241998

Page 1 of 1

6470 8310 1169

9/05/18

Co. Name: AECOM
Contact (Report to): John Santacroce
Phone: 518-951-2200
Address: 40 British American Blvd
Latham, NY 12110

Bill to (if different than Report to):
PO#: 60440641

Project Name/#: Scotia Navy Depot
ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required:
Approved By:

Email? [X] -Y John.Santacroce@aecom.com
Fax? [ ] -Y No.:

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	*G or C	**Matrix	8260C	Total Organic Carbon	RSK 175	Alkalinity	Cl, SO4, NO3					
***Container Type				CG	CG	CG	CG	PL	PL						
***Container Size				40ml	40ml	40ml	500ml	250ml							
*** Preservative				HCl	HCl	HCl	None	None							
1 MW-28 062717		6/27/17	1033	G	GW	X	X	X	X	X					
2 MW-29 062717	Extra Volume Collected for MS/MSD	↓	1229	↓	↓	↓	↓	↓	↓	↓					
3 Dup-4 062717	Duplicate Sample	↓	—	↓	↓										
4 Trip Blank		—	—	-	AQ	↓									
5															
6															
7															
8															

ANALYSES/METHOD REQUESTED
Enter Number of Containers Per Analysis

Receipt Information (completed by Sample Receiving)
Performed by: DAW
Cooler Temp: F
Therm. ID: 291
No. of Coolers:
Notes:

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

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

SAMPLED BY (Please Print): Chris French

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Chris French / AECOM	6/27/17	1420	2	6/27/17	1420
3	6/27/17	1700	4	6/28	834
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [X] See QAPP
SDWA Forms? yes [ ] yes [ ] yes [ ] yes [ ]
State Samples Collected In? MD [ ] NJ [ ] NY [X] PA [ ]
EDDs Required? [X] If yes, format type: See QAPP
Other
DOD Criteria Required?

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

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

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

Rev 01-2013

APPENDIX D: AECOM Data Usability Summary Report (DUSR)

AECOM

Prepared for:
U.S. Army Corps of Engineers
Huntsville and New York Districts

Prepared by:
AECOM
Pittsburgh, PA
60440641-9
August 2017

August 21, 2017

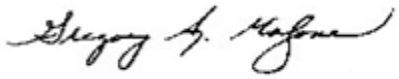
Data Usability Summary Report
Defense National Stockpile Center
Scotia Depot
Glenville, New York
Groundwater Sampling Event
June 2017
Final

Prepared for:
U.S. Army Corps of Engineers
Huntsville and New York Districts

Prepared by:
AECOM
Pittsburgh, PA
60440641-9
August 2017

August 21, 2017

Data Usability Summary Report
Defense National Stockpile Center
Scotia Depot
Glenville, New York
Groundwater Sampling Event
June 2017
Final



Prepared By
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Reviewed By
Robert Davis, Data Validator/Database Technician
AECOM
1360 Peachtree Street NE, Suite 500
Atlanta, GA 30309

Contents

Executive Summary ES-1

1.0 Volatile Organic Compounds 1-1

2.0 Methane, Ethane, Ethene 2-1

3.0 Chloride, Sulfate, Nitrate as N 3-1

4.0 Alkalinity 4-1

5.0 Total Organic Carbon 5-1

6.0 Field Duplicate Comparison 6-1

7.0 Notes 7-1

List of Appendices

Appendix A Glossary of Data Qualifier Codes

Appendix B Data Qualification Summaries

Appendix C Support Documentation

Executive Summary

Overview

Data validation was performed by Gregory A. Malzone of AECOM-Pittsburgh on the fixed-laboratory analytical data for groundwater samples collected from the Defense National Stockpile Center Scotia Depot, Glenville, New York, from June 20, 2017 through June 27, 2017. Samples were collected as part of the baseline groundwater sampling round as described in Final Quality Assurance Project Plan for the Defense National Stockpile Center Scotia Depot Glenville, New York (the project-specific QAPP; AECOM, September 2016). Samples were submitted for analysis to ALS Environmental, 34 Dogwood Lane, Middletown, Pennsylvania 17057.

The list of field and field quality control samples submitted, the date sampled and the laboratory work order numbers are presented in Table 1. Data were reported by ALS in five deliverables. Each laboratory deliverable is identified by both a laboratory work order number and sample delivery group (SDG) number.

The following analytical methods were requested on the chain-of-custody (CoC) records.

- Volatile Organic Compounds by USEPA SW-846 Method 8260B
- Methane, Ethane and Ethene by RSK -175
- Chloride, Nitrate as N and Sulfate by Method EPA Method 300.0
- Alkalinity by Standard Methods 2320B
- Total Organic Carbon by Standard Methods 5310B

The trip blanks were analyzed for VOCs only. Samples MW-6-062017 and MW-29-062717 were designated in the field to be processed as the quality control samples, that is, as the matrix spike/matrix spike duplicate (MS/MSD). Unless otherwise noted, analyses were performed in accordance with the project-specific QAPP which is based on the DoD QSM v5.0.

Table 1 - Sample Submittals

Field ID	ALS ID	Matrix	Date Sampled	Work Order Number	SDG Number
MW-16-062017	2240568001	Groundwater	6/20/2017	2240568	ASN020
MW-7-062017	2240568002	Groundwater	6/20/2017	2240568	ASN020
MW-6-062017	2240568003	Groundwater	6/20/2017	2240568	ASN020
MW-9-062017	2240568004	Groundwater	6/20/2017	2240568	ASN020
DUP-1-062017 [MW-16]	2240568005	Groundwater (QC)	6/20/2017	2240568	ASN020
Trip Blank	2240568006	Aqueous (QC)	6/22/2017	2240568	ASN020
MW-5-062017	2240572001	Groundwater	6/20/2017	2240572	ASN021
GEP-4-062117	2240572002	Groundwater	6/21/2017	2240572	ASN021
GEP-2-062112	2240572003	Groundwater	6/21/2017	2240572	ASN021
MW-15-062117	2240572004	Groundwater	6/21/2017	2240572	ASN021
MW-18-062117	2240572005	Groundwater	6/21/2017	2240572	ASN021
MW-25-062117	2240572006	Groundwater	6/21/2017	2240572	ASN021
MW-19-062117	2240572007	Groundwater	6/21/2017	2240572	ASN021
MW-14-062117	2240572008	Groundwater	6/21/2017	2240572	ASN021
Trip Blank	2240572009	Aqueous (QC)	6/22/2017	2240572	ASN021
MW-23-062217	2241456001	Groundwater	6/22/2017	2241456	ASN024

Table 1 (Continued) - Sample Submittals

Field ID	ALS ID	Matrix	Date Sampled	Work Order Number	SDG Number
MWB-23-062217	2241456002	Groundwater	6/22/2017	2241456	ASN024
MW-36-062217	2241456003	Groundwater	6/22/2017	2241456	ASN024
MW-22-062217	2241456004	Groundwater	6/22/2017	2241456	ASN024
MW-20-062217	2241456005	Groundwater	6/22/2017	2241456	ASN024
DUP-2-062217 [MW-23]	2241456006	Groundwater (QC)	6/22/2017	2241456	ASN024
GEP-3-062317	2241456007	Groundwater	6/23/2017	2241456	ASN024
GEP-1-062317	2241456008	Groundwater	6/23/2017	2241456	ASN024
MW-17-062317	2241456009	Groundwater	6/23/2017	2241456	ASN024
MW-27-062317	2241456010	Groundwater	6/23/2017	2241456	ASN024
Trip Blank	2241456011	Aqueous (QC)	6/24/2017	2241456	ASN024
MW-34-062617	2241674001	Groundwater	6/26/2017	2241674	ASN022
MW-35-062617	2241674002	Groundwater	6/26/2017	2241674	ASN022
MW-26-062617	2241674003	Groundwater	6/26/2017	2241674	ASN022
MW-24-062617	2241674004	Groundwater	6/26/2017	2241674	ASN022
MW-32-062617	2241674005	Groundwater	6/26/2017	2241674	ASN022
MW-33-062617	2241674006	Groundwater	6/26/2017	2241674	ASN022
MW-30-062617	2241674007	Groundwater	6/26/2017	2241674	ASN022
MW-31-062617	2241674008	Groundwater	6/26/2017	2241674	ASN022
DUP-3-062617 [MW-34]	2241674009	Groundwater (QC)	6/26/2017	2241674	ASN022
Trip Blank	2241674010	Aqueous (QC)	6/27/2017	2241674	ASN022
MW-28-062717	2241998001	Groundwater	6/27/2017	2241998	ASN023
MW-29-062717	2241998002	Groundwater	6/27/2017	2241998	ASN023
DUP-4-062717 [MW-28]	2241998003	Groundwater (QC)	6/27/2017	2241998	ASN023
Trip Blank	2241998004	Aqueous (QC)	6/25/2017	2241998	ASN023

The data were evaluated for conformance to method specifications and qualifiers were applied using the USEPA Region II SOPs and the validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-013-001, August 2014, as they apply to the analytical methods employed.

Field duplicate relative percent difference (RPD) review and applicable control limits were taken from the *USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, December 1996.

Summary

All data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the compounds and analytes in the media tested (i.e. groundwater) with the qualifications described below. Completeness of 100% was achieved for this data set. This is within the goal of 90-100% and is acceptable.

A glossary of data qualifier definitions is included in Appendix A of this report. The data qualifier summaries are attached as Appendix B of this report.

Each nonconformance with specific data usability criteria is discussed below. Page references for the supporting documentation in the laboratory reports are provided in each item header. Support documentation for data qualifications was included in Appendix C of this report.

1.0 Volatile Organic Compounds

Measurement performance indicators which did not meet criteria for Volatile Organic Compounds (VOCs) analysis are presented below for each of the five laboratory reports. Analytical results for VOCs were reviewed for the following measurement performance indicators:

- Data Completeness
- Chain of Custody
- Sample Preservation
- Holding Time
- GC/MS Tunes
- Initial Calibration
- Initial Calibration Verification
- Continuing Calibration Verification
- Method Blanks
- Trip Blanks
- Surrogates
- Matrix Spike/Matrix Spike Duplicate
- Internal Standards
- Quantitation Limits
- Laboratory Control Samples
- Data package / EDD consistency

Work Order 2240568 (SDG ASN020)

No data quality issues were noted. No data qualification was required.

Work Order 2240572 (SDG ASN021)

Matrix Spike Recoveries and RPDs (pp.34-35): Sample MW-15-062117 was chosen as the batch quality control sample. The trichloroethene spike added to MW-15-062117 MS/MSD was less than 25% of the original sample result. The spike recoveries and RPD could not be calculated. No data qualifications were required.

Work Order 2241674 (SDG ASN022)

Trip Blank (p. 14): Toluene was detected in the trip blank at a concentration estimated to be less than the limit of quantitation (LOQ). Toluene was not detected in any of the samples within this SDG. No data qualifications were required.

Surrogate Recoveries (p. 31): The 4-bromofluorobenzene surrogate recovery for sample MW-35-062617 was greater than the upper quality control limit. The positive trichloroethene result was qualified (J+) as an estimated concentration, because of high method bias and/or matrix effects. Non-detect results were not qualified on this basis.

Matrix Spike Recoveries and RPDs (pp.42-43): Sample MW-33-062617 was chosen as the batch quality control sample. The trichloroethene spike added to MW-33-062617 MS/MSD was less than 25% of the original sample result. The spike recoveries and RPD could not be calculated. No data qualifications were required.

Work Order 2241998 (SDG ASN023)

Surrogate Recoveries (p. 31): The 4-bromofluorobenzene and 1,2-dichloroethane-d4 surrogate recoveries for samples MW-29-062717 and DUP-4-062717 were greater than the upper quality control limits. The positive 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans--dichloroethene, tetrachloroethene and 1,1,1-trichloroethane were qualified (J/J+) as estimated concentrations, because of high method bias and/or matrix effects. Non-detect results were not qualified on this basis.

The 1,2-dichloroethane-d4 surrogate recovery for sample MW-28-062717 was greater than the upper quality control limit. The positive 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-dichloroethene, tetrachloroethene and 1,1,1-trichloroethane were qualified (J/J+) as estimated concentrations, because of high method bias and/or matrix effects. Non-detect results were not qualified on this basis.

Dilutions: Samples MW-28-062717, MW-29-062717 and DUP-4-062717required analysis at a secondary five-fold dilution to bring the trichloroethene concentration into the calibration range. The surrogate recoveries were within the quality control limits. No data qualifications were required.

Work Order 2241456 (SDG ASN024)

Surrogate Recoveries (p. 32): The 4-bromofluorobenzene surrogate recovery for sample GEP-1-062317 was greater than the upper quality control limit. The positive tetrachloroethene, 1,1,1-trichloroethane and trichloroethene results were qualified (J/J+) as estimated concentrations, because of high method bias and/or matrix effects. Non-detect results were not qualified on this basis.

Dilutions: Sample MW-22-062217required analysis at and initial five-fold dilution to bring the trichloroethene concentration into the calibration range. The surrogate recoveries were within the quality control limits. No data qualifications were required. The initial dilution elevated the LOQs and detection limits for non-detect results.

Sample MW-27-062317 required analysis at a secondary five-fold dilution to bring the trichloroethene concentration into the calibration range. The surrogate recoveries were within the quality control limits. No data qualifications were required.

2.0 Methane, Ethane, Ethene

Measurement performance indicators which did not meet criteria for methane, ethane, ethene (MEE) analysis are presented below for each of the five laboratory reports. Analytical results for MEE were reviewed for the following measurement performance indicators:

- Data Completeness
- Chain of Custody
- Sample Preservation
- Holding Time
- Initial Calibration
- Initial Calibration Verification
- Continuing Calibration Verification
- Method Blanks
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Duplicate
- Quantitation Limits
- Laboratory Control Samples
- Data package / EDD consistency

Work Order 2240568 (SDG ASN020)

Laboratory Method Blank (p. 1845): Methane was detected in method blank 2563120 (06/28/17) at a concentration greater than the limit of detection LOD (0.31 µg/L). The result for methane in associated sample MW-16-062017 was less than the LOD and was qualified as non-detect (U) at the LOQ.

Work Order 2240572 (SDG ASN021)

Laboratory Method Blank (p. 3033): Methane was detected in method blank 2563120 (06/28/17) at a concentration greater than the limit of detection LOD (0.31 µg/L). The result for methane in associated sample MW-15-062117 was less than the LOD and was qualified as non-detect (U) at the LOQ.

Work Order 2241674 (SDG ASN022)

Laboratory Method Blank (p. 2371): Methane was detected in method blank 2563120 (06/28/17) at a concentration greater than the limit of detection LOD (0.31 µg/L). The results for methane in associated samples MW-34-062617, MW-35-062617, MW-26-062617, MW-24-062617, MW-32-062617,MW-33-062617, MW-30-062617, MW-31-062617 and DUP-3-062617 were greater than the LOQ and greater than five times the blank concentration. No data qualification was required.

Work Order 2241998 (SDG ASN023)

Laboratory Method Blank (p. 2551): Methane was detected in method blank 2564777 (06/30/17) at a concentration greater than the LOD but less than the LOQ. The results for methane in associated samples MW-28-062717 and DUP-4-062717 were greater than the LOQ, no qualification was

required. The result for methane in associated sample MW-29-062717 was less than the LOQ and was qualified as non-detect (U) at the LOQ.

Work Order 2241456 (SDG ASN024)

No methane analyses were requested for the samples within this SDG.

3.0 Chloride, Sulfate, Nitrate as N

Measurement performance indicators which did not meet criteria for chloride, sulfate and nitrate as N analysis are presented below for each of the five laboratory reports. Analytical results for these anions were reviewed for the following measurement performance indicators:

- Chain of Custody
- Sample Preservation
- Holding Time
- Quantitation Limits
- Initial Calibration
- Continuing Calibration Verification
- Method Blanks
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Duplicate
- Laboratory Control Samples
- Data package / EDD consistency

Work Order 2240568 (SDG ASN020)

Laboratory Method Blank (p. 1874): Chloride was detected in several method blanks (2560096, 2561314 and 2560099 analyzed on 06/22/17 at concentrations greater than the LOD but less than the LOQ. The chloride result for associated sample MW-16-062017 was greater than the LOQ. No data qualification was required.

Work Order 2240572 (SDG ASN021)

Laboratory Method Blank (p. 3056): Chloride was detected in the method blanks (2561112 and 2561316) analyzed on 06/23/17 at concentrations greater than the LOD but less than the LOQ. The chloride result for associated sample MW-15-062117 was greater than the LOQ. No data qualification was required.

Work Order 2241674 (SDG ASN022)

Laboratory Method Blank (p. 2402): Chloride, sulfate and nitrate were detected in the method blanks (2563123 and 2563529) analyzed on 06/28/17 at concentrations greater than the LOD but less than the LOQ. The positive nitrate results for samples MW-34-062617, MW-26-062617, MW-24-062617, MW-32-062617, MW-31-062617 and DUP-3-062617 and the positive sulfate results for samples MW-32-062617 and MW-30-062617 were estimated to be less than the LOQ and were qualified as non-detect (U) at the LOQ. All chloride and all other nitrate and sulfate results were non-detect or greater than ten times the LOQ and did not require qualification.

Work Order 2241998 (SDG ASN023)

Holding Time (p. 2583): The nitrate analysis of sample MW-29-062717 was performed on day beyond the US EPA 24-hour holding time. The nitrate result for sample MW-29-062717 was positive and was qualified as an estimated concentration (J) because the holding time was exceeded.

Laboratory Method Blank (p. 2583): Chloride, sulfate and nitrate were detected in the method blanks (2563977, 2564812, 2564812, and 2564327) analyzed on 06/29/17 at concentrations greater than the LOD but less than the LOQ. The positive nitrate, chloride and sulfate results for associated samples MW-28-062717, MW-29-06217 and DUP-4-062717 and the positive sulfate results for samples MW-32-062617 and MW-30-062617 were greater than the LOQs did not require qualification.

Work Order 2241456 (SDG ASN024)

No IC anions analyses were requested for the samples within this SDG.

4.0 Alkalinity

Measurement performance indicators which did not meet criteria for alkalinity analysis are presented below for each of the five laboratory reports. Analytical results for alkalinity were reviewed for the following measurement performance indicators:

- Chain of Custody
- Sample Preservation
- Holding Time
- Quantitation Limits
- Initial Calibration
- Continuing Calibration Verification
- Method Blanks
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Duplicate
- Laboratory Control Samples
- Data package / EDD consistency

Work Order 2240568 (SDG ASN020)

Laboratory Method Blank (p. 1860): Method blanks 2563823, 2563843 and 2563847 associated with sample MW-16-062017 were contaminated at concentrations greater than the LOD but less than the LOQ. The associated sample result was greater than the LOQ, and greater than the highest blank contamination level. No qualification was required.

Work Order 2240572 (SDG ASN021)

Laboratory Method Blank (p. 3042): Method blanks 2563823, 2563843 and 2563847 associated with sample MW-15-062117 were contaminated at concentrations greater than the LOD but less than the LOQ. The associated sample result was greater than the LOQ, and greater than the highest blank contamination level. No qualification was required.

Work Order 2241674 (SDG ASN022)

Laboratory Method Blank (p. 2386): Method blanks 2564650, 2564694 and 2564698 associated with samples MW-30-062617, MW-31-062617, MW-32-062617, MW-33-062617, MW-34-062617, MW-35-062617, MW-26-062617, MW-24-062617 and DUP-3-062617 were contaminated at concentrations greater than the LOD but less than the LOQ. The associated sample results were greater than the LOQ, and greater than the highest blank contamination level. No qualification was required.

Work Order 2241998 (SDG ASN023)

Laboratory Method Blank (p. 2565): Method blanks 2565372, 2565388, 2565392 and 2565396 associated with samples MW-28-062717, MW-29-062717 and DUP-4-062717 were contaminated at concentrations greater than the LOD but less than the LOQ. The associated sample results were greater than the LOQ, and greater than the highest blank contamination level. No qualification was required.

Work Order 2241456 (SDG ASN024)

No total alkalinity analyses were requested for the samples within this SDG.

5.0 Total Organic Carbon

Measurement performance indicators which did not meet criteria for total organic carbon (TOC) analysis are presented below for each of the five laboratory reports. Analytical results for TOC were reviewed for the following measurement performance indicators:

- Chain of Custody
- Sample Preservation
- Holding Time
- Quantitation Limits
- Initial Calibration
- Initial Calibration Verification
- Continuing Calibration Verification
- Method Blanks
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Duplicate
- Laboratory Control Samples
- Data package / EDD consistency

Work Order 2240568 (SDG ASN020)

No data quality issues were noted. No data qualification was required.

Work Order 2240572 (SDG ASN021)

No data quality issues were noted. No data qualification was required.

Work Order 2241674 (SDG ASN022)

No data quality issues were noted. No data qualification was required.

Work Order 2241998 (SDG ASN023)

No data quality issues were noted. No data qualification was required.

Work Order 2241456 (SDG ASN024)

No TOC analyses were requested for the samples within this SDG.

6.0 Field Duplicate Comparison

Field duplicate samples were collected at groundwater wells MW-16, MW-23, MW-28 and MW-34. See Table 2 below for the calculated RPDs for all compounds for which there were detections. Field duplicate results were evaluated using the following criteria.

Organics: The RPD must be ≤ 30% for groundwaters, for results greater than or equal to two times the reporting limit. If one of the results is non-detect or less than two times the reporting limit, and the duplicate is greater than two times the reporting limit, the difference between the parent and field duplicate results must be less than or equal to two times the reporting limit.

Action applies only to the affected analyte in the organic duplicate sample pair.

Inorganics: The RPD must be ≤ 30% for groundwaters, for results greater than or equal to five times the reporting limit. For results less than five times the reporting limit, the difference between the parent and field duplicate results must be less than or equal to two times the reporting limit.

Action applies to the affected analyte in all inorganic samples of the same matrix prepared and analyzed by the same method.

The following notations are used in the field precision table.

RPD: Relative percent difference
Qual: Qualification required;
µg/L: micrograms per liter (ppb) and mg/L: milligrams per liter (ppm)

Table 2 – Field Duplicate Precision

Parameter	Units	MW-16-062017	DUP-1-062017	RPD (%)	Qual
1,1,1-Trichloroethane	µg/L	0.50 J	0.50 J	0	None
Parameter	**Units**	**MW-23-062217**	**DUP-2-062217**	**RPD (%)**	**Qual**
Parent and field duplicate results were non-detect.					None
Parameter	**Units**	**MW-34-062617**	**DUP-3-062617**	**RPD (%)**	**Qual**
Trichloroethene	µg/L	34.0	33.6	1.2	None
Methane	µg/L	12.4	14.0	12	None
Alkalinity, total	mg/L	201	192	4.6	None
Chloride	mg/L	15.7	15.7	0	None
Sulfate	mg/L	13.4	13.4	0	None
Total Organic Carbon	mg/L	3.3	3.5	5.9	None
Parameter	**Units**	**MW-28-062717**	**DUP-4-062717**	**RPD (%)**	**Qual**
1,1-Dichloroethane	µg/L	1.0	1.1	10	None
1,1-Dichloroethene	µg/L	0.38 J	0.36 J	5.4	None
cis-1,2-Dichloroethene	µg/L	4.7	4.7	0	None
trans-1,2-Dichloroethene	µg/L	0.37 J	0.38 J	2.7	None
Tetrachloroethene	µg/L	36.3	35.2	3.1	None
1,1,1-Trichloroethane	µg/L	8.9	9.1	2.2	None
Trichloroethene	µg/L	195	196	0.5	None

Table 2 (Continued) – Field Duplicate Precision

Parameter	Units	MW-28-062717	DUP-4-062717	RPD (%)	Qual
Methane	µg/L	1.0	1.0	0	None
Alkalinity, total	mg/L	352	340	3.5	None
Chloride	mg/L	29.0	29.5	1.7	None
Nitrate	mg/L	1.5	1.5	0.0	None
Sulfate	mg/L	13.0	13.2	1.5	None
Total Organic Carbon	mg/L	0.76 J	0.91 J	18	None

The RPDs between the parent and field duplicate results were within the advisory limits of 0-30%. Field sampling/laboratory precision and sample homogeneity were acceptable. No data qualifications were required.

7.0 Notes

Positive organic and inorganic results less than the LOQ, but greater than the detection limit were qualified “J,” as estimated concentrations, due to increased uncertainty near the detection limit. The “J” qualifiers were maintained in the data validation.

Matrix spike and matrix spike duplicates and laboratory duplicates that were performed on non-project samples were not evaluated because matrix similarity to project samples could not be assumed.

Appendix A

Glossary of Data Qualifier Codes

Glossary of Data Qualifier Codes

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.

J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity, likely to be biased high. The associated numerical value is the approximate concentration of the analyte in the sample.

J- The result is an estimated quantity, likely to be biased low. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.

N (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.

NJ (Organics) The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

Appendix B

Data Qualification Summaries

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568001** Date Collected: 6/20/2017 10:05 Matrix: Ground Water

Sample ID: **MW-16 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,1-Trichloroethane	0.50J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:12	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118			SW846 8260C		6/29/17 18:12	TMP	A
4-Bromofluorobenzene (S)	93.5		%	85 - 114			SW846 8260C		6/29/17 18:12	TMP	A
Dibromofluoromethane (S)	88.2		%	80 - 119			SW846 8260C		6/29/17 18:12	TMP	A
Toluene-d8 (S)	94		%	89 - 112			SW846 8260C		6/29/17 18:12	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 01:12	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 01:12	EGO	C
Methane 0.50U	~~0.19J~~	~~J~~	ug/L	0.50	0.25	0.13	RSK 175		6/28/17 01:12	EGO	C
WET CHEMISTRY											
Alkalinity, Total	322	X	mg/L	5	5	0.8	S2320B-97		6/29/17 19:08	MSA	H
Chloride	20.2		mg/L	2.0	0.50	0.16	EPA 300.0		6/22/17 09:42	CHW	G
Nitrate-N	3.7		mg/L	0.20	0.060	0.020	EPA 300.0		6/22/17 09:42	CHW	G
Sulfate	75.5		mg/L	2.0	0.50	0.20	EPA 300.0		6/22/17 09:42	CHW	G
Total Organic Carbon (TOC)	0.67J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/26/17 10:15	PAG	G

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568002** Date Collected: 6/20/2017 12:40 Matrix: Ground Water

Sample ID: **MW-7 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:34	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	100		%	81 - 118	SW846 8260C		6/29/17 18:34	TMP	A
4-Bromofluorobenzene (S)	95.1		%	85 - 114	SW846 8260C		6/29/17 18:34	TMP	A
Dibromofluoromethane (S)	86.6		%	80 - 119	SW846 8260C		6/29/17 18:34	TMP	A
Toluene-d8 (S)	93.4		%	89 - 112	SW846 8260C		6/29/17 18:34	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568003** Date Collected: 6/20/2017 14:37 Matrix: Ground Water

Sample ID: **MW-6 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
cis-1,2-Dichloroethene	0.39J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
1,1,1-Trichloroethane	0.77J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
Trichloroethene	26.0		ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 18:57	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	100		%	81 - 118	SW846 8260C		6/29/17 18:57	TMP	A
4-Bromofluorobenzene (S)	93.4		%	85 - 114	SW846 8260C		6/29/17 18:57	TMP	A
Dibromofluoromethane (S)	86.3		%	80 - 119	SW846 8260C		6/29/17 18:57	TMP	A
Toluene-d8 (S)	92.1		%	89 - 112	SW846 8260C		6/29/17 18:57	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568004** Date Collected: 6/20/2017 14:56 Matrix: Ground Water

Sample ID: **MW-9 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:20	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	98.8		%	81 - 118	SW846 8260C		6/29/17 19:20	TMP	A
4-Bromofluorobenzene (S)	95.1		%	85 - 114	SW846 8260C		6/29/17 19:20	TMP	A
Dibromofluoromethane (S)	87		%	80 - 119	SW846 8260C		6/29/17 19:20	TMP	A
Toluene-d8 (S)	92.5		%	89 - 112	SW846 8260C		6/29/17 19:20	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568005** Date Collected: 6/20/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-1 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,1-Trichloroethane	0.50J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/29/17 19:42	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.5		%	81 - 118	SW846 8260C		6/29/17 19:42	TMP	A
4-Bromofluorobenzene (S)	95.4		%	85 - 114	SW846 8260C		6/29/17 19:42	TMP	A
Dibromofluoromethane (S)	88.2		%	80 - 119	SW846 8260C		6/29/17 19:42	TMP	A
Toluene-d8 (S)	94.6		%	89 - 112	SW846 8260C		6/29/17 19:42	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240568006** Date Collected: 6/22/2017 08:55 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/29/17 13:38	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.1		%	81 - 118	SW846 8260C			6/29/17 13:38	TMP	A
4-Bromofluorobenzene (S)	94.7		%	85 - 114	SW846 8260C			6/29/17 13:38	TMP	A
Dibromofluoromethane (S)	86.4		%	80 - 119	SW846 8260C			6/29/17 13:38	TMP	A
Toluene-d8 (S)	92.2		%	89 - 112	SW846 8260C			6/29/17 13:38	TMP	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572001** Date Collected: 6/20/2017 16:11 Matrix: Ground Water

Sample ID: **MW-5 062017** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
1,1,1-Trichloroethane	0.41J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
Trichloroethene	0.58J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:59	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	97.5		%	81 - 118	SW846 8260C		6/30/17 00:59	CJG	A
4-Bromofluorobenzene (S)	94.4		%	85 - 114	SW846 8260C		6/30/17 00:59	CJG	A
Dibromofluoromethane (S)	85.8		%	80 - 119	SW846 8260C		6/30/17 00:59	CJG	A
Toluene-d8 (S)	94.4		%	89 - 112	SW846 8260C		6/30/17 00:59	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572002** Date Collected: 6/21/2017 10:15 Matrix: Ground Water
Sample ID: **GEP-4 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Tetrachloroethene	0.80J	J	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,1-Trichloroethane	4.7		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Trichloroethene	72.4		ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 01:22	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C			6/30/17 01:22	CJG	A
4-Bromofluorobenzene (S)	94.4		%	85 - 114	SW846 8260C			6/30/17 01:22	CJG	A
Dibromofluoromethane (S)	85.6		%	80 - 119	SW846 8260C			6/30/17 01:22	CJG	A
Toluene-d8 (S)	93.1		%	89 - 112	SW846 8260C			6/30/17 01:22	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572003** Date Collected: 6/21/2017 10:51 Matrix: Ground Water

Sample ID: **GEP-2 062112** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
1,1-Dichloroethane	0.68J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
1,1-Dichloroethene	1.1		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
cis-1,2-Dichloroethene	1.8		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
Tetrachloroethene	3.2		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
1,1,1-Trichloroethane	16.3		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
Trichloroethene	167		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 19:23	TMP	B

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118	SW846 8260C		7/3/17 19:23	TMP	B
4-Bromofluorobenzene (S)	112		%	85 - 114	SW846 8260C		7/3/17 19:23	TMP	B
Dibromofluoromethane (S)	94.9		%	80 - 119	SW846 8260C		7/3/17 19:23	TMP	B
Toluene-d8 (S)	99		%	89 - 112	SW846 8260C		7/3/17 19:23	TMP	B

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572004** Date Collected: 6/21/2017 11:10 Matrix: Ground Water

Sample ID: **MW-15 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Tetrachloroethene	0.66J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,1-Trichloroethane	3.8		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Trichloroethene	122	~~J~~	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:07	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118	SW846 8260C		6/30/17 02:07	CJG	A
4-Bromofluorobenzene (S)	94		%	85 - 114	SW846 8260C		6/30/17 02:07	CJG	A
Dibromofluoromethane (S)	87.1		%	80 - 119	SW846 8260C		6/30/17 02:07	CJG	A
Toluene-d8 (S)	92.4		%	89 - 112	SW846 8260C		6/30/17 02:07	CJG	A

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 01:46	EGO	D
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 01:46	EGO	D
Methane 0.50U	~~0.25J~~	~~J~~	ug/L	0.50	0.25	0.13	RSK 175		6/28/17 01:46	EGO	D
WET CHEMISTRY											
Alkalinity, Total	217	~~B~~	mg/L	5	5	0.8	S2320B-97		6/29/17 19:19	MSA	I
Chloride	40.1		mg/L	2.0	0.50	0.16	EPA 300.0		6/23/17 10:54	CHW	H
Nitrate-N	0.52		mg/L	0.20	0.060	0.020	EPA 300.0		6/23/17 10:54	CHW	H
Sulfate	20.5		mg/L	2.0	0.50	0.20	EPA 300.0		6/23/17 10:54	CHW	H
Total Organic Carbon (TOC)	0.21J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/26/17 10:15	PAG	H

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572005** Date Collected: 6/21/2017 13:21 Matrix: Ground Water

Sample ID: **MW-18 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Tetrachloroethene	1.8		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,1-Trichloroethane	2.4		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Trichloroethene	117		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:29	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118	SW846 8260C		6/30/17 02:29	CJG	A
4-Bromofluorobenzene (S)	94.9		%	85 - 114	SW846 8260C		6/30/17 02:29	CJG	A
Dibromofluoromethane (S)	87.8		%	80 - 119	SW846 8260C		6/30/17 02:29	CJG	A
Toluene-d8 (S)	93.1		%	89 - 112	SW846 8260C		6/30/17 02:29	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572006** Date Collected: 6/21/2017 13:25 Matrix: Ground Water

Sample ID: **MW-25 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Trichloroethene	76.7		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 02:52	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118	SW846 8260C		6/30/17 02:52	CJG	A
4-Bromofluorobenzene (S)	94.1		%	85 - 114	SW846 8260C		6/30/17 02:52	CJG	A
Dibromofluoromethane (S)	88.1		%	80 - 119	SW846 8260C		6/30/17 02:52	CJG	A
Toluene-d8 (S)	91.9		%	89 - 112	SW846 8260C		6/30/17 02:52	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572007** Date Collected: 6/21/2017 15:14 Matrix: Ground Water

Sample ID: **MW-19 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,1-Trichloroethane	2.9		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Trichloroethene	14.3		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:15	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	103		%	81 - 118	SW846 8260C		6/30/17 03:15	CJG	A
4-Bromofluorobenzene (S)	96.4		%	85 - 114	SW846 8260C		6/30/17 03:15	CJG	A
Dibromofluoromethane (S)	87.8		%	80 - 119	SW846 8260C		6/30/17 03:15	CJG	A
Toluene-d8 (S)	93.4		%	89 - 112	SW846 8260C		6/30/17 03:15	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572008** Date Collected: 6/21/2017 15:20 Matrix: Ground Water

Sample ID: **MW-14 062117** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
cis-1,2-Dichloroethene	0.85J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
Tetrachloroethene	10.5		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
1,1,1-Trichloroethane	1.2		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
Trichloroethene	2.4		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 03:37	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C		6/30/17 03:37	CJG	A
4-Bromofluorobenzene (S)	94.7		%	85 - 114	SW846 8260C		6/30/17 03:37	CJG	A
Dibromofluoromethane (S)	86.1		%	80 - 119	SW846 8260C		6/30/17 03:37	CJG	A
Toluene-d8 (S)	92.2		%	89 - 112	SW846 8260C		6/30/17 03:37	CJG	A

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ANALYTICAL RESULTS

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID: **2240572009** Date Collected: 6/22/2017 08:55 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/22/2017 08:55

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:36	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C		6/30/17 00:36	CJG	A
4-Bromofluorobenzene (S)	97		%	85 - 114	SW846 8260C		6/30/17 00:36	CJG	A
Dibromofluoromethane (S)	87.6		%	80 - 119	SW846 8260C		6/30/17 00:36	CJG	A
Toluene-d8 (S)	94.6		%	89 - 112	SW846 8260C		6/30/17 00:36	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674001** Date Collected: 6/26/2017 09:15 Matrix: Ground Water

Sample ID: **MW-34 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
Trichloroethene	34.0		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 20:55	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	116		%	81 - 118			SW846 8260C		7/3/17 20:55	TMP	A
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C		7/3/17 20:55	TMP	A
Dibromofluoromethane (S)	93.3		%	80 - 119			SW846 8260C		7/3/17 20:55	TMP	A
Toluene-d8 (S)	96.9		%	89 - 112			SW846 8260C		7/3/17 20:55	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 02:18	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 02:18	EGO	C
Methane	12.4		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 02:18	EGO	C
WET CHEMISTRY											
Alkalinity, Total	201	X	mg/L	5	5	0.8	S2320B-97		7/1/17 21:35	MSA	H
Chloride	15.7		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 04:48	CHW	G
Nitrate-N 0.20 U	~~0.040J~~	~~J~~	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 04:48	CHW	G
Sulfate	13.4		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 04:48	CHW	G
Total Organic Carbon (TOC)	3.3		mg/L	1.0	0.50	0.18	S5310B-00		7/3/17 09:54	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674002** Date Collected: 6/26/2017 09:25 Matrix: Ground Water
Sample ID: **MW-35 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
Trichloroethene	43.8	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:17	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	117		%	81 - 118			SW846 8260C		7/3/17 21:17	TMP	A
4-Bromofluorobenzene (S)	116	X	%	85 - 114			SW846 8260C		7/3/17 21:17	TMP	A
Dibromofluoromethane (S)	94.7		%	80 - 119			SW846 8260C		7/3/17 21:17	TMP	A
Toluene-d8 (S)	97.9		%	89 - 112			SW846 8260C		7/3/17 21:17	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 02:34	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 02:34	EGO	C
Methane	7.2		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 02:34	EGO	C
WET CHEMISTRY											
Alkalinity, Total	202	X	mg/L	5	5	0.8	S2320B-97		7/1/17 21:46	MSA	H
Chloride	17.1		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 05:00	CHW	G
Nitrate-N	0.66		mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 05:00	CHW	G
Sulfate	13.6		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 05:00	CHW	G
Total Organic Carbon (TOC)	0.75J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/28/17 10:36	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674003** Date Collected: 6/26/2017 10:45 Matrix: Ground Water

Sample ID: **MW-26 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 21:40	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C		7/3/17 21:40	TMP	A
4-Bromofluorobenzene (S)	111		%	85 - 114			SW846 8260C		7/3/17 21:40	TMP	A
Dibromofluoromethane (S)	93.2		%	80 - 119			SW846 8260C		7/3/17 21:40	TMP	A
Toluene-d8 (S)	97.6		%	89 - 112			SW846 8260C		7/3/17 21:40	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 02:50	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 02:50	EGO	C
Methane	2.1		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 02:50	EGO	C
WET CHEMISTRY											
Alkalinity, Total	223	X	mg/L	5	5	0.8	S2320B-97		7/1/17 21:58	MSA	H
Chloride	133		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 05:12	CHW	G
Nitrate-N 0.20U	~~0.020J~~	~~J~~	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 05:12	CHW	G
Sulfate	20.9		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 05:12	CHW	G
Total Organic Carbon (TOC)	30.7		mg/L	10.0	5.0	1.8	S5310B-00		6/29/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674004** Date Collected: 6/26/2017 10:45 Matrix: Ground Water

Sample ID: **MW-24 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
Trichloroethene	1.2		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:03	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C		7/3/17 22:03	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114			SW846 8260C		7/3/17 22:03	TMP	A
Dibromofluoromethane (S)	92.8		%	80 - 119			SW846 8260C		7/3/17 22:03	TMP	A
Toluene-d8 (S)	96.5		%	89 - 112			SW846 8260C		7/3/17 22:03	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 03:06	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 03:06	EGO	C
Methane	2.2		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 03:06	EGO	C
WET CHEMISTRY											
Alkalinity, Total	195	X	mg/L	5	5	0.8	S2320B-97		7/1/17 22:09	MSA	H
Chloride	41.0		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 05:24	CHW	G
Nitrate-N 0.20U	~~0.040J~~	~~J~~	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 05:24	CHW	G
Sulfate	22.1		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 05:24	CHW	G
Total Organic Carbon (TOC)	0.79J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/28/17 10:36	PAG	E

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674005** Date Collected: 6/26/2017 12:40 Matrix: Ground Water

Sample ID: **MW-32 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
1,1-Dichloroethene	0.48J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
cis-1,2-Dichloroethene	1.3		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
Trichloroethene	130		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:25	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118	SW846 8260C		7/3/17 22:25	TMP	A
4-Bromofluorobenzene (S)	110		%	85 - 114	SW846 8260C		7/3/17 22:25	TMP	A
Dibromofluoromethane (S)	93.9		%	80 - 119	SW846 8260C		7/3/17 22:25	TMP	A
Toluene-d8 (S)	95.5		%	89 - 112	SW846 8260C		7/3/17 22:25	TMP	A

LIGHT HYDROCARBON GASES											
Ethane	35.9		ug/L	1.0	0.50	0.25	RSK 175		6/28/17 03:22	EGO	C
Ethene	15.6		ug/L	1.5	0.75	0.31	RSK 175		6/28/17 03:22	EGO	C
Methane	817		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 03:22	EGO	C
WET CHEMISTRY											
Alkalinity, Total	129	~~*~~	mg/L	5	5	0.8	S2320B-97		7/1/17 22:21	MSA	H
Chloride	38.0		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 05:36	CHW	G
Nitrate-N 0.20U	~~0.020J~~	~~J~~	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 05:36	CHW	G
Sulfate 2.0U	~~0.50J~~	~~J~~	mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 05:36	CHW	G
Total Organic Carbon (TOC)	22.0		mg/L	10.0	5.0	1.8	S5310B-00		7/3/17 09:54	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674006** Date Collected: 6/26/2017 12:41 Matrix: Ground Water

Sample ID: **MW-33 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
Trichloroethene	152	✂	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 22:48	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C		7/3/17 22:48	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114			SW846 8260C		7/3/17 22:48	TMP	A
Dibromofluoromethane (S)	93.7		%	80 - 119			SW846 8260C		7/3/17 22:48	TMP	A
Toluene-d8 (S)	97.7		%	89 - 112			SW846 8260C		7/3/17 22:48	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 03:42	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 03:42	EGO	C
Methane	16.0		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 03:42	EGO	C
WET CHEMISTRY											
Alkalinity, Total	205	✂	mg/L	5	5	0.8	S2320B-97		7/1/17 22:32	MSA	H
Chloride	22.8		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 05:48	CHW	G
Nitrate-N	0.32		mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 05:48	CHW	G
Sulfate	11.8		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 05:48	CHW	G
Total Organic Carbon (TOC)	0.54J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/28/17 10:36	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674007** Date Collected: 6/26/2017 14:25 Matrix: Ground Water

Sample ID: **MW-30 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
cis-1,2-Dichloroethene	0.61J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
Trichloroethene	24.3		ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/3/17 23:11	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118			SW846 8260C		7/3/17 23:11	TMP	A
4-Bromofluorobenzene (S)	111		%	85 - 114			SW846 8260C		7/3/17 23:11	TMP	A
Dibromofluoromethane (S)	91.7		%	80 - 119			SW846 8260C		7/3/17 23:11	TMP	A
Toluene-d8 (S)	96.8		%	89 - 112			SW846 8260C		7/3/17 23:11	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	36.7		ug/L	1.0	0.50	0.25	RSK 175		6/28/17 03:58	EGO	C
Ethene	12.7		ug/L	1.5	0.75	0.31	RSK 175		6/28/17 03:58	EGO	C
Methane	3210		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 03:58	EGO	C
WET CHEMISTRY											
Alkalinity, Total	154	X	mg/L	5	5	0.8	S2320B-97		7/1/17 22:43	MSA	H
Chloride	49.6		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 05:59	CHW	G
Nitrate-N	0.060U	U	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 05:59	CHW	G
Sulfate 2.0U	~~0.32J~~	~~J~~	mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 05:59	CHW	G
Total Organic Carbon (TOC)	75.2		mg/L	50.0	25.0	9.2	S5310B-00		6/28/17 10:36	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674008** Date Collected: 6/26/2017 19:33 Matrix: Ground Water

Sample ID: **MW-31 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
cis-1,2-Dichloroethene	0.50J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
Trichloroethene	29.0		ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:48	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	116		%	81 - 118			SW846 8260C		7/5/17 13:48	TMP	A
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C		7/5/17 13:48	TMP	A
Dibromofluoromethane (S)	92		%	80 - 119			SW846 8260C		7/5/17 13:48	TMP	A
Toluene-d8 (S)	98.3		%	89 - 112			SW846 8260C		7/5/17 13:48	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	2.7		ug/L	1.0	0.50	0.25	RSK 175		6/28/17 04:34	EGO	C
Ethene	3.2		ug/L	1.5	0.75	0.31	RSK 175		6/28/17 04:34	EGO	C
Methane	56.5		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 04:34	EGO	C
WET CHEMISTRY											
Alkalinity, Total	150	~~J~~	mg/L	5	5	0.8	S2320B-97		7/1/17 22:55	MSA	H
Chloride	31.0		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 06:11	CHW	G
Nitrate-N 0.20U	~~0.020J~~	~~J~~	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 06:11	CHW	G
Sulfate	5.6		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 06:11	CHW	G
Total Organic Carbon (TOC)	2.8		mg/L	2.0	1.0	0.37	S5310B-00		6/29/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674009** Date Collected: 6/26/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-3 062617** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
Trichloroethene	33.6		ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/7/17 15:54	TMP	B
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	81 - 118			SW846 8260C		7/7/17 15:54	TMP	B
4-Bromofluorobenzene (S)	110		%	85 - 114			SW846 8260C		7/7/17 15:54	TMP	B
Dibromofluoromethane (S)	90.3		%	80 - 119			SW846 8260C		7/7/17 15:54	TMP	B
Toluene-d8 (S)	94.7		%	89 - 112			SW846 8260C		7/7/17 15:54	TMP	B
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/28/17 02:01	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/28/17 02:01	EGO	C
Methane	14.0		ug/L	0.50	0.25	0.13	RSK 175		6/28/17 02:01	EGO	C
WET CHEMISTRY											
Alkalinity, Total	192	~~J~~	mg/L	5	5	0.8	S2320B-97		7/1/17 23:06	MSA	H
Chloride	15.7		mg/L	2.0	0.50	0.16	EPA 300.0		6/28/17 07:23	CHW	G
Nitrate-N 0.20U	~~0.040J~~	~~J~~	mg/L	0.20	0.060	0.020	EPA 300.0		6/28/17 07:23	CHW	G
Sulfate	13.4		mg/L	2.0	0.50	0.20	EPA 300.0		6/28/17 07:23	CHW	G
Total Organic Carbon (TOC)	3.5		mg/L	1.0	0.50	0.18	S5310B-00		7/3/17 09:54	PAG	E

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ANALYTICAL RESULTS

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241674010** Date Collected: 6/27/2017 08:46 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/27/2017 08:46

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
Toluene	0.37J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:25	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	81 - 118	SW846 8260C		7/5/17 13:25	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114	SW846 8260C		7/5/17 13:25	TMP	A
Dibromofluoromethane (S)	94.1		%	80 - 119	SW846 8260C		7/5/17 13:25	TMP	A
Toluene-d8 (S)	96.3		%	89 - 112	SW846 8260C		7/5/17 13:25	TMP	A

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998001** Date Collected: 6/27/2017 10:33 Matrix: Ground Water

Sample ID: **MW-28 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1-Dichloroethane	1.0	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1-Dichloroethene	0.38J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
cis-1,2-Dichloroethene	4.7	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
trans-1,2-Dichloroethene	0.37J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Tetrachloroethene	36.3	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,1-Trichloroethane	8.9	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Trichloroethene	195		ug/L	5.0	3.8	1.7	SW846 8260C		7/7/17 14:46	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:11	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	119	X	%	81 - 118			SW846 8260C		7/5/17 14:11	TMP	A
1,2-Dichloroethane-d4 (S)	113		%	81 - 118			SW846 8260C		7/7/17 14:46	TMP	B
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C		7/5/17 14:11	TMP	A
4-Bromofluorobenzene (S)	113		%	85 - 114			SW846 8260C		7/7/17 14:46	TMP	B
Dibromofluoromethane (S)	96.2		%	80 - 119			SW846 8260C		7/5/17 14:11	TMP	A
Dibromofluoromethane (S)	89.5		%	80 - 119			SW846 8260C		7/7/17 14:46	TMP	B
Toluene-d8 (S)	95.3		%	89 - 112			SW846 8260C		7/7/17 14:46	TMP	B
Toluene-d8 (S)	97.6		%	89 - 112			SW846 8260C		7/5/17 14:11	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/30/17 04:03	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/30/17 04:03	EGO	C
Methane	1.0		ug/L	0.50	0.25	0.13	RSK 175		6/30/17 04:03	EGO	C
WET CHEMISTRY											
Alkalinity, Total	352	X	mg/L	5	5	0.8	S2320B-97		7/3/17 10:26	MSA	H
Chloride	29.0		mg/L	2.0	0.50	0.16	EPA 300.0		6/29/17 04:46	CHW	G
Nitrate-N	1.5		mg/L	0.20	0.060	0.020	EPA 300.0		6/29/17 04:46	CHW	G
Sulfate	13.0		mg/L	2.0	0.50	0.20	EPA 300.0		6/29/17 04:46	CHW	G
Total Organic Carbon (TOC)	0.76J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/29/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998001** Date Collected: 6/27/2017 10:33 Matrix: Ground Water

Sample ID: **MW-28 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998002** Date Collected: 6/27/2017 12:29 Matrix: Ground Water

Sample ID: **MW-29 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1-Dichloroethane	1.0	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1-Dichloroethene	0.63J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
cis-1,2-Dichloroethene	5.8	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
trans-1,2-Dichloroethene	0.70J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Tetrachloroethene	38.1	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,1-Trichloroethane	11.8	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Trichloroethene	264		ug/L	5.0	3.8	1.7	SW846 8260C		7/7/17 15:31	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 15:18	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	81 - 118			SW846 8260C		7/7/17 15:31	TMP	B
1,2-Dichloroethane-d4 (S)	121	~~J~~	%	81 - 118			SW846 8260C		7/5/17 15:18	TMP	A
4-Bromofluorobenzene (S)	115	~~J~~	%	85 - 114			SW846 8260C		7/5/17 15:18	TMP	A
4-Bromofluorobenzene (S)	112		%	85 - 114			SW846 8260C		7/7/17 15:31	TMP	B
Dibromofluoromethane (S)	90.3		%	80 - 119			SW846 8260C		7/7/17 15:31	TMP	B
Dibromofluoromethane (S)	96		%	80 - 119			SW846 8260C		7/5/17 15:18	TMP	A
Toluene-d8 (S)	93.6		%	89 - 112			SW846 8260C		7/7/17 15:31	TMP	B
Toluene-d8 (S)	96.6		%	89 - 112			SW846 8260C		7/5/17 15:18	TMP	A
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/30/17 04:18	EGO	G
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/30/17 04:18	EGO	G
Methane 0.50 U	~~0.20J~~	~~J,3~~	ug/L	0.50	0.25	0.13	RSK 175		6/30/17 04:18	EGO	G
WET CHEMISTRY											
Alkalinity, Total	361	~~X~~	mg/L	5	5	0.8	S2320B-97		7/3/17 09:07	MSA	V
Chloride	49.4		mg/L	2.0	0.50	0.16	EPA 300.0		6/30/17 05:53	CHW	S
Nitrate-N	1.3	~~X~~ J	mg/L	0.20	0.060	0.020	EPA 300.0		6/30/17 05:53	CHW	S
Sulfate	13.8		mg/L	2.0	0.50	0.20	EPA 300.0		7/6/17 04:48	CHW	S
Total Organic Carbon (TOC)	0.92J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/29/17 10:29	C_W	M

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998002** Date Collected: 6/27/2017 12:29 Matrix: Ground Water

Sample ID: **MW-29 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998003** Date Collected: 6/27/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-4 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
1,1-Dichloroethane	1.1	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
1,1-Dichloroethene	0.36J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
cis-1,2-Dichloroethene	4.7	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
trans-1,2-Dichloroethene	0.38J	J	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
Tetrachloroethene	35.2	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
1,1,1-Trichloroethane	9.1	J+	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
Trichloroethene	196		ug/L	5.0	3.8	1.7	SW846 8260C		7/7/17 15:09	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 14:56	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	120	X	%	81 - 118			SW846 8260C		7/5/17 14:56	TMP	A
1,2-Dichloroethane-d4 (S)	114		%	81 - 118			SW846 8260C		7/7/17 15:09	TMP	B
4-Bromofluorobenzene (S)	116	X	%	85 - 114			SW846 8260C		7/5/17 14:56	TMP	A
4-Bromofluorobenzene (S)	109		%	85 - 114			SW846 8260C		7/7/17 15:09	TMP	B
Dibromofluoromethane (S)	92.5		%	80 - 119			SW846 8260C		7/7/17 15:09	TMP	B
Dibromofluoromethane (S)	95		%	80 - 119			SW846 8260C		7/5/17 14:56	TMP	A
Toluene-d8 (S)	96.1		%	89 - 112			SW846 8260C		7/5/17 14:56	TMP	A
Toluene-d8 (S)	94.8		%	89 - 112			SW846 8260C		7/7/17 15:09	TMP	B
LIGHT HYDROCARBON GASES											
Ethane	0.50U	U	ug/L	1.0	0.50	0.25	RSK 175		6/30/17 04:50	EGO	C
Ethene	0.75U	U	ug/L	1.5	0.75	0.31	RSK 175		6/30/17 04:50	EGO	C
Methane	1.0		ug/L	0.50	0.25	0.13	RSK 175		6/30/17 04:50	EGO	C
WET CHEMISTRY											
Alkalinity, Total	340	X	mg/L	5	5	0.8	S2320B-97		7/3/17 11:28	MSA	H
Chloride	29.5		mg/L	2.0	0.50	0.16	EPA 300.0		6/29/17 05:10	CHW	G
Nitrate-N	1.5		mg/L	0.20	0.060	0.020	EPA 300.0		6/29/17 05:10	CHW	G
Sulfate	13.2		mg/L	2.0	0.50	0.20	EPA 300.0		6/29/17 05:10	CHW	G
Total Organic Carbon (TOC)	0.91J	J	mg/L	1.0	0.50	0.18	S5310B-00		6/29/17 10:29	C_W	E

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998003** Date Collected: 6/27/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-4 062717** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr

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ANALYTICAL RESULTS

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID: **2241998004** Date Collected: 6/28/2017 08:34 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/28/2017 08:34

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		7/5/17 13:02	TMP	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	81 - 118	SW846 8260C		7/5/17 13:02	TMP	A
4-Bromofluorobenzene (S)	111		%	85 - 114	SW846 8260C		7/5/17 13:02	TMP	A
Dibromofluoromethane (S)	89.4		%	80 - 119	SW846 8260C		7/5/17 13:02	TMP	A
Toluene-d8 (S)	96.2		%	89 - 112	SW846 8260C		7/5/17 13:02	TMP	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456001** Date Collected: 6/22/2017 09:40 Matrix: Ground Water

Sample ID: **MW-23 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:00	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	105		%	81 - 118	SW846 8260C		6/30/17 04:00	CJG	A
4-Bromofluorobenzene (S)	95.4		%	85 - 114	SW846 8260C		6/30/17 04:00	CJG	A
Dibromofluoromethane (S)	88.7		%	80 - 119	SW846 8260C		6/30/17 04:00	CJG	A
Toluene-d8 (S)	92.8		%	89 - 112	SW846 8260C		6/30/17 04:00	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456002** Date Collected: 6/22/2017 11:46 Matrix: Ground Water

Sample ID: **MWB-23 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Tetrachloroethene	3.9		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:23	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	102		%	81 - 118	SW846 8260C		6/30/17 04:23	CJG	A
4-Bromofluorobenzene (S)	95.9		%	85 - 114	SW846 8260C		6/30/17 04:23	CJG	A
Dibromofluoromethane (S)	86.9		%	80 - 119	SW846 8260C		6/30/17 04:23	CJG	A
Toluene-d8 (S)	93.6		%	89 - 112	SW846 8260C		6/30/17 04:23	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456003** Date Collected: 6/22/2017 13:45 Matrix: Ground Water

Sample ID: **MW-36 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
Trichloroethene	0.81J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 04:46	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C		6/30/17 04:46	CJG	A
4-Bromofluorobenzene (S)	95		%	85 - 114	SW846 8260C		6/30/17 04:46	CJG	A
Dibromofluoromethane (S)	86.7		%	80 - 119	SW846 8260C		6/30/17 04:46	CJG	A
Toluene-d8 (S)	92.3		%	89 - 112	SW846 8260C		6/30/17 04:46	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456004** Date Collected: 6/22/2017 13:46 Matrix: Ground Water

Sample ID: **MW-22 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
1,1-Dichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
1,2-Dichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
1,1-Dichloroethene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
cis-1,2-Dichloroethene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
trans-1,2-Dichloroethene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
1,1,1,2-Tetrachloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
1,1,2,2-Tetrachloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
Tetrachloroethene	3.8J	J	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
Toluene	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
1,1,1-Trichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
1,1,2-Trichloroethane	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
Trichloroethene	238		ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B
Vinyl Chloride	3.8U	U	ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 19:46	TMP	B

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	112		%	81 - 118	SW846 8260C		7/3/17 19:46	TMP	B
4-Bromofluorobenzene (S)	114		%	85 - 114	SW846 8260C		7/3/17 19:46	TMP	B
Dibromofluoromethane (S)	93.9		%	80 - 119	SW846 8260C		7/3/17 19:46	TMP	B
Toluene-d8 (S)	97.9		%	89 - 112	SW846 8260C		7/3/17 19:46	TMP	B

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456005** Date Collected: 6/22/2017 15:05 Matrix: Ground Water

Sample ID: **MW-20 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
Tetrachloroethene	3.7		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
Trichloroethene	86.8		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 05:31	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.5		%	81 - 118	SW846 8260C		6/30/17 05:31	CJG	A
4-Bromofluorobenzene (S)	94.8		%	85 - 114	SW846 8260C		6/30/17 05:31	CJG	A
Dibromofluoromethane (S)	85.6		%	80 - 119	SW846 8260C		6/30/17 05:31	CJG	A
Toluene-d8 (S)	93		%	89 - 112	SW846 8260C		6/30/17 05:31	CJG	A

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456006** Date Collected: 6/22/2017 00:00 Matrix: Ground Water

Sample ID: **DUP-2 062217** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			6/30/17 05:54	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	98.7		%	81 - 118	SW846 8260C			6/30/17 05:54	CJG	A
4-Bromofluorobenzene (S)	93.2		%	85 - 114	SW846 8260C			6/30/17 05:54	CJG	A
Dibromofluoromethane (S)	84.7		%	80 - 119	SW846 8260C			6/30/17 05:54	CJG	A
Toluene-d8 (S)	92		%	89 - 112	SW846 8260C			6/30/17 05:54	CJG	A

Vicki Forney

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456007** Date Collected: 6/23/2017 09:05 Matrix: Ground Water

Sample ID: **GEP-3 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
Tetrachloroethene	0.57J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
1,1,1-Trichloroethane	1.2		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
Trichloroethene	131		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 06:16	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	105		%	81 - 118	SW846 8260C		6/30/17 06:16	CJG	A
4-Bromofluorobenzene (S)	94.3		%	85 - 114	SW846 8260C		6/30/17 06:16	CJG	A
Dibromofluoromethane (S)	88.3		%	80 - 119	SW846 8260C		6/30/17 06:16	CJG	A
Toluene-d8 (S)	95.1		%	89 - 112	SW846 8260C		6/30/17 06:16	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456008** Date Collected: 6/23/2017 09:40 Matrix: Ground Water

Sample ID: **GEP-1 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS												
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
Tetrachloroethene	0.45J	J	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
1,1,1-Trichloroethane	3.3	J+	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
Trichloroethene	152	J+	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C			7/3/17 20:09	TMP	B

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	114		%	81 - 118	SW846 8260C			7/3/17 20:09	TMP	B
4-Bromofluorobenzene (S)	115	X	%	85 - 114	SW846 8260C			7/3/17 20:09	TMP	B
Dibromofluoromethane (S)	94.8		%	80 - 119	SW846 8260C			7/3/17 20:09	TMP	B
Toluene-d8 (S)	98.5		%	89 - 112	SW846 8260C			7/3/17 20:09	TMP	B

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456009** Date Collected: 6/23/2017 10:50 Matrix: Ground Water

Sample ID: **MW-17 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1-Dichloroethane	1.1		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
cis-1,2-Dichloroethene	2.1		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,1-Trichloroethane	22.0		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Trichloroethene	35.2		ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:02	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.6		%	81 - 118	SW846 8260C		6/30/17 07:02	CJG	A
4-Bromofluorobenzene (S)	93.7		%	85 - 114	SW846 8260C		6/30/17 07:02	CJG	A
Dibromofluoromethane (S)	86.1		%	80 - 119	SW846 8260C		6/30/17 07:02	CJG	A
Toluene-d8 (S)	93		%	89 - 112	SW846 8260C		6/30/17 07:02	CJG	A

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456010** Date Collected: 6/23/2017 12:46 Matrix: Ground Water

Sample ID: **MW-27 062317** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1-Dichloroethene	0.51J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
1,1,2-Trichloroethane	0.73J	J	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A
Trichloroethene	211		ug/L	5.0	3.8	1.7	SW846 8260C		7/3/17 20:32	TMP	B
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 07:24	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	81 - 118	SW846 8260C		6/30/17 07:24	CJG	A
1,2-Dichloroethane-d4 (S)	113		%	81 - 118	SW846 8260C		7/3/17 20:32	TMP	B
4-Bromofluorobenzene (S)	111		%	85 - 114	SW846 8260C		7/3/17 20:32	TMP	B
4-Bromofluorobenzene (S)	94.4		%	85 - 114	SW846 8260C		6/30/17 07:24	CJG	A
Dibromofluoromethane (S)	94.1		%	80 - 119	SW846 8260C		7/3/17 20:32	TMP	B
Dibromofluoromethane (S)	86.7		%	80 - 119	SW846 8260C		6/30/17 07:24	CJG	A
Toluene-d8 (S)	94.1		%	89 - 112	SW846 8260C		6/30/17 07:24	CJG	A
Toluene-d8 (S)	97.3		%	89 - 112	SW846 8260C		7/3/17 20:32	TMP	B

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ANALYTICAL RESULTS

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID: **2241456011** Date Collected: 6/24/2017 09:38 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 6/24/2017 09:38

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS											
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
1,1,1,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C		6/30/17 00:13	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	97.8		%	81 - 118	SW846 8260C		6/30/17 00:13	CJG	A
4-Bromofluorobenzene (S)	93.5		%	85 - 114	SW846 8260C		6/30/17 00:13	CJG	A
Dibromofluoromethane (S)	85.8		%	80 - 119	SW846 8260C		6/30/17 00:13	CJG	A
Toluene-d8 (S)	93.4		%	89 - 112	SW846 8260C		6/30/17 00:13	CJG	A

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Appendix C

Support Documentation

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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

* 2 2 4 0 5 6 8 *

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM 40 British American Blvd Latham NY 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 | 1 | 1 | 0 | 0

NUMBER OF CONTAINERS: —

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	GCMS VOAs • 8260 • 624 • CLP 1/2160 L	GCMS SVOAs • 8270 • 625 RSK 175.	GC VOAs • 8021 • 8015/602 TOL	PESTICIDES • 8081 • 608 Alkalinity	PCBs • 8082 • 608 Cl, SO4, NO3	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	REMARKS/ ALTERNATE DESCRIPTION
MW-16 062017		6/20/17	1005	GW	X	X	X	X	X			
MW-7 062017		↓	1240	↓	X							
MW-6 062017			1437		X							Extra Volume collected for MS/MSD
MW-7 062017			1456		X							
Dup-1 062017			—		X							
Trip Blank		—	—	AQ	X							

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 ____

Chris French

SPECIAL INSTRUCTIONS/C
Metals

See QAPP ☒

STATE WHERE SAMPLE

	Y	N	Initials	Cooler Temp:
Custody Seals Present?				°C
(if present) Seals Intact?				Cooler #:
Received on Ice?				
COC/Labs Complete				Therm ID: 24
Cont in Good Cond?				
Correct Containers?				Ship Carrier:
Correct Samp Vol?				FedEx UPS
Correct Preservation?				DHL
Headspace/Volatiles?				

Tracking #: 6470 8360 1014

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
Standard
REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
____ I. Results Only See QAPP
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data See QAPP
Edata X Yes ____ No

INVOICE INFORMATION
PO # 60440641
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham, NY 12110

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Chris French	Signature: Brian McGuire	Signature: Brianne McGuire	Signature: Brian Nosi
Printed Name: Chris French	Printed Name: Brian McGuire	Printed Name: Brianne McGuire	Printed Name: Brian Nosi
Firm: AECOM	Firm: ALS	Firm: ALS	Firm: ALS
Date/Time: 6/20/17 1515	Date/Time: 6/20/17 2045	Date/Time: 6/21/17 1700	Date/Time: 6/22/17 945
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

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

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2240568 ASN020|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2240568001	MW-16 062017	Ground Water	6/20/2017 10:05	6/22/2017 08:55	Collected by Client
2240568002	MW-7 062017	Ground Water	6/20/2017 12:40	6/22/2017 08:55	Collected by Client
2240568003	MW-6 062017	Ground Water	6/20/2017 14:37	6/22/2017 08:55	Collected by Client
2240568004	MW-9 062017	Ground Water	6/20/2017 14:56	6/22/2017 08:55	Collected by Client
2240568005	DUP-1 062017	Ground Water	6/20/2017 00:00	6/22/2017 08:55	Collected by Client
2240568006	Trip Blank	Ground Water	6/22/2017 08:55	6/22/2017 08:55	Collected by Client

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2240568001	1	MW-16 062017	RSK 175	Methane
The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 56.6 and the upper control limit is 20.				
2240568001	2	MW-16 062017	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

AECOM - Latham, NY
ALS-Middletown
Case Narrative
ASN-020 (2240568)

Sample Management

This report contains the results of the analysis of six (6) ground water samples collected on June 20 and 22, 2017. Analytical results and quality control information are summarized in this data package.

Qualifier Symbol Definitions:

U = Qualifier indicates that the analyte was not detected above the LOD.
J = Qualifier indicates that the analyte value is between the DL and the LOQ.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds the calibration range.
P = Qualifier indicates that the RPD between the two analytical columns is > 40%.
NSC = Qualifier indicates that spike recoveries were not calculated based on the spiking concentration.

Result Symbol Definitions:

DL = The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.
LOD = The smallest analyte concentration that must be present in a sample in order to be detected at a high level of confidence.
LOQ = The lowest concentration that produces a quantitative result within specified limits of precision or bias.

Manual Integration Symbol Definitions

I = Peak was not integrated properly by chromatographic software. This may be due to baseline irregularities resulting from sample matrix, elevated baseline, or incorrect integration by software on a sample. Integration was adjusted by operator to ensure proper quantitation.
H = The incorrect peak was identified or the chromatographic software did not identify an analyte peak. Operator manually identified the correct peak as the appropriate target analyte. This flag is automatically assigned by the Target software.
SP = Peak was erroneously split. The operator manually integrated the peak to include all the area of the analyte peak to ensure proper quantitation.
MP = Two peaks were erroneously merged. This may include two discrete peaks separated by a distinguishable valley or a larger peak with a clearly identifiable shoulder. Operator manually split peaks.
AB = Integration of group of adjacent peaks did not follow baseline. Operator manually assigned integration to follow baseline.
NP = Negative spike in the baseline resulted in overstating area of analyte peaks. Analyte peaks were re-assigned.
AC = Integration of aggregate or multi-component analyte to include area off all components of the analyte (i.e., toxaphene).

Sample Receipt

Samples arrived at ALS via courier on June 22, 2017. Upon receipt, the samples were inspected and compared to the Chain of Custody. Sample temperature was documented on the enclosed Chain of Custody. Samples were received intact and properly preserved, unless noted on the enclosed Certificate of Analysis and/or Chain of Custody.

Manual Integrations

If manual integrations were performed they are indicated on the raw data quantification files for each method.

Volatile Organics by SW-846 Method 8260

Sample Handling. Six (6) water samples were analyzed by SW-846 Method 8260 for volatile organic compounds. All analyses were performed within the holding time.

Initial Calibrations. Initial calibrations were properly analyzed and met method criteria for all target analytes. **Note**: The batch LCS also serves as a second source (ICV).

Continuing Calibration Verification. Samples were analyzed immediately following the initial calibration.

Blanks. Target analytes were not detected in the method blank.

Surrogates. Recoveries were within control limits..

Laboratory control samples. Target analytes were recovered within control limits in the laboratory control samples.

Matrix Spikes. A matrix spike and matrix spike duplicate, identified as 2564416 and 2564417 was prepared from project sample MW-6 062017 (2240568005). Results for precision and accuracy were within control limits.

Internal Standards. Internal standard results met method criteria

Light Hydrocarbon Gases by RSK-175

Sample Handling. One (1) water sample was submitted for the analysis of light hydrocarbon gases by Method RSK-175. The samples were analyzed within the method specified holding time of fourteen days.

Calibrations. The initial calibrations met method criteria for all target analytes.

Calibration verification. Prior to the analysis of samples in this group, the initial calibrations were successfully verified by the analysis of calibration verification standards. The samples were then successfully bracketed with alternating calibration verification standards (CCV) throughout the analysis.

Continuing Calibration. A continuing calibration standard were properly analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank; except as follows:

- Methane was detected at 0.31 µg/L.

Duplicate Samples. A duplicate sample, identified as 2563121, was prepared from project sample MW-16 062017 (2240568001). Target analytes were detected as follows:

- Methane was detected at 0.19J µg/L in the sample and at 0.34 µg/L in the duplicate sample with a %RPD of 57%.

Anions by EPA 300.0

Sample handling. One (1) aqueous sample was analyzed for chloride, nitrate-N, and sulfate by EPA Method 300.0. The sample was analyzed within the method recommended holding time for each analyte.

Calibration. Initial calibrations, identified as Method A (high range) and Method L (low range), were properly established. All calibration verification standards were recovered within the QC limits.

Blanks. Initial and continuing blanks were analyzed with the samples. No analyte was detected above ½ the reporting limits in the blanks.

Laboratory Control Samples. Laboratory control samples, identified as 2559567, 2560605, 2560098 and SSL, were analyzed initially and every 20 samples. Recoveries were within the QC limits.

Total Alkalinity by SM 2320B

Sample handling. One (1) aqueous sample was analyzed for total alkalinity by Standard Method 2320B. The sample was analyzed within the 14-day holding time established for the method.

Blanks. Method blanks were analyzed with the samples. Total alkalinity was not detected above the reporting limit in the blanks.

Calibration. The standards were recovered within the alkalinity QC limits.

Total Organic Carbon by SM 5310B

Sample handling. One (1) aqueous sample was analyzed for total organic carbon by Standard Method 5310B. The sample was analyzed within the 28-day holding time established for the method.

Calibration. Initial calibrations were properly established on the days of analysis. Initial and continuing calibration standards were analyzed for verification, and recoveries were all within the QC limits.

Blanks. Method blanks were analyzed with the samples. Total organic carbon was not detected above ½ the reporting limit in the blanks.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
2563120

Lab Name: ALSI Contract:

Lab Code: PA-010 Case No.: SAS No.: SDG No.: ASN020

Matrix: (soil/water) WATER Lab Sample ID: 2563120

Sample wt/vol: _____ (g/mL) ML Lab File ID: MFSA003

Level: (low/med) LOW Date Received: 06/28/17

% Moisture: not dec. _____ Date Analyzed: 06/28/17

GC Column: PORAPAK Q ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	METHANE	0.31	
74-85-1	ETHENE	~~0.75~~	~~U~~
74-84-0	ETHANE	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
MW-16 06
2017 DUP

Lab Name: ALSI Contract:

Lab Code: PA-010 Case No.: SAS No.: SDG No.: ASN020

Matrix: (soil/water) WATER Lab Sample ID: 2563121

Sample wt/vol: _____ (g/mL) ML Lab File ID: MFSA005

Level: (low/med) LOW Date Received: 06/22/17

% Moisture: not dec. _____ Date Analyzed: 06/28/17

GC Column: PORAPAK Q ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	METHANE	0.34	
74-85-1	ETHENE	0.75	U
74-84-0	ETHANE	0.50	U

Methane detected at 0.31 µg/L in the associated method blank. No qualifications CAM 08/18/17.

FORM I VOA

Form 4B
Inorganic Blank Summary

Analysis Method: S2320B-97
Instrument: AUTOT

SDG No.: ASN020

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2563823	Alkalinity, Total	MB	QC-Water	06/29/2017 07:36	0.8	J	mg/L
2563843	Alkalinity, Total	MB	QC-Water	06/29/2017 17:47	1	J	mg/L
2563847	Alkalinity, Total	MB	QC-Water	06/29/2017 20:03	1	J	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

Form 4B
Inorganic Blank Summary

Analysis Method: EPA 300.0
Instrument: IC-7

SDG No.: ASN020

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2560603	Chloride	MB	QC-Water	06/22/2017 03:35	0.25	U	mg/L
2559565	Chloride	MB	QC-Water	06/22/2017 03:35	1.0	U	mg/L
2560603	Nitrate-N	MB	QC-Water	06/22/2017 03:35	0.030	U	mg/L
2559565	Nitrate-N	MB	QC-Water	06/22/2017 03:35	0.10	U	mg/L
2559565	Sulfate	MB	QC-Water	06/22/2017 03:35	1.0	U	mg/L
2560603	Sulfate	MB	QC-Water	06/22/2017 03:35	0.25	U	mg/L
2560096	Chloride	MB	QC-Water	06/22/2017 08:14	0.16	J	mg/L
2561312	Chloride	MB	QC-Water	06/22/2017 08:14	0.16	J	mg/L
2560096	Nitrate-N	MB	QC-Water	06/22/2017 08:14	0.10	U	mg/L
2561312	Nitrate-N	MB	QC-Water	06/22/2017 08:14	0.030	U	mg/L
2560096	Sulfate	MB	QC-Water	06/22/2017 08:14	1.0	U	mg/L
2561312	Sulfate	MB	QC-Water	06/22/2017 08:14	0.25	U	mg/L
2561314	Chloride	MB	QC-Water	06/22/2017 12:09	0.18	J	mg/L
2560099	Chloride	MB	QC-Water	06/22/2017 12:09	0.18	J	mg/L
2560099	Nitrate-N	MB	QC-Water	06/22/2017 12:09	0.10	U	mg/L
2561314	Nitrate-N	MB	QC-Water	06/22/2017 12:09	0.030	U	mg/L
2560099	Sulfate	MB	QC-Water	06/22/2017 12:09	1.0	U	mg/L
2561314	Sulfate	MB	QC-Water	06/22/2017 12:09	0.25	U	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

Form 4B
Inorganic Blank Summary

Analysis Method: S2320B-97
Instrument: AUTOT

SDG No.: ASN020

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2563823	Alkalinity, Total	MB	QC-Water	06/29/2017 07:36	0.8	J	mg/L
2563843	Alkalinity, Total	MB	QC-Water	06/29/2017 17:47	1	J	mg/L
2563847	Alkalinity, Total	MB	QC-Water	06/29/2017 20:03	1	J	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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* 2 2 4 0 5 7 2 *

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM 40 British American Blvd Latham NY 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 | 1 | 1 | 0 | 0

NUMBER OF CONTAINERS

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	OC/AS VOAs • 8260 • 624 • CLP: 8260 C	OC/AS SVOAs • 8270 • 625: RSK 175	GC VOAs • 8021 • 601/602: TOC	PESTICIDES • 8081 • 608: Alkalinity	PCBs • 8082 • 608: Cl, SO4, NO2	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)
MW-5 062017 (QAP)		6/20/17	1611	GW	X							
(C.J.) GEP-4 062117		6/21/17	1015		X							
GEP-2 062117			1051		X							
MW-15 062117			1110		X	X	X	X	X			
MW-18 062117			1321		X							
MW-25 062117			1325		X							
MW-19 062117			1514		X							
MW-14 062117			1520		X							
Trip Blank		—	—	AQ	X							

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 _____

REMARKS/ ALTERNATE DESCRIPTION

	Y	N	Initials
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			DMN
COC/Labels Complete			
Cont in Good Cond?			
Correct Containers?			
Correct Samp Vol?			
Correct Preservation?			
Headspace/Volatiles?			

Cooler Temp: 2 1 3

Cooler #:

Therm ID: 249

Ship Carrier: FedEx UPS DHL

Tracking #: 6470 8310 1041

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☒

STATE WHERE SAMPLES WERE COLLECT

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
Standard
REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
____ I. Results Only See QAPP
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
See QAPP
Edata ✓ Yes ____ No

INVOICE INFORMATION
PO # 60440641
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham NY 12110

RELINQUISHED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature
Printed Name: Chris French	Printed Name: Brian McGuirk	Printed Name: David Nosa	Printed Name	Printed Name
Firm: AECOM	Firm: ALS	Firm: ALS	Firm	Firm
Date/Time: 6/22/17 1535	Date/Time: 6/23/17 1130	Date/Time: 6/23/17 1130	Date/Time	Date/Time

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

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2240572 ASN021|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2240572001	MW-5 062017	Ground Water	6/20/2017 16:11	6/22/2017 08:55	Collected by Client
2240572002	GEP-4 062117	Ground Water	6/21/2017 10:15	6/22/2017 08:55	Collected by Client
2240572003	GEP-2 062112	Ground Water	6/21/2017 10:51	6/22/2017 08:55	Collected by Client
2240572004	MW-15 062117	Ground Water	6/21/2017 11:10	6/22/2017 08:55	Collected by Client
2240572005	MW-18 062117	Ground Water	6/21/2017 13:21	6/22/2017 08:55	Collected by Client
2240572006	MW-25 062117	Ground Water	6/21/2017 13:25	6/22/2017 08:55	Collected by Client
2240572007	MW-19 062117	Ground Water	6/21/2017 15:14	6/22/2017 08:55	Collected by Client
2240572008	MW-14 062117	Ground Water	6/21/2017 15:20	6/22/2017 08:55	Collected by Client
2240572009	Trip Blank	Ground Water	6/22/2017 08:55	6/22/2017 08:55	Collected by Client

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2240572004	1	MW-15 062117	SW846 8260C	Trichloroethene
The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Trichloroethene. The % Recovery was reported as 70.3 and the control limits were 79 to 123.				
2240572004	2	MW-15 062117	SW846 8260C	Trichloroethene
The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Trichloroethene. The % Recovery was reported as 71.4 and the control limits were 79 to 123.				
2240572004	3	MW-15 062117	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

AECOM - Latham, NY
ALS-Middletown
Case Narrative
ASN-021 (2240572)

Sample Management

This report contains the results of the analysis of nine (9) ground water samples collected on June 21-22, 2017. Analytical results and quality control information are summarized in this data package.

Qualifier Symbol Definitions:

U = Qualifier indicates that the analyte was not detected above the LOD.
J = Qualifier indicates that the analyte value is between the DL and the LOQ.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds the calibration range.
P = Qualifier indicates that the RPD between the two analytical columns is > 40%.
NSC = Qualifier indicates that spike recoveries were not calculated based on the spiking concentration.

Result Symbol Definitions:

DL = The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.
LOD = The smallest analyte concentration that must be present in a sample in order to be detected at a high level of confidence.
LOQ = The lowest concentration that produces a quantitative result within specified limits of precision or bias.

Manual Integration Symbol Definitions

I = Peak was not integrated properly by chromatographic software. This may be due to baseline irregularities resulting from sample matrix, elevated baseline, or incorrect integration by software on a sample. Integration was adjusted by operator to ensure proper quantitation.
H = The incorrect peak was identified or the chromatographic software did not identify an analyte peak. Operator manually identified the correct peak as the appropriate target analyte. This flag is automatically assigned by the Target software.
SP = Peak was erroneously split. The operator manually integrated the peak to include all the area of the analyte peak to ensure proper quantitation.
MP = Two peaks were erroneously merged. This may include two discrete peaks separated by a distinguishable valley or a larger peak with a clearly identifiable shoulder. Operator manually split peaks.
AB = Integration of group of adjacent peaks did not follow baseline. Operator manually assigned integration to follow baseline.
NP = Negative spike in the baseline resulted in overstating area of analyte peaks. Analyte peaks were re-assigned.
AC = Integration of aggregate or multi-component analyte to include area off all components of the analyte (i.e., toxaphene).

Sample Receipt

Samples arrived at ALS via courier on June 22, 2017. Upon receipt, the samples were inspected and compared to the Chain of Custody. Sample temperature was documented on the enclosed Chain of Custody. Samples were received intact and properly preserved, unless noted on the enclosed Certificate of Analysis and/or Chain of Custody.

Manual Integrations

If manual integrations were performed they are indicated on the raw data quantification files for each method.

Volatile Organics by SW-846 Method 8260

Sample Handling. Nine (9) water samples were analyzed by SW-846 Method 8260 for volatile organic compounds. All analyses were performed within the holding time.

Initial Calibrations. Initial calibrations were properly analyzed and met method criteria for all target analytes. **Note**: The batch LCS also serves as a second source (ICV).

Initial Calibration Verifications. Initial calibration verification samples were properly analyzed and met method criteria.

Continuing Calibration Verification. Continuing Calibration Verification samples were analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank.

Surrogates. Recoveries were within control limits..

Laboratory control samples. Target analytes were recovered within control limits in the laboratory control samples.

Matrix Spikes. A matrix spike and matrix spike duplicate, identified as 2564759 and 2564760 was prepared from project sample MW-15 062117 (2240572007). Results for precision and accuracy were within control limits, except as follows:

- In 2564759 MS/ 2564760 MSD set, Trichloroethene was recovered below control limits.

Internal Standards. Internal standard results met method criteria

Light Hydrocarbon Gases by RSK-175

Sample Handling. One (1) water sample was submitted for the analysis of light hydrocarbon gases by Method RSK-175. The samples were analyzed within the method specified holding time of fourteen days.

Calibrations. The initial calibrations met method criteria for all target analytes.

Calibration verification. Prior to the analysis of samples in this group, the initial calibrations were successfully verified by the analysis of calibration verification standards. The samples were then successfully bracketed with alternating calibration verification standards (CCV) throughout the analysis.

Continuing Calibration. A continuing calibration standard were properly analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank; except as follows:

- Methane was detected at 0.31 µg/L.

Anions by EPA 300.0

Sample handling. One (1) aqueous sample was analyzed for chloride, nitrate-N, and sulfate by EPA Method 300.0. The sample was analyzed within the method recommended holding time for each analyte.

Calibration. Initial calibrations, identified as Method A (high range) and Method L (low range), were properly established. All calibration verification standards were recovered within the QC limits.

Blanks. Initial and continuing blanks were analyzed with the samples. No analyte was detected above ½ the reporting limits in the blanks.

Laboratory Control Samples. Laboratory control samples, identified as 2560615, 2560611, 2561115 and SSL, were analyzed initially and every 20 samples. Recoveries were within the QC limits.

Total Alkalinity by SM 2320B

Sample handling. One (1) aqueous sample was analyzed for total alkalinity by Standard Method 2320B. The sample was analyzed within the 14-day holding time established for the method.

Blanks. Method blanks were analyzed with the samples. Total alkalinity was not detected above the reporting limit in the blanks.

Calibration. The standards were recovered within the alkalinity QC limits.

Total Organic Carbon by SM 5310B

Sample handling. One (1) aqueous sample was analyzed for total organic carbon by Standard Method 5310B. The sample was analyzed within the 28-day holding time established for the method.

Calibration. Initial calibrations were properly established on the days of analysis. Initial and continuing calibration standards were analyzed for verification, and recoveries were all within the QC limits.

Blanks. Method blanks were analyzed with the samples. Total organic carbon was not detected above ½ the reporting limit in the blanks.

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: _____ SAS No.: _____ SDG No.: ASN-021

Matrix Spike - Sample No: MW-15 062117MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC
Carbon Tetrachloride	20	0	20.2	101	(72-136)
1,1-Dichloroethane	20	0	21.2	106	(77-125)
1,2-Dichloroethane	20	0	19.6	98.2	(73-128)
1,1-Dichloroethene	20	0.32	24.0	118	(71-131)
cis-1,2-Dichloroethene	20	0	20.6	103	(78-123)
trans-1,2-Dichloroethene	20	0	22.7	114	(75-124)
1,1,1,2-Tetrachloroethane	20	0	19.5	97.5	(78-124)
1,1,2,2-Tetrachloroethane	20	0	19.8	98.8	(71-121)
Tetrachloroethene	20	0.66	20.1	97.2	(74-129)
Toluene	20	0	21.7	108	(80-121)
1,1,1-Trichloroethane	20	3.8	23.6	99.3	(74-131)
1,1,2-Trichloroethane	20	0	19.7	98.5	(80-119)
Trichloroethene	20	122	136	70.3*	(79-123)
Vinyl Chloride	20	0	20.0	100	(58-137)

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 14 outside limits

Comments: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: _____ SAS No.: _____ SDG No.: ASN-021

Matrix Spike - Sample No: MW-15 062117MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	MSD % RPD #	QC LIMITS RPD	QC LIMITS REC
Carbon Tetrachloride	20	20.5	103	1.26	30	(72-136)
1,1-Dichloroethane	20	20.9	104	1.34	30	(77-125)
1,2-Dichloroethane	20	19.4	97	1.23	30	(73-128)
1,1-Dichloroethene	20	23.9	118	.38	30	(71-131)
cis-1,2-Dichloroethene	20	20.9	105	1.46	30	(78-123)
trans-1,2-Dichloroethene	20	22.7	114	.04	30	(75-124)
1,1,1,2-Tetrachloroethane	20	19.8	99.1	1.68	30	(78-124)
1,1,2,2-Tetrachloroethane	20	19.8	98.9	.13	30	(71-121)
Tetrachloroethene	20	20.8	101	3.69	30	(74-129)
Toluene	20	21.7	108	.15	30	(80-121)
1,1,1-Trichloroethane	20	24.1	101	1.76	30	(74-131)
1,1,2-Trichloroethane	20	19.6	98.1	.46	30	(80-119)
Trichloroethene	20	137	71.4*	.16	30	(79-123)
Vinyl Chloride	20	19.6	98.1	2.14	30	(58-137)

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 14 outside limits

Spike Recovery: 1 out of 14 outside limits

Comments: _____

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
2563120

Lab Name: ALSI Contract:

Lab Code: PA-010 Case No.: SAS No.: SDG No.: ASN021

Matrix: (soil/water) WATER Lab Sample ID: 2563120

Sample wt/vol: _____ (g/mL) ML Lab File ID: MFSA003

Level: (low/med) LOW Date Received: 06/28/17

% Moisture: not dec. _____ Date Analyzed: 06/28/17

GC Column: PORAPAK Q ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	METHANE	0.31	
74-85-1	ETHENE	0.75	U
74-84-0	ETHANE	0.50	U

FORM I VOA

Form 4B
Inorganic Blank Summary

Analysis Method: EPA 300.0
Instrument: IC-7

SDG No.: ASN021

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2560609	Chloride	MB	QC-Water	06/23/2017 06:01	1.0	U	mg/L
2560613	Chloride	MB	QC-Water	06/23/2017 06:01	0.25	U	mg/L
2560613	Nitrate-N	MB	QC-Water	06/23/2017 06:01	0.030	U	mg/L
2560609	Nitrate-N	MB	QC-Water	06/23/2017 06:01	0.10	U	mg/L
2560613	Sulfate	MB	QC-Water	06/23/2017 06:01	0.25	U	mg/L
2560609	Sulfate	MB	QC-Water	06/23/2017 06:01	1.0	U	mg/L
2561112	Chloride	MB	QC-Water	06/23/2017 10:39	0.12	J	mg/L
2561316	Chloride	MB	QC-Water	06/23/2017 10:39	0.12	J	mg/L
2561112	Nitrate-N	MB	QC-Water	06/23/2017 10:39	0.10	U	mg/L
2561316	Nitrate-N	MB	QC-Water	06/23/2017 10:39	0.030	U	mg/L
2561316	Sulfate	MB	QC-Water	06/23/2017 10:39	0.25	U	mg/L
2561112	Sulfate	MB	QC-Water	06/23/2017 10:39	1.0	U	mg/L
2561318	Chloride	MB	QC-Water	06/23/2017 14:18	0.13	J	mg/L
2561116	Chloride	MB	QC-Water	06/23/2017 14:18	0.13	J	mg/L
2561318	Nitrate-N	MB	QC-Water	06/23/2017 14:18	0.030	U	mg/L
2561116	Nitrate-N	MB	QC-Water	06/23/2017 14:18	0.10	U	mg/L
2561318	Sulfate	MB	QC-Water	06/23/2017 14:18	0.25	U	mg/L
2561116	Sulfate	MB	QC-Water	06/23/2017 14:18	1.0	U	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

Form 4B
Inorganic Blank Summary

Analysis Method: S2320B-97
Instrument: AUTOT

SDG No.: ASN021

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2563823	Alkalinity, Total	MB	QC-Water	06/29/2017 07:36	0.8	J	mg/L
2563843	Alkalinity, Total	MB	QC-Water	06/29/2017 17:47	1	J	mg/L
2563847	Alkalinity, Total	MB	QC-Water	06/29/2017 20:03	1	J	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUE

33480

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OF 1

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM 40 British American Blvd Latham, NY, 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (including filtered and preservative)

PRESERVATIVE: 1 | 1 | 1 | 0 | 0

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GCMS VOAs • 8260 • 624 • CLP	GCMS SVOAs • 8270 • 625	GC VOAs • 8021 • 601/602	PESTICIDES • 8081 • 608	PCBs • 8082 • 608	METALS: TOTAL (List in comments)	METALS
MW-34 062617		6/26/17	0915	GW	8	X	X	X	X	X		
MW-25 062617			0925			X	X	X	X	X		
MW-26 062617			1045			X	X	X	X	X		
MW-29 062617			1095			X	X	X	X	X		
MW-32 062617			1250			X	X	X	X	X		
MW-33 062617			1241			X	X	X	X	X		
MW-30 062617			1425			X	X	X	X	X		
MW-31 062617			1933			X	X	X	X	X		
Dup-3 062617			—			X	X	X	X	X		
Trip Blank		—	—	AQ	2	X						

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

Cooler Temp: 2.0 / 2.0 °C

Cooler #: Initials: DW

Therm ID: 291

Ship Carrier: UPS / FedEx / DHL

Tracking #: 7870 0034 3529

REMARKS/ALTERNATE DESCRIPTION: Duplicate Sample

	Y	N
Custody Seals Present?		
(if present) Seals Intact?		
Received on Ice?		
COC/Lbls Complete		
Cont in Good Cond?		
Correct Containers?		
Correct Samp Vol?		
Correct Preservation?		
Headspace/Volatiles?		

SPECIAL INSTRUCTIONS/COMMENTS
Metals

Mark as another MW-26
DNW
6/27/17

6/27/17 1828

See QAPP ☒

STATE WHERE SAMPLES WERE COLLECTED: New York

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 1 day ___ 2 day ___ 3 day
___ 4 day ___ 5 day
Standard
REQUESTED REPORT DATE: Standard

REPORT REQUIREMENTS
___ I. Results Only See QAPP
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data See QAPP
Edata ✓ Yes ___ No

INVOICE INFORMATION
PO # 60440641
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham NY 12110

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Chris French	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: AECOM	Firm:	Firm: ALS	Firm:	Firm:	Firm:
Date/Time: 6/26/17 1515	Date/Time:	Date/Time: 6/27/17 1715	Date/Time: 6/27/17 1846	Date/Time:	Date/Time:

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

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2241674001	MW-34 062617	Ground Water	6/26/2017 09:15	6/27/2017 08:46	Collected by Client
2241674002	MW-35 062617	Ground Water	6/26/2017 09:25	6/27/2017 08:46	Collected by Client
2241674003	MW-26 062617	Ground Water	6/26/2017 10:45	6/27/2017 08:46	Collected by Client
2241674004	MW-24 062617	Ground Water	6/26/2017 10:45	6/27/2017 08:46	Collected by Client
2241674005	MW-32 062617	Ground Water	6/26/2017 12:40	6/27/2017 08:46	Collected by Client
2241674006	MW-33 062617	Ground Water	6/26/2017 12:41	6/27/2017 08:46	Collected by Client
2241674007	MW-30 062617	Ground Water	6/26/2017 14:25	6/27/2017 08:46	Collected by Client
2241674008	MW-31 062617	Ground Water	6/26/2017 19:33	6/27/2017 08:46	Collected by Client
2241674009	DUP-3 062617	Ground Water	6/26/2017 00:00	6/27/2017 08:46	Collected by Client
2241674010	Trip Blank	Ground Water	6/27/2017 08:46	6/27/2017 08:46	Collected by Client

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2241674001	1	MW-34 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674002	1	MW-35 062617	SW846 8260C	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 116 and the control limits were 85 to 114. This result was reported at a dilution of 1.				
2241674002	2	MW-35 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674003	1	MW-26 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674004	1	MW-24 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674005	1	MW-32 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674006	1	MW-33 062617	SW846 8260C	Trichloroethene
The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Trichloroethene. The % Recovery was reported as 71.2 and the control limits were 79 to 123.				
2241674006	2	MW-33 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674007	1	MW-30 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674008	1	MW-31 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241674009	2	DUP-3 062617	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PROJECT SUMMARY

Workorder: 2241674 ASN022|2015-SCOTIA NAVY DEPOT-

Sample Comments

Lab ID: 2241674001 **Sample ID:** MW-34 062617 **Sample Type:** SAMPLE

The sample was un-protected to correct the analysis date. MLM 7/7/17

Lab ID: 2241674003 **Sample ID:** MW-26 062617 **Sample Type:** SAMPLE

The sample was un-protected to correct the analysis date. MLM 7/7/17

Lab ID: 2241674008 **Sample ID:** MW-31 062617 **Sample Type:** SAMPLE

The sample was un-reported to correct the analysis date. MLM 7/7/17

AECOM - Latham, NY
ALS-Middletown
Case Narrative
ASN-022 (2241674)

Sample Management

This report contains the results of the analysis of ten (10) ground water samples collected on June 26-27, 2017. Analytical results and quality control information are summarized in this data package.

Qualifier Symbol Definitions:

U = Qualifier indicates that the analyte was not detected above the LOD.
J = Qualifier indicates that the analyte value is between the DL and the LOQ.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds the calibration range.
P = Qualifier indicates that the RPD between the two analytical columns is > 40%.
NSC = Qualifier indicates that spike recoveries were not calculated based on the spiking concentration.

Result Symbol Definitions:

DL = The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.
LOD = The smallest analyte concentration that must be present in a sample in order to be detected at a high level of confidence.
LOQ = The lowest concentration that produces a quantitative result within specified limits of precision or bias.

Manual Integration Symbol Definitions

I = Peak was not integrated properly by chromatographic software. This may be due to baseline irregularities resulting from sample matrix, elevated baseline, or incorrect integration by software on a sample. Integration was adjusted by operator to ensure proper quantitation.
H = The incorrect peak was identified or the chromatographic software did not identify an analyte peak. Operator manually identified the correct peak as the appropriate target analyte. This flag is automatically assigned by the Target software.
SP = Peak was erroneously split. The operator manually integrated the peak to include all the area of the analyte peak to ensure proper quantitation.
MP = Two peaks were erroneously merged. This may include two discrete peaks separated by a distinguishable valley or a larger peak with a clearly identifiable shoulder. Operator manually split peaks.
AB = Integration of group of adjacent peaks did not follow baseline. Operator manually assigned integration to follow baseline.
NP = Negative spike in the baseline resulted in overstating area of analyte peaks. Analyte peaks were re-assigned.
AC = Integration of aggregate or multi-component analyte to include area off all components of the analyte (i.e., toxaphene).

Sample Receipt

Samples arrived at ALS via courier on June 27, 2017. Upon receipt, the samples were inspected and compared to the Chain of Custody. Sample temperature was documented on the enclosed Chain of Custody. Samples were received intact and properly preserved, unless noted on the enclosed Certificate of Analysis and/or Chain of Custody.

Manual Integrations

If manual integrations were performed they are indicated on the raw data quantification files for each method.

Volatile Organics by SW-846 Method 8260

Sample Handling. Ten (10) water samples were analyzed by SW-846 Method 8260 for volatile organic compounds. All analyses were performed within the holding time.

Initial Calibrations. Initial calibrations were properly analyzed and met method criteria for all target analytes. **Note**: The batch LCS also serves as a second source (ICV).

Initial Calibration Verifications. Initial calibration verification samples were properly analyzed and met method criteria.

Continuing Calibration Verification. Continuing Calibration Verification samples were analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank.

Surrogates. Recoveries were within control limits, except as follows:

- For MS-35 062617, 4-bromofluorobenzene was recovered above the QC limit.

Laboratory control samples. Target analytes were recovered within control limits in the laboratory control samples.

Matrix Spikes. A matrix spike and matrix spike duplicate, identified as 2566191 and 2566192 was prepared from project sample MW-33 062617 (2241674007). Results for precision and accuracy were within control limits, except as follows:

- In 2566192 MSD, Trichloroethene was recovered below control limits.

Internal Standards. Internal standard results met method criteria.

Light Hydrocarbon Gases by RSK-175

Sample Handling. Nine (9) water samples were submitted for the analysis of light hydrocarbon gases by Method RSK-175. The samples were analyzed within the method specified holding time of fourteen days.

Calibrations. The initial calibrations met method criteria for all target analytes.

Calibration verification. Prior to the analysis of samples in this group, the initial calibrations were successfully verified by the analysis of calibration verification standards. The samples were then successfully bracketed with alternating calibration verification standards (CCV) throughout the analysis.

Continuing Calibration. A continuing calibration standard were properly analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank; except as follows:

- Methane was detected at 0.31 µg/L.

Duplicate Samples. A duplicate sample, identified as 2563122, from project sample MW-31 062617 (2241674008). Target analytes were detected as follows:

- Methane was detected at 56.47 µg/L in the sample and at 56.67 µg/L in the duplicate sample. The %RPD is 0%.
- Ethene was detected at 3.21 µg/L in the sample and at 3.30 µg/L in the duplicate sample. The %RPD is 3%.
- Ethane was detected at 2.71 µg/L in the sample and at 2.78 µg/L in the duplicate sample. The %RPD is 3%.

Anions by EPA 300.0

Sample handling. Nine (9) aqueous samples were analyzed for chloride, nitrate-N, and sulfate by EPA Method 300.0. The samples were analyzed within the method recommended holding time for each analyte.

Calibration. Initial calibrations, identified as Method A (high range) and Method L (low range), were properly established. All calibration verification standards were recovered within the QC limits.

Blanks. Initial and continuing blanks were analyzed with the samples. No analyte was detected above ½ the reporting limits in the blanks.

Laboratory Control Samples. Laboratory control samples, identified as 2563125, 2563562 and SSL, were analyzed initially and every 20 samples. Recoveries were within the QC limits.

Spikes. A matrix spike and matrix spike duplicate analysis, identified as 2563526 and 2563527, was performed on sample 2241674008 (MW-31 062617). The spike recoveries were within the QC limits. The relative percent difference between the spikes was within the QC limit of 15%.

Total Alkalinity by SM 2320B

Sample handling. Nine (9) aqueous samples were analyzed for total alkalinity by Standard Method 2320B. The samples were analyzed within the 14-day holding time established for the method.

Blanks. Method blanks were analyzed with the samples. Total alkalinity was not detected above the reporting limit in the blanks.

Calibration. The standards were recovered within the alkalinity QC limits.

Total Organic Carbon by SM 5310B

Sample handling. Nine (9) aqueous samples were analyzed for total organic carbon by Standard Method 5310B. The samples were analyzed within the 28-day holding time established for the method.

Calibration. Initial calibrations were properly established on the days of analysis. Initial and continuing calibration standards were analyzed for verification, and recoveries were all within the QC limits.

Blanks. Method blanks were analyzed with the samples. Total organic carbon was not detected above ½ the reporting limit in the blanks.

Spikes. A matrix spike and matrix spike duplicate analysis, identified as 2563639 and 2563640, were performed on sample 2241674002 (MW-35 062617). The recoveries were within the QC limit of 85-115%. The relative percent difference between the spikes was within the QC limit of 15%.

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA CASE No.: SAS No.: SDG NO.: ASN-022

	Sample NO.	SMC1 (BFB) #	SMC2 (DBFM)	SMC3 (DCE) #	SMC4 (TOL) #	TOT OUT
01	2566003(MB)	113	94.0	113	99.2	0
02	2566004(LCS)	112	94.8	104	98.0	0
03	MW-34 062617	113	93.3	116	96.9	0
04	MW-35 062617	116 *	94.7	117	97.9	1
05	MW-26 062617	111	93.2	115	97.6	0
06	MW-24 062617	112	92.8	115	96.5	0
07	MW-32 062617	110	93.9	115	95.5	0
08	MW-33 062617	112	93.7	115	97.7	0
09	MW-30 062617	111	91.7	115	96.8	0
10	MW-33 062617MS	109	94.9	116	92.3	0
11	MW-33 062617MSD	108	93.4	111	93.8	0

	QC LIMITS
SMC1 (BFB) = 4-Bromofluorobenzene	(85-114)
SMC2 (DBFM) = Dibromofluoromethane	(80-119)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(81-118)
SMC4 (TOL) = Toluene-d8	(89-112)

Column to be used to flag recovery values
* Values outside of contract required QC Limits
D Surrogate Diluted Out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: SAS No.: SDG No.: ASN-022

Matrix Spike - Sample No: MW-33 062617MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC
Carbon Tetrachloride	20	0	21.2	106	(72-136)
1,1-Dichloroethane	20	0	21.8	109	(77-125)
1,2-Dichloroethane	20	0	19.9	99.3	(73-128)
1,1-Dichloroethene	20	0	24.4	122	(71-131)
cis-1,2-Dichloroethene	20	0	23.1	116	(78-123)
trans-1,2-Dichloroethene	20	0	23.9	119	(75-124)
1,1,1,2-Tetrachloroethane	20	0	20.1	101	(78-124)
1,1,2,2-Tetrachloroethane	20	0	20.5	102	(71-121)
Tetrachloroethene	20	0	19.1	95.6	(74-129)
Toluene	20	0	20.8	104	(80-121)
1,1,1-Trichloroethane	20	0	21.4	107	(74-131)
1,1,2-Trichloroethane	20	0	19.0	95.1	(80-119)
Trichloroethene	20	152	176	118	(79-123)
Vinyl Chloride	20	0	24.2	121	(58-137)

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 14 outside limits

Comments:

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: SAS No.: SDG No.: ASN-022

Matrix Spike - Sample No: MW-33 062617MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	MSD % RPD #	QC LIMITS RPD	QC LIMITS REC
Carbon Tetrachloride	20	20.0	99.9	6.15	30	(72-136)
1,1-Dichloroethane	20	20.8	104	4.96	30	(77-125)
1,2-Dichloroethane	20	18.9	94.6	4.9	30	(73-128)
1,1-Dichloroethene	20	23.3	117	4.37	30	(71-131)
cis-1,2-Dichloroethene	20	22.2	111	3.96	30	(78-123)
trans-1,2-Dichloroethene	20	22.3	112	6.82	30	(75-124)
1,1,1,2-Tetrachloroethane	20	19.8	99.1	1.48	30	(78-124)
1,1,2,2-Tetrachloroethane	20	20.8	104	1.64	30	(71-121)
Tetrachloroethene	20	18.8	94.2	1.42	30	(74-129)
Toluene	20	20.1	101	3.32	30	(80-121)
1,1,1-Trichloroethane	20	20.5	103	3.97	30	(74-131)
1,1,2-Trichloroethane	20	18.7	93.3	1.89	30	(80-119)
Trichloroethene	20	167	71.2*	5.49	30	(79-123)
Vinyl Chloride	20	22.4	112	7.72	30	(58-137)

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 14 outside limits

Spike Recovery: 1 out of 14 outside limits

Comments:

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
2563120

Lab Name: ALSI Contract:

Lab Code: PA-010 Case No.: SAS No.: SDG No.: ASN022

Matrix: (soil/water) WATER Lab Sample ID: 2563120

Sample wt/vol: _____ (g/mL) ML Lab File ID: MFSA003

Level: (low/med) LOW Date Received: 06/28/17

% Moisture: not dec. _____ Date Analyzed: 06/28/17

GC Column: PORAPAK Q ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	METHANE	0.31	
74-85-1	ETHENE	0.75	U
74-84-0	ETHANE	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
MW-31 06
2617 DUP

Lab Name: ALSI Contract:

Lab Code: PA-010 Case No.: SAS No.: SDG No.: ASN022

Matrix: (soil/water) WATER Lab Sample ID: 2563122

Sample wt/vol: _____ (g/mL) ML Lab File ID: MFSA017

Level: (low/med) LOW Date Received: 06/27/17

% Moisture: not dec. _____ Date Analyzed: 06/28/17

GC Column: PORAPAK Q ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	METHANE	57.7	
74-85-1	ETHENE	3.3	
74-84-0	ETHANE	2.8	

ok

Form 4B
Inorganic Blank Summary

Analysis Method: EPA 300.0
Instrument: IC-4

SDG No.: ASN022

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2563123	Chloride	MB	QC-Water	06/28/2017 03:25	0.22	J	mg/L
2563123	Nitrate-N	MB	QC-Water	06/28/2017 03:25	0.02	J	mg/L
2563123	Sulfate	MB	QC-Water	06/28/2017 03:25	0.12	J	mg/L
2563529	Chloride	MB	QC-Water	06/28/2017 07:11	0.2	J	mg/L
2563529	Nitrate-N	MB	QC-Water	06/28/2017 07:11	0.02	J	mg/L
2563529	Sulfate	MB	QC-Water	06/28/2017 07:11	0.18	J	mg/L
2563563	Chloride	MB	QC-Water	06/28/2017 10:10	0.2	J	mg/L
2563976	Chloride	MB	QC-Water	06/28/2017 10:10	0.2	J	mg/L
2563976	Nitrate-N	MB	QC-Water	06/28/2017 10:10	0.02	J	mg/L
2563563	Nitrate-N	MB	QC-Water	06/28/2017 10:10	0.02	J	mg/L
2563976	Sulfate	MB	QC-Water	06/28/2017 10:10	0.12	J	mg/L
2563563	Sulfate	MB	QC-Water	06/28/2017 10:10	0.12	J	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

Form 4B
Inorganic Blank Summary

Analysis Method: S2320B-97
Instrument: AUTOT

SDG No.: ASN022

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2564650	Alkalinity, Total	MB	QC-Water	06/30/2017 22:47	1	J	mg/L
2564694	Alkalinity, Total	MB	QC-Water	07/01/2017 20:59	2	J	mg/L
2564698	Alkalinity, Total	MB	QC-Water	07/01/2017 23:33	2	J	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CU… REQUEST FOR…

Page 1 of 1

6470 8310 1169

ALL SHADED AREAS MUST BE COM…
SAMPLER: INSTRUCTIONS…

* 2241998 *

Co. Name: AECOM
Contact (Report to): John Santacroce Phone: 518-951-2200
Address: 40 British American Blvd
Latham, NY 12110

Bill to (if different than Report to): PO#: 60440641

Project Name/#: Scotia Navy Depot ALS Quote #:

TAT: [X] Normal-Standard TAT is 10-12 business days. Date Required:
[ ] Rush-Subject to ALS approval and surcharges. Approved By:

Email? [X] Y John.Santacroce@aecom.com
Fax? [ ] Y No.:

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	G or C	Matrix	8260C	Tdal Organic Carbon	RSK 175	Alkalinity	Cl, SO4, NO3				
1 MW-28 062717		6/27/17	1033	G	GW	X	X	X	X	X				
2 MW-29 062717	Extra Volume Collected for MS/MSD		1229											
3 Dup-4 062717	Duplicate Sample		—											
4 Trip Blank		—	—	—	AQ									
5														
6														
7														
8														

Container Type: CG CG CG PL PL
Container Size: 40ml 40 ml 40ml 500 ml 250 ml
Preservative: HCl HCl HCl None None

ANALYSES/METHOD REQUESTED — Enter Number of Containers Per Analysis

Receipt Information (completed by Sample Receiving)
Preserved by: RMN
Cooler Temp: F
Therm. ID: 291
No. of Coolers:
Notes:

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

Custody seals Present?	(If present) Seals Intact?	Received on Ice?	COC/Labels complete/accurate?	Container in good condition?
#	#	#	#	#
(Y)	(Y)	(Y)	(Y)	(Y)

SAMPLED BY (Please Print): Chris French

Project Comments:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Chris French / AECOM	6/27/17	1420	2	6/27/17	1420
3	6/27/17	1700	4	6/28	8:34
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] NJ-Reduced [ ] NJ-Full [X] See QAPP
SDWA Forms?: yes [ ] yes [ ] yes [ ] yes [ ]
State Samples Collected In?: MD [ ] NJ [ ] NY [X] PA [ ]
EDDs Required? [X] If yes, format type: See QAPP
Other: Not Applicable
DOD Criteria Required?

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

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

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

Rev 01-2013

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2241998001	MW-28 062717	Ground Water	6/27/2017 10:33	6/28/2017 08:34	Collected by Client
2241998002	MW-29 062717	Ground Water	6/27/2017 12:29	6/28/2017 08:34	Collected by Client
2241998003	DUP-4 062717	Ground Water	6/27/2017 00:00	6/28/2017 08:34	Collected by Client
2241998004	Trip Blank	Ground Water	6/28/2017 08:34	6/28/2017 08:34	Collected by Client

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PROJECT SUMMARY

Workorder: 2241998 ASN023|2015-SCOTIA NAVY DEPOT-

Workorder Comments

This report was modified on 7/11/17 to correct the date and time analyzed for TOC. VLF

Sample Comments

Lab ID: 2241998001 **Sample ID:** MW-28 062717 **Sample Type:** SAMPLE

The sample was un-reported to correct the TOC analysis date. MLM 7/11/2017

Lab ID: 2241998002 **Sample ID:** MW-29 062717 **Sample Type:** SAMPLE

The sample was un-reported to correct the TOC analysis date. MLM 7/11/2017

Lab ID: 2241998003 **Sample ID:** DUP-4 062717 **Sample Type:** SAMPLE

The sample was un-reported to correct the TOC analysis date. MLM 7/11/2017

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2241998001	1	MW-28 062717	SW846 8260C	1,2-Dichloroethane-d4
The surrogate 1,2-Dichloroethane-d4 for method SW846 8260C was outside of control limits. The % Recovery was reported as 119 and the control limits were 81 to 118. This result was reported at a dilution of 1.				
2241998001	2	MW-28 062717	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241998002	1	MW-29 062717	SW846 8260C	1,2-Dichloroethane-d4
The surrogate 1,2-Dichloroethane-d4 for method SW846 8260C was outside of control limits. The % Recovery was reported as 121 and the control limits were 81 to 118. This result was reported at a dilution of 1.				
2241998002	2	MW-29 062717	SW846 8260C	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 115 and the control limits were 85 to 114. This result was reported at a dilution of 1.				
2241998002	3	MW-29 062717	RSK 175	Methane
The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 33.3 and the upper control limit is 20.				
2241998002	4	MW-29 062717	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2241998002	5	MW-29 062717	EPA 300.0	Nitrate-N
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
2241998003	1	DUP-4 062717	SW846 8260C	1,2-Dichloroethane-d4
The surrogate 1,2-Dichloroethane-d4 for method SW846 8260C was outside of control limits. The % Recovery was reported as 120 and the control limits were 81 to 118. This result was reported at a dilution of 1.				
2241998003	2	DUP-4 062717	SW846 8260C	4-Bromofluorobenzene
The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 116 and the control limits were 85 to 114. This result was reported at a dilution of 1.				
2241998003	3	DUP-4 062717	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

AECOM - Latham, NY
ALS-Middletown
Case Narrative
ASN-023 (2241998)

Sample Management

This report contains the results of the analysis of four (4) ground water samples collected on June 27-28, 2017. Analytical results and quality control information are summarized in this data package.

Qualifier Symbol Definitions:

U = Qualifier indicates that the analyte was not detected above the LOD.
J = Qualifier indicates that the analyte value is between the DL and the LOQ.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds the calibration range.
P = Qualifier indicates that the RPD between the two analytical columns is > 40%.
NSC = Qualifier indicates that spike recoveries were not calculated based on the spiking concentration.

Result Symbol Definitions:

DL = The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.
LOD = The smallest analyte concentration that must be present in a sample in order to be detected at a high level of confidence.
LOQ = The lowest concentration that produces a quantitative result within specified limits of precision or bias.

Manual Integration Symbol Definitions

I = Peak was not integrated properly by chromatographic software. This may be due to baseline irregularities resulting from sample matrix, elevated baseline, or incorrect integration by software on a sample. Integration was adjusted by operator to ensure proper quantitation.
H = The incorrect peak was identified or the chromatographic software did not identify an analyte peak. Operator manually identified the correct peak as the appropriate target analyte. This flag is automatically assigned by the Target software.
SP = Peak was erroneously split. The operator manually integrated the peak to include all the area of the analyte peak to ensure proper quantitation.
MP = Two peaks were erroneously merged. This may include two discrete peaks separated by a distinguishable valley or a larger peak with a clearly identifiable shoulder. Operator manually split peaks.
AB = Integration of group of adjacent peaks did not follow baseline. Operator manually assigned integration to follow baseline.
NP = Negative spike in the baseline resulted in overstating area of analyte peaks. Analyte peaks were re-assigned.
AC = Integration of aggregate or multi-component analyte to include area off all components of the analyte (i.e., toxaphene).

Sample Receipt

Samples arrived at ALS via courier on June 28, 2017. Upon receipt, the samples were inspected and compared to the Chain of Custody. Sample temperature was documented on the enclosed Chain of Custody. Samples were received intact and properly preserved, unless noted on the enclosed Certificate of Analysis and/or Chain of Custody.

Manual Integrations

If manual integrations were performed they are indicated on the raw data quantification files for each method.

Volatile Organics by SW-846 Method 8260

Sample Handling. Four (4) water samples were analyzed by SW-846 Method 8260 for volatile organic compounds. All analyses were performed within the holding time.

Initial Calibrations. Initial calibrations were properly analyzed and met method criteria for all target analytes. **Note**: The batch LCS also serves as a second source (ICV).

Initial Calibration Verifications. Initial calibration verification samples were properly analyzed and met method criteria.

Continuing Calibration Verification. Continuing Calibration Verification samples were analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank.

Surrogates. Recoveries were within control limits, except as follows:

- For MS-28 062717, 1,2-dichloroethane-d4 was recovered above the QC limit.
- For DUP-4 062717, 4-bromofluorobenzene and 1,2-dichloroethane-d4 were recovered above the QC limits.
- For MS-29 062717, 4-bromofluorobenzene and 1,2-dichloroethane-d4 were recovered above the QC limits.

Laboratory control samples. Target analytes were recovered within control limits in the laboratory control samples.

Matrix Spikes. A matrix spike and matrix spike duplicate, identified as 2566851 and 2566852 was prepared from project sample MW-29 062717 (2241998002). Results for precision and accuracy were within control limits, except as follows:

- In 2566851 MS, 1,1-dichloroethene was recovered below control limits.

Internal Standards. Internal standard results met method criteria.

Light Hydrocarbon Gases by RSK-175

Sample Handling. Three (3) water samples were submitted for the analysis of light hydrocarbon gases by Method RSK-175. The samples were analyzed within the method specified holding time of fourteen days.

Calibrations. The initial calibrations met method criteria for all target analytes.

Calibration verification. Prior to the analysis of samples in this group, the initial calibrations were successfully verified by the analysis of calibration verification standards. The samples were then successfully bracketed with alternating calibration verification standards (CCV) throughout the analysis.

Continuing Calibration. A continuing calibration standard were properly analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank; except as follows:

- Methane was detected at 0.35 µg/L.

Duplicate Samples. A duplicate sample, identified as 2564778, from project sample MW-29 062717 (2241998002). Target analytes were detected as follows:

- Methane was detected at 0.20J µg/L in the sample and at 0.28 µg/L in the duplicate sample. The %RPD is 33%.

<u>Anions by EPA 300.0</u>

Sample handling. Three (3) aqueous samples were analyzed for chloride, nitrate-N, and sulfate by EPA Method 300.0. The samples were analyzed within the method recommended holding time for each analyte.

Calibration. Initial calibrations, identified as Method A (high range) and Method L (low range), were properly established. All calibration verification standards were recovered within the QC limits.

Blanks. Initial and continuing blanks were analyzed with the samples. No analyte was detected above ½ the reporting limits in the blanks.

Laboratory Control Samples. Laboratory control samples, identified as 2554664, 2563979, 2564838, and SSL, were analyzed initially and every 20 samples. Recoveries were within the QC limits.

Laboratory control samples, identified as 2567185 and SSL, were analyzed initially and every 20 samples. Recoveries were within the QC limits.

Spikes. A matrix spike and matrix spike duplicate analysis, identified as 2564840 and 2564841, were performed on sample 2241998002 (MW-29 062717). The recoveries were within the QC limits. The relative percent difference between the spikes was within the QC limit of 15%.

<u>Total Alkalinity by SM 2320B</u>

Sample handling. Three (3) aqueous samples were analyzed for total alkalinity by Standard Method 2320B. The samples were analyzed within the 14-day holding time established for the method.

Blanks. Method blanks were analyzed with the samples. Total alkalinity was not detected above the reporting limit in the blanks.

Calibration. The standards were recovered within the alkalinity QC limits.

Duplicate. A duplicate analysis, identified as 2565389, was performed on sample 2241998002 (MW-29 062717). The relative percent difference between the results was within the QC limit of 20%.

Total Organic Carbon by SM 5310B

Sample handling. Three (3) aqueous samples were analyzed for total organic carbon by Standard Method 5310B. The samples were analyzed within the 28-day holding time established for the method.

Calibration. Initial calibrations were properly established on the days of analysis. Initial and continuing calibration standards were analyzed for verification, and recoveries were all within the QC limits.

Blanks. Method blanks were analyzed with the samples. Total organic carbon was not detected above ½ the reporting limit in the blanks.

Spikes. Matrix spike analysis, identified as 2564361, was performed on sample 2241998002 (MW-29 062717). The spike recovery was within the QC limits.

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA CASE No.: SAS No.: SDG NO.: ASN-023

	Sample NO.	SMC1 (BFB) #	SMC2 (DBFM)	SMC3 (DCE) #	SMC4 (TOL) #	TOT OUT
02	2566612(MB)	113	91.7	115	96.5	0
03	2566613(LCS)	112	96.8	108	96.4	0
04	Trip Blank	111	89.4	113	96.2	0
05	MW-28 062717	113	96.2	119 *	97.6	1
06	DUP-4 062717	116 *	95.0	120 *	96.1	2
07	MW-29 062717	115 *	96.0	121 *	96.6	2
08	MW-29 062717MS	108	95.1	114	92.7	0
09	MW-29 062717MSD	110	94.9	106	94.7	0

	QC LIMITS
SMC1 (BFB) = 4-Bromofluorobenzene	(85-114)
SMC2 (DBFM) = Dibromofluoromethane	(80-119)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(81-118)
SMC4 (TOL) = Toluene-d8	(89-112)

Column to be used to flag recovery values
* Values outside of contract required QC Limits
D Surrogate Diluted Out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: SAS No.: SDG No.: ASN-023

Matrix Spike - Sample No: MW-29 062717MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC
Carbon Tetrachloride	20	0	22.2	111	(72-136)
1,1-Dichloroethane	20	1	22.0	105	(77-125)
1,2-Dichloroethane	20	0	20.0	99.8	(73-128)
1,1-Dichloroethene	20	0.63	24.0	117	(71-131)
cis-1,2-Dichloroethene	20	5.8	27.8	110	(78-123)
trans-1,2-Dichloroethene	20	0.7	23.4	114	(75-124)
1,1,1,2-Tetrachloroethane	20	0	19.9	99.7	(78-124)
1,1,2,2-Tetrachloroethane	20	0	20.3	101	(71-121)
Tetrachloroethene	20	38.1	53.3	75.8	(74-129)
Toluene	20	0	20.4	102	(80-121)
1,1,1-Trichloroethane	20	11.8	32.5	104	(74-131)
1,1,2-Trichloroethane	20	0	18.8	94.1	(80-119)
Vinyl Chloride	20	0	23.9	120	(58-137)

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 13 outside limits

Comments:

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: _____ SAS No.: _____ SDG No.: ASN-023

Matrix Spike - Sample No: MW-29 062717MS-DL5

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC
Carbon Tetrachloride	100	0	111	111	(72-136)
1,1-Dichloroethane	100	0	112	112	(77-125)
1,2-Dichloroethane	100	0	103	103	(73-128)
1,1-Dichloroethene	100	0	132	132*	(71-131)
cis-1,2-Dichloroethene	100	5.4	122	116	(78-123)
trans-1,2-Dichloroethene	100	0	123	123	(75-124)
1,1,1,2-Tetrachloroethane	100	0	98.4	98.4	(78-124)
1,1,2,2-Tetrachloroethane	100	0	99.4	99.4	(71-121)
Tetrachloroethene	100	34.8	130	94.8	(74-129)
Toluene	100	0	105	105	(80-121)
1,1,1-Trichloroethane	100	11.5	119	108	(74-131)
1,1,2-Trichloroethane	100	0	95.4	95.4	(80-119)
Trichloroethene	100	264	379	116	(79-123)
Vinyl Chloride	100	0	121	121	(58-137)

1X dilution analysis was acceptable. No qualification
CAM 08/18/17.

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 14 outside limits

Comments: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: _____ SAS No.: _____ SDG No.: ASN-023

Matrix Spike - Sample No: MW-29 062717MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	MSD % RPD #	QC LIMITS RPD	QC LIMITS REC
Carbon Tetrachloride	20	21.5	108	2.96	30	(72-136)
1,1-Dichloroethane	20	21.5	102	2.28	30	(77-125)
1,2-Dichloroethane	20	19.3	96.6	3.29	30	(73-128)
1,1-Dichloroethene	20	23.6	115	1.47	30	(71-131)
cis-1,2-Dichloroethene	20	27.1	107	2.53	30	(78-123)
trans-1,2-Dichloroethene	20	23.7	115	1.33	30	(75-124)
1,1,1,2-Tetrachloroethane	20	19.7	98.3	1.44	30	(78-124)
1,1,2,2-Tetrachloroethane	20	20.0	100	1.37	30	(71-121)
Tetrachloroethene	20	53.0	74.4	.51	30	(74-129)
Toluene	20	20.8	104	1.72	30	(80-121)
1,1,1-Trichloroethane	20	32.1	101	1.49	30	(74-131)
1,1,2-Trichloroethane	20	18.9	94.6	.5	30	(80-119)
Vinyl Chloride	20	24.4	122	2.05	30	(58-137)

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 13 outside limits

Spike Recovery: 0 out of 13 outside limits

Comments: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ALS Global Contract: VOMS

Lab Code: VOA Case No.: _____ SAS No.: _____ SDG No.: ASN-023

Matrix Spike - Sample No: MW-29 062717MSD-DL5

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	MSD % RPD #	QC LIMITS RPD	QC LIMITS REC
Carbon Tetrachloride	100	106	106	4.48	30	(72-136)
1,1-Dichloroethane	100	109	109	2.78	30	(77-125)
1,2-Dichloroethane	100	96.9	96.9	5.93	30	(73-128)
1,1-Dichloroethene	100	125	125	5.42	30	(71-131)
cis-1,2-Dichloroethene	100	117	111	3.96	30	(78-123)
trans-1,2-Dichloroethene	100	120	120	3.01	30	(75-124)
1,1,1,2-Tetrachloroethane	100	93.6	93.6	5.01	30	(78-124)
1,1,2,2-Tetrachloroethane	100	97.7	97.7	1.82	30	(71-121)
Tetrachloroethene	100	124	89	4.55	30	(74-129)
Toluene	100	99.0	99	5.8	30	(80-121)
1,1,1-Trichloroethane	100	115	103	4.15	30	(74-131)
1,1,2-Trichloroethane	100	90.9	90.9	4.88	30	(80-119)
Trichloroethene	100	363	98.7	4.56	30	(79-123)
Vinyl Chloride	100	112	112	8.33	30	(58-137)

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 14 outside limits

Spike Recovery: 0 out of 14 outside limits

Comments: _____

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
2564777

Lab Name: ALSI Contract:

Lab Code: PA-010 Case No.: SAS No.: SDG No.: ASN023

Matrix: (soil/water) WATER Lab Sample ID: 2564777

Sample wt/vol: _____ (g/mL) ML Lab File ID: MFUA003A

Level: (low/med) LOW Date Received: 06/29/17

% Moisture: not dec. _____ Date Analyzed: 06/30/17

GC Column: PORAPAK Q ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	METHANE	0.35	
74-85-1	ETHENE	0.75	U
74-84-0	ETHANE	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
MW-29 06
2717 DUP

Lab Name: ALSI Contract:

Lab Code: PA-010 Case No.: SAS No.: SDG No.: ASN023

Matrix: (soil/water) WATER Lab Sample ID: 2564778

Sample wt/vol: _____ (g/mL) ML Lab File ID: MFUA018

Level: (low/med) LOW Date Received: 06/28/17

% Moisture: not dec. _____ Date Analyzed: 06/30/17

GC Column: PORAPAK Q ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	METHANE	0.28	
74-85-1	ETHENE	0.75	U
74-84-0	ETHANE	0.50	U

Methane was detected in method blank 2564777 at 0.35 µg/L. No data qualification was required.
cm 08/21/17

FORM I VOA

L

ANION SUMMARY REPORT

No.	Name	Time	*Analyst	tionFa	*Batch	strum	Amount F ECD_1	Amount Cl ECD_1	Amount NO2 ECD_1	Amount Br ECD_1	Amount NO3 ECD_1	Amount SO4 ECD_1
16	2564837	06.30.17 04:41	CHW	1	189537	IC-4	0.46	19.52	0.52	0.46	2.44	19.62
17	2564836	06.30.17 04:53	CHW	1	189537	IC-4	n.a.	0.15	n.a.	n.a.	0.01	0.08
18	CCV LEVEL 1L	06.30.17 05:05	CHW	1	189537	IC-4	0.53	2.39	0.47	0.50	0.48	2.42
19	2564838	06.30.17 05:17	CHW	1	189537	IC-4	0.48	19.33	0.51	0.45	2.41	19.38
20	SSL	06.30.17 05:29	CHW	1	189537	IC-4	0.51	2.37	0.46	0.49	0.48	2.44
21	2564839	06.30.17 05:41	CHW	1	189537	IC-4	0.96	38.60	1.04	0.92	4.66	37.26
22	CCV LEVEL 2L	06.30.17 04:30	CHW	1	189537	IC-4	0.99	4.72	0.92	0.98	0.98	4.87
23	2241998002	06.30.17 05:53	CHW	2	189537	IC-4	0.03	[redacted]	n.a.	n.a.	0.67	[redacted]
24	2564840	06.30.17 06:05	CHW	2	189537	IC-4	0.50	44.25	0.59	0.46	3.09	29.95
25	2564841	06.30.17 06:17	CHW	2	189537	IC-4	0.51	44.41	0.59	0.45	3.11	30.04
26	2242518001	06.30.17 06:29	CHW	2	189545	IC-4	0.12	7.07	n.a.	n.a.	0.02	[redacted]
27	2242518002	06.30.17 06:41	CHW	2	189545	IC-4	0.09	2.00	n.a.	n.a.	0.02	[redacted]
28	2242520001	06.30.17 06:52	CHW	2	189545	IC-4	0.07	2.13	n.a.	n.a.	0.53	[redacted]
29	2242526001	06.30.17 07:04	CHW	2	189545	IC-4	n.a.	1.51	n.a.	n.a.	0.75	3.90
30	2242526002	06.30.17 07:16	CHW	2	189545	IC-4	n.a.	1.89	n.a.	n.a.	0.85	2.59
31	2242526003	06.30.17 07:28	CHW	2	189545	IC-4	n.a.	1.32	n.a.	n.a.	0.24	1.88
32	2242526004	06.30.17 07:40	CHW	2	189545	IC-4	n.a.	1.39	n.a.	n.a.	0.18	2.34
33	2564842	06.30.17 07:52	CHW	1	189537	IC-4	0.48	19.59	0.52	0.46	2.45	24.02
34	CCV LEVEL 1L	06.30.17 08:04	CHW	1	189537	IC-4	0.50	2.33	0.45	0.50	0.49	2.49
35	2564843	06.30.17 08:16	CHW	1	189537	IC-4	n.a.	0.16	n.a.	n.a.	0.01	0.10
36	2242356001	06.30.17 08:28	CHW	2	189545	IC-4	0.61	[redacted]	n.a.	3.47	0.51	[redacted]
37	2242356001	06.30.17 08:40	CHW	10	189545	IC-4	0.14	[redacted]	n.a.	0.71	0.12	[redacted]
38	2242356002	06.30.17 08:52	CHW	2	189545	IC-4	0.03	[redacted]	n.a.	0.40	0.28	[redacted]
39	2242356003	06.30.17 09:04	CHW	2	189545	IC-4	0.63	[redacted]	n.a.	3.59	0.52	[redacted]
40	2242356003	06.30.17 09:15	CHW	10	189545	IC-4	0.14	[redacted]	n.a.	0.71	0.11	[redacted]
41	2242356004	06.30.17 09:27	CHW	2	189545	IC-4	0.03	6.97	n.a.	0.36	1.05	[redacted]
42	2242356004	06.30.17 09:39	CHW	10	189545	IC-4	0.02	1.44	n.a.	0.08	0.21	[redacted]
43	2242357001	06.30.17 09:51	CHW	2	189545	IC-4	0.07	1.37	n.a.	n.a.	0.76	[redacted]
44	2242357001	06.30.17 10:03	CHW	50	189545	IC-4	n.a.	0.21	n.a.	n.a.	0.04	[redacted]
45	2565108	06.30.17 10:15	CHW	50	189545	IC-4	0.76	27.89	0.73	0.67	3.49	85.56
46	2565109	06.30.17 10:27	CHW	1	189545	IC-4	0.99	38.63	1.03	0.92	4.68	37.41
47	CCV LEVEL 2L	06.30.17 10:39	CHW	1	189545	IC-4	1.02	4.62	0.80	0.99	0.96	4.89
48	2565110	06.30.17 10:51	CHW	1	189545	IC-4	0.49	19.38	0.51	0.46	2.42	19.49
49	SSL	06.30.17 11:11	CHW	1	189545	IC-4	0.51	2.33	0.45	0.50	0.48	2.45
50	2565111	06.30.17 11:23	CHW	1	189545	IC-4	n.a.	0.15	n.a.	n.a.	n.a.	0.08
51	2242357002	06.30.17 11:35	CHW	2	189545	IC-4	0.08	1.45	n.a.	n.a.	0.82	1692.52
52	2242357002	06.30.17 11:47	CHW	50	189545	IC-4	n.a.	0.21	n.a.	n.a.	0.04	[redacted]
53	2242448003	06.30.17 11:59	CHW	1	189545	IC-4	0.07	[redacted]	n.a.	n.a.	[redacted]	9.82
54	2242362001	06.30.17 12:11	CHW	2	189545	IC-4	0.07	[redacted]	n.a.	n.a.	1.05	[redacted]
55	2242362003	06.30.17 12:23	CHW	2	189545	IC-4	0.09	[redacted]	n.a.	n.a.	n.a.	[redacted]
56	2242366001	06.30.17 12:35	CHW	2	189545	IC-4	0.02	0.38	n.a.	n.a.	0.03	1.48
57	2242367001	06.30.17 12:47	CHW	2	189545	IC-4	0.02	[redacted]	n.a.	n.a.	1.12	[redacted]

HT

Form 4B
Inorganic Blank Summary

Analysis Method: EPA 300.0
Instrument: IC-4

SDG No.: ASN023

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2554662	Chloride	MB	QC-Water	06/13/2017 04:01	0.19	J	mg/L
2554662	Nitrate-N	MB	QC-Water	06/13/2017 04:01	0.10	U	mg/L
2554662	Sulfate	MB	QC-Water	06/13/2017 04:01	1.0	U	mg/L
2554830	Chloride	MB	QC-Water	06/13/2017 13:31	0.28	J	mg/L
2554830	Nitrate-N	MB	QC-Water	06/13/2017 13:31	0.01	J	mg/L
2554830	Sulfate	MB	QC-Water	06/13/2017 13:31	0.1	J	mg/L
2563977	Chloride	MB	QC-Water	06/29/2017 03:23	0.18	J	mg/L
2563977	Nitrate-N	MB	QC-Water	06/29/2017 03:23	0.01	J	mg/L
2563977	Sulfate	MB	QC-Water	06/29/2017 03:23	0.1	J	mg/L
2564812	Chloride	MB	QC-Water	06/29/2017 07:09	0.18	J	mg/L
2564317	Chloride	MB	QC-Water	06/29/2017 07:09	0.18	J	mg/L
2564317	Nitrate-N	MB	QC-Water	06/29/2017 07:09	0.01	J	mg/L
2564812	Nitrate-N	MB	QC-Water	06/29/2017 07:09	0.01	J	mg/L
2564812	Sulfate	MB	QC-Water	06/29/2017 07:09	0.12	J	mg/L
2564317	Sulfate	MB	QC-Water	06/29/2017 07:09	0.12	J	mg/L
2564327	Chloride	MB	QC-Water	06/29/2017 15:17	0.19	J	mg/L
2564327	Nitrate-N	MB	QC-Water	06/29/2017 15:17	0.01	J	mg/L
2564327	Sulfate	MB	QC-Water	06/29/2017 15:17	0.11	J	mg/L
2564836	Chloride	MB	QC-Water	06/30/2017 04:53	0.15	J	mg/L
2564836	Nitrate-N	MB	QC-Water	06/30/2017 04:53	0.01	J	mg/L
2564836	Sulfate	MB	QC-Water	06/30/2017 04:53	0.25	U	mg/L
2564843	Chloride	MB	QC-Water	06/30/2017 08:16	0.16	J	mg/L
2564843	Nitrate-N	MB	QC-Water	06/30/2017 08:16	0.01	J	mg/L
2564843	Sulfate	MB	QC-Water	06/30/2017 08:16	0.1	J	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

Form 4B
Inorganic Blank Summary

Analysis Method: EPA 300.0
Instrument: IC-5

SDG No.: ASN023

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2567183	Chloride	MB	QC-Water	07/06/2017 03:18	0.15	J	mg/L
2567183	Nitrate-N	MB	QC-Water	07/06/2017 03:18	0.030	U	mg/L
2567183	Sulfate	MB	QC-Water	07/06/2017 03:18	0.25	U	mg/L
2568051	Chloride	MB	QC-Water	07/06/2017 07:23	0.13	J	mg/L
2567190	Chloride	MB	QC-Water	07/06/2017 07:23	0.13	J	mg/L
2568051	Nitrate-N	MB	QC-Water	07/06/2017 07:23	0.10	U	mg/L
2567190	Nitrate-N	MB	QC-Water	07/06/2017 07:23	0.030	U	mg/L
2567190	Sulfate	MB	QC-Water	07/06/2017 07:23	0.25	U	mg/L
2568051	Sulfate	MB	QC-Water	07/06/2017 07:23	1.0	U	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

Form 4B
Inorganic Blank Summary

Analysis Method: S2320B-97
Instrument: AUTOT

SDG No.: ASN023

Sample ID	Analyte	Type	Matrix	Analyzed	Result	Q (1)	Units
2565372	Alkalinity, Total	MB	QC-Water	07/02/2017 22:14	1	J	mg/L
2565388	Alkalinity, Total	MB	QC-Water	07/03/2017 08:43	2	J	mg/L
2565392	Alkalinity, Total	MB	QC-Water	07/03/2017 10:52	1	J	mg/L
2565396	Alkalinity, Total	MB	QC-Water	07/03/2017 12:57	2	J	mg/L

(1) The following qualifiers are used:

U: The analyte concentration is less than the reporting limit listed
J: The analyte concentration is less than the reporting limit but greater than the method detection limit

Comments:

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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

PAG 22

* 2 2 4 1 4 5 6 *

Project Name: Scotia Navy Depot	Project Number: 60440641
Project Manager: John Santacroce	Report CC: John Santacroce
Company/Address: AECOM 40 British American Blvd Latham, NY 12110	
Phone #: 518 951 2200	Email: John.Santacroce@aecom.com
Sampler's Signature:	Sampler's Printed Name: Chris French

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1 1 1 0 0

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	VOCs 8260C	RSK 175	TOC	Alkalinity	Cl, SO_4, NO_2	REMARKS/ ALTERNATE DESCRIPTION
MW-23 062217		6/22/17	0940	GW	2	X					
MWB-3 062217			1146			X					
MW-36 062217			1395			X					
MW-22 062217			1346			X					
MW-20 062217			1505			X					
Dup-2 062217			—			X					Duplicate Sample
GEP-3 062317		6/23/17	0905			X					
GEP-1 062317			0940			X					
MW-17 062317			1050			X					
MW-27 062317			1246			X					
Trip Blank		—	—	AQ		X					

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

	Y	N	Initials	Cooler Temp:
Custody Seals Present?		✓		
(If present) Seals Intact?				Cooler #:
Received on Ice?	✓			
COC/Lbls Complete	✓			Tracking #: 291
Cont in Good Cond?	✓			
Correct Containers?	✓			Ship Carrier:
Correct Samp Vol?	✓			FedEx UPS
Correct Preservation?	✓			DHL
Headspace/Volatiles?		✓		

SPECIAL INSTRUCTIONS/COMMENTS
Metals

6/26/17 1942 8022462832 43

See QAPP ☒

STATE WHERE SAMPLES WERE COLLECTED: New York

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 1 day ___ 2 day ___ 3 day
___ 4 day ___ 5 day
Standard
REQUESTED REPORT DATE
Standard

REPORT REQUIREMENTS
___ I. Results Only See QAPP
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
See QAPP
Edata ✓ Yes ___ No

INVOICE INFORMATION
60440641
PO #: John Santacroce
BILL TO: John Santacroce
AECOM
40 British American Blvd
Latham NY 12110

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Chris French	Printed Name: DINA Ayers	Printed Name: DINA Ayers	Printed Name: Allen Nunnis	Printed Name:	Printed Name:
Firm: AECOM	Firm: ALS	Firm: ALS	Firm: ALS	Firm:	Firm:
Date/Time: 6/23/17 1410	Date/Time: 6/23/17 1410	Date/Time: 6/23/17 17:00	Date/Time: 6/24 928	Date/Time:	Date/Time:

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

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ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2241456 2015-SCOTIA NAVY DEPOT-PO 6044

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2241456001	MW-23 062217	Ground Water	6/22/2017 09:40	6/24/2017 09:38	Collected by Client
2241456002	MWB-23 062217	Ground Water	6/22/2017 11:46	6/24/2017 09:38	Collected by Client
2241456003	MW-36 062217	Ground Water	6/22/2017 13:45	6/24/2017 09:38	Collected by Client
2241456004	MW-22 062217	Ground Water	6/22/2017 13:46	6/24/2017 09:38	Collected by Client
2241456005	MW-20 062217	Ground Water	6/22/2017 15:05	6/24/2017 09:38	Collected by Client
2241456006	DUP-2 062217	Ground Water	6/22/2017 00:00	6/24/2017 09:38	Collected by Client
2241456007	GEP-3 062317	Ground Water	6/23/2017 09:05	6/24/2017 09:38	Collected by Client
2241456008	GEP-1 062317	Ground Water	6/23/2017 09:40	6/24/2017 09:38	Collected by Client
2241456009	MW-17 062317	Ground Water	6/23/2017 10:50	6/24/2017 09:38	Collected by Client
2241456010	MW-27 062317	Ground Water	6/23/2017 12:46	6/24/2017 09:38	Collected by Client
2241456011	Trip Blank	Ground Water	6/24/2017 09:38	6/24/2017 09:38	Collected by Client

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2241456008	1	GEP-1 062317	SW846 8260C	4-Bromofluorobenzene

The surrogate 4-Bromofluorobenzene for method SW846 8260C was outside of control limits. The % Recovery was reported as 115 and the control limits were 85 to 114. This result was reported at a dilution of 1.

AECOM - Latham, NY
ALS-Middletown
Case Narrative
ASN-024 (2241456)

Sample Management

This report contains the results of the analysis of eleven (11) ground water samples collected on June 22-24, 2017. Analytical results and quality control information are summarized in this data package.

Qualifier Symbol Definitions:

U = Qualifier indicates that the analyte was not detected above the LOD.
J = Qualifier indicates that the analyte value is between the DL and the LOQ.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds the calibration range.
P = Qualifier indicates that the RPD between the two analytical columns is > 40%.
NSC = Qualifier indicates that spike recoveries were not calculated based on the spiking concentration.

Result Symbol Definitions:

DL = The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence.
LOD = The smallest analyte concentration that must be present in a sample in order to be detected at a high level of confidence.
LOQ = The lowest concentration that produces a quantitative result within specified limits of precision or bias.

Manual Integration Symbol Definitions

I = Peak was not integrated properly by chromatographic software. This may be due to baseline irregularities resulting from sample matrix, elevated baseline, or incorrect integration by software on a sample. Integration was adjusted by operator to ensure proper quantitation.
H = The incorrect peak was identified or the chromatographic software did not identify an analyte peak. Operator manually identified the correct peak as the appropriate target analyte. This flag is automatically assigned by the Target software.
SP = Peak was erroneously split. The operator manually integrated the peak to include all the area of the analyte peak to ensure proper quantitation.
MP = Two peaks were erroneously merged. This may include two discrete peaks separated by a distinguishable valley or a larger peak with a clearly identifiable shoulder. Operator manually split peaks.
AB = Integration of group of adjacent peaks did not follow baseline. Operator manually assigned integration to follow baseline.
NP = Negative spike in the baseline resulted in overstating area of analyte peaks. Analyte peaks were re-assigned.
AC = Integration of aggregate or multi-component analyte to include area off all components of the analyte (i.e., toxaphene).

Sample Receipt

Samples arrived at ALS via courier on June 24, 2017. Upon receipt, the samples were inspected and compared to the Chain of Custody. Sample temperature was documented on the enclosed Chain of Custody. Samples were received intact and properly preserved, unless noted on the enclosed Certificate of Analysis and/or Chain of Custody.

Manual Integrations

If manual integrations were performed they are indicated on the raw data quantification files for each method.

Volatile Organics by SW-846 Method 8260

Sample Handling. Eleven (11) water samples were analyzed by SW-846 Method 8260 for volatile organic compounds. All analyses were performed within the holding time.

Initial Calibrations. Initial calibrations were properly analyzed and met method criteria for all target analytes. **Note**: The batch LCS also serves as a second source (ICV).

Initial Calibration Verifications. Initial calibration verification samples were properly analyzed and met method criteria.

Continuing Calibration Verification. Continuing Calibration Verification samples were analyzed and met method criteria for all target analytes.

Blanks. Target analytes were not detected in the method blank.

Surrogates. Recoveries were within control limits; except as follows:

- Sample GEP-1 062317, 4-bromofluorobenzene was recovered above the control limits.

Laboratory control samples. Target analytes were recovered within control limits in the laboratory control samples.

Internal Standards. Internal standard results met method criteria.

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS Global Contract: VOMS

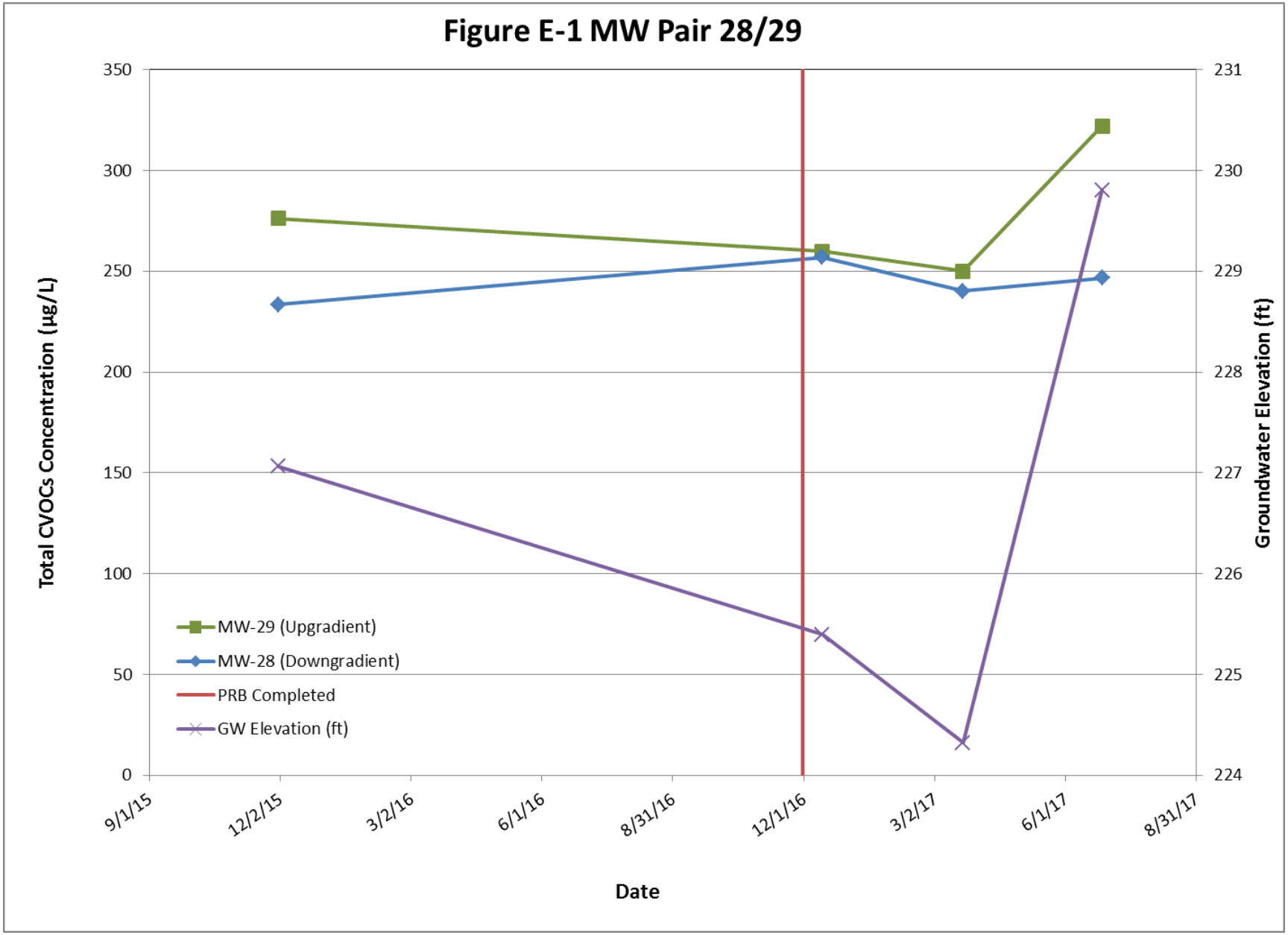
Lab Code: VOA CASE No.: SAS No.: SDG NO.: ASN-024

	Sample NO.	SMC1 (BFB) #	SMC2 (DBFM)	SMC3 (DCE) #	SMC4 (TOL) #	TOT OUT
13	2566003(MB)	113	94.0	113	99.2	0
14	2566004(LCS)	112	94.8	104	98.0	0
15	MW-22 062217	114	93.9	112	97.9	0
16	GEP-1 062317	115 *	94.8	114	98.5	1
17	MW-27 062317	111	94.1	113	97.3	0

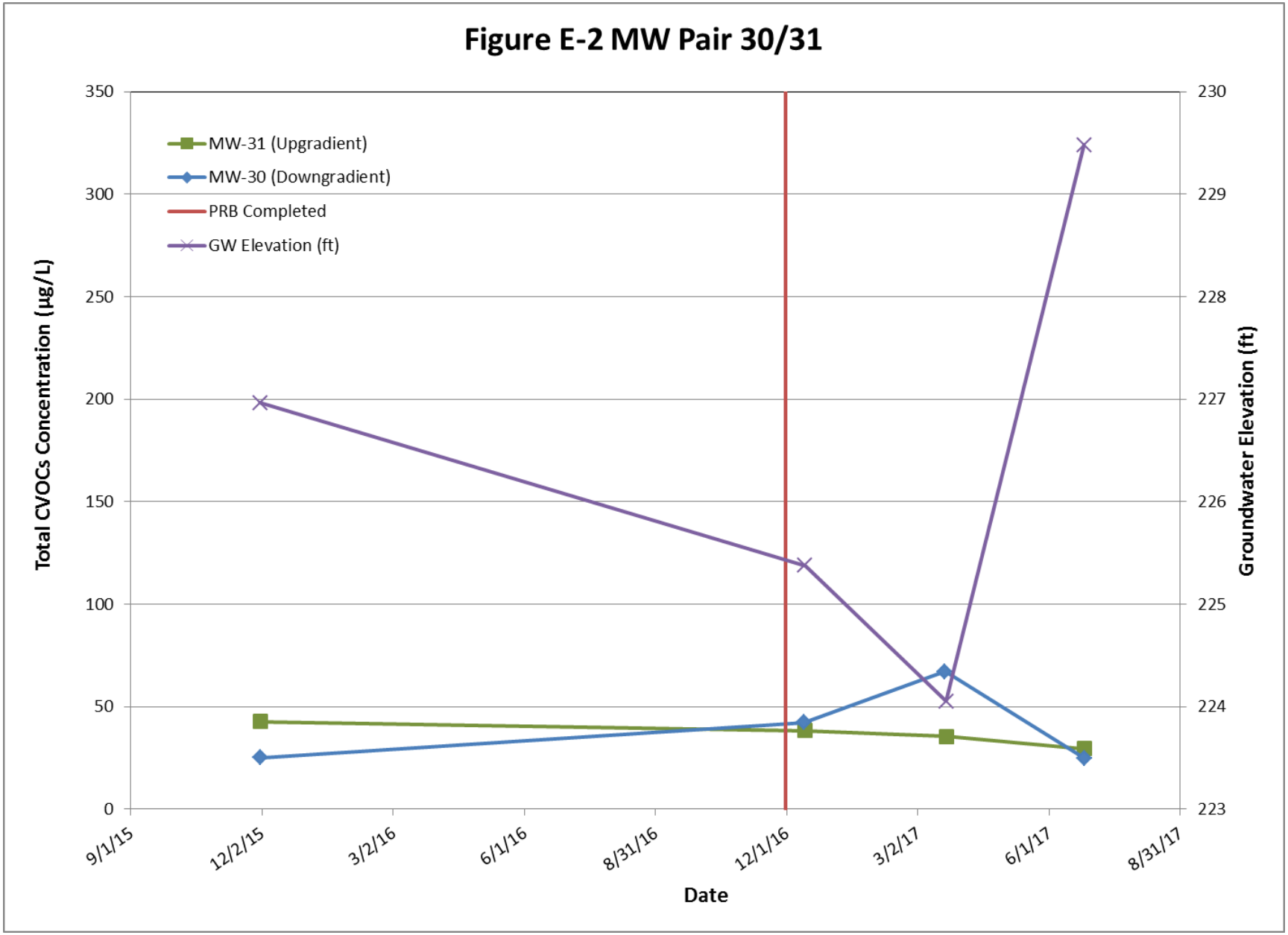
	QC LIMITS
SMC1 (BFB) = 4-Bromofluorobenzene	(85-114)
SMC2 (DBFM) = Dibromofluoromethane	(80-119)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(81-118)
SMC4 (TOL) = Toluene-d8	(89-112)

Column to be used to flag recovery values
* Values outside of contract required QC Limits
D Surrogate Diluted Out

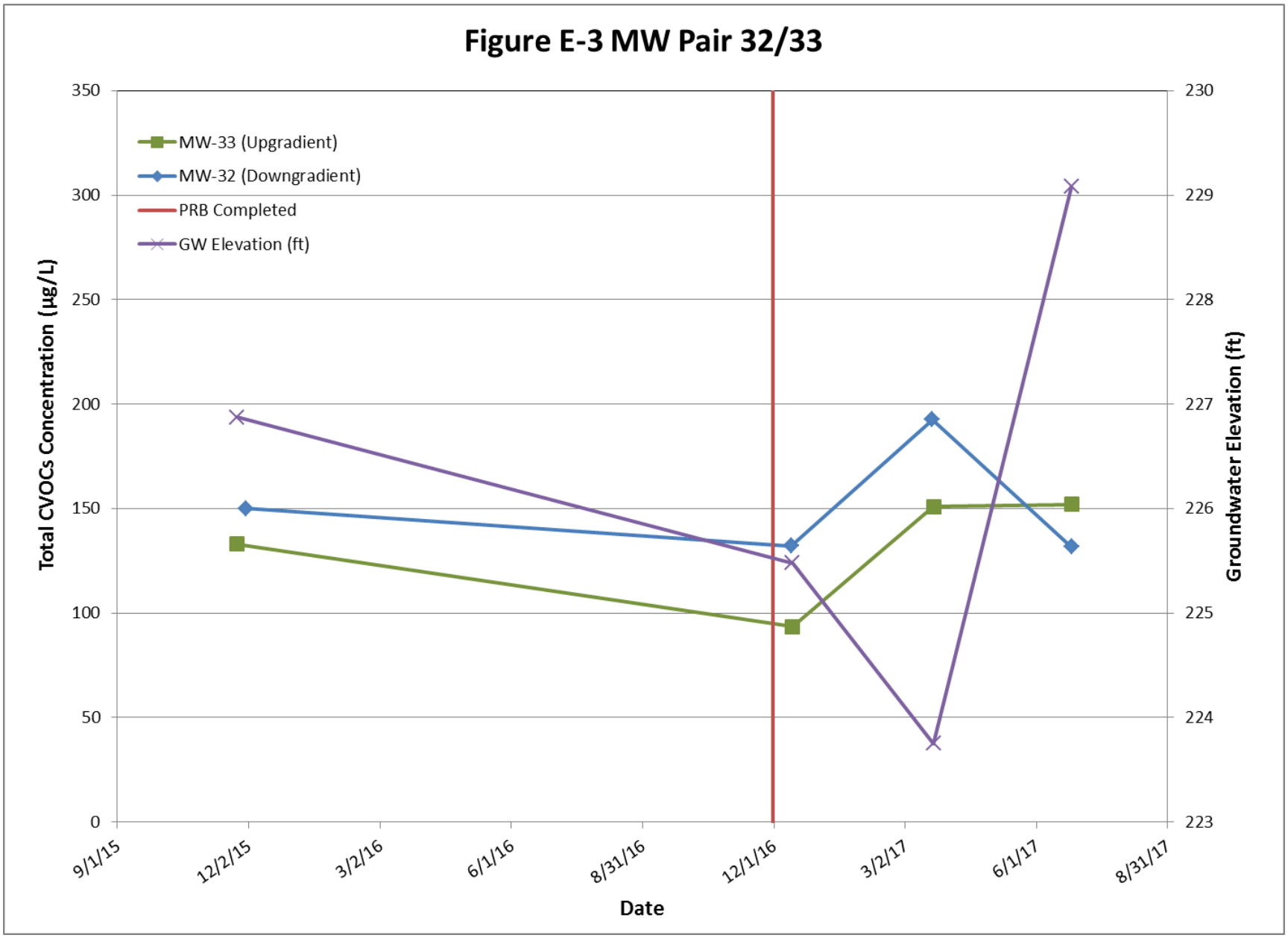
APPENDIX E: Groundwater Concentration Trend Plots



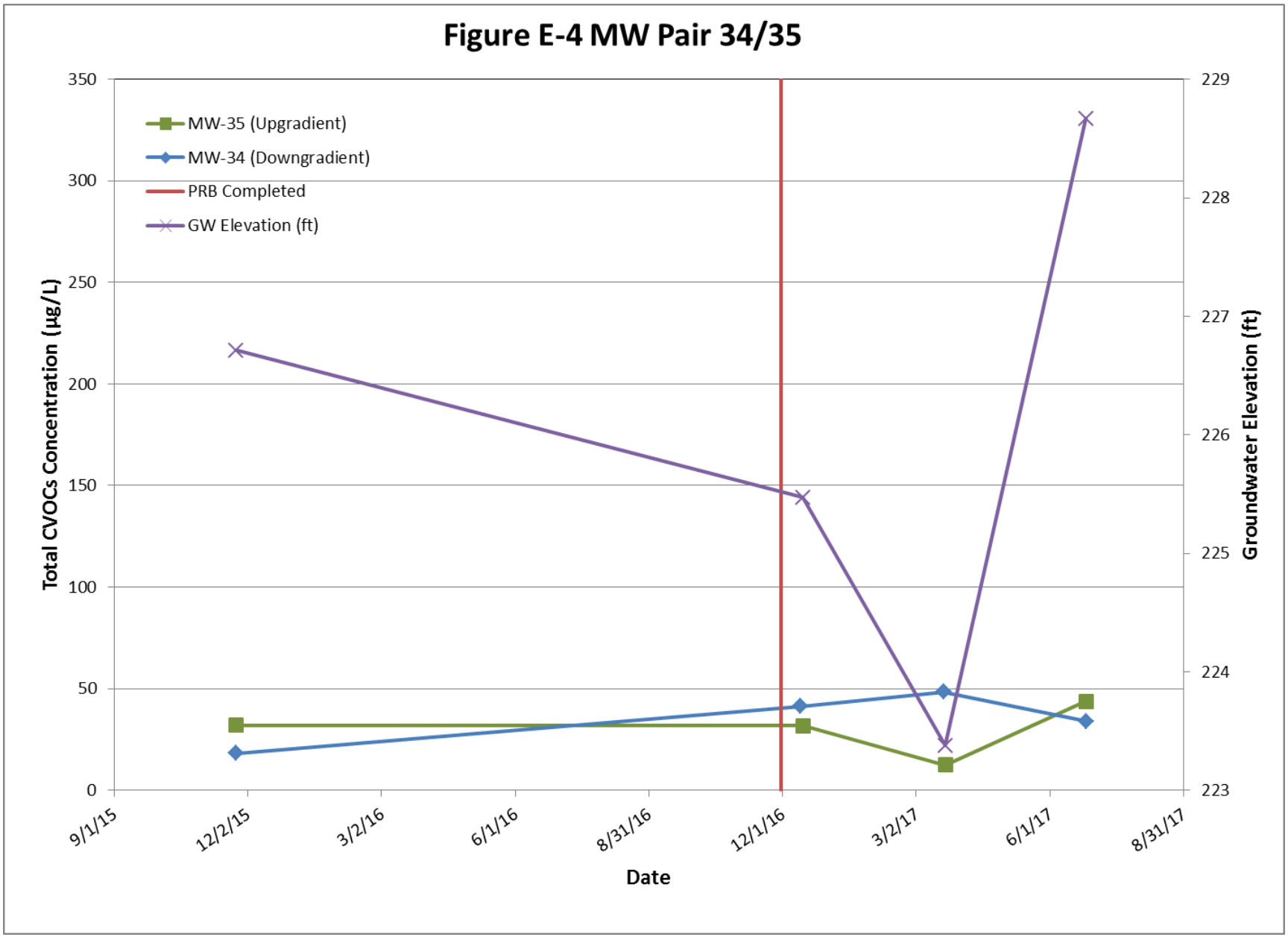
Former Scotia Navy Depot – Groundwater
Chlorinated Volatile Organic Compound
Trend Plots



Former Scotia Navy Depot – Groundwater
Chlorinated Volatile Organic Compound
Trend Plots



Former Scotia Navy Depot – Groundwater
Chlorinated Volatile Organic Compound
Trend Plots



Former Scotia Navy Depot – Groundwater
Chlorinated Volatile Organic Compound
Trend Plots