Prepared for:
Steel Treaters, Inc.
Troy, New York

Prepared By:
ENVIRON Engineers of North Carolina, PC

Date:
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Project Number:
1690000663

PERIODIC REVIEW REPORT

STEEL TREATERS, INC. SITE
520 CAMPBELL AVENUE
TROY, NEW YORK
NEW YORK STATE VOLUNTARY CLEANUP PROGRAM
SITE NO. V00578

ENVIRON

CERTIFICATION STATEMENT

I, Russell Kemp, certify that I am currently a NYS registered professional engineer and that this Periodic Review Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Signature

24 NOVEMBER 2020

Date

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ACRONYMS AND ABBREVIATIONS

1,1-DCA:	1,1-dichloroethane
1,1-DCE:	1,1-dichloroethene
1,2-DCA:	1,2-dichloroethane
1,2-DCE:	cis-1,2-dichloroethene
AWQS:	Ambient Water Quality Standards
bgs:	below grade surface
cVOC:	chlorinated volatile organic compound
DER:	Division of Environmental Remediation
DO:	dissolved oxygen
DUSR:	Data Usability Summary Report
EC:	Engineering Control
ENVIRON:	ENVIRON Engineers of North Carolina, PC
EPA:	United States Environmental Protection Agency
ESCO:	ESCO Corporation
IC:	Institutional Control
NELAP:	National Environmental Laboratory Accreditation Program
NYSDEC:	New York State Department of Environmental Conservation
NYSDOH:	New York State Department of Health
ORP:	oxidation-reduction potential
PCE:	tetrachloroethene
PRB:	permeable reactive barrier
PRR:	Periodic Review Report
RAO:	Remedial Action Objective
SCO:	soil cleanup objective
SF:	square feet
SMP:	Site Management Plan
STI:	Steel Treaters, Inc.
TCA:	1,1,1-trichloroethane
TCE:	trichloroethene
VCA:	Voluntary Cleanup Agreement
VCP:	Voluntary Cleanup Program

VOC:	volatile organic compound
ZVI:	zero-valent iron

EXECUTIVE SUMMARY

ENVIRON Engineers of North Carolina, PC (ENVIRON) has prepared this Periodic Review Report (PRR) for the Former Steel Treaters, Inc. Facility (the Site) located in Troy, New York (see **Figure 1**). The period of review for this report is October 26, 2019 to October 26, 2020.

Between 1966 and 2005, the Site was used to heat treat metal machine parts received from various manufacturers. These activities included the use of solvents, including 1,1,1-trichloroethane (TCA) and trichloroethene (TCE), which were stored in 55-gallon drums and used for degreasing of metal parts. The solvents were reportedly used until 1991 and were reclaimed following use. Operations at the Site ceased following a fire on February 24, 2005, which damaged the single-story building. The Site is currently vacant and consists of the concrete slab of the former building (demolished in 2017), surrounding asphalt parking lot, and wooded areas.

Prior to site remediation, ESCO completed several phases of remedial investigation at the Site, which identified chlorinated ethenes and ethanes as the primary contaminants of concern. The primary source of contamination was identified as a former parts degreaser pit located in the southeast portion of the former building (see **Figure 2**). Between 2007 and 2010, several interim remedial measures were completed at the Site (i.e., in-situ chemical oxidation in 2007, soil vapor extraction from 2008 to 2010, and soil excavation in December 2010) primarily to address contamination identified near the former degreaser pit. These remedial actions resulted in soil concentrations meeting the NYSDEC restricted commercial or industrial SCOs; therefore, no further remedial action of soil was warranted other than establishing institutional controls (ICs) restricting land use to commercial or industrial purposes. However, the detection of chlorinated ethenes and ethanes in groundwater above New York's Ambient Water Quality Standards (AWQS) for Class GA water indicated that remedial action of groundwater was warranted.

In accordance with NYSDEC's Decision Document on October 13, 2017, between January 9, 2018 and March 29, 2018 a passive groundwater remedy was implemented that included (1) construction of a permeable reactive barrier (PRB); (2) construction of a ZVI treatment zone immediately downgradient of the former degreasing pit, where TCA and TCE concentrations are highest; and (3) installation of engineering controls (ECs; i.e., a permanent cover system). In addition, ICs were established in the form of an environmental easement.

All requirements of the IC/EC plan were met during the current review period. The results of site-wide inspections and groundwater sampling show that the IC/ECs are in place, effective, and performing as designed. In addition, all requirements of the monitoring plan were met with the exception of one well that could not be sampled during the August 2020 sampling event due to insufficient water column at the time of sampling. The groundwater monitoring results show that the PRB system is effectively reducing VOC concentrations as groundwater flows through the barriers.

A revised SMP will be submitted to NYSDEC under separate cover to request that the frequency of site-wide inspections be reduced to match the frequency of groundwater monitoring events, which will be performed at least annually. There are no recommended changes to the groundwater monitoring program at this time and groundwater monitoring will continue in accordance with the SMP. The next PRR will be submitted to NYSDEC by November 25, 2021 and will cover monitoring activities completed from October 27, 2020 to October 26, 2021.

1. INTRODUCTION

This Periodic Review Report (PRR) is a required element of the Site Management Plan (SMP; ENVIRON Engineers of North Carolina, PC [ENVIRON], 2018) for the remedial action at the Former Steel Treaters, Inc. Facility located in Troy, New York (hereinafter referred to as the "Site"; see **Figure 1**). Steel Treaters, Inc. (STI) entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) on September 19, 2003 to remediate the Site. The property ownership was transferred to ESCO Corporation (ESCO), STI's parent company and current property owner, in 2012. The Site is currently in the NYSDEC's Voluntary Cleanup Program (VCP) as Site No. V00578-4. The SMP for the Site (dated June 14, 2018) was approved by NYSDEC on June 26, 2018.[1]

This PRR is the second review report for the Site and covers monitoring activities for the period between October 26, 2019 and October 26, 2020. This document was prepared in accordance with the requirements of NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010 and the guidelines provided by NYSDEC.

1.1 Site Location and Description

The Site is located in Troy, Rensselaer County, New York and is identified as Section 112 Block 4 and Lot 25 on the Rensselaer County Tax Map. The Site encompasses an approximately 1.109-acre area and is bounded by Campbell Avenue to the north, a butcher shop and a few residences to the south, undeveloped land to the east, and commercial properties to the west (see **Figure 2**). The boundaries of the Site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in **Appendix A**. The currently vacant Site, which is zoned industrial, consists of the concrete slab of a former building that was demolished in 2017, surrounding asphalt parking lot, and wooded areas.

The Site was acquired by STI in 1965 and used to heat treat metal machine parts received from various manufacturers starting in 1966. Past site activities included the use of solvents, including 1,1,1-trichloroethane (TCA) and trichloroethene (TCE), which were stored in 55-gallon drums and used for degreasing of metal parts. The solvents were reportedly used until 1991 and were reclaimed following use. Operations at the Site ceased following a fire on February 24, 2005, which damaged the single-story building. The building's superstructure was demolished during the week of April 17, 2017.

Prior to site remediation, ESCO completed several phases of remedial investigation at the Site, which identified chlorinated ethenes and ethanes as the primary contaminants of concern. The primary source of contamination was identified as a former parts degreaser pit located in the southeast portion of the former building (see **Figure 2**). Soil sampling indicated that ethenes (1,1-dichloroethene [1,1-DCE], cis-1,2-dichloroethene [1,2-DCE], tetrachloroethene [PCE], TCE, and vinyl chloride), ethanes (1,1-dichloroethane [1,1-DCA], 1,2-dichloroethane [1,2-DCA], and TCA), and 1,4-dioxane were present in site soils in excess of the NYSDEC unrestricted soil cleanup objective (SCO). In addition, some metals (barium, cadmium, total chromium, copper, nickel, and zinc) were detected in surficial soils (less than 12 inches deep) in excess of the NYSDEC unrestricted SCO. Groundwater sampling

[1] A revised Site Management Plan (SMP) was submitted to NYSDEC on December 9, 2019. The revised SMP reflects the replacement of wells MW-102I and MW-103E with MW-102IR and MW-103ER, respectively (January 2019); resurvey of all Site groundwater monitoring wells (February 2019); and a change in the analytical method for 1,4-dioxane requested by NYSDEC (July 2019).

indicated the presence of chlorinated volatile organic compounds (cVOCs; TCA, PCE, and associated breakdown products) above New York's Ambient Water Quality Standards (AWQS) for Class GA water. The groundwater containing cVOCs extended to monitoring wells located on the north side of Campbell Avenue.

1.2 Remedial History

A summary of the investigation and remedial history of the Site is provided in Section 2.3 of the SMP. As discussed above, several phases of remedial investigation were completed at the Site between 2001 and 2013. In addition, between 2007 and 2010, several interim remedial measures were completed at the Site (i.e., in-situ chemical oxidation in 2007, soil vapor extraction from 2008 to 2010, and soil excavation in December 2010) primarily to address contamination identified in the source area, near the former degreaser pit. These remedial actions resulted in soil concentrations meeting the NYSDEC restricted commercial or industrial SCOs; therefore, no further remedial action of soil was warranted other than establishing institutional controls (ICs) restricting land use to commercial or industrial purposes. However, the detection of chlorinated ethenes and ethanes in groundwater above the AWQS for Class GA water indicated that remedial action of groundwater was warranted.

As described in the SMP, additional investigatory activities were conducted between December 2015 and March 2016 and the results presented in ENVIRON's Pre-Design Investigation Report and Remedial Action Workplan dated July 19, 2017. Following the NYSDEC issuance of a Decision Document on October 13, 2017, ENVIRON prepared the Remedial Design Report for the selected remedy, which was approved by NYSDEC on December 19, 2017. As documented in ENVIRON's Final Engineering Report dated June 15, 2018, the remedy was implemented between January 9, 2018 and March 29, 2018 and included the following components:

1. Construction of a permeable reactive barrier (PRB);
2. Construction of a ZVI treatment zone immediately downgradient of the former degreasing pit, where TCA and TCE concentrations are highest; and
3. Installation of engineering controls (ECs; i.e., a permanent cover system).

In addition, ICs were established in the form of an environmental easement which: (a) defines inspection and reporting requirements in accordance with Part 375-1.8(h)(3); (b) limits use and redevelopment of the Site to commercial and industrial purposes as defined by Part 375-1.8(g) and the City of Troy's zoning determination; (c) restricts groundwater as a source of potable or process water without pre-treatment as determined by the New York State Department of Health (NYSDOH) or County DOH; and (d) requires compliance with the SMP developed for the Site. Further and as required by the Environmental Easement, an SMP for long term management of remaining contamination, which includes plans for (1) IC/ECs, (2) monitoring, (3) operation and maintenance, and (4) reporting, was developed and implemented. The long term monitoring defined in the SMP consists of quarterly groundwater sampling from wells upgradient, within, and downgradient of the PRB for the first year (completed), semi-annually for the next two years (partially completed), and annually thereafter to ensure that the treated groundwater complies with the AWQS for Class GA water and restoration of the ground water aquifer to pre-disposal/pre-release conditions has been achieved to the extent practicable.

No changes to the selected remedy have been made since remedy selection.

1.3 Objectives of the Periodic Review

In accordance with the SMP, this PRR will:

- Evaluate the overall performance and effectiveness of the remedy;
- Evaluate the compliance of the remedy with the requirements of the October 13, 2017 NYSDEC Decision Document and the SMP;
- Evaluate the operation and effectiveness of all treatment units, including identification of any needed repairs or modifications;
- Evaluate trends in contaminant levels in the affected media to determine if the remedy continues to be effective in achieving the remedial goals as specified by the Decision Document;
- Provide any new conclusions or observations regarding site contamination based on inspections or data generated by the NYSDEC-approved Monitoring and Sampling Plan for the media being monitored; and
- Provide recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan.

This report includes:

- Identification, assessment, and certification of all IC/ECs required by the remedy for the Site.
- Results of the required annual site inspections completed during the reporting period.
- All site management forms and other records generated for the Site during the reporting period, if not previously submitted.
- A summary of monitoring data generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representation of contaminants of concern by media, which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These include a presentation of past data as part of an evaluation of contaminant concentration trends.

2. REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

2.1 IC/EC Plan Compliance Report

As discussed in **Section 1.2**, ECs at the Site currently consist of (1) the Site cover system and (2) the PRB and ZVI treatment zone. Currently, there are no structures on-site and there is no sub-slab depressurization system in place. ICs have been established for the Site in the form of an Environmental Easement (**Appendix A**). **Figures 3** and **4** show the EC locations and IC boundaries, respectively.

The following subsections describe each control, its objective, performance evaluation completed during the current review period, and status.

2.1.1 Cover System Compliance

As described in the SMP, the cover system is comprised of a minimum of 12 inches of clean coarse aggregate over a demarcation layer in areas immediately around the former building, as well as the concrete slab of the former building and asphalt pavement. In the areas where the PRB and ZVI treatment zone were excavated, the upper 12 inches were backfilled with 8 inches of dense graded aggregate (DGA) and 4 inches of asphalt and concrete, respectively. The coarse aggregate cover system, concrete slab, and asphalt pavement extend over approximately 4,500 square feet (SF), 9,000 SF, and 8,300 SF, respectively (refer to **Figure 3**). The objective of the cover system is to address soil exceedances of the SCOs and prevent direct contact with underlying soils.

In accordance with the SMP, performance of the cover system is visually inspected during biannual site-wide inspections, which for the current review period were performed on February 26, 2020 and August 10, 2020. The inspection forms completed during these site-wide inspections are provided in **Appendix B**. Based on the inspections, the cover system is in place with no visible damage, is unchanged from the previous certification, and complies with the SMP.

2.1.2 PRB and ZVI Treatment Zone Compliance

The PRB was installed around the northern side of the former building and includes an approximately 30-foot long pervious ZVI treatment barrier (20% ZVI and 80% washed sand) and impermeable hydraulic barriers (steel sheetpile sections) on either side of the PRB with a total combined length of 220 linear feet. The PRB is approximately 3 feet wide and installed to a depth between approximately 15.2 and 16.2 feet bgs, extending to the top of the underlying bedrock. The objective of the PRB is to passively reduce concentrations of contaminants in groundwater in-situ and mitigate, to the extent practicable, offsite migrations of impacted groundwater.

The ZVI treatment zone consists of an approximately 3-foot wide and 25-foot long barrier (35% ZVI and 65% washed sand) installed to a depth of approximately 13.7 and 17.7 feet bgs, extending to the top of the underlying bedrock. The objective of the ZVI treatment zone is to passively reduce concentrations in groundwater, improve the effectiveness of the PRB, and reduce remedial timeframes.

Since the PRB and ZVI treatment zone are passive groundwater treatment systems, there are no operational and maintenance requirements for these systems. The performance of the reactive media in both barriers is monitored via monitoring well pairs installed upgradient and downgradient of each

barrier. Monitoring wells are also installed within the reactive media. Based on the monitoring completed to date (refer to **Section 2.2.2**), the PRB and ZVI treatment zone are performing as designed and comply with the SMP.

2.1.3 Institutional Controls Compliance

The ICs required by the Environmental Easement[2] (**Appendix A**) and implemented under the SMP are:

- The property use is limited to commercial and/or industrial land uses;
- All ECs must be operated and maintained as specified in the SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP;
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Rensselaer Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;
- Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement;
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on **Figure 4**, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the site are prohibited.

These ICs exist to: (1) implement, maintain and monitor the EC systems; (2) prevent future exposure to remaining contamination; and (3) limit the use and development of the site to commercial or industrial uses only. As stated in the Environmental Easement, the ICs may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The ICs are in place and unchanged from the previous certification.

[2] The Environmental Easement also requires that "operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP." However, the remedy at the Site does not included any mechanical or physical components.

2.1.4 IC/EC Compliance Conclusions and Recommendations

The completed NYSDEC Institutional and Engineering Controls (IC/ECs) Certification Form for this review period is included as **Appendix C**. The IC/ECs are in place and unchanged from the previous certification, are performing as designed, and comply with the SMP. No changes to the IC/ECs are recommended at this time.

2.2 Monitoring Plan Compliance Report

The monitoring plan for the Site currently includes biannual sitewide inspections. Although not required during the current review period, the monitoring plan also includes sitewide inspections after all severe weather conditions that may affect the ECs or monitoring devices. As discussed in Section 4.2 of the SMP, the purpose of the inspections is to determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date.

During each inspection, the inspection form provided in the SMP (Appendix I – Site Management Forms) is completed to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections are conducted of all remedial components installed at the site, with the exception of the PRB and ZVI treatment zone which are below ground surface. There are no active systems (i.e., systems requiring energy, pumping, or moving parts) requiring monitoring or operation and maintenance. Instead, standard groundwater monitoring is used to assess the performance of the PRB and ZVI treatment zone. Sampling locations, required analytical parameters, and schedule are provided in Table 6 – Post Remediation Sampling Requirements and Schedule of the SMP, reproduced below:

Table 6 – Post Remediation Sampling Requirements and Schedule

Sampling Location (1)	VOC Analysis (3)	Cations, Anions, Dissolved Fe, and Dissolved H2 (4)	Water Levels	Schedule
Overburden monitoring wells MW-101I, MW-104I, MW-104E, MW-11, MW-13, MW-14, MW-17, MW-18, and MW-19	X (2)		X	Annually
Groundwater monitoring for PRB effectiveness (monitoring wells MW-100I, MW-100B, MW-100E, MW-102IR, MW-102B, MW-102ER, MW-103I, MW-103B, and MW-103ER)	X (2)	X	X	Quarterly for first year; semi-annually for the next two years and annually thereafter
Water level monitoring wells MW-101E, MW-1, MW-5 and MW-8			X	Annually

Note 1: Existing monitoring wells MW-2, MW-3, MW-6, MW-7, MW-10, BRMW-1, BRMW-2S, BRMW-2D, BRMW-3 and BRMW-4 will be maintained but not sampled or monitored. Monitoring wells MW-4, MW-9, MW-12, MW-15 and MW-16 will be abandoned, if not abandoned already.
2: The laboratory will achieve detection limits of no greater than 1 ug/L for all chlorinated VOCs of concern for this site.
3: Per correspondence with NYSDEC on July 31, 2019, VOC analysis will be by EPA Method 8260C except for 1,4-dioxane analysis which will be by EPA Method 8270 SIM.
4: Cations refers to calcium, magnesium, sodium, and potassium (EPA Method 200.7). Anions refers to alkalinity (Method SM 2320B), nitrate (EPA Method 300), sulfate (EPA Method 300), and chloride (EPA Method 300). Samples to be analyzed for these parameters will be collected using low-flow sampling techniques and will include measurement of standard water quality parameters (pH, redox potential specific conductivity, and dissolved oxygen).

The groundwater monitoring program is designed to monitor changes in the groundwater plume characteristics, including contaminant concentrations and the horizontal extent of the plume. Documentation of continued decreasing trends in cVOC concentrations and monitoring groundwater geochemistry across each treatment zone (i.e., ZVI treatment zone and PRB) is considered sufficient to demonstrate the continued effectiveness of the remedy.

2.2.1 Summary of Site Inspections

As discussed in **Section 2.1.1**, sitewide inspections during the current review period were conducted on February 26, 2020 and August 10, 2020. The inspection forms completed during these site-wide inspections are provided in **Appendix B**.

During both inspections, the monitoring well covers were observed to be in generally good condition. During the February 2020 inspection, missing bolts were replaced in a few well covers and the well cap was replaced in one well; no new issues were identified during the August 2020 inspection. During the February 2020 inspection, previously deployed passive diffusion bags (PDBs) were removed from six of the monitoring wells that per the SMP are being maintained but not sampled or monitored[3].

The cover system (i.e., the asphalt, stone, and concrete caps) was also observed to be in generally good condition during both inspections. An approximately 5-CY pile of ¼- to ½-inch stone of unknown origin was observed in the southeastern corner of the cap area during the February 2020 inspection.

[3] Attempts to remove the PDB lodged in MW-2 during both the February and August 2020 inspections were unsuccessful, but since this well is not being sampled per the SMP, no further action is required.

Following the August 2020 inspection, vegetation growing within and around the northern, eastern, and western sides of the concrete slab was sprayed with herbicide and/or clipped. Consistent with previous site inspections, the concrete pads for MW-102B and MW-103B were observed to be a few inches above the surrounding surface. This condition will continue to be monitored during future site inspections; however, no repairs are required at this time.

2.2.2 Summary of Groundwater Monitoring

To date, seven post-remedy implementation groundwater sampling events have been conducted at the Site. In accordance with the sampling schedule defined in the SMP (refer to **Section 2.2** above), four quarterly events were conducted in the first year following remedy implementation (July/August 2018, November 2018, February 2019, and May 2019), two semi-annual events were conducted in the second year (July/August 2019 and February 2020), and the first of two semi-annual events has been conducted for the third year (August 2020). The results of each groundwater sampling event were provided to NYSDEC in interim monitoring letter reports dated January 10, 2019 (Events 1 and 2), April 17, 2019 (Event 3), June 21, 2019 (Event 4), September 20, 2019 (Event 5), May 14, 2020 (Event 6), and November 20, 2020 (Event 7).

During the current review period, groundwater samples were collected from the following monitoring wells (Events 6 and 7):

- PRB system monitoring wells (monitored in February 2020 and August 2020): MW-100I, MW-100B, MW-100E, MW-102IR, MW-102B, MW-102ER, MW-103I, MW-103B, and MW-103ER.
- Overburden monitoring wells (monitored in August 2020): MW-11, MW-13[4], MW-14, MW-17, MW-18, MW-19, MW-101I, MW-104I, and MW-104E.

As indicated in the interim monitoring letter reports previously submitted to NYSDEC, all groundwater samples were collected in accordance with the United States Environmental Protection Agency's (EPA) low-flow sampling procedure. Static water levels within each well were measured before and after insertion of the peristaltic pump into the well. After pump startup, the water level drawdown and water quality parameters (i.e., pH, specific conductance, turbidity, temperature, oxidation-reduction potential [ORP], and dissolved oxygen [DO]) were monitored every five minutes using a Horiba U-52 and a flow through cell until the parameters stabilized, at which point samples were collected in the appropriate laboratory supplied containers.

The groundwater samples collected from both the PRB system monitoring wells and other overburden monitoring wells were analyzed for volatile organic compounds (VOCs) using EPA Method 8260C and 1,4-dioxane using EPA Method 8270 SIM by Eurofins TestAmerica, Inc. (Eurofins), a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory approved by NYSDOH. In addition, the groundwater samples collected from the PRB system monitoring wells were analyzed for cations, anions, dissolved iron, and dissolved hydrogen.[5] [6]

[4] MW-13 could not be sampled in August 2020 due to insufficient water column in the well.

[5] Cations refers to calcium, magnesium, sodium, and potassium (EPA Method 200.7). Anions refers to alkalinity (Method SM 2320B), nitrate (EPA Method 300), sulfate (EPA Method 300), and chloride (EPA Method 300). Samples were analyzed for dissolved iron using EPA Method 200.7, and for dissolved hydrogen using AM20GAX.

[6] Eurofins subcontracted Pace Analytical Energy Services LLC and Pace Gulf Coast Laboratory, other NELAP-certified laboratories approved by NYSDOH, to perform the dissolved hydrogen analysis.

The groundwater sampling results for the seven groundwater monitoring events completed to date are summarized in **Figure 5** and **Table 1**. The data from the wells upgradient of the PRB system (i.e., MW-18 and MW-19) indicate that contaminant levels post-remedy implementation remain comparable to contaminant levels pre-remedy implementation, which is expected given that the remedy relies on passive treatment of the impacted groundwater as it flows through the reactive media barriers. VOC concentrations in MW-11, located downgradient of the PRB system, remain below the AWQS for Class GA water. In other wells downgradient of the PRB system (i.e., MW-13, MW-14, and MW-17), some key VOCs were detected above the AWQS; these concentrations are generally comparable to those prior to remedy implementation and are most likely due to residual VOCs present in groundwater.

Data from the wells located on either side of the sheetpile wall (i.e. MW-101I, MW-104I, and MW-104E) indicate that contaminant levels in these wells remain relatively constant or show a slight downward trend over the seven monitoring events completed to date. Some key VOCs remain above the AWQS in these wells, likely due to residual VOCs present in groundwater prior to remedial action implementation.

The data from the PRB system monitoring wells for the seven monitoring events completed to date indicate that the PRB system is functioning as designed. During all seven monitoring events, measured values of pH generally trended higher along the flow direction through each barrier while values of ORP generally trended lower along the flow direction. A return of pH and ORP measured values toward ambient levels on the downgradient side of the barriers was generally observed as anticipated, with the exception of MW-102ER where pH and ORP remained similar to values measured within the PRB. Similarly, a decrease in the concentration of key cations (calcium and magnesium) and alkalinity in samples of groundwater was also generally observed across each barrier, again with some increase toward ambient conditions downgradient from the PRB. These observations are consistent with expectations for functioning PRBs.

VOC concentrations in groundwater samples collected from the monitoring wells immediately upgradient of the PRBs (MW-100I, MW-102IR, and MW-103I) measured during the two monitoring events completed during the current review period remain higher than in the samples from monitoring wells within the PRBs (MW-100B, MW-102B, and MW-103B). These results indicate that VOC concentrations continue to be reduced as the groundwater flows through the barriers. The concentrations observed in groundwater samples from MW-100E, MW-102ER, and MW-103ER (monitoring wells immediately downgradient of the PRBs) are most likely due to residual VOCs present in groundwater prior to remedial action implementation. However, the concentrations of key VOCs in samples from these downgradient wells have generally decreased over time, as anticipated and signaling significant progress in the remedial approach. Natural attenuation processes are also enhanced by the geochemical conditioning of the groundwater and mass flux reduction as promoted by the PRB.

In accordance with Appendix 2B of NYSDEC DER-10, a Data Usability Summary Report (DUSR) evaluating the analytical data collected during each event was provided with each interim monitoring letter report submitted during the current review period. Data evaluated for the two monitoring events completed during the current review period were qualified for ICV and CCV recoveries, trip and field blank contamination, field duplicate precision, laboratory duplicate precision, and when concentrations were detected between the MDL and RL. However, these qualifications did not change the conclusions made from evaluation of the data; therefore, the overall conclusion of the DUSRs is that the analytical data are usable as qualified.

2.2.3 Monitoring Conclusions and Recommendations

The results of the sitewide inspections completed during the current review period show that the monitoring well covers and the cover system are in generally good condition. The cover system is effectively preventing direct contact with underlying soils with exceedances of the SCOs.

The results of the groundwater monitoring completed during the current review period show that the PRB system is effectively reducing VOC concentrations in groundwater in-situ and mitigating offsite migration of impacted groundwater. While concentrations of some VOCs remain above the AWQS for Class GA water in the three monitoring wells immediately downgradient of the PRBs, evaluation of the monitoring results shows that VOC concentrations are being reduced as groundwater flows through the barriers. Residual concentrations are expected to continue decreasing over time as groundwater from the Site continues to flow through the PRB system.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

All requirements of the IC/EC plan were met during the current review period. Site-wide inspections and groundwater sampling were performed in accordance with the schedule provided in the SMP. The results of these activities show that the IC/ECs are in place, effective, and performing as designed.

In addition, all requirements of the monitoring plan were met with the exception of one well that could not be sampled during the August 2020 sampling event due to insufficient water column at the time of sampling. There was sufficient water in all designated PRB monitoring wells during both sampling events (February 2020 and August 2020) completed during the current review period. The results show that the PRB system is effectively reducing VOC concentrations as groundwater flows through the barriers.

3.2 Recommendations and Future Submittals

A revised SMP will be submitted to NYSDEC under separate cover to request that the frequency of site-wide inspections be reduced to match the frequency of groundwater monitoring events, which will be performed at least annually. There are no recommended changes to the groundwater monitoring program at this time and groundwater monitoring will continue in accordance with the revised SMP. The next groundwater monitoring event will be completed in February 2021, and the results will be provided to NYSDEC in a subsequent report. Thereafter, groundwater monitoring will be performed annually in accordance with the SMP.

In accordance with the SMP, the next PRR will be submitted to NYSDEC by November 25, 2021 and will cover monitoring activities completed from October 27, 2020 to October 26, 2021.

4. REFERENCES

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ENVIRON. May 2020. Letter Report – Post-Remedy Groundwater Monitoring Results – Sixth Monitoring Event.

ENVIRON. November 2020. Letter Report – Post-Remedy Groundwater Monitoring Results – Seventh Monitoring Event.

New York State Department of Environmental Conservation (NYSDEC). May 2010. DER-10 / Technical Guidance for Site Investigation and Remediation.

NYSDEC. October 2017. Decision Document – Steel Treaters, Inc., Voluntary Cleanup Program, Troy, Rensselaer County, Site No. V00578.

TABLES

TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

	Location		MW100I	MW100I	MW100I	MW100I	MW100I	MW100I	MW100I	MW100I	MW100I	MW100B	MW100B
	Field Sample ID		MW-100I-180801	MW-100I-181113	DUP-181113	MW-100I-190220	DUP-190220	MW100I-190506	MW100I-190729	MW100I-200224	MW100I-200812	MW-100B-180801	DUP-180801
	Lab Sample ID	NY Fresh Groundwater (GA) Standards	276600004 / 460-161828-4	460-169286-1 / MW-100I-181113	460-169286-2 / DUP-181113	295620002 / 460-175850-2	295620004 / 460-175850-6	302580004 / 460-181383-7	310520001 / 460-187743-1	330740001 / 460-203694-1	22008203201 / 460-215912-2	276600001 / 460-161828-1	276600005 / 460-161828-5
	Sample Method		Peristaltic Pump	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Peristaltic Pump	Peristaltic Pump
	Sample Date		8/1/2018	11/13/2018	11/13/2018	2/20/2019	2/20/2019	5/6/2019	7/29/2019	2/24/2020	8/12/2020	8/1/2018	8/1/2018
	Comments				Field Duplicate		Field Duplicate						Field Duplicate
WQ													
	Alkalinity		252000 (5000)	393000 (5000)	379000 (5000)	315000 (5000)	315000 (5000)	266000 (5000)	317000 (5000)	317000 (5000)	309000 (5000)	155000 (5000)	154000 (5000)
	Bicarbonate Alkalinity		252000 (5000)	393000 (5000)	379000 (5000)	315000 (5000)	315000 (5000)	266000 (5000)	317000 (5000)	317000 (5000)	309000 (5000)	155000 (5000)	154000 (5000)
	Bicarbonate as CaCO3		---	---	---	---	---	---	---	317000 (5000)	---	---	---
	Carbonate Alkalinity		U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)
	Chloride	250000	**406000 (12000)**	226000 (9480)	232000 (9480)	119000 (6000)	113000 (6000)	114000 (6000)	101000 (3600)	45500 (2400)	45600 (320)	126000 (5520)	130000 (5640)
	Nitrate	10000	U (100)	U (100)	U (100)	43 J (100)	83 J (100)	62 J (100)	U (100)	U (100)	79 J (160)	100 J (100)	140 J (100)
	Sulfate	250000	27700 (600)	27200 (6000)	27100 (6000)	27900 (600)	27500 (600)	26900 (600)	23500 (18000)	26700 (12000)	46400 (480)	75900 (27600)	70100 (28200)
VOC													
	Acetone	50	U (50)	U (25)	U (25)	U (10)	U (10)	U (25)	U (25)	U (25)	U (10)	**330 (5)**	---
	Benzene	1	U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	0.93 J (1)	---
	2-Butanone	50	U (50)	U (25)	U (25)	U (10)	U (10)	U (25)	U (25)	U (25)	U (10)	33 (5)	---
	Chloroethane	5	U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	1.5 (1)	---
	Cumene	5	U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	U (1)	---
	1,1-Dichloroethane	5	**98 (10)**	**56 (5)**	**58 (5)**	**66 (2)**	**67 (2)**	**57 (5)**	**29 (5)**	**51 (5)**	**10 (2)**	0.49 J (1)	---
	1,2-Dichloroethane	0.6	**10 (10)**	**5.1 (5)**	**4.3 J (5)**	**2.7 (2)**	**2.7 (2)**	**2.9 J (5)**	U (5)	U (5)	**0.86 J (2)**	U (1)	---
	1,1-Dichloroethene	5	**26 (10)**	**15 (5)**	**19 (5)**	**12 (2)**	**11 (2)**	**12 (5)**	**6.2 J- (5)**	**13 (5)**	2.6 (2)	U (1)	---
	cis-1,2-Dichloroethene	5	**3400 (10)**	**740 (5)**	**790 (5)**	**360 (2)**	**350 (2)**	**280 (5)**	**230 (5)**	**310 (5)**	**230 (2)**	0.46 J (1)	---
	trans-1,2-Dichloroethene	5	3 J (10)	2.8 J (5)	2.1 J (5)	1.4 J (2)	1.3 J (2)	1.7 J (5)	1.2 J (5)	3.6 J (5)	1.3 J (2)	U (1)	---
	1,4-Dioxane		360 J (500)	UJ (250)	UJ (250)	64 J (100)	77 J (100)	U (250)	U (250)	7.1 (0.2)	5.7 (0.2)	120 (50)	---
	Ethyl Benzene	5	U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	U (1)	---
	Methylene Chloride	5	U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	0.64 J (1)	---
	Tetrachloroethene	5	U (10)	**5.2 (5)**	**5.6 (5)**	4.2 (2)	4.1 (2)	**8.1 (5)**	**5.7 (5)**	**5.9 (5)**	2 (2)	U (1)	---
	1,1,1-Trichloroethane	5	**41 (10)**	**37 (5)**	**42 (5)**	**16 (2)**	**15 (2)**	**18 (5)**	**14 (5)**	**10 (5)**	**6.3 (2)**	U (1)	---
	1,1,2-Trichloroethane	1	U (10)	**3.2 J (5)**	**3.1 J (5)**	**1.5 J (2)**	**1.6 J (2)**	U (5)	U (5)	U (5)	U (2)	U (1)	---
	Trichloroethene	5	**410 (10)**	**870 (5)**	**970 (5)**	**880 (2)**	**850 (2)**	**1300 (5)**	**1100 (5)**	**1300 (5)**	**630 (2)**	2 (1)	---
	Vinyl Chloride	2	**250 (10)**	**260 (5)**	**310 (5)**	**180 (2)**	**180 (2)**	**100 (5)**	**76 (5)**	**110 (5)**	**37 (2)**	U (1)	---
	m,p-xylene		U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	U (1)	---
	ortho-xylene	5	U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	U (1)	---
	Xylenes (total)	5	U (10)	U (5)	U (5)	U (2)	U (2)	U (5)	U (5)	U (5)	U (2)	U (1)	---
INORG (total)													
	Calcium		94700 (5000)	70300 (5000)	72400 (5000)	46500 (5000)	46500 (5000)	37400 (5000)	47000 (5000)	45600 (5000)	52300 (5000)	29700 (5000)	29500 (5000)
	Magnesium	35000	30500 (5000)	23600 (5000)	24300 (5000)	15600 (5000)	15600 (5000)	12800 (5000)	14800 (5000)	14800 (5000)	14100 (5000)	1670 J (5000)	1640 J (5000)
	Potassium		1160 J (5000)	829 J (5000)	849 J (5000)	527 J (5000)	530 J (5000)	579 J (5000)	581 J (5000)	490 J (5000)	708 J (5000)	10500 (5000)	10400 (5000)
	Sodium	20000	**250000 (5000)**	**199000 (5000)**	**203000 (5000)**	**155000 (5000)**	**158000 (5000)**	**136000 (5000)**	**150000 (5000)**	**131000 (5000)**	**110000 (5000)**	**184000 (5000)**	**183000 (5000)**
INORG (dissolved)													
	Iron		U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	3150 (150)	3300 (150)
GEOCHEMICAL													
	HYDROGEN (H2) [NM]		87000 n (10000)	140 Jn (20)	20 Jn (4)	58 Jn (2)	17 Jn (1)	5.5 n (1)	18 n (1)	2.4 n (1)	8.6 (1.9)	130000 n (5000)	100000 n (10000)

Notes:

1 All concentrations are presented in ug/L (ppb) unless otherwise noted.
2 Only compounds with at least one detection are shown.
3 Concentrations that exceed the NY Fresh Groundwater (GA) Standards are
4 Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

Abbreviations:

U -- Not Detected.
n -- The lab does not hold NELAP/TNI accreditation for this method or analyte.
J -- Estimated Concentration.
+ -- Biased High.
- -- Biased Low.
( ) -- Detection Limit.
--- -- Not Analyzed.

TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

	Location	MW100B	MW100B	MW100B	MW100B	MW100B	MW100B	MW100B	MW100B	MW100E	MW100E	MW100E	MW100E
	Field Sample ID	MW-100B-181113	MW-100B-190220	MW100B-190506	DUP-190506	MW100B-190729	DUP-190729	MW100B-200224	MW100B-200811	MW-100E-180801	MW-100E-181113	MW-100E-190220	MW100E-190506
	Lab Sample ID	460-169286-4 / MW-100B-181113	295620001 / 460-175850-1	302370002 / 460-181278-2	302370004 / 460-181278-4	310520002 / 460-187743-2	310520003 / 460-187743-3	330740003 / 460-203694-3	22008146601 / 460-215822-3	276600002 / 460-161828-2	460-169286-3	295620003 / 460-175850-3	302370001 / 460-181278-1
	Sample Method	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Peristaltic Pump	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP
	Sample Date	11/13/2018	2/20/2019	5/6/2019	5/6/2019	7/29/2019	7/29/2019	2/24/2020	8/11/2020	8/1/2018	11/13/2018	2/20/2019	5/6/2019
	Comments				Field Duplicate		Field Duplicate						
WQ													
	Alkalinity	94800 (5000)	80400 (5000)	69700 (5000)	69700 (5000)	68200 (5000)	67000 (5000)	83800 (5000)	80800 (5000)	160000 (5000)	107000 (5000)	62400 (5000)	47500 (5000)
	Bicarbonate Alkalinity	71600 (5000)	65300 (5000)	38000 (5000)	40500 (5000)	39600 (5000)	38100 (5000)	32700 (5000)	46700 (5000)	160000 (5000)	102000 (5000)	45000 (5000)	28500 (5000)
	Bicarbonate as CaCO3	---	---	---	---	---	---	32700 (5000)	---	---	---	---	---
	Carbonate Alkalinity	23200 (5000)	15100 (5000)	31700 (5000)	29200 (5000)	28600 (5000)	28900 (5000)	51200 (5000)	34000 (5000)	U (5000)	U (5000)	17400 (5000)	19000 (5000)
	Chloride	163000 (6600)	73500 (3000)	78600 (3000)	77300 (3000)	57900 (2400)	57700 (2400)	52900 (2400)	71300 (320)	104000 (4560)	82800 (3480)	140000 (6000)	143000 (6000)
	Nitrate	U (100)	U (100)	59 J (100)	57 J (100)	U (100)	U (100)	U (100)	78 J (160)	U (100)	U (100)	U (100)	57 J (100)
	Sulfate	590 J (600)	3160 (600)	1060 (600)	1040 (600)	670 (600)	690 (600)	1340 (600)	260 J (480)	25100 (600)	15100 (600)	1450 (600)	930 (600)
VOC													
	Acetone	34 J+ (5)	6.3 J (5)	5.7 (5)	5.8 (5)	U (5)	U (5)	U (5)	U (5)	**120 (5)**	43 J (5)	6.1 J (5)	U (5)
	Benzene	0.55 J (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.46 J (1)	0.95 J (1)	0.47 J (1)	U (1)	U (1)
	2-Butanone	26 (5)	13 (5)	3.6 J (5)	5.9 (5)	4.9 J (5)	U (5)	2.6 J (5)	U (5)	39 (5)	**66 (5)**	14 (5)	2.6 J (5)
	Chloroethane	1.1 (1)	0.51 J (1)	0.92 J (1)	U (1)	U (1)	0.84 J (1)	0.44 J (1)	1.1 (1)	1.1 (1)	0.45 J (1)	U (1)	U (1)
	Cumene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethane	0.33 J (1)	0.28 J (1)	U (1)	U (1)	U (1)	U (1)	0.26 J (1)	0.6 J (1)	4.9 (1)	0.67 J (1)	U (1)	0.27 J (1)
	1,2-Dichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.46 J (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethene	U (1)	UJ (1)	U (1)	U (1)	UJ (1)	U (1)	U (1)	U (1)	1 (1)	U (1)	UJ (1)	U (1)
	cis-1,2-Dichloroethene	0.88 J (1)	0.9 J (1)	0.28 J (1)	U (1)	0.33 J (1)	0.31 J (1)	0.36 J (1)	0.54 J (1)	**290 (1)**	**43 (1)**	**20 (1)**	**19 (1)**
	trans-1,2-Dichloroethene	U (1)	UJ (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.31 J (1)	U (1)	UJ (1)	U (1)
	1,4-Dioxane	71 J- (50)	U (50)	U (50)	U (50)	U (50)	U (50)	2.4 (0.2)	3.3 (0.2)	U (50)	UJ (50)	U (50)	U (50)
	Ethyl Benzene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Methylene Chloride	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Tetrachloroethene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1,1-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1,2-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Trichloroethene	0.78 J (1)	3.2 (1)	U (1)	U (1)	0.45 J (1)	0.38 J (1)	U (1)	U (1)	**5.3 (1)**	2 (1)	2.2 (1)	3 (1)
	Vinyl Chloride	U (1)	0.28 J (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.38 J (1)	**220 (1)**	**8.1 (1)**	**5.4 (1)**	**4.4 (1)**
	m,p-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	ortho-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Xylenes (total)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
INORG (total)													
	Calcium	10500 (5000)	6000 (5000)	6260 (5000)	6030 (5000)	6840 (5000)	6870 (5000)	2630 J (5000)	3700 J (5000)	42600 (5000)	8500 (5000)	5980 (5000)	18900 (5000)
	Magnesium	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	227 J (5000)	3310 J (5000)	U (5000)	U (5000)	U (5000)
	Potassium	11500 (5000)	6890 (5000)	4800 J (5000)	4640 J (5000)	4670 J (5000)	4600 J (5000)	4490 J (5000)	3140 J (5000)	14700 (5000)	10600 (5000)	9580 (5000)	6120 (5000)
	Sodium	**153000 (5000)**	**78400 (5000)**	**78000 (5000)**	**76700 (5000)**	**66700 (5000)**	**66600 (5000)**	**82100 (5000)**	**86200 (5000)**	**125000 (5000)**	**117000 (5000)**	**111000 (5000)**	**93700 (5000)**
INORG (dissolved)													
	Iron	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	1400 (150)	U (150)	U (150)	U (150)
GEOCHEMICAL													
	HYDROGEN (H2) [NM]	7600 Jn (500)	170 n (10)	620 Jn (50)	380 Jn (20)	1300 n (100)	1500 n (50)	45 n (2)	58 (3.8)	5300 n (1000)	1900 Jn (100)	390 n (20)	270 n (20)

Notes:

1 All concentrations are presented in ug/L (ppb) unless otherwise noted.
2 Only compounds with at least one detection are shown.
3 Concentrations that exceed the NY Fresh Groundwater (GA) Standards are
4 Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

Abbreviations:

U -- Not Detected.
n -- The lab does not hold NELAP/TNI accreditation for this method or analyte.
J -- Estimated Concentration.
+ -- Biased High.
- -- Biased Low.
( ) -- Detection Limit.
--- -- Not Analyzed.

TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

	Location	MW100E	MW100E	MW100E	MW101I	MW101I	MW101I	MW102IR	MW102IR	MW102IR	MW102IR	MW102IR	MW102B
	Field Sample ID	MW100E-190729	MW100E-200224	MW100E-200812	MW-101I-180731	MW101I-190731	MW101I-200811	MW-102IR-190221	MW102IR-190506	MW102IR-190730	MW102IR-200224	MW102IR-200813	MW-102B-180731
	Lab Sample ID	310540002 / 460-187853-2	330740002 / 460-203694-2	22008146607 / 460-215822-10	460-161718-3	460-188165-6	460-215716-3	295620005 / 460-175850-7	302370003 / 460-181278-3	310730001 / 460-187853-8	330740004 / 460-203694-5	22008203202 / 460-215912-4	460-161718-1 / 276320001
	Sample Method	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Peristaltic Pump	BLADDER PUMP	Bladder Pump	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Peristaltic Pump
	Sample Date	7/29/2019	2/24/2020	8/12/2020	7/31/2018	7/31/2019	8/11/2020	2/21/2019	5/6/2019	7/30/2019	2/24/2020	8/13/2020	7/31/2018
	Comments												
WQ													
	Alkalinity	61300 (5000)	38600 (5000)	48100 (5000)	---	---	---	352000 (5000)	295000 (5000)	358000 (5000)	272000 (5000)	284000 (5000)	147000 (5000)
	Bicarbonate Alkalinity	48500 (5000)	32500 (5000)	48100 (5000)	---	---	---	352000 (5000)	295000 (5000)	358000 (5000)	272000 (5000)	284000 (5000)	92500 (5000)
	Bicarbonate as CaCO3	---	32500 (5000)	---	---	---	---	---	---	---	272000 (5000)	---	---
	Carbonate Alkalinity	12800 (5000)	6000 (5000)	U (5000)	---	---	---	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	54100 (5000)
	Chloride	75300 (3000)	98800 (6000)	67900 (320)	---	---	---	67800 J+ (3000)	58900 J+ (3000)	63800 (2640)	33500 (1200)	35600 (320)	36900 (1680)
	Nitrate	U (100)	U (100)	U (160)	---	---	---	6470 J+ (500)	5150 J- (2500)	3500 (100)	3200 (100)	1330 (160)	U (100)
	Sulfate	970 (600)	U (600)	280 J (480)	---	---	---	79400 J+ (15000)	70800 J+ (15000)	58300 (13200)	52600 (6000)	54900 (480)	1990 (600)
VOC													
	Acetone	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (25)	U (10)	U (25)	U (10)	U (10)	U (5)
	Benzene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	0.73 J (1)
	2-Butanone	3.9 J (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (25)	U (10)	U (25)	U (10)	U (10)	U (5)
	Chloroethane	UJ (1)	0.42 J (1)	U (1)	U (1)	UJ (1)	U (1)	U (5)	U (2)	UJ (5)	U (2)	1.1 J (2)	U (1)
	Cumene	U (1)	0.77 J (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	1,1-Dichloroethane	0.28 J (1)	U (1)	0.47 J (1)	U (1)	U (1)	U (1)	**5.8 (5)**	3.8 (2)	5 (5)	2.3 (2)	1.6 J (2)	3.6 (1)
	1,2-Dichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	1,1-Dichloroethene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	**7.8 (5)**	**5.6 (2)**	**8.2 (5)**	4.3 (2)	2.5 (2)	0.48 J (1)
	cis-1,2-Dichloroethene	**20 (1)**	**11 (1)**	**18 (1)**	3.1 (1)	1.9 (1)	0.56 J (1)	**180 (5)**	**150 (2)**	**340 (5)**	**120 (2)**	**140 (2)**	**290 (1)**
	trans-1,2-Dichloroethene	U (1)	U (1)	U (1)	0.64 J (1)	0.34 J (1)	U (1)	**5.2 (5)**	3.3 (2)	**6.2 (5)**	3.4 (2)	2.1 (2)	U (1)
	1,4-Dioxane	U (50)	1.9 (0.2)	1.3 (0.2)	U (50)	U (50)	U (0.2)	U (250)	U (100)	U (250)	3 (0.2)	6.1 (0.2)	U (50)
	Ethyl Benzene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	Methylene Chloride	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	Tetrachloroethene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	1,1,1-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	2.7 J (5)	2.5 (2)	3 J (5)	1.1 J (2)	0.96 J (2)	U (1)
	1,1,2-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	Trichloroethene	3.7 (1)	2.3 (1)	3.6 (1)	**110 (1)**	**59 (1)**	**22 (1)**	**960 (5)**	**640 (2)**	**950 (5)**	**500 (2)**	**390 (2)**	1.4 (1)
	Vinyl Chloride	**4.7 (1)**	1.5 (1)	**3.6 (1)**	U (1)	U (1)	U (1)	**12 (5)**	**23 (2)**	**27 (5)**	**13 (2)**	**16 (2)**	**5.3 (1)**
	m,p-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	ortho-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
	Xylenes (total)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (5)	U (2)	U (5)	U (2)	U (2)	U (1)
INORG (total)													
	Calcium	8740 (5000)	12500 (5000)	9020 (5000)	---	---	---	98700 (5000)	88600 (5000)	98200 (5000)	73400 (5000)	71400 (5000)	5840 (5000)
	Magnesium	U (5000)	254 J (5000)	428 J (5000)	---	---	---	23000 (5000)	18600 (5000)	22000 (5000)	15600 (5000)	14400 (5000)	8330 (5000)
	Potassium	3700 J (5000)	6120 (5000)	3760 J (5000)	---	---	---	1320 J (5000)	1370 J (5000)	1690 J (5000)	1250 J (5000)	1610 J (5000)	1390 J (5000)
	Sodium	**68000 (5000)**	**86100 (5000)**	**47700 (5000)**	---	---	---	**99300 (5000)**	**89800 (5000)**	**110000 (5000)**	**76200 (5000)**	**80700 (5000)**	**63600 (5000)**
INORG (dissolved)													
	Iron	U (150)	U (150)	U (150)	---	---	---	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)
GEOCHEMICAL													
	HYDROGEN (H2) [NM]	510 n (50)	790 n (100)	910 (190)	---	---	---	3.5 n (1)	1.7 n (1)	2.8 n (1)	2.3 n (1)	21 (1.9)	3700 n (120)

Notes:

1 All concentrations are presented in ug/L (ppb) unless otherwise noted.
2 Only compounds with at least one detection are shown.
3 Concentrations that exceed the NY Fresh Groundwater (GA) Standards are
4 Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

Abbreviations:

U -- Not Detected.
n -- The lab does not hold NELAP/TNI accreditation for this method or analyte.
J -- Estimated Concentration.
+ -- Biased High.
- -- Biased Low.
( ) -- Detection Limit.
--- -- Not Analyzed.

TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

	Location	MW102B	MW102B	MW102B	MW102B	MW102B	MW102B	MW102ER	MW102ER	MW102ER	MW102ER	MW102ER	MW102ER
	Field Sample ID	MW-102B-181114	MW-102B-190225	MW102B-190506	MW102B-190729	MW102B-200225	MW102B-200811	MW-102ER-180802	MW-102ER-181114	MW-102ER-190225	MW102ER-190507	MW102ER-190730	MW102ER-200225
	Lab Sample ID	460-169286-7 / MW-102B-181114	295750001 / 460-176031-1	302580005 / 460-181383-8	310540004 / 460-187853-4	330740006 / 460-203694-7	22008146603 / 460-215822-1	276650001 / 460-161923-1	460-169286-8	295750002 / 460-176031-2	302580001 / 460-181383-1	310540005 / 460-187853-9	330740005 / 460-203694-6
	Sample Method	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Peristaltic Pump	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP
	Sample Date	11/14/2018	2/25/2019	5/6/2019	7/29/2019	2/25/2020	8/11/2020	8/2/2018	11/14/2018	2/25/2019	5/7/2019	7/30/2019	2/25/2020
	Comments												
WQ													
	Alkalinity	143000 (5000)	102000 (5000)	101000 (5000)	133000 (5000)	147000 (5000)	97000 J (5000)	64900 (5000)	99200 (5000)	93600 (5000)	55700 (5000)	65400 (5000)	62900 (5000)
	Bicarbonate Alkalinity	96900 (5000)	59600 (5000)	58200 (5000)	82800 (5000)	95200 (5000)	53700 J (5000)	63700 (5000)	93500 (5000)	70800 (5000)	17500 (5000)	48800 (5000)	35200 (5000)
	Bicarbonate as CaCO3	---	---	---	---	95200 (5000)	---	---	---	---	---	---	35200 (5000)
	Carbonate Alkalinity	46200 (5000)	42600 (5000)	42300 (5000)	50400 (5000)	52000 (5000)	43300 (5000)	U (5000)	5700 (5000)	22700 (5000)	38200 (5000)	16600 (5000)	27700 (5000)
	Chloride	64000 J (2400)	75600 (2400)	65300 (2400)	58100 (2280)	35100 (1200)	18800 (320)	94800 (3000)	81800 (3360)	53000 (2400)	39100 (2400)	77400 (3240)	19200 (1200)
	Nitrate	U (100)	33 J (100)	62 J (100)	U (100)	U (100)	80 J (160)	UJ (100)	U (100)	32 J (100)	58 J (100)	U (100)	U (100)
	Sulfate	29200 J (12000)	36600 (12000)	49400 (12000)	8210 (600)	24600 (6000)	U (480)	U (600)	7460 (600)	9080 (600)	9530 (600)	710 (600)	560 J (600)
VOC													
	Acetone	UJ (5)	U (5)	U (5)	U (5)	U (5)	U (5)	16 (10)	U (5)	7 (5)	U (5)	U (5)	U (5)
	Benzene	0.65 J (1)	0.49 J (1)	0.59 J (1)	0.8 J (1)	0.51 J (1)	0.81 J (1)	U (2)	0.49 J (1)	0.48 J (1)	0.68 J (1)	0.8 J (1)	U (1)
	2-Butanone	U (5)	U (5)	U (5)	U (5)	4.5 J (5)	U (5)	U (10)	U (5)	U (5)	U (5)	U (5)	U (5)
	Chloroethane	U (1)	U (1)	U (1)	2.6 J- (1)	0.95 J (1)	1.4 (1)	U (2)	U (1)	U (1)	U (1)	UJ (1)	U (1)
	Cumene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethane	2.8 (1)	1.6 (1)	**5.1 (1)**	2.9 (1)	2.5 (1)	1.2 (1)	1.8 J (2)	1.5 (1)	4 (1)	0.33 J (1)	0.65 J (1)	U (1)
	1,2-Dichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethene	0.63 J (1)	0.38 J (1)	U (1)	0.69 J (1)	0.58 J (1)	0.51 J (1)	U (2)	0.74 J (1)	1.3 (1)	U (1)	U (1)	U (1)
	cis-1,2-Dichloroethene	**220 (1)**	**15 (1)**	**8.2 (1)**	**86 (1)**	**48 (1)**	**67 (1)**	**530 (2)**	**220 (1)**	**240 (1)**	**34 (1)**	**60 (1)**	**37 (1)**
	trans-1,2-Dichloroethene	0.26 J (1)	U (1)	U (1)	0.25 J (1)	U (1)	U (1)	U (2)	0.32 J (1)	U (1)	U (1)	U (1)	U (1)
	1,4-Dioxane	UJ (50)	U (50)	U (50)	U (50)	2.4 (0.2)	3.4 (0.2)	U (100)	UJ (50)	U (50)	U (50)	U (50)	0.18 J (0.2)
	Ethyl Benzene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	Methylene Chloride	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	Tetrachloroethene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1,1-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1,2-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	Trichloroethene	0.36 J (1)	U (1)	U (1)	1 (1)	1.1 (1)	0.53 J (1)	1.6 J (2)	1.4 (1)	**7.2 (1)**	0.86 J (1)	0.88 J (1)	U (1)
	Vinyl Chloride	**4.2 (1)**	1.8 (1)	1.5 (1)	**7.7 (1)**	**4.7 (1)**	**5.8 (1)**	**5.2 (2)**	**8.9 (1)**	**7 (1)**	0.76 J (1)	**2.2 (1)**	U (1)
	m,p-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	ortho-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
	Xylenes (total)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)
INORG (total)													
	Calcium	6220 (5000)	8000 (5000)	10800 (5000)	3310 J (5000)	6350 (5000)	2640 J (5000)	25800 (5000)	14600 (5000)	12700 (5000)	5780 (5000)	11000 (5000)	3170 J (5000)
	Magnesium	18400 (5000)	13600 (5000)	13100 (5000)	7830 (5000)	15800 (5000)	2720 J (5000)	10600 (5000)	12400 (5000)	11600 (5000)	938 J (5000)	9890 (5000)	1480 J (5000)
	Potassium	1350 J (5000)	2390 J (5000)	2430 J (5000)	1370 J (5000)	1980 J (5000)	1190 J (5000)	2210 J (5000)	1970 J (5000)	2060 J (5000)	4890 J (5000)	1550 J (5000)	3950 J (5000)
	Sodium	**79700 (5000)**	**76600 (5000)**	**65900 (5000)**	**83700 (5000)**	**71800 (5000)**	**48600 (5000)**	**55000 (5000)**	**57400 (5000)**	**46200 (5000)**	**43300 (5000)**	**47800 (5000)**	**39700 (5000)**
INORG (dissolved)													
	Iron	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)
GEOCHEMICAL													
	HYDROGEN (H2) [NM]	250 Jn (20)	130 n (10)	3.7 n (1)	22 n (1)	3 n (1)	1.9 (1.9)	540 n (100)	1800 Jn (100)	520 n (20)	880 n (50)	42 n (1)	2.5 n (1)

Notes:

1 All concentrations are presented in ug/L (ppb) unless otherwise noted.
2 Only compounds with at least one detection are shown.
3 Concentrations that exceed the NY Fresh Groundwater (GA) Standards are
4 Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

Abbreviations:

U -- Not Detected.
n -- The lab does not hold NELAP/TNI accreditation for this method or analyte.
J -- Estimated Concentration.
+ -- Biased High.
- -- Biased Low.
( ) -- Detection Limit.
--- -- Not Analyzed.

TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

	Location	MW102ER	MW102ER	MW103I	MW103I	MW103I	MW103I	MW103I	MW103I	MW103I	MW103B	MW103B	MW103B
	Field Sample ID	DUP-200225	MW102ER-200812	MW-103I-180801	MW-103I-181114	MW-103I-190225	MW103I-190507	MW103I-190730	MW103I-200225	MW103I-200812	MW-103B-180731	MW-103B-181114	MW-103B-190225
	Lab Sample ID	330740007 / 460-203694-8	22008146606 / 460-215822-7	276600003 / 460-161828-3	460-169286-9 / MW-103I-181114	295750003 / 460-176031-3	302580002 / 460-181383-2	310730002 / 460-187954-1	330740008 / 460-203694-10	22008146605 / 460-215822-5	460-161718-2 / 276320002	460-169346-1	295750005 / 460-176031-5
	Sample Method	BLADDER PUMP	Bladder Pump	Peristaltic Pump	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Peristaltic Pump	BLADDER PUMP	BLADDER PUMP
	Sample Date	2/25/2020	8/12/2020	8/1/2018	11/14/2018	2/25/2019	5/7/2019	7/30/2019	2/25/2020	8/12/2020	7/31/2018	11/14/2018	2/25/2019
	Comments	Field Duplicate											
WQ													
	Alkalinity	62900 (5000)	67200 (5000)	360000 (5000)	248000 (5000)	327000 (5000)	215000 (5000)	262000 (5000)	248000 (5000)	258000 (5000)	92900 (5000)	46500 (5000)	55000 (5000)
	Bicarbonate Alkalinity	34500 (5000)	49600 (5000)	360000 (5000)	248000 (5000)	327000 (5000)	215000 (5000)	262000 (5000)	248000 (5000)	258000 (5000)	47200 (5000)	28300 (5000)	41700 (5000)
	Bicarbonate as CaCO3	34500 (5000)	---	---	---	---	---	---	248000 (5000)	---	---	---	---
	Carbonate Alkalinity	28400 (5000)	17600 (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	45700 (5000)	18200 (5000)	13300 (5000)
	Chloride	18900 (1200)	26400 (320)	16800 (720)	82600 (3360)	89800 (3000)	75400 (2400)	47200 (2400)	22600 (1200)	17200 (320)	40200 (1800)	51000 J+ (2040)	37500 (2400)
	Nitrate	U (100)	78 J (160)	UJ (100)	3110 (100)	780 (100)	7880 (200)	5090 J (100)	3480 (100)	3290 (160)	U (100)	U (100)	34 J (100)
	Sulfate	560 J (600)	U (480)	31100 (3600)	33300 (16800)	23400 (15000)	49900 (12000)	49600 (1200)	25500 (6000)	37700 (480)	3840 (600)	U (600)	330 J (600)
VOC													
	Acetone	U (5)	18 (5)	U (5)	UJ (5)	U (10)	U (5)	U (5)	U (5)	U (5)	U (5)	14 (5)	5.6 (5)
	Benzene	U (1)	**1.2 (1)**	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	0.62 J (1)	0.56 J (1)	U (1)
	2-Butanone	7.1 (5)	8.9 (5)	U (5)	U (5)	U (10)	U (5)	U (5)	U (5)	U (5)	6.4 (5)	U (5)	U (5)
	Chloroethane	U (1)	0.34 J (1)	U (1)	0.76 J (1)	U (2)	U (1)	U (1)	U (1)	U (1)	**5.7 (1)**	U (1)	U (1)
	Cumene	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethane	U (1)	U (1)	**100 (1)**	**99 (1)**	**110 (2)**	**7.9 (1)**	4.8 (1)	**49 (1)**	**15 (1)**	**45 (1)**	0.78 J (1)	0.29 J (1)
	1,2-Dichloroethane	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethene	U (1)	U (1)	3.8 (1)	**8.9 (1)**	**16 (2)**	2.4 (1)	0.91 J (1)	**11 (1)**	3.7 (1)	U (1)	UJ (1)	U (1)
	cis-1,2-Dichloroethene	**38 (1)**	**57 (1)**	**450 (1)**	**490 (1)**	**720 (2)**	**60 (1)**	**28 (1)**	**270 (1)**	**110 (1)**	**32 (1)**	1 (1)	0.89 J (1)
	trans-1,2-Dichloroethene	U (1)	U (1)	0.37 J (1)	0.95 J (1)	U (2)	0.48 J (1)	0.39 J (1)	0.56 J (1)	0.47 J (1)	U (1)	UJ (1)	U (1)
	1,4-Dioxane	0.15 J (0.2)	0.27 (0.2)	130 (50)	63 J- (50)	120 (100)	U (50)	U (50)	3 (0.2)	1.5 (0.2)	36 J (50)	U (50)	U (50)
	Ethyl Benzene	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Methylene Chloride	U (1)	U (1)	0.32 J (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	UJ (1)	U (1)
	Tetrachloroethene	U (1)	U (1)	U (1)	0.26 J (1)	U (2)	1.2 (1)	0.62 J (1)	1.9 (1)	2.5 (1)	U (1)	U (1)	U (1)
	1,1,1-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (2)	0.24 J (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1,2-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Trichloroethene	U (1)	0.61 J (1)	4.3 (1)	**40 (1)**	**26 (2)**	**99 (1)**	**87 (1)**	**93 (1)**	**120 (1)**	0.57 J (1)	U (1)	U (1)
	Vinyl Chloride	0.37 J (1)	1.5 (1)	**110 (1)**	**44 (1)**	**47 (2)**	1.8 (1)	0.76 J (1)	**12 (1)**	**6 (1)**	**3.1 (1)**	U (1)	U (1)
	m,p-xylene	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	ortho-xylene	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Xylenes (total)	U (1)	U (1)	U (1)	U (1)	U (2)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
INORG (total)													
	Calcium	3240 J (5000)	4370 J (5000)	63500 (5000)	73400 (5000)	74400 (5000)	76000 (5000)	84100 (5000)	66300 (5000)	62400 (5000)	7400 (5000)	8330 (5000)	9960 (5000)
	Magnesium	1450 J (5000)	2370 J (5000)	16900 (5000)	14500 (5000)	17700 (5000)	14600 (5000)	14900 (5000)	12100 (5000)	11900 (5000)	2840 J (5000)	4370 J (5000)	7380 (5000)
	Potassium	4010 J (5000)	2480 J (5000)	2120 J (5000)	3380 J (5000)	1990 J (5000)	3970 J (5000)	4700 J (5000)	3090 J (5000)	3300 J (5000)	2040 J (5000)	3870 J (5000)	2880 J (5000)
	Sodium	**40400 (5000)**	**40700 (5000)**	**80700 (5000)**	**81300 (5000)**	**99000 (5000)**	**69300 (5000)**	**66200 (5000)**	**59500 (5000)**	**64700 (5000)**	**53900 (5000)**	**36100 (5000)**	**25900 (5000)**
INORG (dissolved)													
	Iron	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)
GEOCHEMICAL													
	HYDROGEN (H2) [NM]	2 n (1)	16 (1.9)	7.7 n (2)	250 Jn (20)	340 n (20)	1.3 n (1)	1.6 n (1)	2.5 n (1)	8.5 (1.9)	1600 n (120)	170 Jn (20)	34 n (1)

Notes:

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4 Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

Abbreviations:

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TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

	Location	MW103B	MW103B	MW103B	MW103B	MW103E	MW103ER	MW103ER	MW103ER	MW103ER	MW103ER	MW103ER	MW104I
	Field Sample ID	MW103B-190507	MW103B-190729	MW103B-200225	MW103B-200811	MW-103E-180731	MW-103ER-190225	MW103ER-190507	MW103ER-190729	MW103ER-200225	MW103ER-200811	DUP-200811	MW-104I-180802
	Lab Sample ID	460-181383-4	310540003 / 460-187853-3	330740009 / 460-203694-11	22008146501 / 460-215716-4	200-44580-5 / 460-161627-5 / 276310001	295750004 / 460-176031-4	302580003 / 460-181383-3	310540001 / 460-187853-1	330790001 / 460-203770-1	22008146602 / 460-215822-2	22008146604 / 460-215822-4	460-161923-5
	Sample Method	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Peristaltic Pump	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	BLADDER PUMP	Bladder Pump	Bladder Pump	Peristaltic Pump
	Sample Date	5/7/2019	7/29/2019	2/25/2020	8/11/2020	7/31/2018	2/25/2019	5/7/2019	7/29/2019	2/25/2020	8/11/2020	8/11/2020	8/2/2018
	Comments											Field Duplicate	
WQ													
	Alkalinity	42800 (5000)	100000 (5000)	59200 (5000)	139000 (5000)	119000 (5000)	87500 (5000)	139000 (5000)	52800 (5000)	140000 (5000)	71100 (5000)	76700 (5000)	---
	Bicarbonate Alkalinity	26300 (5000)	74000 (5000)	44100 (5000)	89100 (5000)	119000 (5000)	84100 (5000)	139000 (5000)	52800 (5000)	140000 (5000)	71100 (5000)	76700 (5000)	---
	Bicarbonate as CaCO3	---	---	44100 (5000)	---	---	---	---	---	---	---	---	---
	Carbonate Alkalinity	16500 (5000)	26400 (5000)	15100 (5000)	49900 (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	U (5000)	---
	Chloride	35800 (2400)	48400 (1920)	17000 (1200)	19900 (320)	83200 (3720)	8720 (600)	9660 (600)	10600 (480)	4120 (120)	10500 (320)	10500 (320)	---
	Nitrate	78 J (100)	U (100)	U (100)	78 J (160)	U (100)	36 J (100)	180 (100)	U (100)	59 J (100)	UJ (160)	UJ (160)	---
	Sulfate	3310 (600)	660 (600)	U (600)	1150 (480)	U (600)	610 (600)	11700 (600)	810 (600)	11300 (600)	1930 (480)	1890 (480)	---
VOC													
	Acetone	U (5)	U (5)	U (5)	U (5)	**170 (5)**	U (5)	U (5)	U (5)	U (5)	9.9 (5)	11 (5)	U (5)
	Benzene	0.48 J (1)	0.52 J (1)	U (1)	0.61 J (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.52 J (1)	0.54 J (1)	U (1)
	2-Butanone	2.5 J (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	4.8 J (5)	4.7 J (5)	U (5)
	Chloroethane	U (1)	0.85 J (1)	U (1)	1.6 (1)	**5.9 (1)**	U (1)	U (1)	UJ (1)	U (1)	0.33 J (1)	0.46 J (1)	U (1)
	Cumene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethane	U (1)	**9.3 (1)**	0.26 J (1)	**15 (1)**	**14 (1)**	0.58 J (1)	U (1)	0.66 J (1)	U (1)	0.98 J (1)	0.95 J (1)	**17 (1)**
	1,2-Dichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1-Dichloroethene	U (1)	U (1)	U (1)	U (1)	0.42 J (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	4.4 (1)
	cis-1,2-Dichloroethene	0.4 J (1)	**19 (1)**	0.42 J (1)	**27 (1)**	**88 (1)**	3.2 (1)	2.8 (1)	3.7 (1)	2.1 (1)	**7.8 (1)**	**7.5 (1)**	**360 (1)**
	trans-1,2-Dichloroethene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.45 J (1)
	1,4-Dioxane	U (50)	U (50)	0.65 (0.2)	6.7 (0.2)	2.6 (0.2)	U (50)	U (50)	U (50)	U (0.2)	0.83 J (0.2)	UJ (0.2)	U (50)
	Ethyl Benzene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.45 J (1)
	Methylene Chloride	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Tetrachloroethene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	2.8 (1)	U (1)	1.9 (1)	U (1)	U (1)	U (1)
	1,1,1-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	1,1,2-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
	Trichloroethene	U (1)	U (1)	U (1)	U (1)	1.6 (1)	0.42 J (1)	**17 (1)**	0.78 J (1)	**13 (1)**	U (1)	0.32 J (1)	**34 (1)**
	Vinyl Chloride	U (1)	0.83 J (1)	U (1)	1 (1)	**4.8 (1)**	0.62 J (1)	U (1)	1.1 (1)	U (1)	1.1 (1)	1.1 (1)	**68 (1)**
	m,p-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	1.6 (1)
	ortho-xylene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.81 J (1)
	Xylenes (total)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	2.41 (1)
INORG (total)													
	Calcium	9030 (5000)	7660 (5000)	5370 (5000)	3950 J (5000)	58600 (5000)	18600 (5000)	51300 (5000)	19300 (5000)	50600 (5000)	17000 (5000)	15900 (5000)	---
	Magnesium	4780 J (5000)	12400 (5000)	5250 (5000)	8230 (5000)	8490 (5000)	6360 (5000)	6330 (5000)	5160 (5000)	5950 (5000)	2590 J (5000)	2250 J (5000)	---
	Potassium	3570 J (5000)	2980 J (5000)	3320 J (5000)	2330 J (5000)	4440 J (5000)	2210 J (5000)	2160 J (5000)	3670 J (5000)	2170 J (5000)	3080 J (5000)	2830 J (5000)	---
	Sodium	**23200 (5000)**	**47900 (5000)**	**27600 (5000)**	**53200 (5000)**	**40800 (5000)**	11700 (5000)	11600 (5000)	16000 (5000)	9990 (5000)	**22400 (5000)**	**21900 (5000)**	---
INORG (dissolved)													
	Iron	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	U (150)	---
GEOCHEMICAL													
	HYDROGEN (H2) [NM]	---	7.2 n (1)	5 n (1)	2.6 (1.9)	470 n (24)	5.4 n (1)	46 n (1)	40 n (1)	2.2 n (1)	2.8 (1.9)	2 (1.9)	---

Notes:

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4 Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

Abbreviations:

U -- Not Detected.
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TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

Location	MW104I	MW104I	MW104E	MW104E	MW104E	MW11	MW11	MW13	MW14	MW14	MW14	MW17	MW17
Field Sample ID	**MW104I-190730**	**MW104I-200812**	**MW-104E-180802**	**MW104E-190731**	**MW104E-200811**	**MW11-190731**	**MW11-200810**	**MW13-190731**	**MW-14-180731**	**MW14-190731**	**MW14-200812**	**MW-17-180802**	**MW17-190730**
Lab Sample ID	**460-187954-4**	**460-215912-1**	**460-161923-3**	**460-188165-1**	**460-215716-5**	**460-188165-2**	**460-215716-1**	**460-188165-3**	**200-44580-4 / 460-161627-4**	**460-188165-4**	**460-215822-6**	**460-161923-2**	**460-187954-3**
Sample Method	**BLADDER PUMP**	**Bladder Pump**	**Peristaltic Pump**	**BLADDER PUMP**	**Bladder Pump**	**BLADDER PUMP**	**Bladder Pump**	**BLADDER PUMP**	**Peristaltic Pump**	**BLADDER PUMP**	**Bladder Pump**	**Peristaltic Pump**	**BLADDER PUMP**
Sample Date	**7/30/2019**	**8/12/2020**	**8/2/2018**	**7/31/2019**	**8/11/2020**	**7/31/2019**	**8/10/2020**	**7/31/2019**	**7/31/2018**	**7/31/2019**	**8/12/2020**	**8/2/2018**	**7/30/2019**
Comments													
WQ													
Alkalinity	---	---	---	---	---	---	---	---	---	---	---	---	---
Bicarbonate Alkalinity	---	---	---	---	---	---	---	---	---	---	---	---	---
Bicarbonate as CaCO3	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbonate Alkalinity	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloride	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate	---	---	---	---	---	---	---	---	---	---	---	---	---
Sulfate	---	---	---	---	---	---	---	---	---	---	---	---	---
VOC													
Acetone	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)
Benzene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
2-Butanone	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)
Chloroethane	U (1)	UJ (1)	U (1)	UJ (1)	U (1)	UJ (1)	U (1)	UJ (1)	U (1)	UJ (1)	U (1)	U (1)	U (1)
Cumene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
1,1-Dichloroethane	**20 (1)**	**21 (1)**	4.7 (1)	**6.2 (1)**	**6.2 (1)**	U (1)	U (1)	U (1)	4.8 (1)	**6.3 (1)**	4.9 (1)	U (1)	U (1)
1,2-Dichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
1,1-Dichloroethene	**5.2 (1)**	3.9 (1)	1.5 (1)	1.4 (1)	0.93 J (1)	U (1)	U (1)	U (1)	1.8 (1)	1.6 (1)	1.1 (1)	0.39 J (1)	1.2 (1)
cis-1,2-Dichloroethene	**460 (1)**	**460 (1)**	**32 (1)**	**22 (1)**	**11 (1)**	U (1)	U (1)	0.8 J (1)	**66 (1)**	**52 (1)**	**39 (1)**	**7.3 (1)**	**28 (1)**
trans-1,2-Dichloroethene	0.75 J (1)	0.76 J (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.33 J (1)	0.36 J (1)	0.27 J (1)	0.57 J (1)	1.8 (1)
1,4-Dioxane	U (50)	1.8 (0.2)	U (50)	U (50)	13 (0.2)	U (50)	U (0.2)	U (50)	7.5 (0.2)	U (50)	12 (0.2)	U (50)	U (50)
Ethyl Benzene	U (1)	U (1)	**16 (1)**	**9.9 (1)**	**12 (1)**	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
Methylene Chloride	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
Tetrachloroethene	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	1.1 (1)	U (1)	U (1)	U (1)	U (1)	U (1)
1,1,1-Trichloroethane	U (1)	U (1)	1.1 (1)	3 (1)	1.3 (1)	U (1)	U (1)	U (1)	1 (1)	2.8 (1)	0.6 J (1)	U (1)	U (1)
1,1,2-Trichloroethane	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
Trichloroethene	**38 (1)**	**28 (1)**	**12 (1)**	3.7 (1)	2.7 (1)	U (1)	U (1)	**20 (1)**	**9.4 (1)**	**16 (1)**	**13 (1)**	**100 (1)**	**350 (1)**
Vinyl Chloride	**81 (1)**	**86 (1)**	**9.9 (1)**	**20 (1)**	**14 (1)**	U (1)	U (1)	U (1)	**9.1 (1)**	**13 (1)**	**15 (1)**	U (1)	**2.4 (1)**
m,p-xylene	U (1)	U (1)	65 (1)	10 (1)	3 (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)
ortho-xylene	U (1)	U (1)	**45 (1)**	1.5 (1)	2.3 (1)	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.83 J (1)	U (1)
Xylenes (total)	U (1)	U (1)	**110 (1)**	**11.5 (1)**	**5.3 (1)**	U (1)	U (1)	U (1)	U (1)	U (1)	U (1)	0.83 J (1)	U (1)
INORG (total)													
Calcium	---	---	---	---	---	---	---	---	---	---	---	---	---
Magnesium	---	---	---	---	---	---	---	---	---	---	---	---	---
Potassium	---	---	---	---	---	---	---	---	---	---	---	---	---
Sodium	---	---	---	---	---	---	---	---	---	---	---	---	---
INORG (dissolved)													
Iron	---	---	---	---	---	---	---	---	---	---	---	---	---
GEOCHEMICAL													
HYDROGEN (H2) [NM]	---	---	---	---	---	---	---	---	---	---	---	---	---

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TABLE 1
Summary of Cumulative Groundwater Sampling Results
ESCO Steel Treaters; Troy, NY

	Location	MW17	MW18	MW18	MW18	MW18	MW19	MW19	MW19
	Field Sample ID	MW17-200810	MW-18-180730	DUP-180730	MW18-190731	MW18-200813	MW-19-180802	MW19-190730	MW19-200813
	Lab Sample ID	460-215716-2	200-44580-1 / 460-161627-1	200-44580-2 / 460-161627-2	460-187954-7	460-215912-5	460-161923-4	460-187954-2	460-215912-3
	Sample Method	Bladder Pump	Peristaltic Pump	Peristaltic Pump	BLADDER PUMP	Bladder Pump	Peristaltic Pump	BLADDER PUMP	Bladder Pump
	Sample Date	8/10/2020	7/30/2018	7/30/2018	7/31/2019	8/13/2020	8/2/2018	7/30/2019	8/13/2020
	Comments			Field Duplicate					
WQ									
	Alkalinity	---	---	---	---	---	---	---	---
	Bicarbonate Alkalinity	---	---	---	---	---	---	---	---
	Bicarbonate as CaCO3	---	---	---	---	---	---	---	---
	Carbonate Alkalinity	---	---	---	---	---	---	---	---
	Chloride	---	---	---	---	---	---	---	---
	Nitrate	---	---	---	---	---	---	---	---
	Sulfate	---	---	---	---	---	---	---	---
VOC									
	Acetone	U (5)	U (50)	U (130)	U (50)	U (50)	U (10)	U (25)	U (10)
	Benzene	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	2-Butanone	U (5)	U (50)	U (130)	U (50)	U (50)	U (10)	U (25)	U (10)
	Chloroethane	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	Cumene	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	1,1-Dichloroethane	U (1)	**38 J (10)**	**83 J (25)**	**21 (10)**	**15 (10)**	**20 (2)**	**16 J+ (5)**	**14 (2)**
	1,2-Dichloroethane	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	1,1-Dichloroethene	1.4 (1)	**18 J (10)**	**34 J (25)**	**21 (10)**	**32 (10)**	3.4 (2)	**7 J+ (5)**	3.4 (2)
	cis-1,2-Dichloroethene	**48 (1)**	**25 J (10)**	**45 J (25)**	**180 (10)**	**230 (10)**	**240 (2)**	**1000 (5)**	**820 (2)**
	trans-1,2-Dichloroethene	2.4 (1)	U (10)	U (25)	U (10)	U (10)	0.71 J (2)	2.1 J (5)	1.7 J (2)
	1,4-Dioxane	0.85 (0.2)	7.8 (1)	9.1 (1)	U (500)	19 (0.2)	U (100)	U (250)	7.3 (0.2)
	Ethyl Benzene	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	Methylene Chloride	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	Tetrachloroethene	U (1)	**13 (10)**	**20 J (25)**	**32 (10)**	**41 (10)**	**14 (2)**	4.7 J (5)	**7.2 (2)**
	1,1,1-Trichloroethane	U (1)	**380 J (10)**	**610 J (25)**	**430 (10)**	**820 (10)**	**150 (2)**	**120 J+ (5)**	**100 (2)**
	1,1,2-Trichloroethane	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	Trichloroethene	**280 (1)**	**2600 J (10)**	**4300 J (25)**	**3900 (10)**	**4900 (10)**	**570 (2)**	**130 (5)**	**190 (2)**
	Vinyl Chloride	**4.1 (1)**	U (10)	U (25)	**2.8 J (10)**	U (10)	U (2)	U (5)	**5.2 (2)**
	m,p-xylene	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	ortho-xylene	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
	Xylenes (total)	U (1)	U (10)	U (25)	U (10)	U (10)	U (2)	U (5)	U (2)
INORG (total)									
	Calcium	---	---	---	---	---	---	---	---
	Magnesium	---	---	---	---	---	---	---	---
	Potassium	---	---	---	---	---	---	---	---
	Sodium	---	---	---	---	---	---	---	---
INORG (dissolved)									
	Iron	---	---	---	---	---	---	---	---
GEOCHEMICAL									
	HYDROGEN (H2) [NM]	---	---	---	---	---	---	---	---

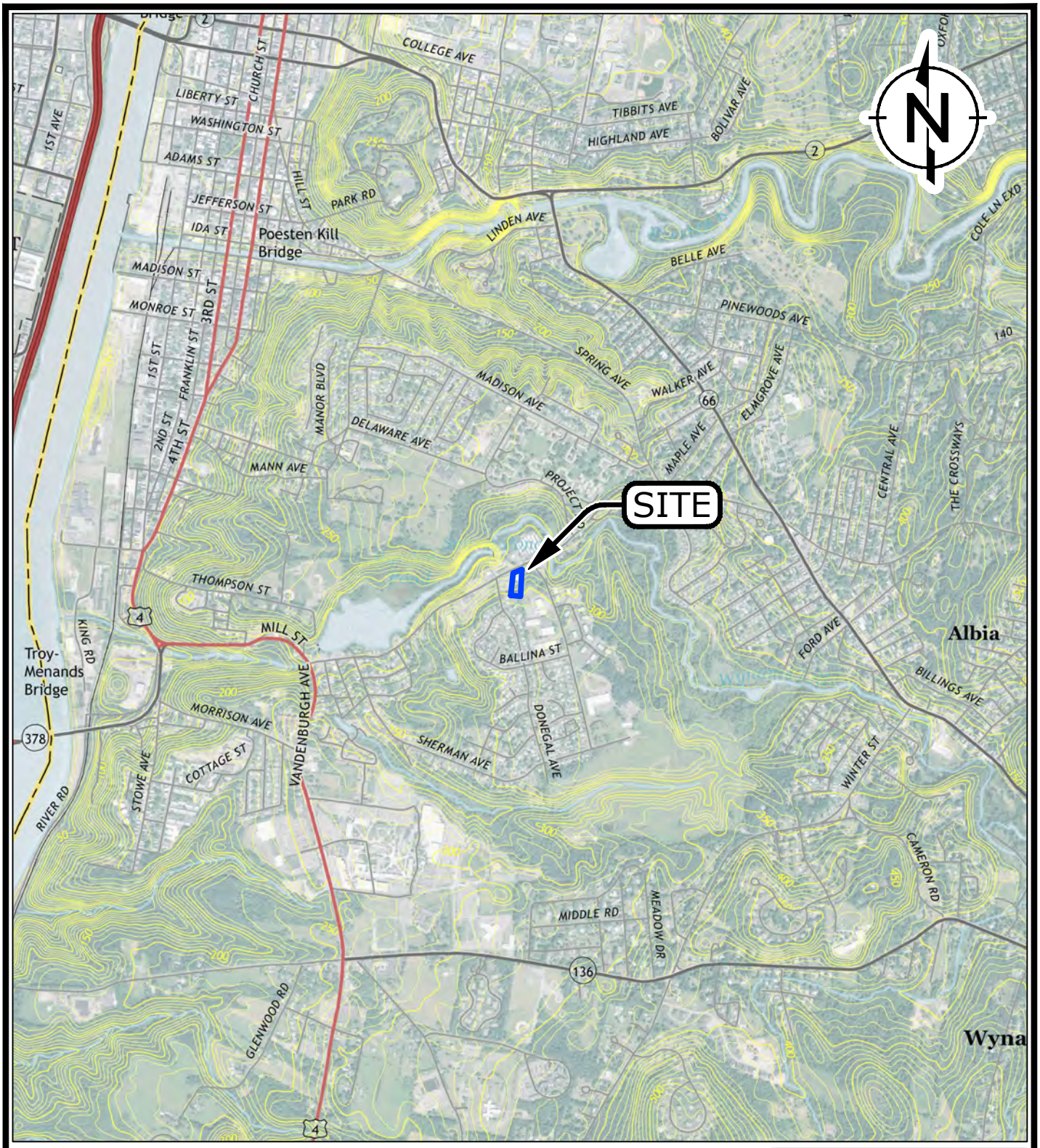
Notes:

1 All concentrations are presented in ug/L (ppb) unless otherwise noted.
2 Only compounds with at least one detection are shown.
3 Concentrations that exceed the NY Fresh Groundwater (GA) Standards are
4 Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

Abbreviations:

U -- Not Detected.
n -- The lab does not hold NELAP/TNI accreditation for this method or analyte.
J -- Estimated Concentration.
+ -- Biased High.
- -- Biased Low.
( ) -- Detection Limit.
--- -- Not Analyzed.

FIGURES

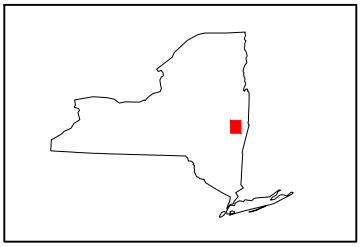


LEGEND:

PROPERTY BOUNDARY (APPROXIMATE)

0 1/2 1
SCALE IN MILES

2000 0 2000 4000
SCALE IN FEET



QUADRANGLE KEY MAP

SOURCE:
USGS 2016 TROY SOUTH, NY 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE.
MAP SCALE: 1:24,000. SITE LOCATION: N: 42.706999° W: 73.677401° WGS84.

ENVIRON
ENVIRON Engineers of North Carolina, PC
CERTIFICATE NUMBER: 0012568

DRAFTED BY: KPM | DATE: 10/24/2019

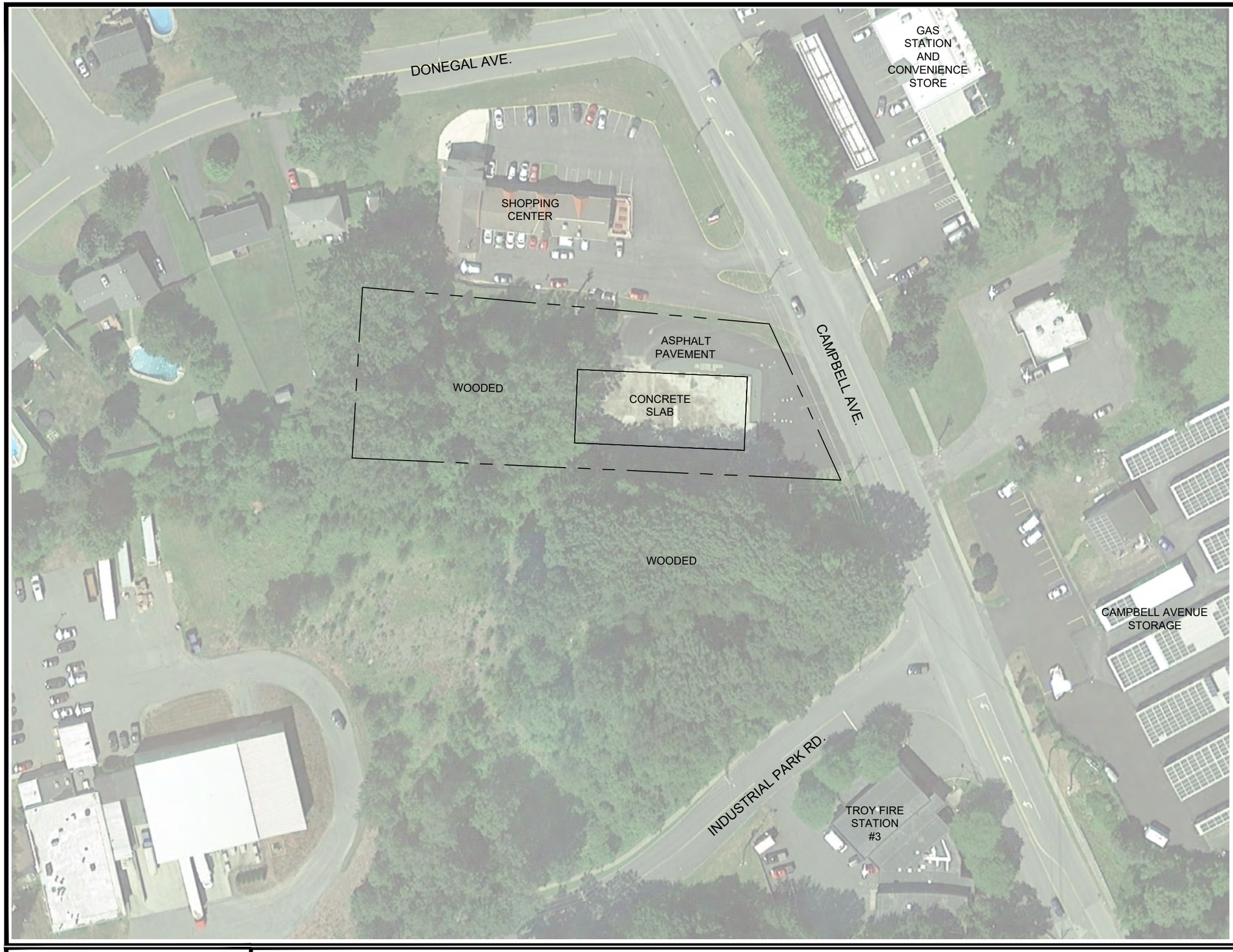
SITE LOCATION MAP

520 CAMPBELL AVENUE
CITY OF TROY, NEW YORK

FIGURE
1

PROJECT: 1690000663

KMAUGHAN 10/24/19 F:\1690000663_ESCO STEEL_NYSDEC_PRR < SITE LOCATION_PRR >



LEGEND

PROPERTY BOUNDARY

SOURCE:

1. GOOGLE EARTH AERIAL IMAGERY DATED 6/25/2018.

0 80

SCALE IN FEET

ENVIRON

ENVIRON Engineers of North Carolina, PC
CERTIFICATE NUMBER: 0012568

DRAFTED BY: KPM | DATE: 10/24/2019

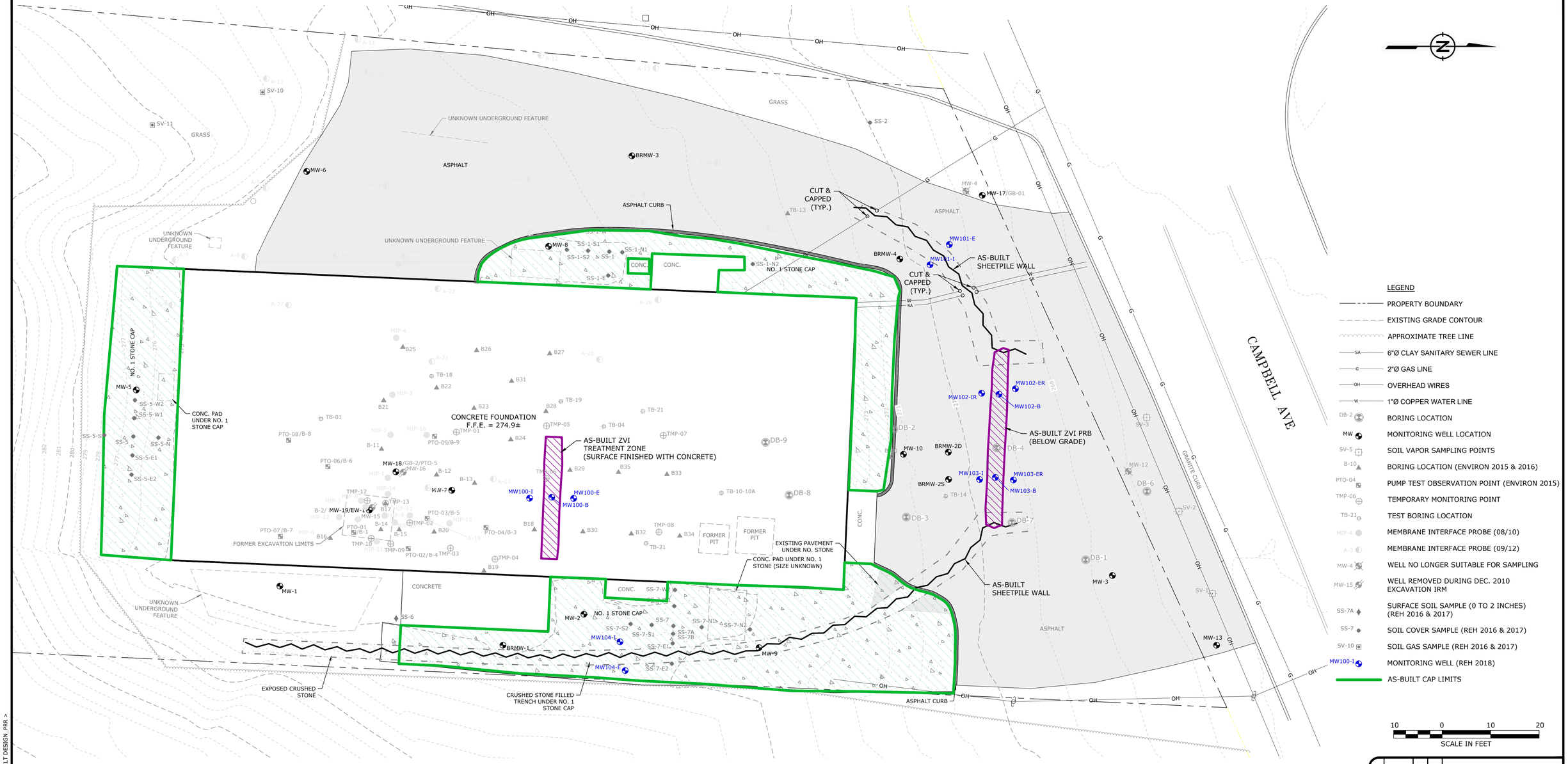
SITE LAYOUT MAP

520 CAMPBELL AVENUE
CITY OF TROY, NEW YORK

FIGURE
2

PROJECT:1690000663

KMAUGHAN 10/24/19 F:\1690000663_ESCO STEEL_NYSDEC_PRR < SITE LAYOUT_PRR >



LEGEND

- PROPERTY BOUNDARY
- EXISTING GRADE CONTOUR
- APPROXIMATE TREE LINE
- SA — 6"Ø CLAY SANITARY SEWER LINE
- G — 2"Ø GAS LINE
- OH — OVERHEAD WIRES
- W — 1"Ø COPPER WATER LINE
- DB-2 — BORING LOCATION
- MW — MONITORING WELL LOCATION
- SV-5 — SOIL VAPOR SAMPLING POINTS
- B-10 — BORING LOCATION (ENVIRON 2015 & 2016)
- PTO-04 — PUMP TEST OBSERVATION POINT (ENVIRON 2015)
- TMP-06 — TEMPORARY MONITORING POINT
- TB-21 — TEST BORING LOCATION
- MIP-4 — MEMBRANE INTERFACE PROBE (08/10)
- A-3 — MEMBRANE INTERFACE PROBE (09/12)
- MW-4 — WELL NO LONGER SUITABLE FOR SAMPLING
- MW-15 — WELL REMOVED DURING DEC. 2010 EXCAVATION IRM
- SS-7A — SURFACE SOIL SAMPLE (0 TO 2 INCHES) (REH 2016 & 2017)
- SS-7 — SOIL COVER SAMPLE (REH 2016 & 2017)
- SV-10 — SOIL GAS SAMPLE (REH 2016 & 2017)
- MW100-I — MONITORING WELL (REH 2018)
- AS-BUILT CAP LIMITS

10 0 10 20
SCALE IN FEET

SOURCE:

1. SITE TOPOGRAPHY AND PLANIMETRY "POST CONSTRUCTION SURVEY" PREPARED BY NMB LAND SURVEYING PLLC, JUNE 6, 2018.
2. SAMPLE LOCATIONS: "STEEL TREATERS, 520 CAMPBELL AVENUE, SAMPLE LOCATIONS" PREPARED BY BARTON AND LOGUIDICE, P.C., PROJECT NO. 1047.001, AND INCLUDED AS FIGURE 3 OF THE NOVEMBER 2013 REMEDIAL INVESTIGATION REPORT.
3. ALL SAMPLE LOCATIONS SHOWN IN LIGHT GRAY ARE APPROXIMATE. LOCATIONS BASED ON "SITE MAP SHOWING SOIL AND GROUNDWATER SAMPLING LOCATIONS" PREPARED BY BARTON & LOGUIDICE, P.C. AND INCLUDED AS FIGURE 3 OF THE NOVEMBER 2013 REMEDIAL INVESTIGATION REPORT.
4. "UNKNOWN UNDERGROUND FEATURE" REFERS TO SUBSURFACE METALLIC ANOMALIES IDENTIFIED DURING THE GEOPHYSICAL SURVEY COMPLETED BY NAEVA GEOPHYSICS ON NOVEMBER 24, 2015.

REV.	DATE	DR.	CH.	REVISION

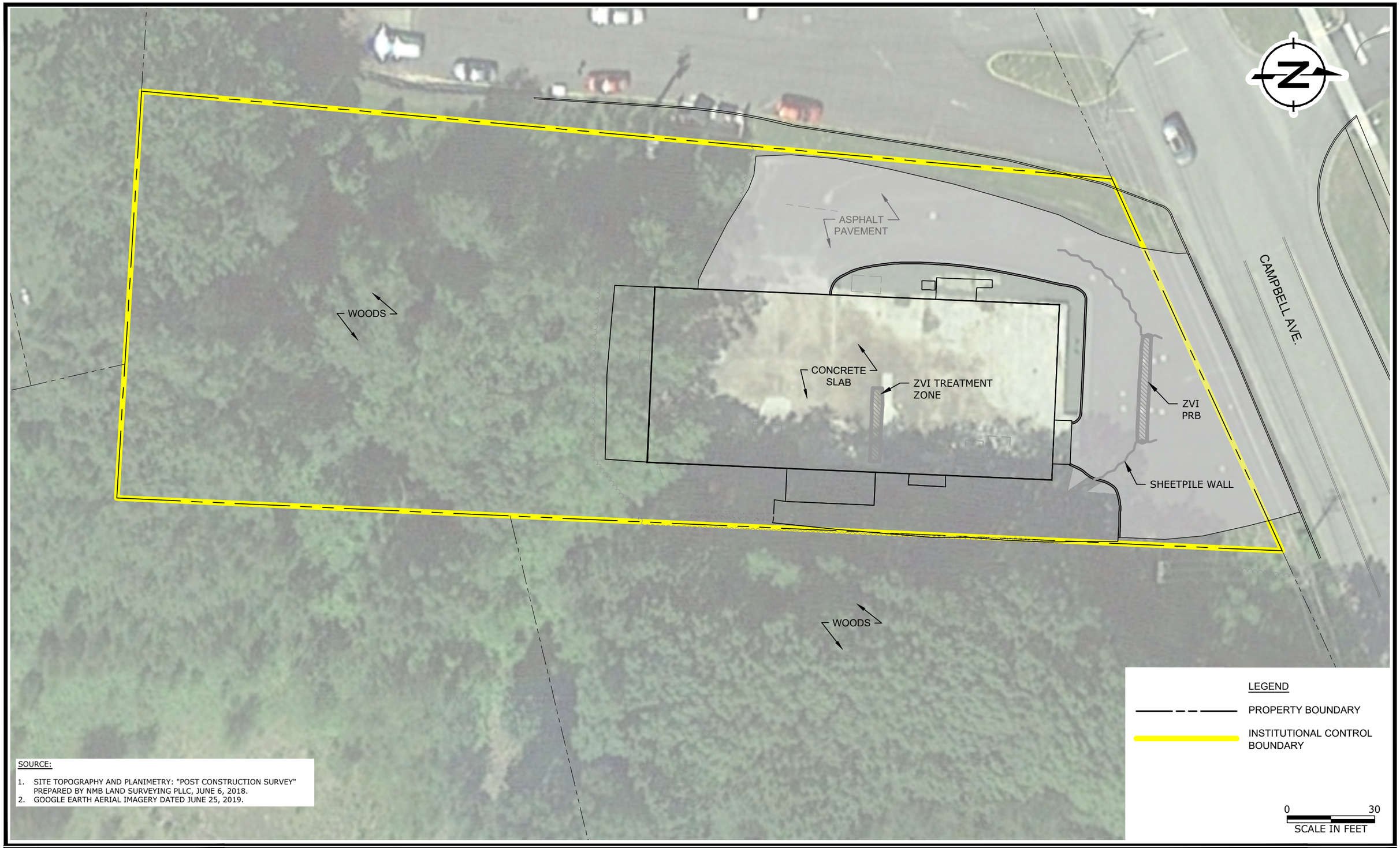
ENGINEERING CONTROLS LOCATION

ESCO STEEL
520 CAMPBELL AVENUE
CITY OF TROY, NEW YORK

ENVIRON
ENVIRON Engineers of North Carolina, PC
CERTIFICATE NUMBER: 0012568

PREPARED BY: JS/TA	DATE: 10/24/2019	FIGURE 3
DRAFTED BY: MSB	SCALE: AS SHOWN	
APPROVED BY: JS	PROJECT: 0239035A	

KMAUGHAN 10/24/19
F:\1690000663_ESCO STEEL_NYSDEC_PRR < POST-REMEDIAL ACTION_ASBUILT DESIGN_PRR >



SOURCE:

1. SITE TOPOGRAPHY AND PLANIMETRY: "POST CONSTRUCTION SURVEY" PREPARED BY NMB LAND SURVEYING PLLC, JUNE 6, 2018.
2. GOOGLE EARTH AERIAL IMAGERY DATED JUNE 25, 2019.

ENVIRON
ENVIRON Engineers of North Carolina, PC
CERTIFICATE NUMBER: 0012568

DRAFTED BY: KPM/MSB | DATE: 10/24/2019

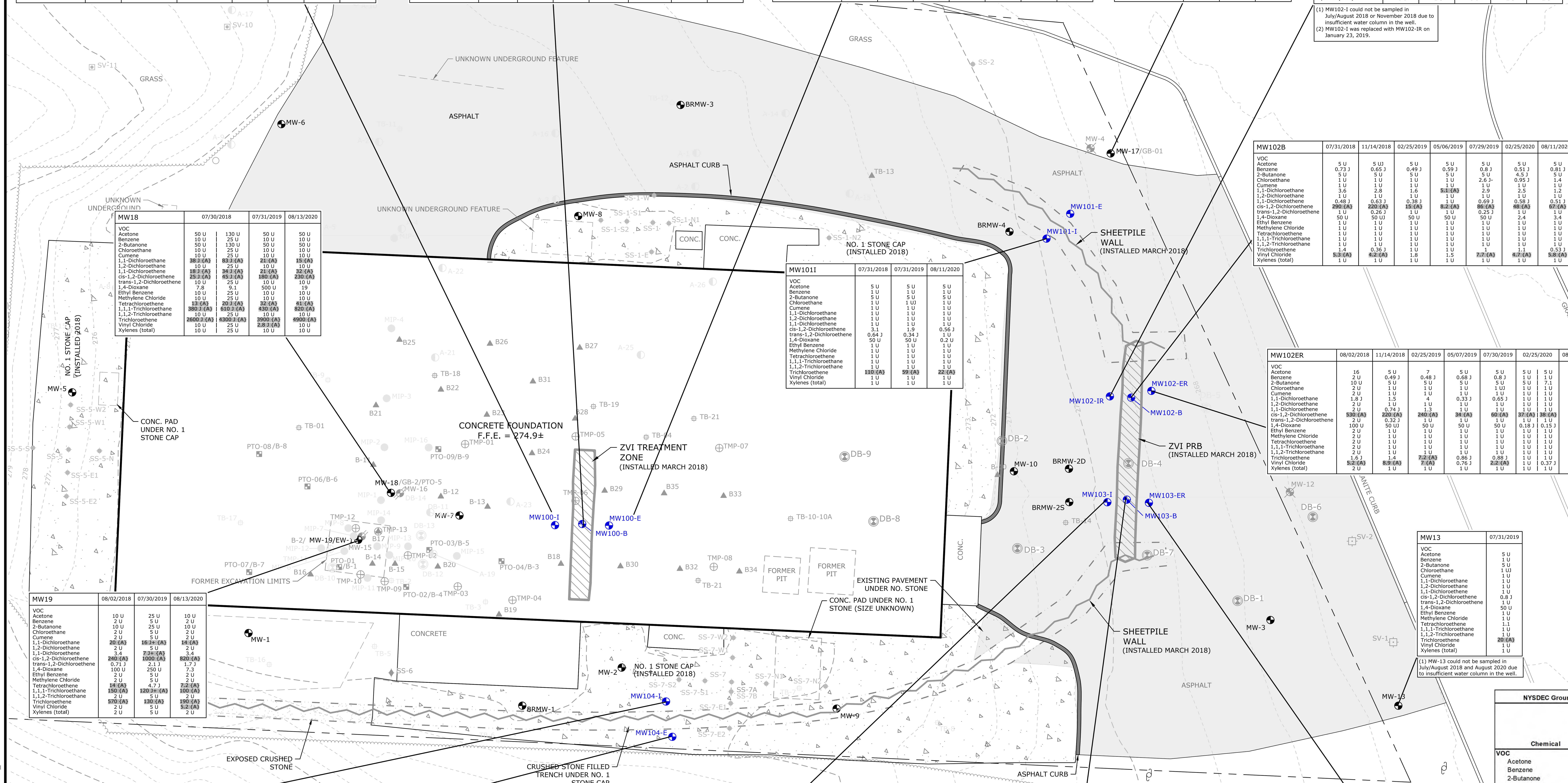
INSTITUTIONAL CONTROL BOUNDARIES

520 CAMPBELL AVENUE
CITY OF TROY, NEW YORK

FIGURE
4

PROJECT:1690000663

KMAUGHAN 10/24/19 F:\1690000663_ESCO STEEL_NYSDEC_PRR < INSTITUTIONAL CONTROL BOUNDARY_PRR >



MW100I	08/01/2018	11/13/2018		02/20/2019		05/06/2019	07/29/2019	02/24/2020	08/12/2020
VOC									
Acetone	50 U	25 U	25 U	10 U	10 U	25 U	25 U	25 U	10 U
Benzene	10 U	5 U	5 U	2 U	2 U	5 U	5 U	5 U	2 U
2-Butanone	50 U	25 U	25 U	10 U	10 U	25 U	25 U	25 U	10 U
Chloroethane	10 U	5 U	5 U	2 U	2 U	5 U	5 U	5 U	2 U
Cumene	10 U	5 U	5 U	2 U	2 U	5 U	5 U	5 U	2 U
1,1-Dichloroethane	98 {A}	56 {A}	58 {A}	66 {A}	67 {A}	57 {A}	29 {A}	51 {A}	10 {A}
1,2-Dichloroethane	10 {A}	5.1 {A}	4.3 J {A}	2.7 {A}	2.7 {A}	2.9 J {A}	5 U	5 U	0.86 J {A}
1,1-Dichloroethene	26 {A}	15 {A}	19 {A}	12 {A}	11 {A}	12 {A}	6.2 J- {A}	13 {A}	2.6
cis-1,2-Dichloroethene	3400 {A}	740 {A}	790 {A}	360 {A}	350 {A}	280 {A}	230 {A}	310 {A}	230 {A}
trans-1,2-Dichloroethene	3 J	2.8 J	2.1 J	1.4 J	1.3 J	1.7 J	1.2 J	3.6 J	1.3 J
1,4-Dioxane	360 J	250 UJ	250 UJ	64 J	77 J	250 U	250 U	7.1	5.7
Ethyl Benzene	10 U	5 U	5 U	2 U	2 U	5 U	5 U	5 U	2 U
Methylene Chloride	10 U	5 U	5 U	2 U	2 U	5 U	5 U	5 U	2 U
Tetrachloroethene	10 U	5.2 {A}	5.6 {A}	4.2	4.1	8.1 {A}	5.7 {A}	5.9 {A}	2
1,1,1-Trichloroethane	41 {A}	37 {A}	42 {A}	16 {A}	15 {A}	18 {A}	14 {A}	10 {A}	6.3 {A}
1,1,2-Trichloroethane	10 U	3.2 J {A}	3.1 J {A}	1.5 J {A}	1.6 J {A}	5 U	5 U	5 U	2 U
Trichloroethene	410 {A}	870 {A}	970 {A}	880 {A}	850 {A}	1300 {A}	1100 {A}	1300 {A}	630 {A}
Vinyl Chloride	250 {A}	260 {A}	310 {A}	180 {A}	180 {A}	100 {A}	76 {A}	110 {A}	37 {A}
Xylenes (total)	10 U	5 U	5 U	2 U	2 U	5 U	5 U	5 U	2 U

MW100B	08/01/2018		11/13/2018	02/20/2019	05/06/2019		07/29/2019		02/24/2020	08/11/2020
VOC										
Acetone	330 {A}	NA	34 J+	6.3 J	5.7	5.8	5 U	5 U	5 U	5 U
Benzene	0.93 J	NA	0.55 J	1 U	1 U	1 U	1 U	1 U	1 U	0.46 J
2-Butanone	33	NA	26	13	3.6 J	5.9	4.9 J	5 U	2.6 J	5 U
Chloroethane	1.5	NA	1.1	0.51 J	0.92 J	1 U	1 U	0.84 J	0.44 J	1.1
Cumene	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	0.49 J	NA	0.33 J	0.28 J	1 U	1 U	1 U	1 U	0.26 J	0.6 J
1,2-Dichloroethane	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	NA	1 U	1 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U
cis-1,2-Dichloroethene	0.46 J	NA	0.88 J	0.9 J	0.28 J	1 U	0.33 J	0.31 J	0.36 J	0.54 J
trans-1,2-Dichloroethene	1 U	NA	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	120	NA	71 J-	50 U	50 U	50 U	50 U	50 U	2.4	3.3
Ethyl Benzene	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	0.64 J	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	2	NA	0.78 J	3.2	1 U	1 U	0.45 J	0.38 J	1 U	1 U
Vinyl Chloride	1 U	NA	1 U	0.28 J	1 U	1 U	1 U	1 U	1 U	0.38 J
Xylenes (total)	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

MW100E	08/01/2018	11/13/2018	02/20/2019	05/06/2019	07/29/2019	02/24/2020	08/12/2020
VOC							
Acetone	120 {A}	43 J	6.1 J	5 U	5 U	5 U	5 U
Benzene	0.95 J	0.47 J	1 U	1 U	1 U	1 U	1 U
2-Butanone	39	66 {A}	14	2.6 J	3.9 J	5 U	5 U
Chloroethane	1.1	0.45 J	1 U	1 U	1 UJ	0.42 J	1 U
Cumene	1 U	1 U	1 U	1 U	1 U	0.77 J	1 U
1,1-Dichloroethane	4.9	0.67 J	1 U	0.27 J	0.28 J	1 U	0.47 J
1,2-Dichloroethane	0.46 J	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1	1 U	1 UJ	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	290 {A}	43 {A}	20 {A}	19 {A}	20 {A}	11 {A}	18 {A}
trans-1,2-Dichloroethene	0.31 J	1 U	1 UJ	1 U	1 U	1 U	1 U
1,4-Dioxane	50 U	50 UJ	50 U	50 U	50 U	1.9	1.3
Ethyl Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5.3 {A}	2	2.2	3	3.7	2.3	3.6
Vinyl Chloride	220 {A}	8.1 {A}	5.4 {A}	4.4 {A}	4.7 {A}	1.5	3.6 {A}
Xylenes (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U

MW17	08/02/2018	07/30/2019	08/10/2020
VOC			
Acetone	5 U	5 U	5 U
Benzene	1 U	1 U	1 U
2-Butanone	5 U	5 U	5 U
Chloroethane	1 U	1 U	1 U
Cumene	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U
1,1-Dichloroethene	0.39 J	1.2	1.4
cis-1,2-Dichloroethene	7.3 {A}	28 {A}	48 {A}
trans-1,2-Dichloroethene	0.57 J	1.8	2.4
1,4-Dioxane	50 U	50 U	0.85
Ethyl Benzene	1 U	1 U	1 U
Methylene Chloride	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U
Trichloroethene	100 {A}	350 {A}	280 {A}
Vinyl Chloride	1 U	2.4 {A}	4.1 {A}
Xylenes (total)	0.83 J	1 U	1 U

MW102I/MW102IR	02/21/2019	05/06/2019	07/30/2019	02/24/2020	08/13/2020
VOC					
Acetone	25 U	10 U	25 U	10 U	10 U
Benzene	5 U	2 U	5 U	2 U	2 U
2-Butanone	25 U	10 U	25 U	10 U	10 U
Chloroethane	5 U	2 U	5 UJ	2 U	1.1 J
Cumene	5 U	2 U	5 U	2 U	2 U
1,1-Dichloroethane	5.8 {A}	3.8	5	2.3	1.6 J
1,2-Dichloroethane	5 U	2 U	5 U	2 U	2 U
1,1-Dichloroethene	7.8 {A}	5.6 {A}	8.2 {A}	4.3	2.5
cis-1,2-Dichloroethene	180 {A}	150 {A}	340 {A}	120 {A}	140 {A}
trans-1,2-Dichloroethene	5.2 {A}	3.3	6.2 {A}	3.4	2.1
1,4-Dioxane	250 U	100 U	250 U	3	6.1
Ethyl Benzene	5 U	2 U	5 U	2 U	2 U
Methylene Chloride	5 U	2 U	5 U	2 U	2 U
Tetrachloroethene	5 U	2 U	5 U	2 U	2 U
1,1,1-Trichloroethane	2.7 J	2.5	3 J	1.1 J	0.96 J
1,1,2-Trichloroethane	5 U	2 U	5 U	2 U	2 U
Trichloroethene	960 {A}	640 {A}	950 {A}	500 {A}	390 {A}
Vinyl Chloride	12 {A}	23 {A}	27 {A}	13 {A}	16 {A}
Xylenes (total)	5 U	2 U	5 U	2 U	2 U

(1) MW102-I could not be sampled in July/August 2018 or November 2018 due to insufficient water column in the well.
(2) MW102-I was replaced with MW102-IR on January 23, 2019.

LEGEND

- PROPERTY BOUNDARY
- DB-2 BORING LOCATION
- MW MONITORING WELL LOCATION
- SV-5 SOIL VAPOR SAMPLING POINTS
- B-10 BORING LOCATION (ENVIRON 2015 & 2016)
- PTO-04 PUMP TEST OBSERVATION POINT (ENVIRON 2015)
- TMP-06 TEMPORARY MONITORING POINT
- TB-21 TEST BORING LOCATION
- MIP-4 MEMBRANE INTERFACE PROBE (08/10)
- A-3 MEMBRANE INTERFACE PROBE (09/12)
- MW-4 WELL NO LONGER SUITABLE FOR SAMPLING
- MW-15 WELL REMOVED DURING DEC. 2010 EXCAVATION IRM
- SS-7A SURFACE SOIL SAMPLE (0 TO 2 INCHES) (REH 2016 & 2017)
- SS-7 SOIL COVER SAMPLE (REH 2016 & 2017)
- SV-10 SOIL GAS SAMPLE (REH 2016 & 2017)
- MW100-I MONITORING WELL (REH 2018)

MW102B	07/31/2018	11/14/2018	02/25/2019	05/06/2019	07/29/2019	02/25/2020	08/11/2020
VOC							
Acetone	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U
Benzene	0.73 J	0.65 J	0.49 J	0.59 J	0.8 J	0.51 J	0.81 J
2-Butanone	5 U	5 U	5 U	5 U	5 U	4.5 J	5 U
Chloroethane	1 U	1 U	1 U	1 U	2.6 J-	0.95 J	1.4
Cumene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	3.6	2.8	1.6	5.1 {A}	2.9	2.5	1.2
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	0.48 J	0.63 J	0.38 J	1 U	0.69 J	0.58 J	0.51 J
cis-1,2-Dichloroethene	290 {A}	220 {A}	15 {A}	8.2 {A}	86 {A}	48 {A}	67 {A}
trans-1,2-Dichloroethene	1 U	0.26 J	1 U	1 U	0.25 J	1 U	1 U
1,4-Dioxane	50 U	50 UJ	50 U	50 U	50 U	2.4	3.4
Ethyl Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1.4	0.36 J	1 U	1 U	1	1.1	0.53 J
Vinyl Chloride	5.3 {A}	4.2 {A}	1.8	1.5	7.7 {A}	4.7 {A}	5.8 {A}
Xylenes (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U

MW11	07/31/2019	08/10/2020
VOC		
Acetone	5 U	5 U
Benzene	1 U	1 U
2-Butanone	5 U	5 U
Chloroethane	1 UJ	1 U
Cumene	1 U	1 U
1,1-Dichloroethane	1 U	1 U
1,2-Dichloroethane	1 U	1 U
1,1-Dichloroethene	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U
1,4-Dioxane	50 U	0.2 U
Ethyl Benzene	1 U	1 U
Methylene Chloride	1 U	1 U
Tetrachloroethene	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U
Trichloroethene	1 U	1 U
Vinyl Chloride	1 U	1 U
Xylenes (total)	1 U	1 U

(1) MW-11 could not be sampled in July/August 2018 due to insufficient water column in the well.

MW18	07/30/2018		07/31/2019	08/13/2020
VOC				
Acetone	50 U	130 U	50 U	50 U
Benzene	10 U	25 U	10 U	10 U
2-Butanone	50 U	130 U	50 U	50 U
Chloroethane	10 U	25 U	10 U	10 U
Cumene	10 U	25 U	10 U	10 U
1,1-Dichloroethane	38 J {A}	83 J {A}	21 {A}	15 {A}
1,2-Dichloroethane	10 U	25 U	10 U	10 U
1,1-Dichloroethene	18 J {A}	34 J {A}	21 {A}	32 {A}
cis-1,2-Dichloroethene	25 J {A}	45 J {A}	180 {A}	230 {A}
trans-1,2-Dichloroethene	10 U	25 U	10 U	10 U
1,4-Dioxane	7.8	9.1	500 U	19
Ethyl Benzene	10 U	25 U	10 U	10 U
Methylene Chloride	10 U	25 U	10 U	10 U
Tetrachloroethene	13 {A}	20 J {A}	32 {A}	41 {A}
1,1,1-Trichloroethane	380 J {A}	610 J {A}	430 {A}	820 {A}
1,1,2-Trichloroethane	10 U	25 U	10 U	10 U
Trichloroethene	2600 J {A}	4300 J {A}	3900 {A}	4900 {A}
Vinyl Chloride	10 U	25 U	2.8 J {A}	10 U
Xylenes (total)	10 U	25 U	10 U	10 U

MW101I	07/31/2018	07/31/2019	08/11/2020
VOC			
Acetone	5 U	5 U	5 U
Benzene	1 U	1 U	1 U
2-Butanone	5 U	5 U	5 U
Chloroethane	1 U	1 UJ	1 U
Cumene	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U
cis-1,2-Dichloroethene	3.1	1.9	0.56 J
trans-1,2-Dichloroethene	0.64 J	0.34 J	1 U
1,4-Dioxane	50 U	50 U	0.2 U
Ethyl Benzene	1 U	1 U	1 U
Methylene Chloride	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U
Trichloroethene	110 {A}	59 {A}	22 {A}
Vinyl Chloride	1 U	1 U	1 U
Xylenes (total)	1 U	1 U	1 U

MW102ER	08/02/2018	11/14/2018	02/25/2019	05/07/2019	07/30/2019	02/25/2020		08/12/2020
VOC								
Acetone	16	5 U	7	5 U	5 U	5 U	5 U	18
Benzene	2 U	0.49 J	0.48 J	0.68 J	0.8 J	1 U	1 U	1.2 {A}
2-Butanone	10 U	5 U	5 U	5 U	5 U	5 U	7.1	8.9
Chloroethane	2 U	1 U	1 U	1 U	1 UJ	1 U	1 U	0.34 J
Cumene	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1.8 J	1.5	4	0.33 J	0.65 J	1 U	1 U	1 U
1,2-Dichloroethane	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	2 U	0.74 J	1.3	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	530 {A}	220 {A}	240 {A}	34 {A}	60 {A}	37 {A}	38 {A}	57 {A}
trans-1,2-Dichloroethene	2 U	0.32 J	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	100 U	50 UJ	50 U	50 U	50 U	0.18 J	0.15 J	0.27
Ethyl Benzene	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1.6 J	1.4	7.2 {A}	0.86 J	0.88 J	1 U	1 U	0.61 J
Vinyl Chloride	5.2 {A}	8.9 {A}	7 {A}	0.76 J	2.2 {A}	1 U	0.37 J	1.5
Xylenes (total)	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

MW14	07/31/2018	07/31/2019	08/12/2020
VOC			
Acetone	5 U	5 U	5 U
Benzene	1 U	1 U	1 U
2-Butanone	5 U	5 U	5 U
Chloroethane	1 U	1 UJ	1 U
Cumene	1 U	1 U	1 U
1,1-Dichloroethane	4.8	6.3 {A}	4.9
1,2-Dichloroethane	1 U	1 U	1 U
1,1-Dichloroethene	1.8	1.6	1.1
cis-1,2-Dichloroethene	66 {A}	52 {A}	39 {A}
trans-1,2-Dichloroethene	0.33 J	0.36 J	0.27 J
1,4-Dioxane	7.5	50 U	12
Ethyl Benzene	1 U	1 U	1 U
Methylene Chloride	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U
1,1,1-Trichloroethane	1	2.8	0.6 J
1,1,2-Trichloroethane	1 U	1 U	1 U
Trichloroethene	9.4 {A}	16 {A}	13 {A}
Vinyl Chloride	9.1 {A}	13 {A}	15 {A}
Xylenes (total)	1 U	1 U	1 U

MW13	07/31/2019
VOC	
Acetone	5 U
Benzene	1 U
2-Butanone	5 U
Chloroethane	1 UJ
Cumene	1 U
1,1-Dichloroethane	1 U
1,2-Dichloroethane	1 U
1,1-Dichloroethene	1 U
cis-1,2-Dichloroethene	0.8 J
trans-1,2-Dichloroethene	1 U
1,4-Dioxane	50 U
Ethyl Benzene	1 U
Methylene Chloride	1 U
Tetrachloroethene	1.1
1,1,1-Trichloroethane	1 U
1,1,2-Trichloroethane	1 U
Trichloroethene	20 {A}
Vinyl Chloride	1 U
Xylenes (total)	1 U

(1) MW-13 could not be sampled in July/August 2018 and August 2020 due to insufficient water column in the well.

SOURCE:

1. SITE TOPOGRAPHY AND PLANIMETRY: "POST CONSTRUCTION SURVEY" PREPARED BY NMB LAND SURVEYING PLLC, JUNE 6, 2018.
2. MAP ENTITLED "STEEL TREATERS, 520 CAMPBELL AVENUE, SAMPLE LOCATIONS" PREPARED BY BARTON AND LOGUIDICE, P.C., PROJECT NO. 1047.001, AND INCLUDED AS FIGURE 3 OF THE NOVEMBER 2013 REMEDIAL INVESTIGATION REPORT.
3. ALL SAMPLE LOCATIONS SHOWN IN LIGHT GRAY ARE APPROXIMATE. LOCATIONS BASED ON "SITE MAP SHOWING SOIL AND GROUNDWATER SAMPLING LOCATIONS" PREPARED BY BARTON & LOGUIDICE, P.C. AND INCLUDED AS FIGURE 3 OF THE NOVEMBER 2013 REMEDIAL INVESTIGATION REPORT.
4. "UNKNOWN UNDERGROUND FEATURE" REFERS TO SUBSURFACE METALLIC ANOMALIES IDENTIFIED DURING THE GEOPHYSICAL SURVEY COMPLETED BY NAEVA GEOPHYSICS ON NOVEMBER 24, 2015.

MW19	08/02/2018	07/30/2019	08/13/2020
VOC			
Acetone	10 U	25 U	10 U
Benzene	2 U	5 U	2 U
2-Butanone	10 U	25 U	10 U
Chloroethane	2 U	5 U	2 U
Cumene	2 U	5 U	2 U
1,1-Dichloroethane	20 {A}	16 J+ {A}	14 {A}
1,2-Dichloroethane	2 U	5 U	2 U
1,1-Dichloroethene	3.4	7 J+ {A}	3.4
cis-1,2-Dichloroethene	240 {A}	1000 {A}	820 {A}
trans-1,2-Dichloroethene	0.71 J	2.1 J	1.7 J
1,4-Dioxane	100 U	250 U	7.3
Ethyl Benzene	2 U	5 U	2 U
Methylene Chloride	2 U	5 U	2 U
Tetrachloroethene	14 {A}	4.7 J	7.2 {A}
1,1,1-Trichloroethane	150 {A}	120 J+ {A}	100 {A}
1,1,2-Trichloroethane	2 U	5 U	2 U
Trichloroethene	570 {A}	130 {A}	190 {A}
Vinyl Chloride	2 U	5 U	5.2 {A}
Xylenes (total)	2 U	5 U	2 U

NYSDEC Groundwater Criteria	
Chemical	(A) NYSDEC Fresh Groundwater (GA) Criteria (ug/L)
VOC	
Acetone	50
Benzene	1
2-Butanone	50
Chloroethane	5
Cumene	5
1,1-Dichloroethane	5
1,2-Dichloroethane	0.6
1,1-Dichloroethene	5
cis-1,2-Dichloroethene	5
trans-1,2-Dichloroethene	5
1,4-Dioxane	--
Ethyl Benzene	5
Methylene Chloride	5
Tetrachloroethene	5
1,1,1-Trichloroethane	5
1,1,2-Trichloroethane	1
Trichloroethene	5
Vinyl Chloride	2
Xylenes (total)	5

U -- Not Detected.
J -- Estimated Concentration.
+ -- Biased high.
- -- Biased low.
NA -- Not Analyzed.

{A} Exceeds Fresh GW Criteria

NOTES:
1. All concentrations are presented in ug/L.
2. Prior to February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8260C. Beginning February 24, 2020, 1,4-dioxane was analyzed using EPA Method 8270 SIM.

10 0 10 20
SCALE IN FEET

MW104I	08/02/2018	07/30/2019	08/12/2020
VOC			
Acetone	5 U	5 U	5 U
Benzene	1 U	1 U	1 U
2-Butanone	5 U	5 U	5 U
Chloroethane	1 U	1 U	1 UJ
Cumene	1 U	1 U	1 U
1,1-Dichloroethane	17 {A}	20 {A}	21 {A}
1,2-Dichloroethane	1 U	1 U	1 U
1,1-Dichloroethene	4.4	5.2 {A}	3.9
cis-1,2-Dichloroethene	360 {A}	460 {A}	460 {A}
trans-1,2-Dichloroethene	0.45 J	0.75 J	0.76 J
1,4-Dioxane	50 U	50 U	1.8
Ethyl Benzene	0.45 J	1 U	1 U
Methylene Chloride	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U
Trichloroethene	34 {A}	38 {A}	28 {A}
Vinyl Chloride	68 {A}	81 {A}	86 {A}
Xylenes (total)	2.41	1 U	1 U

MW104E	08/02/2018	07/31/2019	08/11/2020
VOC			
Acetone	5 U	5 U	5 U
Benzene	1 U	1 U	1 U
2-Butanone	5 U	5 U	5 U
Chloroethane	1 U	1 UJ	1 U
Cumene	1 U	1 U	1 U
1,1-Dichloroethane	4.7	6.2 {A}	6.2 {A}
1,2-Dichloroethane	1 U	1 U	1 U
1,1-Dichloroethene	1.5	1.4	0.93 J
cis-1,2-Dichloroethene	32 {A}	22 {A}	11 {A}
trans-1,2-Dichloroethene	1 U	1 U	1 U
1,4-Dioxane	50 U	50 U	13
Ethyl Benzene	16 {A}	9.9 {A}	12 {A}
Methylene Chloride	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U
1,1,1-Trichloroethane	1.1	3	1.3
1,1,2-Trichloroethane	1 U	1 U	1 U
Trichloroethene	12 {A}	3.7	2.7
Vinyl Chloride	9.9 {A}	20 {A}	14 {A}
Xylenes (total)	110 {A}	11.5 {A}	5.3 {A}

MW103I	08/01/2018	11/14/2018	02/25/2019	05/07/2019	07/30/2019	02/25/2020	08/12/2020
VOC							
Acetone	5 U	5 UJ	10 U	5 U	5 U	5 U	5 U
Benzene	1 U	1 U	2 U	1 U	1 U	1 U	1 U
2-Butanone	5 U	5 U	10 U	5 U	5 U	5 U	5 U
Chloroethane	1 U	0.76 J	2 U	1 U	1 U	1 U	1 U
Cumene	1 U	1 U	2 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	100 {A}	99 {A}	110 {A}	7.9 {A}	4.8	49 {A}	15 {A}
1,2-Dichloroethane	1 U	1 U	2 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	3.8	8.9 {A}	16 {A}	2.4	0.91 J	11 {A}	3.7
cis-1,2-Dichloroethene	450 {A}	490 {A}	720 {A}	60 {A}	28 {A}	270 {A}	110 {A}
trans-1,2-Dichloroethene	0.37 J	0.95 J	2 U	0.48 J	0.39 J	0.56 J	0.47 J
1,4-Dioxane	130	63 J-	120	50 U	50 U	3	1.5
Ethyl Benzene	1 U	1 U	2 U	1 U	1 U	1 U	1 U
Methylene Chloride	0.32 J	1 U	2 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	0.26 J	2 U	1.2	0.62 J	1.9	2.5
1,1,1-Trichloroethane	1 U	1 U	2 U	0.24 J	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	2 U	1 U	1 U	1 U	1 U
Trichloroethene	4.3	40 {A}	26 {A}	99 {A}	87 {A}	93 {A}	120 {A}
Vinyl Chloride	110 {A}	44 {A}	47 {A}	1.8	0.76 J	12 {A}	6 {A}
Xylenes (total)	1 U	1 U	2 U	1 U	1 U	1 U	1 U

MW103B	07/31/2018	11/14/2018	02/25/2019	05/07/2019	07/29/2019	02/25/2020	08/11/2020
VOC							
Acetone	5 U	14	5.6	5 U	5 U	5 U	5 U
Benzene	0.62 J	0.56 J	1 U	0.48 J	0.52 J	1 U	0.61 J
2-Butanone	6.4	5 U	5 U	2.5 J	5 U	5 U	5 U
Chloroethane	5.7 {A}	1 U	1 U	1 U	0.85 J	1 U	1.6
Cumene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	45 {A}	0.78 J	0.29 J	1 U	9.3 {A}	0.26 J	15 {A}
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	32 {A}	1	0.89 J	0.4 J	19 {A}	0.42 J	27 {A}
trans-1,2-Dichloroethene	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	36 J	50 U	50 U	50 U	50 U	0.65	6.7
Ethyl Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	0.57 J	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	3.1 {A}	1 U	1 U	1 U	0.83 J	1 U	1
Xylenes (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U

MW103E/MW103ER	07/31/2018	02/25/2019	05/07/2019	07/29/2019	02/25/2020	08/11/2020	
VOC							
Acetone	170 {A}	5 U	5 U	5 U	5 U	9.9	11
Benzene	1 U	1 U	1 U	1 U	1 U	0.52 J	0.54 J
2-Butanone	5 U	5 U	5 U	5 U	5 U	4.8 J	4.7 J
Chloroethane	5.9 {A}	1 U	1 U	1 UJ	1 U	0.33 J	0.46 J
Cumene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	14 {A}	0.58 J	1 U	0.66 J	1 U	0.98 J	0.95 J
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	0.42 J	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	88 {A}	3.2	2.8	3.7	2.1	7.8 {A}	7.5 {A}
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	2.6	50 U	50 U	50 U	0.2 U	0.83 J	0.2 UJ
Ethyl Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	2.8	1 U	1.9	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1.6	0.42 J	17 {A}	0.78 J	13 {A}	1 U	0.32 J
Vinyl Chloride	4.8 {A}	0.62 J	1 U	1.1	1 U	1.1	1.1
Xylenes (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U

(1) MW103-E could not be sampled in November 2018 due to an obstruction present in the well casing.
(2) MW103-E was replaced with MW103-ER on January 23, 2019.

REV.	DATE	DR.	CH.	REVISION

GROUNDWATER MONITORING VOC RESULTS (THROUGH AUGUST 2020)

ESCO STEEL
520 CAMPBELL AVENUE
CITY OF TROY, NEW YORK

ENVIRON
ENVIRON Engineers of North Carolina, PC
CERTIFICATE NUMBER: 0012568

PREPARED BY: LI/TA	DATE: 10/12/2020	FIGURE
DRAFTED BY: TSP/DLB	SCALE: AS SHOWN	5
APPROVED BY: JS	PROJECT: 1690000663	

DELANCHARD 10/12/20
\\NTAPPRCIFS\CAD\1690000663_ESCO STEEL_NYSDEC_PRR < DATA_GW_Q3 2020_PRR >

APPENDIX A
ENVIRONMENTAL EASEMENT

RENSSELAER COUNTY – STATE OF NEW YORK
FRANK MEROLA COUNTY CLERK
105 THIRD STREET, TROY, NEW YORK 12180

COUNTY CLERK'S RECORDING PAGE
THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH

BOOK/PAGE: 8450 / 244
INSTRUMENT #: 2018-530098

Receipt#: 1117806
Clerk: RK
Rec Date: 03/01/2018 11:53:33 AM
Doc Grp: RP
Descrip: EASEMENT
Num Pgs: 10
Rec'd Frm: SNEERINGER PROVOST & REDGRAVE

Party1: ESCO CORP
Party2: PEOPLE OF THE STATE OF NEW YORK
Town: TROY

Recording:	
Cover Page	5.00
Recording Fee	65.00
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
TP584	5.00
Sub Total:	95.00
Transfer Tax	
Transfer Tax - State	0.00
Sub Total:	0.00
Total:	95.00

**** NOTICE: THIS IS NOT A BILL ****

***** Transfer Tax *****
Transfer Tax #: 2899
Transfer Tax
Consideration: 0.00

Total: 0.00

WARNING***
I hereby certify that the within and foregoing was recorded in the Rensselaer County Clerk's Office, State of New York. This sheet constitutes the Clerks endorsement required by Section 316 of the Real Property Law of the State of New York.

Frank Merola
Rensselaer County Clerk

Record and Return To:

SNEERINGER PROVOST & REDGRAVE
50 CHAPEL STREET
ALBANY NY 12207

Instr # 2018-530098
Bk 8450 Pg: 244

10/104

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 21st day of February, 20 18 between Owner(s) ESCO Corporation, having an office at 2141 NW 25th Avenue, Portland, Oregon 97210, County of Multnomah, State of Oregon (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 520 Campbell Avenue in the City of Troy, County of Rensselaer and State of New York, known and designated on the tax map of the County Clerk of Rensselaer as tax map parcel numbers: Section 112 Block 4 Lot 25, being the same as that property conveyed to Grantor by deed dated October 23, 2012 and recorded in the Rensselaer County Clerk's Office in Instrument No. 2012-00420835. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 1.109 +/- acres, and is hereinafter more fully described in the Land Title Survey dated January 30, 2018 prepared by Nathan M. Burrows, LLS of NMB Land Surveying PLLC, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is

R+R - Box SMPR - Courtesy Recording Bond, Schoeneck & King Attn: Theresa

extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Voluntary Cleanup Agreement Index Number: V00578-4, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Rensselaer County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation

Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against

the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: V00578
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the

recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

ESCO Corporation:

By: _____

Print Name: Kevin Thomas

Title: SVP, GC & Secy Date: 2/12/18

Grantor's Acknowledgment

STATE OF Oregon)
) ss:
COUNTY OF Multnomah)

On the 12th day of February, in the year 2018, before me, the undersigned, personally appeared Kevin S. Thomas personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Mary Denise Roberts
Notary Public - State of Oregon

OFFICIAL STAMP
MARY DENISE ROBERTS
NOTARY PUBLIC-OREGON
COMMISSION NO. 925759
MY COMMISSION EXPIRES MARCH 05, 2018

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____

Michael J. Ryan, Assistant Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 21st day of February, in the year 2018 before me, the undersigned, personally appeared Michael J. Ryan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

ALL THAT PIECE OR PARCEL OF LAND situate in the City of Troy, County of Rensselaer, State of New York, BEGINNING AT A POINT in the South line of Campbell's Highway said point being in the Northeast corner of the new Weber Lot resulting from a sub division of his original lot which was shown on a map prepared by James F. Hoffman, PE, LS, CE of HOFFMAN ENGINEERS AND SURVEYORS dated November 23, 1965 said point being further North 80 degrees 00 minutes East (N. 80° 00' E.) along the said South line of Campbell's Highway one hundred seventy five feet (175.00') from a concrete monument set in the division line between the Lands of the Airport Inn and the original Charles Weber parcel; thence according to the magnetic meridian and along the said South line of Campbell's Highway North 80 degrees 00 minutes East (N. 80° 00' E.) one hundred forty point twenty feet (140.20') to a point; thence South 17 degrees 12 minutes West (S. 17° 12" W.) four hundred feet (400.00') to a point in the North line of the lands of the Troy Airport; thence along this same North line North 71 degrees 54 minutes West (N. 71° 54' W.) one hundred thirty nine point eighty feet (139.80') to a point in the Southeast corner of the new aforementioned Weber lot; thence along the East line of the Weber lot which is the West line of the lot herein described North 19 degrees 46 minutes East (N. 19° 46' E.) three hundred thirty-four point zero eight feet (334.08') to a point in the South line of Campbell's Highway, said point being the point of beginning.

Containing approximately 1.109 acres more or less.

APPENDIX B
SITE MANAGEMENT FORMS

Monitoring Well Inspection Form
Former Steel Treaters, Inc. (Site No. V00578)
520 Campbell Avenue, Troy, New York

Inspection Date: 2/26/2020

Inspected By: Lauren Iacobucci, Ellie Seery

Monitoring Well	Well Cover Condition	Locking Well Cap Condition	Comments and Maintenance Needs/Actions
MW-1	Good	Good	
MW-5	Good	Good	
MW-8	Good	Good	
MW-11	Good	Good	
MW-13	Good	Good	
MW-14	-	-	Well not located (covered by snow/ice)
MW-17	Good	Good	Removed grass to expose well pad
MW-18	Good	Good	
MW-19	Good	Good	
MW-100I	Good	Good	
MW-100B	Good	Good	
MW-100E	Good	Good	
MW-101I	Good	Good	
MW-101E	Good	Good	
MW-102I	Good	Good	
MW-102B	Good	Good	
MW-102ER	Good	Good	
MW-103I	Good	Good	
MW-103B	Good	Good	
MW-103ER	Good	Good	

Monitoring Well Inspection Form
Former Steel Treaters, Inc. (Site No. V00578)
520 Campbell Avenue, Troy, New York

Inspection Date: 2/26/2020			
Inspected By: Lauren Iacobucci, Ellie Seery			
Monitoring Well	**Well Cover Condition**	**Locking Well Cap Condition**	**Comments and Maintenance Needs / Actions**
MW-104I	Good	Good	
MW-104E	Good	Good	
MONITORING WELLS NOT IN USE			
MW-2	Good	Good	Previously deployed PDB lodged in PVC
MW-3	Good	Good	Previously deployed PDB removed
MW-6	Good	Good	
MW-7	Good	Missing	Locking well cap to be replaced
MW-10	Good	Good	Previously deployed PDB removed
BRMW-1	Good	Good	
BRMW-2S	Good	Good	Previously deployed PDB removed
BRMW-2D	Good	Good	Previously deployed PDB removed
BRMW-3	Good	Good	Previously deployed PDB removed
BRMW-4	Good	Good	Previously deployed PDB removed
MONITORING WELLS TO BE ABANDONED			
MW-9	Good	Good	
MW-12	Good	Missing	Insufficient clearance for locking well cap; well temporarily sealed with tape

Notes:

1. Monitoring wells MW-4, MW-15 and MW-16 were incorrectly reported on in the July 2018, January 2019, and July 2019 inspection logs. These wells were removed in December 2010 and replaced by MW-17, MW-19, and MW-18, respectively, during the pre-design investigation activities conducted between December 2015 and March 2016.

Inspection Date: 2/26/2020			
Inspected By: Lauren Iacobucci, Ellie Seery			
Consolidation and Capping Area Designation	**Type of Final Cap Material**	**Observations**	
		Satisfactory Cap Condition	**Comments**
Northern cap area	Asphalt cap	Yes	Concrete pads for MW-102B and MW-103B are about 3 inches above the surrounding surface.
Northern cap area	Stone cap	Yes	-
Western cap area	Asphalt cap	Yes	-
Western cap area	Stone cap	Yes	-
Southern cap area	Stone cap	Yes	-
Eastern cap area	Stone cap	Yes	-
Foundation area	Concrete cap	Yes	An approximately 5-CY pile of approximately ¼- to ½-inch stone of unknown origin was observed in the southeastern corner of the cap area, near MW-1.

Photo 1: Concrete cap condition (facing northwest).

Photo 2: Concrete cap condition (facing southeast). Note small pile of stone in southeast corner.

Photo 3: Concrete cap condition (facing southwest).

Photo 4: Concrete and stone cap condition (facing south).

Photo 5: Concrete and stone cap condition (facing southwest).

Photo 6: Concrete and stone cap condition (facing northeast).

Photo 7: Concrete and stone cap condition (facing northeast).

Photo 8: Former building foundation, stone, and asphalt cap condition (facing southwest).

Photo 9: Stone cap condition (facing southeast).

Photo 10: Asphalt cap condition (facing southwest).

Photo 11: Asphalt cap condition (facing northeast).

Photo 12: Asphalt cap condition (facing west).

Photo 13: Asphalt cap condition (facing northwest).

Photo 14: Pile of stone observed in southeastern corner of concrete cap (facing southeast).

Monitoring Well Inspection Form
Former Steel Treaters, Inc. (Site No. V00578)
520 Campbell Avenue, Troy, New York

Inspection Date: 8/10/2020

Inspected By: Lauren Iacobucci, Jordyn Perdon, Patrick Sommer

Monitoring Well	Well Cover Condition	Locking Well Cap Condition	Comments and Maintenance Needs/Actions
MW-1	Good	Good	
MW-5	Good	Good	
MW-8	Good	Good	
MW-11	Good	Good	
MW-13	Good	Good	
MW-14	Good	Good	
MW-17	Good	Good	
MW-18	Good	Good	
MW-19	Good	Good	
MW-100I	Good	Good	
MW-100B	Good	Good	
MW-100E	Good	Good	
MW-101I	Good	Good	
MW-101E	Good	Good	
MW-102I	Good	Good	
MW-102B	Good	Good	
MW-102ER	Good	Good	
MW-103I	Good	Good	
MW-103B	Good	Good	
MW-103ER	Good	Good	

Monitoring Well Inspection Form
Former Steel Treaters, Inc. (Site No. V00578)
520 Campbell Avenue, Troy, New York

Inspection Date: 8/10/2020			
Inspected By: Lauren Iacobucci, Jordyn Perdon, Patrick Sommer			
Monitoring Well	**Well Cover Condition**	**Locking Well Cap Condition**	**Comments and Maintenance Needs / Actions**
MW-104I	Good	Good	
MW-104E	Good	Good	
MONITORING WELLS NOT IN USE			
MW-2	Good	Good	Previously deployed PDB lodged in PVC – attempt to dislodge PDB unsuccessful
MW-3	Good	Good	
MW-6	Good	Good	
MW-7	Good	Good	
MW-10	Good	Good	
BRMW-1	Good	Good	
BRMW-2S	Good	Good	
BRMW-2D	Good	Good	
BRMW-3	Good	Good	
BRMW-4	Good	Good	
MONITORING WELLS TO BE ABANDONED			
MW-9	Good	Good	
MW-12	Good	Missing	Insufficient clearance for locking well cap; well temporarily sealed with tape

Inspection Date: 8/10/2020			
Inspected By: Lauren Iacobucci, Jordyn Perdon, Patrick Sommer			
Consolidation and Capping Area Designation	**Type of Final Cap Material**	**Observations**	
		Satisfactory Cap Condition	**Comments**
Northern cap area	Asphalt cap	Yes	Concrete pads for MW-102B and MW-103B are about 3 inches above the surrounding surface.
Northern cap area	Stone cap	Yes	-
Western cap area	Asphalt cap	Yes	-
Western cap area	Stone cap	Yes	-
Southern cap area	Stone cap	Yes	-
Eastern cap area	Stone cap	Yes	-
Foundation area	Concrete cap	Yes	The approximately 5-CY pile of approximately ¼- to ½-inch stone of unknown origin observed in the southeastern corner of the cap area during the February 2020 inspection remains in place. Vegetation growing within and around the northern, eastern, and western sides of the cap was sprayed with herbicide and/or removed.

Photo 1: Concrete cap condition prior to vegetation removal (facing southeast).

Photo 2: Concrete cap condition after vegetation removal (facing southeast).

Photo 3: Concrete cap condition prior to vegetation removal (facing south).

Photo 4: Concrete cap condition after vegetation removal (facing southeast).

Photo 5: Concrete cap condition prior to vegetation removal (facing southeast).

Photo 6: Concrete cap condition after vegetation removal (facing north).

Photo 7: Concrete and stone cap condition (facing north).

Photo 8: Concrete cap condition (facing southeast).

Photo 9: Former building foundation, stone, and concrete cap condition (facing northeast).

Photo 10: Former building foundation, stone, and asphalt cap condition (facing southwest).

Photo 11: Former building foundation, stone, and asphalt cap condition (facing southeast).

Photo 12: Former building foundation, stone, and asphalt cap condition (facing north).

Photo 13: Asphalt cap condition (facing southwest).

Photo 14: Asphalt cap condition (facing southwest).

Photo 15: Concrete, stone, and asphalt cap condition (facing northeast).

Photo 16: Asphalt, stone, and concrete cap condition (facing southeast).

Photo 17: Small pile of stone observed in southeastern corner of concrete cap (facing southeast).

Photo 18: Attempting to dislodge formerly deployed PDB in MW-2 (facing northeast).

APPENDIX C
INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. V00578

Site Name Steel Treaters,Inc.

Site Address: 520 Campbell Avenue Zip Code: 12180-
City/Town: Troy
County: Rensselaer
Site Acreage: 1.109

Reporting Period: October 26, 2019 to October 26, 2020

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☒	☐
7. Are all ICs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. V00578 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
11200000040250000000	ESCO Corporation	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan Building Use Restriction IC/EC Plan

Institutional controls required at the site by the environmental easement include a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3), groundwater restrictions, land use restrictions (commercial and industrial) and the requirement that the site adheres to the approved SMP. Future buildings erected at the site must evaluate the potential for soil vapor intrusion.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
11200000040250000000	Cover System Subsurface Barriers Monitoring Wells

Engineering controls consist of operation and maintenance of the site cover, two Permeable Reactive Barriers (zero-valent-iron walls), and periodic groundwater monitoring.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

   (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative Date

IC CERTIFICATIONS
SITE NO. V00578

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Pamela S. Pawelek (print name) at 2141 NW 25th AVE PORTLAND, OR 97201 (print business address),

am certifying as Owner (on behalf of ESCO Group LLC) (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Pamela S. Pawelek, Environment Manager
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

11/23/2020
Date

EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I RUSSELL KEMP (print name) at 1600 PARKWOOD CIR., SUITE 310 ATLANTA, GA 30339 (print business address),

am certifying as a Professional Engineer for the ESCO CORPORATION (Owner or Remedial Party)

STATE OF NEW YORK
RUSSELL STEPHEN KEMP
079272-1
LICENSED PROFESSIONAL ENGINEER

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

24 NOV 2020
Date