REMEDIAL INVESTIGATION / ALTERNATIVES ANALYSIS REPORT

FOR

301 CONNECTICUT STREET SITE
301 CONNECTICUT STREET
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
SITE NO. C915345

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REVISION 02

CERTIFICATION STATEMENT

I ___John T. Camp, P.E._____ certify that I am currently a NYS registered professional engineer and that this Remedial Investigation / Alternative Analysis Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Department of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10).

_____ P.E.

___JUNE 8, 2020_____ DATE

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ACRONYM LIST

AAR	Alternatives Analysis Report
AST	Aboveground Storage Tank
BCP	Brownfield Cleanup Program
BGS	Below Ground Surface
BSA	Buffalo Sewer Authority
C&S	C&S Engineers
CAMP	Community Air Monitoring Plan
CPP	Citizen Participation Plan
COPC	Constituents of Potential Concern
DER	Department of Environmental Remediation
DUSR	Data Usability and Summary Report
EDD	Electronic Data Deliverable
EE	Environmental Easement
ELAP	Environmental Laboratory Accreditation Program
ESA	Environmental Site Assessment
HASP	Health and Safety Plan
HFM	Historic Fill Material
IRM	Interim Remedial Measures
MS/MSD	Matrix Spike / Matrix Spike Duplicate
MW	Monitoring Well
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PID	Photo-ionization Detector
PPM	Parts Per Million
PPT	Parts Per Trillion
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
REC	Recognized Environmental Condition

RI	Remedial Investigation
SCG	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objectives
Site	0.86-Acre Site; 301 Connecticut Street, Buffalo, New York
SMP	Site Management Plan
SVOCs	Semi-volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
TOGS	Technical & Operational Guidance Series
U.S. EPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

ES 1. Site Setting

a. Physical Setting

The Brownfield Cleanup Program (BCP) Site is located in the City of Buffalo, New York. The Site is situated on a partial city block which contains a parking lot, Hart's Service Station, and the D'Youville Education Center building. The Site is bounded by the Connecticut Street to the northwest, West Avenue to the southwest, a D'Youville parking lot to the southeast, and residential housing, The Armory Restaurant, and Plymouth Avenue to the northeast.

The BCP Site is located in the Lower West Side in the City of Buffalo, New York, adjacent to the D'Youville College campus. The Site is approximately 0.86-acres and is owned by 301 Connecticut LLC.

Land uses immediately adjacent to the BCP Site include parking, residential uses, educational uses (D'Youville campus), and retail (Rite Aid).

According to historical records, the Site was initially occupied by residential homes. The property at 305 Connecticut contained a filling station and auto repair shop from 1951 to 1981. The auto repair shop remained past 1981 to present. A property at 289 Connecticut Street formerly contained upholstering and 291 Connecticut Street formerly contained a paints store. An additional auto repair shop and gas tanks were located on the Site along West Avenue.

b. Subsurface Setting

The Site is comprised of asphalt underlain by Historic Fill Material (HFM) and native soils. Asphalt thickness varied throughout the Site. Generally, asphalt was approximately five to twelve inches thick. Underneath the asphalt, the Site contains urban fill to approximate depths ranging from one to four feet below grade, in most areas. HFM is defined as material coming from anthropogenic sources re-worked to build a site to a defined grade. Underlying the HFM are native soils which are comprised of primarily moist brown silty clay.

Groundwater levels were encountered at relatively shallow depths. Many soil borings exhibited moist, and even soft, wet, or saturated material at varying depths within the borings. Groundwater levels throughout the Site ranged from four to eight feet below ground surface (bgs). Groundwater flow appeared to be flowing in a general northwest direction, toward Connecticut Street.

After review of New York State Department of Environmental Conservation (NYSDEC) data, it was determined that the Site is not underlain by any mapped principal or primary aquifers. Groundwater at and in the vicinity of the Site is not used for public drinking water supply. The City of Buffalo Water Board Regulations (21 NYCRR § 10085.3) states that every dwelling, house, or other building requiring the use of water must be supplied from the water mains of the water board.

ES 2. Remedial Investigation

The Remedial Investigation (RI) supplemented the existing, Phase I Environmental Site Assessment (ESA), Phase II ESA, and Supplemental Investigation information through the advancement of soil borings, installation of monitoring wells, and collection and analysis of soil and groundwater samples.

ES2.1 Surface Soil

Surface soil samples were collected from three locations throughout the Site. Results indicate many semi-volatile organic compounds (SVOCs), pesticides, and metals present in all three of the sample locations. Analytics show multiple SVOCs above Residential, Restricted Residential, and Industrial Use Soil Cleanup Objectives (SCOs) in B3, C1, and E1. Pesticides and metals, including lead and zinc, were all also present in these surface soil samples with results above Unrestricted Use SCOs.

ES2.2 Historic Fill Material

The Site was broken into 18 grids, each grid was approximately a 50 by 50 foot area. A total of seven fill samples were collected across the Site, taken from the seven of the 18 on-site grid locations. Sample results indicate that subsurface HFM within the BCP boundary contain concentrations of volatile organic compounds (VOCs), SVOCs, pesticides, and metals above multiple SCOs. VOCs and pesticides were detected above Unrestricted Use SCOs. SVOCs/polycyclic aromatic hydrocarbons (PAHs) were detected above Residential, Restricted Residential, and Industrial Use SCOs. Metals were detected above Unrestricted and Restricted Residential Use SCOs.

A total of five soil samples collected within the HFM were analyzed for waste characterization parameters. Based on these results, HFM located at the Site is considered non-hazardous.

ES2.3 Native Soil

During the RI, native soil samples were collected from 18 grid locations as the final confirmatory samples. Soil samples were collected at the top of the native material, with two additional samples that were collected at one-foot intervals below the first native soil sample. A total of three of the 18 native soil sample grid locations exceeded Unrestricted Use SCOs. Two of the three sample locations collected that exceeded Unrestricted Use SCOs were due to metals such as lead and zinc. These locations were in grid locations A1 for zinc and B1 for zinc and lead. One native soil sample, C4, exceeded VOC Unrestricted Use SCOs for acetone. The exceedances of Unrestricted Use SCOs within native material has been attributed to impacts from the overlying HFM.

ES2.4 15-Foot Deep Native Soil

Deep native soil samples were taken from a depth of 15 feet bgs in five of the 18 grid borings completed within the Site bounds. The locations of the deep native samples were dispersed evenly across the Site. In four of the five locations sampled, contaminant concentrations did not exceed the Unrestricted Use SCOs. In grid location A1 (within an area backfilled with crushed stone), zinc concentrations exceeded the Unrestricted Use SCO. Considering that zinc is a heavy metal that is not mobile in the subsurface, it is likely that residual stone backfill interfered with the native soil results at 15-feet in this location.

ES2.5 EB-1/X (Lead) Delineation

Initial sampling indicated elevated lead levels in the subsurface near the northern corner of the Site, which resulted in the need for delineation to determine the extents of contamination. Results indicated lead concentrations below Unrestricted Use SCOs for all but one of the sample locations. At a depth of 13 feet below ground surface, 2-X04 had lead levels of 266 mg/kg, exceeding the Unrestricted Use SCOs. Multiple VOCs were detected above Unrestricted Use SCOs in ten of the delineation locations. These VOCs included acetone, ethylbenzene, toluene, and xylenes. In one of the locations, 1-X01, at a depth of 9 feet below ground surface, multiple SVOCs were also detected. Three SVOC analytes in that

location had levels exceeding Residential Use SCOs, and two of those three exceeding Restricted Residential Use SCOs.

ES2.6 EB-4 and EB-11/Y and Z (Petroleum) Delineation

Remedial investigation in this area focused on the determination of the extents of petroleum impacts. Soil borings and sampling indicated that the extent of contamination extends to approximately 7 to 12 feet below ground surface. Both petroleum delineation areas showed evidence of petroleum impairment toward the northwest. With the addition of soil borings 3-Y04, 2-Y05, and 2-Z05, it appeared this contamination extended toward Connecticut Street. With Photo-Ionization Detector (PID) measurements of up to 5,500 parts per million (ppm) in 3-Y04, it was determined that additional sampling beneath the sidewalk and across the street would need to take place. The only contamination which appeared in the analytical results was in soil boring 2-Z01 at a depth of 10 feet below ground surface and soil boring 2-Y05 at a depth of 12 feet below ground surface. Both locations appeared to show total xylenes to have concentrations slightly above Unrestricted Use SCOs, and 2-Y05 showed ethylbenzene concentrations also above Unrestricted Use SCOs.

ES2.7 Groundwater

Groundwater sampling occurred in two stages. The first round of sampling occurred in April 2019. Five groundwater samples, a duplicate, and matrix spike / matrix spike duplicate (MS/MSD) were collected from the five previously installed wells at the Site.

The second round of groundwater sampling occurred in May 2019. The second round of sampling did not include emerging contaminates.

During the first sampling event, VOCs were detected at concentrations greater than the Department of Environmental Conservation Technical & Operational Guidance Series (TOGS) 1.1.1 standards for groundwater in all monitoring wells, aside from Monitoring Well (MW)-2. During the second groundwater sampling event, VOC concentrations greatly diminished and analytes were only detected above TOGS in MW-1.

During the first sampling event, SVOCs including, but not limited to; benzo(a)anthracene benzo(b)flouranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-c,d)pyrene were detected at concentrations greater than the respective standards in nearly all of the monitoring wells. During the second sampling event, SVOC concentrations diminished, but some analytes still exceeded standards, which is anticipated to be due to reduced turbidity levels.

Metals, including iron, magnesium, and manganese were present in wells in both rounds of groundwater sampling. Barium was detected above guidance values for MW-1 in both rounds of sampling. Lead was detected above TOGS standards in the first round of sampling in MW-2.

Aside from the pesticide beta-BHC found in both rounds of sampling in MW-1, no other pesticides or PCBs were found in any of the wells in either round of groundwater sampling.

Emerging contaminants were sampled in two out of the five wells in the first round of sampling. Laboratory data generated from the first round of sampling was compared to the United States Environmental Protection Agency (USEPA) 70 parts per trillion (ppt) guidance value for total perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), combined. Results were also compared against NYSDEC guidance values of 10 ppt for each PFOA and PFOS, in addition to NYSDEC guidance value of 500 ppt for all perfluoroalkyl and polyfluoroalkyl substance (PFAS) compounds, combined. All PFAS results fall below the guidance values set by USEPA and NYSDEC. In both of the wells 1,4-

Dioxane was not detected.

ES 3. Alternatives Analysis

This remediation was completed under an IRM. All fill at the Site and any contaminated layers of native soils was excavated and disposed of at appropriately permitted off-site waste disposal facilities. The volume of removed fill/contaminated soil is 16,423 tons. Cut and fill depths associated with the planned Track 1 cleanup are shown in **Figure 8**. The final excavation depths are presented in **Figure 9.**

Based on the alternative analysis evaluation and the IRM described in **Section 7**, the recommended remedy for the Site is no further action. The IRM is fully protective of public health and the environment. This remedy is protective of human health and the environment, and was implemented in one construction season The IRM included the following:

- The excavation and off-site disposal of all fill and all layers of contaminated native soils. **Figure 8** depicts a Track 1 Cleanup Plan with the required excavation depths based on analytical results in each grid on the property;
- The placement of backfill consisting of clean fill and/or building materials (stone, concrete); and
- No environmental easements or continuing monitoring programs such as an SMP would be required.

1 INTRODUCTION

C&S Engineers, Inc. (C&S) has prepared this Remedial Investigation (RI) / Alternative Analysis (AA) Report on behalf of the applicant to the Brownfield Cleanup Program (BCP), 301 Connecticut LLC and D'Youville College (hereafter known as "Applicant") for the remediation and redevelopment of 301 Connecticut Street, Buffalo, New York (the "Site").

On April 1, 2019, the Applicant, acting as a BCP Participant, submitted a BCP Application to remediate and develop 301 Connecticut Street, Buffalo, New York. Investigative and remedial actions covered under this RI/AA Report includes the entire 0.86-acre Site.

Initial sampling, conducted through a Phase II Environmental Site Assessment (ESA), indicated the presence of historic fill material (HFM), petroleum contamination, and lead contamination with contaminant concentrations in excess of the New York State Department of Environmental Conservation's (NYSDEC's) Soil Cleanup Objectives (SCOs). The NYSDEC used these results to approve the Site's entrance into the BCP.

In response to the findings of the Phase II ESA, C&S prepared an RI/IRM Work Plan to describe the proposed approach to more thoroughly assess site contaminant conditions. The RI was implemented to further evaluate the extent of the contaminated HFM, petroleum, and lead material. The intent of this RI/AA Report is to present the results of the investigation and to identify and evaluate potential remedial measures to address the contamination present at the Site.

2 PROJECT BACKGROUND

The Site is comprised of one parcel: 301 Connecticut Street (SBL: 99.67-8-1.121, total 0.86 acres).

The BCP Site is located in the Lower West Side in the City of Buffalo, New York, adjacent to the D'Youville College campus. The Site is approximately 0.86-acres and is owned by 301 Connecticut LLC. Connecticut Street is located to the north, Plymouth Avenue to the east, West Ave to the west, and parking for D'Youville College to the south. Land uses immediately adjacent to the BCP Site include parking, residential uses, educational uses (D'Youville campus), and retail (Rite Aid). **Figure 1** shows the location of the Site and **Figure 2** shows the Project Area and Site Boundaries.

The Site is situated on a partial city block which contains an approximately 75 spot parking lot, Hart's Service Station, and the D'Youville Education Center building. Access to the Site is made possible through the parking area entrance off West Avenue or the parking area along Connecticut Street for Hart's Service Station and the D'Youville Education Center.

The parking lot area of the Site, on the corner of West Ave. and Connecticut St., is immediately surrounded by a black metal fence with landscaped areas just outside the fence. The Site contains three utility poles with wires hanging above the parking area and buildings.

The anticipated post remediation use of the Site is a multistory, mixed-use Health Professions Hub for D'Youville College students that will include a Community Clinic, a Workforce Development Center, a Virtual Simulation Training Center, and a neighborhood pharmacy.

2.1 Site History

The 301 Connecticut Street property was created in December 2018 by combining 295 Connecticut Street, 305 Connecticut Street and a portion of 289 Connecticut Street.

According to historical records, the Site was initially occupied by residential homes. The property at 305 Connecticut contained a filling station and auto repair shop from 1951 to 1981. The auto repair shop remained past 1981 to present. A property at 289 Connecticut Street formerly contained upholstering and 291 Connecticut Street formerly contained a paints store. An additional auto repair shop and gas tanks were located on the Site along West Avenue.

D'Youville College has owned the parking lot area of the Site and the D'Youville Education Center since the early 2000's. The Hart's Service Station was purchased by D'Youville in March of 2018.

The Site has not been remediated pursuant to Titles 9, 13, or 14 of ECL Article 27, or Title 5 of ECL Article 56. However, during excavation and removal of underground storage tanks (USTs) at the former 305 Connecticut Street parcel (Hart Service Station), contamination was discovered and remediated under the NYS Spills program, in conformance with Article 12 of Navigation Law. Spill 0475238 was made inactive in October 2008.

Based on recent investigative results, contamination at the Site appears to be from the previous filling station/service station at the Site in the proximity of the former 305 Connecticut Street parcel and possibly from the long term presence of a repair shop at the former 457 and 461 West Avenue parcels. Additionally, contamination may be related to the placement of urban fill material throughout the years as property uses changed along Connecticut Street and West Avenue and buildings were built and/or demolished.

2.2 Previous Investigations

Environmental information currently exists for the Site from a Phase I ESA completed by C&S Engineers (C&S) in 2017, from Phase II ESA completed by C&S in 2018, and a Supplemental Investigation completed by C&S in 2018. The associated documents are provided in **Attachment B**.

The Phase I indicated areas containing Recognized Environmental Conditions (RECs) which were subsequently investigated in a Phase II ESA.

C&S Phase I ESA Report

The Phase I ESA for the Site was restricted to the Hart's Service Station parcel only, located on what was once 305 Connecticut Street and is now included within the 301 Connecticut Street parcel. The Phase I ESA identified the following RECs:

- Multiple oily stains observed throughout the service area, especially around numerous small containers/drums and the two 250-gallon aboveground storage tanks (ASTs).
- The drain inside the service area. This drain is positioned to collect any fluids that would spill on the floor of the service area. At the time of the Site visit, the point of discharge could not be determined. This drain could serve as a way for spilled petroleum based products to be released on the Subject Property.
- After the removal of the three leaking USTs, the NYSDEC spills report indicated that groundwater contamination may still exist on-site.
- Multiple historic dry cleaner and auto repair shops located adjacent to the Subject Property. These sites are considered a REC in this Phase I ESA due to its close proximity to the Subject Property and potential for contaminants to migrate onto the Subject Property.

C&S Phase II ESA Report

A Phase II ESA was completed to provide additional information on the RECs identified as a result of the 2017 Phase I ESA (summarized above). The Phase II ESA included the advancement of 11 soil borings, installation of two temporary groundwater monitoring wells, and the collection and analysis of 8 soil samples. The soil samples were analyzed for the following contaminants in 6 NYCRR Part 375-6.8; Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), and Metals. The two temporary groundwater monitoring wells were sampled and analyzed for VOCs and SVOCs.

The findings from the Phase II ESA are provided below:

- Further review of the historic Sanborn Maps indicated in addition to the USTs located at the 305 Connecticut Street property, gasoline tanks were noted on the 1951 map for the 295 Connecticut Street property and the 461 West Avenue property.
- The floor drain survey indicated that at one time prior to the installation of the hydraulic lifts there were other floor drains inside the building. These floor drains were removed or buried underneath the existing hydraulic lifts. The drainage system discharges from a pipe approximately three feet bgs in front of the garage doors and runs northwest to Connecticut Street. This drainage line likely connects into the existing sewer system.

- Petroleum-like odors were observed from soil cores from the 305 and 295 Connecticut Street properties. The highest concentrations of petroleum-like odors was observed in the area of the former underground storage tanks (UST), 305 Connecticut Street property, and on the 295 Connecticut Street property.
- Fill material was generally observed across the Site from beneath the asphalt surface to approximately one feet to four feet bgs. The fill material consists of a mixture of soil types (sand, silt and or clay), ash, coal, gravel, and construction demolition debris. One soil boring, EB-1, was advanced in the area of the removed USTs; in this area fill material (medium grade "run of the bank") was observed to eight feet bgs. Beneath the fill material was native silty clay.
- Petroleum impacted native soil was observed around soil boring EB-4 and EB-11. Black staining of the native silty clay was observed from four to seven feet in EB-4 and from one to eleven feet in EB-11. Strong petroleum-like odors were also observed with the stained material.
- Contaminant concentrations in the fill material and petroleum impacted subsurface soils exceeded New York State Department of Environmental Conservation (NYSDEC) Soil Cleanup Objectives (SCO), including Volatile Organic Compounds (VOC), Semi-Volatile Organic Compounds (SVOC) and metals at concentrations above the Unrestricted, Restricted Residential, and Commercial SCOs.
    - Analytical results indicate that the area remediated for hazardous levels of lead still contains high lead concentrations at eight feet bgs. A sample collected from the native silty clay material (EB-1) contained lead at 1,740 ppm, which is over Commercial Use SCOs.
    - VOC concentrations from petroleum contaminants were detected above Unrestricted and Restricted Residential Use in the sample EB-4 collected in the area of the historic gasoline tank on 295 Connecticut Street.
    - Samples collected for fill material underneath the parking lot (EB-2, EB-3, EB-5, and EB-7) and underneath the floor of the auto repair shop (EB-9) contained concentrations of SVOC and metals above Unrestricted and Restricted Residential Use SCOs.
    - Only EB-5 contained concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) above SCOs for benzo(b)fluoranthene exceeding Restricted Residential Use, detected at1 ppm, and indeno(1,2,3-cd)pyrene exceeding the Restricted Residential Use, detected at 0.51 ppm.
- Groundwater on the Site was particularly shallow and was present at depths of approximately one to six feet bgs. Both groundwater samples contained at least one contaminant concentration exceeding NYSDEC TOGS Groundwater Standards, for contaminants including VOC, and SVOCs.
    - One groundwater sample, GW-1, was collected within the area where the USTs were removed. This sample contained concentrations of VOCs related to petroleum contaminants that exceed NYS TOGS Groundwater Standards.

- The second groundwater sample, GW-2, was collected south of GW-1 on the 295 Connecticut Street property. This sample did not contain VOC concentrations above NYS TOGS Groundwater Standards.
- PAH concentrations were identified in both the groundwater samples (GW-1 and GW-2). Overall, PAH compounds marginally exceeded NYS TOGS Groundwater Standards, this is likely due to the high turbidity of the groundwater samples.

C&S Supplemental Investigation (October – November 2018)

A supplemental investigation was completed by C&S Engineers to provide additional characterization of the soil on the Site. This effort included the advancement of 17 additional soil borings. The soil samples were analyzed for SVOCs and metals. The analytical findings from the supplemental investigation are provided below:

- Contaminant concentrations in the soil exceeded NYSDEC SCOs for SVOCs and metals at concentrations above the Unrestricted, Residential Use, Restricted Residential Use, and Commercial Use and Industrial Use SCOs.

Summary of Previous Investigations

Site characterization efforts in 2017 and 2018 were conducted to assess contaminant concentrations at the Site and the results are summarized on **Figure 3**. The Site soils encountered during previous limited investigations generally consisted of HFM extending down approximately one to four feet bgs. Consistent with HFM found throughout the City of Buffalo, this HFM contains VOC, SVOC, and metal contamination, as shown in recent sampling. No discrete horizontal contamination layer was observed within the HFM, and therefore, the horizontal extent of contamination within the HFM is difficult to identify due to its heterogeneous nature.

The Phase II ESA completed by C&S included 11 soil borings with eight borings sampled. Out of the eight soil samples taken, seven of them showed exceedances of Unrestricted Use SCO. Concentrations of VOCs, SVOCs and metals present in the HFM that exceed SCOs included:

- Concentrations of VOCs exceeded Unrestricted Use SCOs in one location on the Site, EB-4 for multiple analytes.
- SVOC/PAH compounds, such as benzo(b)fluoranthene and indeno(1,2,3-cd)pyrene were detected in HFM samples and at concentrations that exceed Restricted Residential Use SCOs in EB-5.
- Metals, including copper, lead, mercury, and zinc were detected in all HFM samples, aside from EB-8, at concentrations that exceed Unrestricted Use SCOs. Lead exceeded commercial Use SCOs in EB-1.

The table below summarizes the contaminants of concern in the HFM, the number of locations where samples were collected and contain concentrations above Unrestricted Use SCOs, and the range of the concentrations in parts per million (ppm) for each analyte.

Table 2-3: Previous Subsurface Soil Investigation Sample Exceedances

Analyte	Locations with Concentrations above SCOs	Low Concentration (ppm)	High Concentration (ppm)
VOCs			
Toluene	1	1.8	1.8
Ethylbenzene	1	11	11
p/m-Xylene	1	19	19
o-Xylene	1	8.7	8.7
Xylenes, Total	1	28	28
n-Propylbenzene	1	11	11
1,3,5-Trimethylbenzene	1	18	18
1,2,4-Trimethylbenzene	1	85	85
SVOCs / PAHs			
Benzo(b)fluoranthene	1	1	1
Indeno(1,2,3-cd)pyrene	1	0.51	0.51
Metals			
Copper	1		
Lead	5	105	591
Mercury	4	0.18	1.05
Zinc	4	113	220

The previous investigations completed by C&S in 2018 included the installation and sampling of VOCs and SVOCs in two temporary groundwater monitoring wells. Groundwater sampling revealed exceedances of VOCs and SVOCs exceeding NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 in well GW-1 and SVOCs only in GW-2. Groundwater results are summarized below:

- One groundwater sample, GW-1, was collected within the area where USTs were removed. This sample contained concentrations of VOCs related to petroleum contaminants that exceed NYS TOGS Groundwater Standards.
- The second groundwater sample, GW-2, was collected south of GW-1 on the 295 Connecticut Street property. This sample did not contain VOC concentrations above NYS TOGS Groundwater Standards.
- PAH concentrations were identified in both the groundwater samples (GW-1 and GW-2). Overall, PAH compounds marginally exceeded NYS TOGS Groundwater Standards, this is likely due to the high turbidity of the groundwater samples.

Based on investigations conducted to date, the known contaminants of concern include SVOCs; primarily PAHs, VOCs, and metals including lead and mercury in the native soils and in the HFM.

The variation in analyte concentrations, outside of VOCs, across the Site indicates that the source of contamination is the variable HFM and no discrete source is located on-site or off-site. The VOC exceedances source correlates to approximately where USTs were in place and removed. Based on these sampling results, contaminated HFM is expected to exist on-site from surface to an average approximate depth of four feet bgs.

2.3 Remedial Investigation Objectives, Scope, and Rationale

The objectives of the RI were to further characterize contamination at the Site, evaluate contaminant impacts to soil and groundwater, and identify and evaluate appropriate remedial actions necessary to redevelop the Site. The investigation work included evaluating the magnitude and extent of contaminant impacts, conducting a qualitative exposure assessment for actual or potential exposures to contaminants at the Site and/or emanating from the Site, and producing data that supports the development of an acceptable RI Report.

The scope of the RI was based on information previously gathered regarding historical operations conducted at the Site, the results of previous investigations, including the Phase I and Phase II Environmental Site Assessments (ESA), and the project objectives. The RI included the following:

- Soil Evaluation – This task consisted of multiple elements: HFM characterization, lead delineation, petroleum delineation, and underlying native soils.
    - The HFM was characterized to identify the extent and magnitude of contamination. This material was also the subject of waste characterization sampling because subsequent remedial activities would likely include the excavation and off-site disposal of the HFM.
    - An area in the northern corner of the Site was delineated to characterize the extent of area and depth of lead contamination uncovered during the Phase II ESA.
    - Two areas along Connecticut Street on the northwest boundary of the Site were delineated to characterize the extent of area and depth of petroleum contamination uncovered during the Phase II ESA.
    - The underlying native soils were characterized to determine the depth of impacts from the overlying HFM and the depths at which remedial efforts may be terminated.

- Groundwater Evaluation – Subsequent to completing the above tasks, existing groundwater monitoring wells on Site were sampled to confirm previous sampling results and evaluate if the on-site HFM, petroleum, and lead contamination impacts groundwater quality.

The RI activities were completed in accordance with NYSDEC Division of Environmental Remediation: Technical Guidance for Site Investigation and Remediation dated May 2010 (DER-10).

3 METHODOLOGY

The RI supplemented the existing, Phase II Environmental Site Assessment (ESA) information through the advancement of soil borings and collection and analysis of soil and groundwater samples. The investigative methods described below closely follow the approved RI/IRM Work Plan (dated July 2019).

Soil and groundwater samples sent to a certified laboratory were analyzed in accordance with EPA SW-846 methodology for the following contaminants:

- VOCs (EPA Method 8260);
- SVOCs (EPA Method 8270C);
- Pesticides (USEPA Method 8081A);
- PCBs (USEPA Method 8082);
- Cyanide (USEPA Method 9010B);
- Mercury (USEPA Method 7471A);
- Hexavalent Chromium (USEPA Method 7196A);
- Metals (EPA Method 6010B);
- 1,4 dioxane (EPA Method 8270SIM); and
- Per- and Poly-fluoroalkyl Substances (EPA Method 537).

The complete sampling program conducted during this RI, including the number of samples collected for each media and the contaminant list samples were collected for, can be found in **Table 11**. Category B deliverables were used in a third-party data validation.

3.1 Soil / HFM Characterization

Recent Site characterization efforts conducted to assess contaminant concentrations at the Site are summarized on **Figure 3.** The locations of all soil boring and sampling associated with the RI are shown in **Figure 4**.

3.1.1 Surface Soil

Surface soil samples were collected from the top two inches below the vegetative layer. In three locations, one surface sample was collected and analyzed for the following:

- Target Compound List (TCL) VOCs
- TCL SVOCs
- TCL pesticides
- Total polychlorinated biphenyls (PCBs)
- Target Analyte List (TAL) metals
- Total mercury
- Total cyanide
- Per- and Poly-fluoroalkl Substances (PFAS)
- 1,4-dioxane

3.1.2 Subsurface Soil / HFM Characterization

The advancement of soil borings across the Site facilitated the sampling of native material and HFM. To ensure complete coverage, borings were located in a grid pattern across the Site. The Site was divided into 50 by 50 foot grids resulting in a total of 18 sample grids each with one central soil boring.

From the borings, fill and native soil samples were collected to document Site conditions.

A Geoprobe 6620DT was used to advance the borings. Each boring location was continuously sampled in four or five-foot intervals depending on the sample volume required at the specific location. The steel coring tube was fitted with a disposable acetate liner at every interval. All non-disposable sampling equipment was decontaminated between runs and between drill locations to avoid potential cross contamination of samples.

Soils from the acetate liners were screened in the field for visible impairment (e.g. staining), olfactory indications of impairment, evidence of non-aqueous phase liquids (NAPLs), and/or indication of detectable VOCs with a 10.6 eV PID over 10 ppm, collectively referred to as "evidence of impairment" and the results were recorded on boring logs. Soil boring logs were prepared and include soil description, PID readings, etc. The boring logs are included in **Appendix A**.

3.1.2.1 Fill Sampling

Fill samples were collected from seven of the borings based on evidence of impairment and to provide characterization across the Site. In six locations, one HFM sample was collected and analyzed for the following:

- TCL VOCs
- TCL pesticides
- Total polychlorinated biphenyls (PCBs)
- Hexavalent chromium
- Silvex
- Per- and Poly-fluoroalkl Substances (PFAS) (five out of six samples)
- 1,4-dioxane (five out of six samples)

In addition to the six fill samples collected and analyzed for the above; one additional fill sample was also analyzed for:

- TCL VOCs

Additionally, five samples were collected from the HFM for waste disposal characteristics. The waste characterization analysis included:

- Toxicity Characteristic Leaching Procedure (TCLP) VOCs
- TCLP SVOCs
- PCBs
- TCLP metals
- Reactivity
- Corrosivity
- Ignitability
- pH
- Total Petroleum Hydrocarbons
- Percent Solids

3.1.2.2 Native Soil Sampling

Native Soil Samples Collected Immediately Below the Fill

Native soil was visually assessed and sampled in each of the 18 grid locations. In order to assess the impact of fill on the underlying native soil, a soil sample was collected from the

top two feet of native material in each grid location. The 18 native soil samples were collected and analyzed for:

- TCL VOCs
- TCL SVOCs
- TCL pesticides (from 5 of 18 samples only)
- Total PCBs (from 5 of 18 samples only)
- TAL metals
- Total mercury
- Total cyanide
- Hexavalent chromium (from 5 of 18 samples only)
- Silvex (from 5 of 18 samples only)
- Per- and Poly-fluoroalkl Substances (PFAS)
- 1,4-dioxane

Based on the results, the 18 native soil samples also served as the final confirmatory samples during the subsequent remedial activities.

In addition to collecting samples at the top of the native material, two additional samples were collected at one-foot intervals below the first native soil sample. These deeper samples were submitted to the laboratory but held until the uppermost native soil sample is analyzed. If any analytes exceeded the respective SCOs, the next deeper sample was analyzed for only those compounds that exceed the SCO. If the concentrations in that sample also exceeded the SCOs, the next lower sample was analyzed and the results were compared to the SCOs. The process was repeated for the third sample, if necessary. The intent of this sampling scheme was to identify the depth of remedial investigation and use the sampling results as the confirmatory sample results for the IRM.

Deep Native Soil Samples

Five samples, one sample per location, were collected from deeper native soils below the last confirmatory interval, outlined above, to a maximum depth of 15 feet below ground surface. The deep native soil characterization analysis included:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- Total PCBs
- TAL metals
- Total mercury
- Total cyanide
- Hexavalent chromium
- Silvex
- Per- and Poly-fluoroalkl Substances (PFAS)
- 1,4-dioxane

Below, in **Table 3-1**, shows the scheme in which we identified all subsurface soil samples to reference throughout this report.

Table 3-1: Sample ID Protocol

"Grid ID"-00-"depth"	Fill Sample

"Grid ID"-01-"depth"	1st Native Sample
"Grid ID"-02-"depth"	2nd Native Sample
"Grid ID"-03-"depth"	3rd Native Sample
"Grid ID"-04-"depth"	15-foot Native Sample

3.1.2.3 EB-1/X (Lead) Delineation

Soil samples were collected in concentric circles outward from EB-1. Each delineation circle contained four soil borings and stepped out every five feet from the point of origin or the previous circle. For the initial round of sampling, two delineation circles were used; if sample results indicated that lead concentrations exceed Unrestricted Use beyond the boundary of the this initial evaluation, then another round of delineation sampling would have been conducted. Only two delineation circles were investigated upon in this RI.

Vertical sampling from each soil boring was conducted starting at five feet below grade and extending to 12 feet below grade. Five soil samples were collected from each soil boring at one-foot intervals between five and 12 feet below grade. The samples from the first delineation circle were analyzed by the laboratory. The samples from the second delineation circle were submitted to the laboratory. Analysis samples from the second delineation circle were held pending the first round of laboratory results. If any analytes exceeded the respective SCOs, samples from the second delineation circle were analyzed.

A total of 49 samples were collected for the following:

- TCL VOCs
- TCL SVOCs
- Lead Only
- Total PCBs

The intent of this sampling scheme was to identify the depth of remedial investigation and use the sampling results as the confirmatory sample results for the IRMs.

3.1.2.4 EB-4 and EB-11/Y and Z (Petroleum) Delineation

Soils were evaluated in concentric circles outward from EB-4 and EB-11. Each delineation circle contained four soil borings and stepped out every five feet from the point of origin or the previous circle. Soils from these borings were continuously assessed for visible or olfactory indications of impairment, and/or indication of detectable petroleum impacts with a PID. Soil samples were collected from the locations at least one-foot away from any visual staining and/or PID readings below 50 ppm.

Up to eight samples were collected within each delineation area to delineate the horizontal extents of contamination and up to two samples were collected to delineate the vertical extents of contamination. Between the two delineation circles, 18 total samples were collected. Samples were analyzed for the following:

- TCL VOCs
- TCL SVOCs
- TAL metals

3.1.2.5 Off-site Soil Sampling

Ten additional soil boring locations were investigated to determine the possibility of petroleum contamination migrating toward Connecticut Street. The locations were drilled and sampled in the sidewalk at the furthest extent toward the southeast side of Connecticut Street that was permitted. Elevated PID measurements were found in five of the locations. The locations of these elevated measurements were adjacent to where elevated PID measurements were found in the original on-site investigation. Samples were collected from the soil interval where the most significant petroleum impacts were observed (staining, or highest PID measurements).

The ten samples that were collected were analyzed for the following:

- TCL VOCs
- TCL SVOCs

3.2 Groundwater Characterization

3.2.1 On-Site Groundwater Characterization

To characterize groundwater conditions at the Site, five new monitoring wells were installed. The new wells were located throughout the Site, as shown in **Figure 5**.

A rotary drill was used to advance 4-1/4-inch hollow stem augers. New overburden wells were constructed to intersect the top of the water table. Each well was completed with 10 feet of 2-inch Schedule 40 0.010-slot well screen connected to an appropriate length of schedule 40 PVC well riser to complete the well. The annulus was sand packed with quartz sand to approximately one to two feet above the screened section, and one to two feet of bentonite chips or pellets above the sand. The remaining annulus was grouted to ground surface. Each well was completed with a flush mount monitoring well cover. Groundwater well construction and sampling logs can be found in **Appendix B**.

Following installation, the monitoring wells were developed through the removal of up to ten well volumes using dedicated bailers or a peristaltic or submersible pump.

Groundwater sampling was conducted using low-flow purging and sampling techniques. Before purging the well, water levels were measured using an electric water level sounder capable of measuring to the 0.01 foot accuracy. Peristaltic or bladder pumps using manufacturer-specified tubing were used for purging and sampling groundwater. Calibration, purging and sampling procedures were performed as specified by the USEPA[1] for low-flow sampling. Decontamination was conducted after each well was sampled to reduce the likelihood of cross contamination. Calibration times, purging volumes, water levels and field measurements were recorded in a field log and will be provided in the RI Report.

The groundwater samples were analyzed for the following analyte list:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- Total PCBs
- TAL metals

[1] U.S. EPA Region 1 Low Stress (low-flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, January 19, 2010.

- Total mercury
- Total cyanide

Historic uses and sampling performed to date did not indicate the Site contained per- and poly-fluoroalkyl substances (PFOA / PFOS) and 1,4-dioxane. As a prerequisite screening of the Site, the NYSDEC requested the collection of one round of groundwater samples for the analysis of PFOA/PFOS and 1,4-dioxane on two groundwater monitoring wells.

Drilling decontamination, development, and purge fluids were allowed to infiltrate the ground surface of the Site in the vicinity of each soil sampling location.

A second round of groundwater sampling was performed approximately four weeks after the first round. The second round of groundwater samples was analyzed for the same analytes as in the first round (excluding PFOA/PFOS and 1,4-dioxane).

3.2.2 Off-site Groundwater Characterization

Three temporary groundwater monitoring wells were drilled in the sidewalk to the northwest, across Connecticut Street, to examine if petroleum impacts found in the on-site investigation migrated via groundwater. These temporary wells were drilled to approximately 12 to 16 feet below ground surface. Each well was completed with 5 feet of 1-inch Schedule 40 0.010-slot well screen connected to an appropriate length of schedule 40 PVC well riser to complete the well. Only one of these wells produced enough groundwater to sample from.

The single additional groundwater monitoring well sample was analyzed for:

- TCL VOCs
- TCL SVOCs

All temporary wells were removed after sample was taken. Well holes were packed with stone and topped with concrete to fill hole.

3.3 Soil Vapor Intrusion

Due to the VOC and SVOC detections in the groundwater, the New York State Department of Health (NYSDOH) and the NYSDEC will require a Soil Vapor Intrusion (SVI) investigation once the building is enclosed. The SVI investigation will be conducted in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006), with updates. The scope of the SVI is will consist of five sub-slab air samples and five indoor air samples spaced throughout the future building. The five locations chosen through the SVI investigation will include one sub-slab air sample and one indoor air sample in each location. One outdoor ambient air sample will also be collected. All samples will be collected concurrently.

3.4 Quality Assurance/Quality Control Program

Additionally, Quality Assurance/Quality Control (QA/QC) samples were collected, and the following describes the minimum number of samples per media type.

- Soil samples (excluding waste characteristic samples)
    - Blind duplicate – 5%
    - Matrix Spike/Matrix Spike Duplicate (MS/MSD) – 5%
- Groundwater samples
    - Trip blank – 1 per shipment
    - Blind Duplicate – 5%
    - Matrix Spike/Matrix Spike Duplicate (MS/MSD) – 5%

Test America, Inc. and Alpha Analytical, both being New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratories, performed the analytical testing. The laboratory results for the samples were reported in a Category B deliverables package to facilitate validation of the data, and a third party validator reviewed the laboratory data and prepared a Data Usability Summary Report (DUSR). The validator evaluated the analytical results for the field samples and quality assurance/quality control samples and compared the findings to USEPA guidance to determine the accuracy and validity of the results.

Quality control samples were collected from the samples to characterize the contamination and document the RI activities. The RI Work Plan stated that a minimum of 5% of the soil samples would be collected for Matrix Spike/Matrix Spike Duplicates (MS/MSD). In addition, the RI Work Plan stated that a minimum of 5% of the groundwater samples would be collected for Blind Duplicate and another 5% for MS/MSD, in addition to a trip blank. QA/QC samples were not collected nor analyzed for the waste characterization sampling.

During the RI activities, 153 soil samples collected: eight QA/QC samples were taken which included four Matrix Spikes and Matrix Spike Duplicates, and four field duplicates; meeting the 5% criteria. Five groundwater samples were analyzed during the first groundwater sampling event in addition to one field duplicate and one MS/MSD; meeting the 5% criteria. Five groundwater samples were collected during the second groundwater sampling event. The 5% criteria for QA/QC for groundwater sampling was also met in the second round as well.

A third-party data consultant, Vail-Data, prepared the Data Usability and Summary Report (DUSR) as required in the RI Work Plan. Once complete, the DUSR is included as **Appendix C.** The following items were reviewed:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate Standard Recoveries
- Matrix Spike Recoveries. Duplicate Recoveries
- Blind Field Duplicate Correlations
- Preparation/calibration Blanks
- Laboratory Control Samples (LCSs)
- Calibration/Low Level Standards
- ICP Serial Dilution
- Instrument MDLs
- Sample Result Verification

4 FINDINGS

4.1 Geology and Hydrogeology

4.1.1 Site Geology

The following geologic information is based on observations made during the 2018 Phase II ESA and the 2019 Remedial Investigation.

The Site contains HFM across the Site from directly below asphalt and subbase material to depths ranging from one to four feet bgs.

HFM is defined as material coming from anthropogenic sources re-worked to build a site to a defined grade. The HFM at the Site contains:

- Crushed Rock
- Sand
- Silt
- Clay
- Plastics
- Construction Debris
- Lumber
- Ash/Cinders
- Ceramics
- Bricks
- Metals

Underlying the HFM are native soils which are comprised of primarily moist brown silty clay.

4.1.2 Site Hydrogeology

The groundwater monitoring program consisted of five wells installed and screened at various depths during two separate sampling events. The monitoring wells consisted of the following:

- MW-1 installed in close proximity to the area of the Site where there is believed to have been USTs, or possibly still contains USTs. This was located right alongside the southeast sidewalk of Connecticut Street, in front of the D'Youville Education Center.
- MW-2 was installed in the area in which lead concentrations above Unrestricted Use were uncovered during the Phase II ESA. This well was located in the far north corner of the Site.
- MW-3 was installed directly in front of the garage doors for the Hart's Service Station which is the area believed to contain a drain pipe from the service station that may have flowed toward Connecticut Street into the existing sewer system.
- MW-4 was installed along West Avenue where is was believed there may have possibly been an UST in that area due to historical records of gasoline tanks in that area.
- MW-5 was installed near the southeast edge of the Site to get complete coverage of possible groundwater flow characteristics and uncover any contamination that may have migrated from the automobile related businesses located in close proximity.

Water levels were encountered at relatively shallow depths. Water levels throughout the Site ranged from four to eight feet bgs. Groundwater flow appeared to be flowing in a general northwest direction, toward Connecticut Street. **Figure 7** shows the groundwater contour map for the Site.

Groundwater flow influences include local drainage features, building foundations, subsurface geology, and/or other local Site features. **Tables 4-1 and 4-2** present the water level measurements at the two sampling events.

Table 4-1: April 2019 Groundwater Elevations

WELL ID	SURFACE ELEVATION (FEET)	WATER LEVEL (FEET)	GROUNDWATER ELEVATION (FEET)
MW-1	633.569	5.7	627.869
MW-2	632.698	5.3	627.398
MW-3	634.687	5.7	628.987
MW-4	635.743	6.4	629.343
MW-5	637.424	5.0	632.424

Table 4-2: May 2019 Groundwater Elevations

WELL ID	SURFACE ELEVATION (FEET)	WATER LEVEL (FEET)	GROUNDWATER ELEVATION (FEET)
MW-1	633.569	5.6	627.969
MW-2	632.698	5.4	627.298
MW-3	634.687	5.8	628.887
MW-4	635.743	7.6	628.143
MW-5	637.424	5.0	632.424

After review of NYSDEC data, it was determined that the Site is not underlain by any mapped principal or primary aquifers. Groundwater at and in the vicinity of the Site is not used for public drinking water supply. The City of Buffalo Water Board Regulations (21 NYCRR § 10085.3) states that every dwelling, house, or other building requiring the use of water must be supplied from the water mains of the water board.

4.2 Field Observations

Initial sampling provided evidence of lead contamination near the northern corner of the Site. Labeled as the "X Delineation", this area of the Site appeared to contain deeper areas of crushed stone. Based on previous reports and photographs, a portion of grid A1 was

remediated and backfilled to 12 to 15 feet when the tanks were removed from the gas station that was previously located on that Site.

The two other delineation areas were investigated to determine extents of petroleum contamination uncovered in previous sampling. These areas were labeled as "Y and Z Delineation" areas and were located along Connecticut Street, southwest of the lead delineation area.

Grid location C1 and multiple locations within the Y and Z delineation areas did exhibit evidence of petroleum contamination. Staining, odors, and elevated PID measurements were recorded in these areas. Grid location C1 and other locations contained petroleum-like odors with PID measurements of up to 4000 ppm. Depths of these petroleum impacts extended down 6 to 10 feet below ground surface.

Soil borings were advanced throughout the Site to at least 15 feet below ground surface and within the existing buildings. Except for grid location C1 and the delineation areas, no other petroleum impacts were observed on-site. Soil boring logs can be found in **Appendix A**.

4.3 Analytical Results

The following sections summarize and discuss the analytical results generated during the RI. Fill, native soil, deep native soil, and groundwater samples, along with samples from the lead and petroleum delineation areas, were collected for laboratory analysis to determine the magnitude and extent of potential contamination occurring in various media at the Site.

For discussion purposes, this data was compared with the Standards Criteria and Guidance values (SCGs) applicable to each medium sampled, and included:

- Soil/Fill: NYSDEC's 6NYCRR Part 375 Environmental Remediation Programs: Part 375-6.8: Unrestricted, Residential, Restricted Residential, Commercial and Industrial Use Soil Cleanup Objectives; and
- Groundwater: NYSDEC's June 1998 Ambient Water Quality Standards and Guidance Values, and Groundwater Effluent Limitations in the Technical and Operational Guidance Series (TOGS) 1.1.1.

Consistent with NYSDEC guidelines, the ASP Category B deliverables are not presented as appendices to the RI Report. The data has been transmitted electronically to the NYSDEC in a format consistent with the Electronic Data Deliverable (EDD) Manual. The associated Data Usability Summary Reports (DUSRs) will be included in **Appendix C**.

4.3.1 Surface Soil Results

Surface soil samples were collected from three locations throughout the Site. **Table 1** and **Figure 6** shows these surface soil results.

Results indicate many SVOCs, pesticides, and metals present in all three of the sample locations. Analytics show multiple SVOCs above Residential, Restricted Residential, and Industrial Use SCOs in B3, C1, and E1. Pesticides and metals, including lead and zinc, were all also present in these surface soil samples with results above Unrestricted Use SCOs.

4.3.2 On-site Subsurface Soil/Fill Sample Results

4.3.2.1 Fill Sample Results

A total of seven fill samples were collected across the Site, taken from the seven of the 18 on-site grid locations. The analytical results are summarized in **Table 2** and **Figure 6** shows the sampling locations and results.

Sample results indicate that subsurface HFM within the BCP boundary contain concentrations of VOCs, SVOCs, pesticides, and metals above multiple SCOs. VOCs and pesticides were detected above Unrestricted Use SCOs. SVOCs/PAHs were detected above Residential, Restricted Residential, and Industrial Use SCOs. Metals were detected above Unrestricted and Restricted Residential Use SCOs. Fill samples were collected underneath the two buildings that existed onsite (A2-00-1ft and B2-00-1ft). **Figure 6** shows the location of these samples and the outline of the former buildings. Mercury, lead and zinc concentrations exceeded Unrestricted Use SCOs in these samples. **Table 4-3 (below)** summarizes the analytes that exceeded the SCOs in the HFM, including the lowest and highest exceedance concentrations.

Table 4-3: Summary of Exceedances in HFM Grid Sampling

Analyte	Samples with Detections above SCOs					Low Concentration (ppm)	High Concentration (ppm)
	UR	RS	RR	CM	IN		
VOCs							
Ethylbenzene	1					1.9	1.9
Xylenes, Total	1					5.1	5.1
SVOCs / PAHs							
Benzo(a)anthracene			1			2.8	2.8
Benzo(a)pyrene					1	2.0	2.0
Benzo(b)fluoranthene			2			1.1	2.7
Benzo(k)fluoranthene		1				1.3	1.3
Chrysene		1				2.6	2.6
Dibenzo(a,h)anthracene			1			0.34	0.34
Indeno(1,2,3-cd)pyrene			2			0.72	1.3
Pesticides							
4,4'-DDD	1					0.016	0.016
4,4'-DDT	1					0.015	0.015
PCBs							
No PCBs were detected at concentrations above SCOs							
Herbicides							
No Herbicides were detected at concentrations above SCOs							
Metals							
Mercury	3					0.21	0.58
Copper	1					61.6	61.6
Lead	2		1			120	545
Zinc	4					112	386
Emerging Contaminants							
No Emerging Contaminants were detected at concentrations above SCOs							

Notes: UR = Unrestricted Use SCOs
RS = Residential Use SCOs
RR = Restricted Residential Use SCOs

CM = Commercial Use SCOs
IN = Industrial Use SCOs

4.3.2.2 Native Soil Sample Results

During the RI, native soil samples were collected from 18 grid locations as the final confirmatory samples. Soil samples were collected at the top of the native material, with two additional samples that were collected at one-foot intervals below the first native soil sample. A total of three of the 18 native soil sample grid locations exceeded Unrestricted Use SCOs. Two of the three sample locations collected that exceeded Unrestricted Use SCOs were due to metals such as lead and zinc. These locations were in grid locations A1 for zinc and B1 for zinc and lead. One native soil sample, C4, exceeded VOC Unrestricted Use SCOs for acetone. The analytical results are summarized in **Table 2**. **Figure 6** shows the sampling locations and results. **Table 4-4 (below)** summarizes the analytes that exceeded the SCOs in native soil, including the lowest and highest exceedance concentrations.

Table 4-4: Summary of Exceedances in Native Soil

Analyte	Samples with Detections above SCOs					Low Concentration (ppm)	High Concentration (ppm)
	UR	RS	RR	CM	IN		
VOCs							
Acetone	1					0.013	0.013
SVOCs/PAHs							
No PCBs were detected at concentrations above SCOs							
Pesticides							
No Pesticides were detected at concentrations above SCOs							
PCBs							
No PCBs were detected at concentrations above SCOs							
Herbicides							
No Herbicides were detected at concentrations above SCOs							
Metals							
Lead	2					191	191
Zinc	2					117	127
Emerging Contaminants							
No Emerging Contaminants were detected at concentrations above SCOs							

Notes: UR = Unrestricted Use SCOs
RS = Residential Use SCOs
RR = Restricted Residential Use SCOs
CM = Commercial Use SCOs
IN = Industrial Use SCOs

Additional Confirmatory Sampling

In addition to collecting samples at the top of the native material, two additional samples were collected at one-foot intervals below the first native soil sample. These deeper samples were submitted to the laboratory but held until the uppermost native soil sample was analyzed. If any analytes exceeded the respective SCOs, the next deeper sample was analyzed for only those compounds that exceeded the SCO. The process was repeated for

the second additional sample, if necessary. The intent of this sampling scheme was to identify the depth of remedial investigation and use the sampling results as the confirmatory sample results for the IRM.

A total of three of the 18 native soil samples from the grid locations collected exceeded Unrestricted Use SCOs. The results and locations are shown on **Figure 6**. The exceedances prompted analyzation of the next deeper confirmatory sample for the analytes showing exceedances. A total of four samples on hold were analyzed for several or a single analyte to determine the extent of impact in the native material based on the original native sample. Full native soil results can be found in **Table 2**.

In grid location A1, two additional samples at deeper depths were analyzed for zinc. A1-02 at a depth of 13 feet bgs exceeded Unrestricted Use SCOs, therefore the next sample was also analyzed. A1-02 at a depth of 14 feet bgs was analyzed for zinc and exceeded Unrestricted Use SCOs. There was evidence through previous investigations that this area was backfilled with crushed stone. Considering that zinc is a heavy metal that is not mobile in the subsurface, it is likely that residual stone backfill interfered with the native soil results at the 12, 13 and 14 feet bgs intervals.

In grid location B1, one additional sample was analyzed for lead and zinc due to the top native sample exceeding Unrestricted SCOs for those analytes. DUP-D from B1 at 1-2 feet bgs, also displayed a lead exceedance. B1-02 was analyzed at a depth of 3 feet bgs and both lead and zinc results were below Unrestricted SCOs.

In grid location C4, one additional sample was analyzed for acetone due to the top native sample exceeding Unrestricted SCOs for that analyte. C4-02 was analyzed at a depth of 4 feet bgs with decreasing acetone results above Unrestricted SCOs.

4.3.2.3 15-Foot Deep Native Soil Sample Results

Deep native soil samples were taken from a depth of 15 feet bgs in five of the 18 grid sampling borings completed within the Site bounds. The locations of the deep native samples were dispersed evenly across the Site and shown in **Figure 6**. Deep native sample results are presented in **Table 2**. In four of the five locations sampled, contaminant concentrations did not exceed the Unrestricted Use SCOs. In grid location A1 (within an area backfilled with crushed stone), zinc concentrations exceeded the Unrestricted Use SCO. Considering that zinc is a heavy metal that is not mobile in the subsurface, it is likely that residual stone backfill interfered with the native soil results at 15-feet in this location.

4.3.2.4 EB-1/X (Lead) Delineation

Initial sampling indicated elevated lead levels in the subsurface near the northern corner of the Site, as shown in **Figure 6**, which resulted in the need for delineation to determine the extents of contamination. Results indicated lead concentrations below Unrestricted Use SCOs for all but one of the sample locations. At a depth of 13 feet below ground surface, 2-X04 had lead levels of 266 mg/kg, exceeding the Unrestricted Use SCOs. Multiple VOCs were detected above Unrestricted Use SCOs in ten of the delineation locations. These VOCs included acetone, ethylbenzene, toluene, and xylenes. In one of the locations, 1-X01, at a depth of 9 feet below ground surface, multiple SVOCs were also detected. Three SVOC analytes in that location had levels exceeding Residential Use SCOs, and two of those three exceeding Restricted Residential Use SCOs. Full lead delineation results are summarized in **Table 3**.

4.3.2.5 EB-4 and EB-11/Y and Z (Petroleum) Delineation

Remedial investigation in this area focused on the determination of the extents of petroleum impacts through sampling. The area of this petroleum delineation is along Connecticut Street, directly in front of the D'Youville Education Center building, as shown in **Figure 6**. Soil borings and sampling indicated that the extent of contamination extends to approximately seven to 12 feet below ground surface. Both petroleum delineation areas showed evidence of petroleum impairment toward the northwest. With the addition of soil borings 3-Y04, 2-Y05, and 2-Z05, it appeared this contamination extended toward Connecticut Street. With PID measurements of up to 5,500 ppm in 3-Y04, it was determined that additional sampling beneath the sidewalk and across the street would need to take place. The only contamination which appeared in the analytical results was in soil boring 2-Z01 at a depth of 10 feet below ground surface and soil boring 2-Y05 at a depth of 12 feet below ground surface. Both locations appeared to show total xylenes to have concentrations slightly above Unrestricted Use SCOs, and 2-Y05 showed ethylbenzene concentrations also above Unrestricted Use SCOs. Full Petroleum delineation results can be found in **Table 4**.

4.3.2.6 Waste Characterization Results

A total of five soil samples collected within the HFM were analyzed for waste characterization parameters. **Table 5** presents waste characterization results. Based on these results, HFM located at the Site is considered non-hazardous.

4.3.3 Off-site Sampling Results

4.3.3.1 Off-site Soil

Ten additional soil boring locations were investigated to determine the possibility of petroleum contamination migrating toward Connecticut Street. The locations were drilled and sampled in the sidewalk at the furthest extent toward the southeast side of Connecticut Street that was permitted, as shown in **Figure 6**. Elevated PID measurements were found in five of the locations. PID measurements as high as 2600 ppm were recorded in soil boring locations SW-4, SW-6, and SW-7. Lower PID measurements were recorded in surrounding locations, SW-3 and SW-5, as high as 500 ppm. The locations of these elevated measurements were adjacent to where elevated PID measurements were found in the original on-site investigation. All elevated off-site PID measurements were recorded approximately five to ten feet bgs. Samples were collected from the soil interval where the most significant petroleum impacts were observed (staining, or highest PID measurements).

VOCs were detected at concentrations just above Unrestricted Use SCOs in only two of the ten off-site samples. These analytes included total xylenes, and 1,3,5-trimethlybenzene in locations SW-4 and SW-7. These contaminants do not seem to be an issue at their low levels and with the proposed Track 1 cleanup (as shown in Figure 4), all sources will be removed. No SVOCs were detected at levels exceeding Unrestricted Use SCOs. Full off-site subsurface soil results can be found in **Table 6**.

Tentatively Identified Compounds (TICs) were not detected at the boundaries of the off-site sidewalk investigation. Samples collected from SW-1, SW-2 and SW-10 contained no TICs. TICs were detected in SW-3 through SW-9 and ranged in total TIC concentration. The following were identified:

- Unknown Cyclohexane
- Pentane, 2,3-dimethyl-

- Unknown Benzene
- Benzene, 1-butenyl-, (E)-Unknown
- Cyclohexane
- Cyclohexane, 1,1,3-trimethyl-Unknown
- Hexane, 3-methyl-
- Heptane, 2,6-dimethyl-Pentane,
- 3-ethyl-2-methyl-
- Heptane
- Octane, 3-methyl-
- Aromatic
- Unknown Aromatic
- Unknown Alkane
- Unknown Alkane
- Unknown Cycloalkane
- Unknown Cyclopentane
- Unknown Naphthalene
- Unknown

The highest totals were detected in the sample collected from SW-4 (107,000 ug/kg) with the lowest total TICs were detected in SW-9 at 2.48 ug/kg.

4.3.3.2 Off-site Groundwater

Three temporary groundwater monitoring wells were drilled in the sidewalk to the northwest, across Connecticut Street, as shown in **Figure 7**, to examine if petroleum impacts found in the on-site investigation migrated via groundwater. MW-6, which was drilled to a depth of 16 feet below ground surface, was sampled and contained only SVOC (polycyclic aromatic hydrocarbons) concentrations exceeding New York State Groundwater TOGS Standards. The SVOC concentrations were likely due to the turbidity of the groundwater sample. No TICs were identified in the off-site groundwater sample.

Groundwater from this well showed no evidence of petroleum odors. The two other temporary wells, MW-7 and MW-8, were drilled to depths of 12 to 16 feet below ground surface. Neither of these two wells produced groundwater and were unable to be sampled. None of the soil borings advanced for the installation of temporary wells showed evidence of petroleum impacts. Full off-site groundwater results can be found in **Table 7**.

4.3.4 Groundwater (On-Site)

Groundwater sampling occurred in two stages. The first round of sampling occurred in April 2019 and the second occurred in May 2019. Five groundwater samples were collected in each round of sampling from the five installed monitoring wells at the Site.

4.3.4.1 First Round of Sampling – April 2019

On April 11, 2019, C&S collected groundwater samples from the five monitoring wells

located on 301 Connecticut Street. Samples were collected from these locations as described in the Remedial Investigation / Interim Remedial Work Plan. **Figure 5** shows the locations of the samples on the BCP Site. **Table 8** summarizes analytical results and compares the results to the Department of Environmental Conservation TOGS 1.1.1 standards for groundwater.

VOCs

VOCs were detected in three of the five wells including the DUP sampling which was collected from MW-4. Wells MW-1, MW-3, MW-4 and the DUP sample contained VOC levels above TOGS guidance levels. These VOCs included; 1,3,5-trimethylbenzene (mesitylene), acetone, benzene, ethylbenzene, n-propylbenzene, p/m-xylene, o-xylene, and toluene.

SVOCs

All five wells on the Site contained at least one SVOC above the TOGS groundwater guidance levels. MW-3 contained the highest number of SVOCs above TOGS groundwater guidance levels. With all five wells partially screened within the fill material zone, it was not unexpected to have minor detections of SVOCs. The anticipated remedy will remove all contaminated fill material from the Site.

Metals

Metals were detected above TOGS groundwater guidance levels in all five of the monitoring wells throughout the Site. Magnesium was detected above guidance levels in all five monitoring wells including the DUP sample. Other metals that were detected above the guidance levels included, manganese, iron, chromium, barium, and one detection of lead in MW-2.

PCBs

No PCBs were detected in any monitoring wells throughout the Site.

Pesticides

Only one well on Site had a detection of pesticides above TOGS groundwater guidance levels. MW-1 had a detection of Beta-BHC slightly above the guidance levels.

Emerging Contaminants

PFAS were sampled in two out of the five wells. Laboratory data generated from the first round of sampling was compared to the USEPA 70 parts per trillion (ppt) guidance value for total PFOA and PFOS, combined. Results were also compared against NYSDEC guidance values of 10 ppt for each PFOA and PFOS, in addition to NYSDEC guidance value of 500 ppt for all PFAS compounds, combined. PFAS compounds were detected in both monitoring wells sampled with concentrations of a total PFAS analyte ranging from 0.502 parts per trillion (ng/L) to 7.19 ng/L. The highest concentration was detected from MW-1. All PFAS results fall below the guidance values set by USEPA and NYSDEC. In both of the wells 1,4-Dioxane was not detected.

4.3.4.2 Second Round of Sampling – May 2019

On May 21, 2019, C&S collected a second round of groundwater samples from the five monitoring wells located on 301 Connecticut Street. Samples were collected from these locations as described in the Remedial Investigation / Interim Remedial Work Plan. **Figure 7** shows the locations of the samples on the BCP Site. No emerging contaminants were tested for in the second round of groundwater sampling. **Table 8** summarizes the analytical

results and compares the results to the Department of Environmental Conservation TOGS 1.1.1 standards for groundwater.

VOCs

VOCs were detected in all five wells including the DUP sampling which was collected from MW-4. All VOC levels decreased in concentration since the previous sampling event. Only Well MW-1, contained VOC levels above TOGS guidance levels. These VOCs included; 1,3,5-trimethylbenzene (mesitylene), benzene, ethylbenzene, p/m-xylene, o-xylene, and toluene.

SVOCs

SVOCs were detected in four of the five wells on the Site. All four wells, including the DUP sample contained at least one SVOC above the TOGS groundwater guidance levels. MW-1 and MW-3 contained the highest number of SVOCs above TOGS groundwater guidance levels. Well MW-4 detected no concentrations for SVOCs for any analyte sampled. With all five wells partially screened within the fill material zone, it was not unexpected to have turbidity, leading to minor detections of SVOCs. The anticipated remedy will remove all contaminated fill material from the Site.

Metals

Metals were detected above TOGS groundwater guidance levels in all five of the monitoring wells throughout the Site. Magnesium was detected above guidance levels in all five monitoring wells including the DUP sample. Other metals that were detected above the guidance levels included, manganese, iron, barium, and one detection of thallium in MW-2. Majority if metal concentrations appeared to decrease in the second round of groundwater sampling.

PCB

No PCBs were detected in any monitoring wells throughout the Site.

Pesticides

Only one well on Site had a detection of pesticides above TOGS groundwater guidance levels. MW-1 had a detection of beta-BHC slightly above the guidance levels. Beta-BHC was also the only pesticide detected in the first round of groundwater sampling. The concentration remained relatively consistent.

Emerging Contaminants

No PFAS were sampled in the second round of groundwater sampling. PFAS were previously detected below guidance values in the first round of groundwater sampling in both monitoring wells that were sampled.

4.3.4.3 Post Remediation Groundwater Sampling

Post remedial action groundwater sampling was conducted on-site in two rounds. Samples were collected from three groundwater monitoring wells located in the northeast corner of the site, within the cells which were found to have the greatest contamination during the RI. The first round of groundwater sampling occurred on February 12, 2020 and the second round occurred on March 9, 2020. Samples were analyzed for VOCs + Tentatively Identified Compounds (TICs), SVOCs + TICs, and Total Lead. Complete results can be found in **Table 10.**

During the first round of sampling, multiple SVOCs were detected in all three of the wells above TOGS standards. These exceedances were not detected in the second round of post

remediation groundwater sampling. One VOC compound, methyl tert butyl ether, was found in well MW-2R in both rounds of sampling. No other VOC exceedances were detected in either round of sampling. No lead concentrations were detected above TOGS standards in either rounds of sampling.

Because the HFM material has been removed from the Site, and the City of Buffalo Water Board Regulations states that every dwelling, house, or other building requiring the use of water must be supplied from the water mains of the water board, the potential exposure to any possible remaining groundwater contamination is unlikely.

5 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

A QHHEA was completed for the Site and is presented in this section. The QHHEA was conducted in accordance with New York Environmental Conservation Law (ECL) §27-1415(2)(b) and Section 3.3(c)(4) and Appendix 3B of DER-10. As presented in DER-10, the purpose of the QHHEA is to evaluate and document the potential exposure routes and pathways, and to identify and characterize the potentially exposed populations currently and under reasonably anticipated future use of the Site. Environmental media assessed in the RI for potential impacts from historical Site operations and practices and potential human exposure include soil, groundwater, and soil vapor.

The Site is situated on a partial city block which contains an approximately 75 spot parking lot, Hart's Service Station, and the D'Youville Education Center building. Access to the Site is made possible through the parking area entrance off West Avenue or the parking area along Connecticut Street for Hart's Service Station and the D'Youville Education Center.

The anticipated post remediation use of the Site is a multistory, mixed-use Health Professions Hub for D'Youville College students that will include a Community Clinic, a Workforce Development Center, a Virtual Simulation Training Center, and a neighborhood pharmacy.

5.1 Human Health Constituents of Potential Concern

Constituents that were detected in each medium are designated as constituents of potential concern (COPCs) for evaluation of human health exposures if they exceed screening criteria that correspond with current and probable future land use. Given the reasonably anticipated future use of the Site for mixed-use, as well as current and likely future zoning, the soil and groundwater data have been evaluated against the following standards/guidance values:

- Unrestricted Use SCOs
- NYS TOGS

5.1.1 Sub-surface Soil

Historic Fill Material

A total of seven subsurface soil samples were taken from within the HFM during this RI. Samples were collected from on-site soil borings which were evenly dispersed throughout the Site. **Tables 2** provide analytical results compared to SCOs. **Figure 6** shows the sampling location and results. **Table 4-3** (located above in **Section 4 – Findings**) summarizes the analytes that exceeded the SCOs in on-site HFM, including the lowest and highest exceedance concentrations. The following table identifies the contaminants detected in HFM above standards.

Table 5-1: Detected Contaminants in HFM

VOC	SVOC	Pesticides	PCBs	Herbicides	Metals	Emerging Contaminants
Ethylbenzene Xylenes, Total	Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene	4,4'-DDD 4,4'-DDT	None	None	Mercury Copper Lead Zinc	None

	Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene					

HFM is present at the Site at depths ranging from approximately one to four feet bgs in most areas. Contaminated HFM extends horizontally throughout the entire Site.

The variation in analyte concentrations across the Site indicates that the source of contamination in fill soil samples is the variable HFM and no discrete source is located on-site or off-site. Contaminant sources are likely related to the demolition of buildings and homes that were present within the Site boundary prior to D'Youville College purchasing the Site.

Native Soil

Contaminant concentrations in the upper extent of native soil were largely below the Unrestricted Use SCOs. However, VOCs and metals were present at concentrations slightly above the Unrestricted Use SCOs in a limited number of samples collected from the shallowest native soil, due to the impacts from the overlying HFM. In areas with slightly elevated VOC and metals concentrations in the native material, the underlying samples were collected until analyte concentrations were below the Unrestricted Use SCOs. The sampling demonstrated that the impacts from the overlying fill were limited to the top one foot or less of native soil in most areas. Only A1 revealed deeper impacts of zinc down to 15 feet bgs. Considering that zinc is a heavy metal that is not mobile in the subsurface, it is likely that residual stone backfill in that area interfered with the native soil results at the 12, 13 and 14 feet bgs intervals, as well as the deep native sample at 15 feet bgs.

Lead Delineation Area

Lead concentrations were found to be below Unrestricted Use SCOs in all but one location within the lead delineation area. This was at a depth of 13 feet bgs at location 2-X04. Multiple VOCs had concentrations above Unrestricted Use SCOs throughout this area and extended from nine to fifteen feet bgs. One location, 1-X01, at nine feet bgs contained multiple SVOC exceedances.

The previously known lead contamination can be linked to the fueling station that once occupied this property. This location appeared to have been backfilled with crushed stone which could have contributed to the migration of the lead contamination extending down to thirteen feet bgs. The VOC and SVOC exceedances can also be directly connected to the fueling station and different waste oils that may have been disposed of in an improper manner on the Site in the past. There is evidence of USTs occupying the area prior to D'Youville College purchasing the property which had the possibility of leaking and causing much of this contamination.

Petroleum Delineation Area

Samples that were taken within this area displayed results consistent with petroleum contamination stemming from a fueling station and USTs being located on Site. VOCs, including ethylbenzene and total xylenes, were found in two locations at depths ranging from seven to twelve feet bgs. These compounds are typical products of petroleum contamination within the subsurface. The possibility of there being USTs beneath the ground surface presently of in the past is high and would be the source of this contamination.

Due to much of the Site being underlain by dense silty clay, it is not believed that the

petroleum contamination migrated too far horizontally throughout the Site.

5.1.2 Groundwater

The analytical results for the groundwater samples are summarized in **Table 8** and the locations and results of sampling at the monitoring wells are depicted on **Figure 7**. Two rounds of groundwater sampling were conducted for this remedial investigation.

Groundwater levels in all the wells were fairly consistent throughout the Site. Measurement to depth of water in each well were roughly from five to seven feet bgs in every well. The groundwater levels in all of the wells were at depths within the HFM zone. The following should be understood related to the VOC, SVOC, PCB, pesticide, metal, and emerging contaminant concentrations in groundwater:

- Exposure and migration of groundwater is significantly limited do to the extent and volume of the silty clay zone embedded within several feet of dense clay.
- The VOCs that were detected exceeding NYS TOGS standards in the first round of sampling in wells MW-1, MW-3, MW-4, and including the DUP sampling which was collected from MW-4, all fell to undetected outside of MW-1 in the second round of sampling. Source of these marginal exceedances can be contributed to the fill material within the subsurface.
- In the first round of groundwater sampling, SVOCs were detected in all five wells. The second round exhibited the same types of results, outside of MW-4, which contained no exceedances in the second round of sampling. MW-1 and MW-3 contained the highest number of SVOCs above TOGS groundwater guidance levels. With all five wells partially screened within the fill material zone, it was not unexpected to have turbidity, leading to minor detections of SVOCs. The anticipated remedy will remove all contaminated fill material from the Site.
- Metals were detected above TOGS groundwater guidance levels in all five of the monitoring wells in both rounds of sampling throughout the Site. Metals that were detected above the guidance levels included; lead, magnesium, manganese, iron, barium, and one detection of thallium in MW-2. Groundwater in Western New York is commonly referred to as “hard water” because it tends to have high levels of iron, sodium, magnesium, etc. The source of these metals can be contributed to the HFM in the subsurface of the Site. Metal exceedances would be expected to greatly decrease after remediation of the Site is complete.
- No PCBs were detected in any monitoring wells in either round of sampling throughout the Site.
- One monitoring well, MW-1, detected the pesticide Beta-BHC in both rounds of sampling. The source of this could be the contaminated soil and HFM beneath the Site.
- Two wells, MW-1 and MW-5 were sampled for emerging contaminants in the first round of groundwater sampling. Individual PFOA/PFOS analytes ranged in values from 0.219 parts per trillion (ppt) to 7.19 ppt. No analytes were found to exceed the USEPA 70 ppt guidance value for total PFOA/PFAS or NYSDEC guidance values for PFOA or PFAS individually at 10 ppt. 1,4-

Dioxane was undetected. PFA detections in subsurface soils are primarily within the fill material on-site and are below guidance values

- All potable water used in the City of Buffalo is provided by a publically-owned treatment facility. Groundwater at and in the vicinity of the Site is not used for public drinking water supply. The City of Buffalo Water Board Regulations states that every dwelling, house, or other building requiring the use of water must be supplied from the water mains of the water board. Therefore, no other regulatory easement or institutional controls are needed to prohibit the potable use of groundwater at the Site.

The probable cause of the various exceedances of VOCs, SVOCs, and metals is the HFM and native soil contamination on-site. These exceedances have occurred in wells screened within the HFM. Additionally, the higher VOC and SVOC exceedances in the first round of sampling could have been attributed to high turbidity levels, as VOC and SVOC analytical results all decreased in the second round. The remaining minimal metal exceedances are considered background for this region. It is unlikely that these marginal detections represent a wider area of contamination. The planned excavation on-site will remove all HFM and contaminated native soils within the property boundaries.

5.1.3 Soil Vapor

Due to the VOC and SVOC detections in the groundwater, the New York State Department of Health (NYSDOH) and the NYSDEC will require a Soil Vapor Intrusion (SVI) investigation once the building is enclosed. The SVI investigation will be conducted in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006), with updates. The scope of the SVI is will consist of five sub-slab air samples and five indoor air samples spaced throughout the future building. The five locations chosen through the SVI investigation will include one sub-slab air sample and one indoor air sample in each location. One outdoor ambient air sample will also be collected. All samples will be collected concurrently.

5.2 Human Health COPC Migration Pathways

The probable fate and transport of contaminants detected on the Site is a function of the properties of the individual contaminants and available pathways for the contaminants to migrate. The Site is currently used as a parking lot and contains a D'Youville Education building and a vacant automobile service center. The Site is the location of the planned construction of multistory, mixed-use Health Professions Hub for D'Youville College students that will include a Community Clinic, a Workforce Development Center, a Virtual Simulation Training Center, and a neighborhood pharmacy. The degree to which, as well as the route by which, contaminants migrate is dependent on the physical characteristics of the Site and the type and distribution of contaminants. The following sections discuss the probable fate and transport of contaminants in the different types of media at the Site.

5.2.1 Subsurface Soil

Contaminants of concern associated with the subsurface soil/HFM include VOCs, SVOCs, and metals, which were present due to the nature of the urban environment. Contaminants in the subsurface soil can move deeper into the subsurface depending on whether or not they sorb to particles or dissolve in water. Natural attenuation, due to processes such as biodegradation or hydrolysis can break down a parent chemical into other forms.

The SVOCs/PAHs detected are characterized by low water solubilities and, therefore, have a tendency to adsorb onto soil particles. Because of their low vapor pressures, compounds

with five or more aromatic rings, which include a majority of the detected PAHs, will exist mainly adsorbed to airborne particulate matter. Those with four or fewer rings, such as benzo(a)anthracene, will occur both in the vapor phase and adsorbed to particles. The detected compounds have relatively low vapor pressures and are expected to remain in a solid or liquid state and undergo degradation via naturally occurring microbes. Due to the low solubility, these contaminants are not expected to impact groundwater quality or migrate substantially further into the subsurface.

Heavy metals, such as lead are non-biodegradable pollutants that are generally transported through anthropogenic activities. In contaminated soils, they tend to persist for many years in the surface layers of soil. In aquatic systems, heavy metals may become blocked as sinks in bottom sediments, where they may remain for many years. Metals can be remobilized in water if the pH falls, increasing heavy metals as solubility increases. Due to the low solubility, these contaminants are not expected to impact groundwater quality or migrate substantially into the subsurface. While lead was present in the groundwater, it was found within one well which was screened within the HFM. Groundwater analysis also detected naturally occurring metals such as iron, magnesium, and manganese. The metals detected at concentrations above the groundwater standards and guidance values appear to be representative of local groundwater quality. Metals do not readily break down and will persist in the environment.

5.2.2 Groundwater

Site groundwater contains concentrations of organic and inorganic constituents above NYS TOGS

. Only two monitoring wells contain petroleum-related VOCs associated with pervious operations at the Site, it is likely that there is not a persistent plume on the Site. In addition, no VOCs were identified in the off-site groundwater sample. If present, volatile groundwater COPCs will migrate downgradient with groundwater flow, while hydrophobic COPC will adhere to organic ligands and fine particles within the saturated soil matrix. The general direction of shallow groundwater flow is to the north, with components potentially flowing to the northwest. The groundwater does not discharge a waterway or other waterway sensitive downgradient receptors where direct human contact could occur.

Transport of Site-related VOCs in groundwater can be affected by various processes that result in reduced concentrations, including volatilization, diffusion, sorption, and degradation. Inorganic constituents in groundwater are potentially subject to biologically and physically induced chemical reactions (e.g., oxidation/reduction), which can markedly affect their mobility.

5.2.3 Soil Vapor

Volatile compounds in soil and groundwater have the potential to migrate into the interstitial air spaces within soil. Where this occurs below future buildings or structures, VOCs originating from soil and groundwater could enter indoor air of an occupiable space and subsequently be inhaled. The potential for vapor intrusion to future buildings is governed by several factors, including target building location, COPC concentration, pressure differentials, building properties, presence and width of cracks in a building's foundation, and vadose zone soil temperature. Attenuation processes described above for groundwater can also mitigate soil vapor concentrations and potential indoor air concentrations when soil vapors discharge to a building.

Depending on the location of the future buildings, the potential presence of VOCs in Site groundwater and detection of odors and elevated PID readings in soil suggests the potential

that COPC VOCs could migrate as vapors in soil and into the indoor air of a future building. Because mixed use structures will be constructed on the Site property under the current redevelopment plan, the potential for soil vapor intrusion in the future building will be further evaluated prior to occupancy.

The potential for off-site migration of soil vapor to adjacent residences to the north of the Site was considered; however, predicting the extent of soil vapor contamination from soil or groundwater contamination, as well as the potential for human exposure from soil vapor intrusion into buildings, is complicated by factors that can affect soil vapor migration and intrusion. Soil vapor intrusion will be further evaluated prior to on-site occupancy.

5.3 Potentially Exposed Receptors and Exposure Pathways

This section identifies the potential exposure pathways through which there may be exposure to Site-related human health COPCs. An exposure pathway analysis describes the transport of a COPC from the affected medium to the exposed receptor. An exposure pathway links the potential sources, exposure media, and receptor populations to identify potential pathways of human exposure. As defined in DER-10 (Appendix 3B), an exposure pathway has five elements:

- A source and mechanism of COPC release to the environment
- An environmental transport medium (e.g., soil) for the COPC and/or mechanism of transfer from one medium to another
- A point of contact with the impacted environmental medium (exposure point)
- An exposure route at the contact point (i.e., ingestion, inhalation, or dermal contact)
- A characterization of the receptor populations who may be exposed.

The exposure pathways considered for evaluation in this QHHEA include direct contact with surface and/or subsurface soils via ingestion, dermal contact, and inhalation of ambient vapors and fugitive dust. Direct exposure (dermal contact and incidental ingestion) to overburden groundwater is also a potentially complete exposure pathway. Potential indirect exposure via inhalation of groundwater-derived vapors in indoor air is also considered a complete pathway.

Public water is available in the Site area; therefore, groundwater is not considered a current or future source of potable water. All potable water used in the City of Buffalo is provided by a publically-owned treatment facility. Groundwater at and in the vicinity of the Site is not used for public drinking water supply. The City of Buffalo Water Board Regulations states that every dwelling, house, or other building requiring the use of water must be supplied from the water mains of the water board..

The potential exposure pathways associated with current and reasonably anticipated future receptors are discussed in the following section. As a conservative measure, these pathways and receptors may also apply to some of the properties adjoining the Site.

5.3.1 Receptors and Exposure Pathways

The exposure pathways and receptors considered in the QHHEA are as follows:

- Current/future utility worker: Subsurface utilities at the Site may require periodic inspection, servicing, and maintenance both currently and in the foreseeable future. The utility worker is presumed to be of adult age (>18 years old) and may be exposed to Site-related COPCs in surface and subsurface soil through incidental

ingestion, dermal contact, and soil dust inhalation. Utility workers could also inhale groundwater-derived soil vapors while engaging in subsurface work activities.

- Future construction worker: A construction worker is selected as a receptor for this QHHEA due to the potential for excavation and/or construction to occur across the Site in the future. The construction worker is an adult (>18 years old), and may be exposed to Site-related surface and subsurface soil COPCs via incidental ingestion, dermal contact, and incidental inhalation of groundwater-derived ambient vapors and fugitive dust. These workers may also be directly exposed to groundwater COPCs via dermal contact and incidental ingestion with affected groundwater.
- Future students and medical patients: Under a future use scenario, child and adult exposure routes include incidental ingestion of and dermal contact with surface soil, inhalation of fugitive dust, and inhalation of groundwater-derived VOC vapors in the interior space of residential buildings. As discussed previously, the Site and surrounding area is supplied potable water from an off-Site water source, and direct exposure to groundwater is unlikely. The potential for soil vapor intrusion in the on-site building will be further evaluated prior to occupancy.

5.3.2 Surface / Subsurface Soil

Under the current use, persons living and working in the vicinity of the project Site and/or persons trespassing on the Site are relatively unlikely to be exposed to the contaminants of concern because the majority Site is paved, outside of some landscaped areas along Connecticut Avenue and West Avenue.

The presence of elevated concentrations of VOCs, SVOCs, and metals in surface soil and subsurface fill is not interpreted to represent a human or environmental exposure risk because no complete exposure pathways were identified under the current use scenario for the Site. This is a function of the subsurface disposition of the contamination, which effectively minimizes the potential for the incidental ingestion of, or dermal contact with the contaminated media. These factors also reduce the potential for the emission of vapors and particulates that could pose an exposure risk via inhalation. This applies to persons living, working and traveling through the area surrounding the Site, as well as persons visiting, working or trespassing on the Site.

During excavation of the contaminated soil/HFM in connection with Site redevelopment activities, environmental receptors, construction workers, Site visitors and persons living, working and traveling through the project Site could be exposed to the VOCs, SVOCs, and metals in the HFM during excavation of the contaminated soil. Potential exposure routes for these receptors include inhalation of contaminated dust and incidental ingestion of, and/or dermal contact with the contaminated surface soil. However, the use of appropriate personal protective equipment, dust suppression techniques and personal/air monitoring, and the development and implementation of a Health and Safety Plan (provided in the RI/IRM Work Plan) would minimize the risk of exposure during this stage of the project. In addition to the Health and Safety Plan, a Community Air Monitoring Plan (CAMP) was implemented during remedial activities for the protection of the surrounding community.

No complete exposure pathways to the chemical contaminants in the surface or subsurface soil have been identified in connection with the post-redevelopment period, assuming that the contaminated soil and HFMs have been removed.

5.3.3 Groundwater

Groundwater at and in the vicinity of the Site is not used for public drinking water supply.

The City of Buffalo Water Board Regulations (21 NYCRR § 10085.3) states that every dwelling, house, or other building requiring the use of water must be supplied from the water mains of the water board. Therefore, no human exposure via ingestion of contaminated groundwater is likely.

5.3.4 Soil Vapor

As a result of the post-remediation groundwater sampling, identified one VOC compound, methyl tert butyl ether, and multiple SVOCs in the Site groundwater at a location adjacent to the proposed buildings. As discussed in **Section 3.3** above, the potential for soil vapor intrusion in the on-site building will be further evaluated prior to occupancy.

The potential for off-site migration of soil vapor to adjacent residences to the north of the Site was considered

A summary of the environmental media, exposure pathways, and potential human receptors relevant to the QHHEA are presented in **Table 5-2** below.

Table 5-2: Human Exposure Pathway Analysis

Environmental Media & Exposure Route	Human Exposure Assessment
Direct contact with surface soils(and incidental ingestion)	• People are not coming into contact because contaminated surface soils are covered with pavement.
Direct contact with subsurface soils(and incidental ingestion)	• People can come into contact if they complete ground- intrusive work at the site.
Ingestion of groundwater	• Contaminated groundwater is not being used for drinking water, as the area is served by the public water supply.
Direct contact with groundwater	• People can come into contact if they complete ground- intrusive work at the site.
Inhalation of air(exposures related to soil vapor intrusion)	• A ventilation system has been installed on the on-site building to prevent the indoor air quality from being affected by the contamination. • A soil vapor intrusion evaluation will be completed.

5.4 QHHEA Summary

Under current conditions, potential human and are minimal. Almost all of the Site is currently covered in asphalt paving or structures, preventing disturbance of contaminated soils below the pavement and concrete foundations. Exposure risks to persons working on the Site will increase during remedial work on-site. Exposure via inhalation of airborne particles cause the largest threat to workers on the Site and pedestrians in the surrounding area. The potential for soil vapor intrusion in the on-site building will be further evaluated prior to occupancy.

6 FISH/WILDLIFE RESOURCES EXPOSURE ASSESSMENT

The Site is used as a paved parking area with currently vacant structures in an urban area which limited wildlife exposure.

The Site and surrounding area within one-quarter mile of the Site consists of urban land that is not proximate to a surface water body, wetland or other ecologically significant area. A review of information concerning endangered and threatened species in Erie County, available via the NYSDEC Environmental Resource Mapper indicated that no threatened or endangered species were identified around the Site according to the State's data bases.

The Site is not located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 or the ECL and 6 NYCRR 617, nor are any state or federally designated wetlands located on or adjacent to the project Site.

Based upon the information summarized above, there are no ecological resources present on or in the vicinity of the Site and, consequently, no fish and wildlife resource impacts have been identified.

There was evidence of impacted groundwater, however groundwater is not used for drinking water and therefore there is no exposure risk through ingestion. In addition, the depth of the groundwater (greater than 4 feet below grade) reasonably precludes human contact.

7 ALTERNATIVES ANALYSIS

7.1 Objectives

The objectives of this portion of the document, the Alternatives Analysis Report (AAR), are to evaluate remedial alternatives to address the contamination presented above and select remedial actions to be implemented. As defined in NYSDEC DER-10 (Section 4.0), remedial alternatives will be evaluated based on the following criteria:

a. Overall Protection of Public Health and the Environment: This criterion evaluates exposure and residual risks to human health and the environment during or subsequent to implementation of the alternative.

b. Compliance with SCGs: This criterion evaluates whether the remedial alternative will ultimately result in compliance with SCGs, to the extent practicable.

c. Long-Term Effectiveness and Permanence: This criterion evaluates if the remedy is effective in the long-term after implementation (e.g., potential rebound). In the event that residual impacts will remain as part of the alternative, then the risks and adequacy/reliability of the controls are also evaluated.

d. Reduction of Toxicity, Mobility, or Volume with Treatment: This criterion evaluates the reduction of contaminant toxicity, mobility or volume as a result of the remedial alternative. In addition, the reversibility of the contaminant destruction or treatment is evaluated.

e. Short-Term Effectives: This criterion evaluates if the remedial alternative protects the community, workers and the environment during implementation.

f. Implementability: This criterion evaluates the remedial alternative based on its suitability, implementability at the specific site, and availability of services and materials that will be required.

g. Community Acceptance: This criterion takes into account concerns of the community regarding the proposed remedy. Any public comments and overall public perception are addressed as part of the criterion.

h. Land Use: This criterion evaluates the proposed remedial approach against the current, intended, and reasonably anticipated future use of the land and its surroundings.

7.2 Applicable Standards, Criteria, Guidance

The remedial alternatives were developed in consideration of the following Standards, Criteria, and Guidance (SCG):

7.2.1 Soil

- New York Codes, Rules, and regulations, Title 6 (6 NYCRR), Chapter IV, Subpart 375-6: *Remedial Program Soil Cleanup Objectives*, and *DEC CP-51 Soil Cleanup Guidance*, issued October 21, 2010.

7.2.2 Groundwater

- NYSDEC Technical and Operational Guidance Series (TOGS), *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, June 1998.
- 6 NYCRR Part 703, *Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations*.

7.2.3 Soil Vapor

- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006, with updates.
- NYSDOH Trichloroethene (TCE) in Indoor Air and Outdoor Air, August 2015 Fact Sheet.

7.2.4 Waste Characterization Analysis

- NYSDEC 6 NYCRR Part 371, *Identification and Listing of Hazardous Wastes*.

7.2.5 Alternatives Analysis Guidelines:

- NYSDEC DER-10, *Technical Guidance for Site Investigation and Remediation*, May 2010.
- NYSDEC DER-31, *Green Remediation*, January 20, 2011

7.3 Remedial Action Objectives

Remedial Action Objectives (RAOs) are medium-specific objectives for the protection of public health and the environment and are developed based on contaminant-specific standards, criteria, and guidance (SCGs) established by NYSDEC and/or New York State Department of Health (NYSDOH).

Soil RAOs

The RAOs for soil used in this AAR are:

- RAOs for Public Health Protection
    - Prevent ingestion/direct contact with contaminated soil;
    - Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil;
    - Meet the NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives; and
    - Reduce the toxicity, mobility, and volume of contaminants at the Site.
- RAOs for Environmental Protection
    - Prevent migration of contaminants that would result in groundwater or surface water contamination; and
    - Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

Groundwater RAOs

The RAOs for groundwater used in this AAR are:

- RAOs for Public Health Protection
    - Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards; and
    - Prevent contact with, or inhalation of, volatiles from contaminated groundwater.
- RAOs for Environmental Protection

- Restore groundwater aquifer to pre-disposal / pre-release conditions, to the extent practicable;
- Prevent the discharge of contaminants to surface water; and
- Remove the source of ground or surface water contamination.

Soil Vapor RAOs

- RAOs for Public Health Protection
  - Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a Site.
  - Prevent contact with, or inhalation of, volatiles due to soil vapor intrusion.

7.4 Development of Alternatives

This section identifies potential remedial alternatives being considered to address the Site. Per DER-10 4.2(a)(i), each alternative considered must be protective of human health and the environment and conform to officially promulgated SCGs. These two criteria are considered threshold criteria. The remedial alternatives evaluated are summarized below:

7.4.1 No Further Action

This remediation was completed under an IRM. All fill at the Site and any contaminated layers of native soils was excavated and disposed of at appropriately permitted off-site waste disposal facilities. The volume of removed fill/contaminated soil is 16,423 tons. Cut and fill depths associated with the planned Track 1 cleanup are shown in **Figure 8**. The final excavation depths are presented in **Figure 9.**

7.5 Detailed Evaluation of Alternatives

The following sections include an evaluation of the alternatives presented in the previous section.

7.5.1 No Further Action

Description

All of the fill and all layers of contaminated native soil was excavated and disposed of off-site in accordance with applicable regulations. The need for the removal of the entire volume of fill and varying depths of native soils on-site is based on the RI results, which indicate that the HFM and some upper layers of native soils contain contaminants at concentrations above the Unrestricted Use SCOs.

Assessment

Overall Protection of Human Health and the Environment

This alternative would be protective of human health and the environment. All fill with contaminant concentrations above RAOs on-site was removed and disposed of off-site.

Compliance with Standards, Criteria and Guidance (SCGs)

The alternative complies with the SCGs, as all on-site fill with contaminant concentrations above the SCOs was removed and disposed of off-site.

Short-term Impacts and Effectiveness

This alternative increases the short-term risks for the community and the workers implementing the alternative (i.e., through the disturbance of impacted fill), because the Site has undergone complete removal of contaminated material. However, these risks were minimized through the implementation of appropriate fill/soil handling procedures, air monitoring, and dust suppression techniques. Furthermore, this alternative will be effective in the long-term. A Community Air Monitoring Plan (CAMP) was implemented during remedial activities for the protection of offsite receptors.

Long-term Effectiveness and Permanence

The no further action will be a permanent remedy to address the contaminant concentrations in the fill and petroleum/lead contamination in the native soil throughout the Site. It will have a positive impact on groundwater concentrations for VOCs, SVOCs, and metals, especially in the long-term due to complete source removal.

Reduction of Toxicity, Mobility and Volume

This alternative resulted in the reduction of the toxicity, mobility, and volume of contaminants in the fill.

Implementability

This alternative was implementable using existing construction methods and equipment. The expected duration was less than one construction season. This alternative resulted in a Site suitable for redevelopment for any use.

Community Acceptance

Based on the findings of the studies performed to date, no further action was acceptable to the community.

Land Use

This alternative will allow for unrestricted use of the parcel as a Medical HUB for D'Youville College, which conforms to the City of Buffalo's development plans for the area. This alternative leaves open the possibility for different uses of the Site in the future without the need for further remediation. Therefore, this alternative will allow for the highest and best use of the land.

As a result of the post-remediation groundwater sampling, identified one VOC compound, methyl tert butyl ether, and multiple SVOCs in the Site groundwater at a location adjacent to the proposed buildings. As discussed in **Section 3.3** above, the potential for soil vapor intrusion in the on-site building will be further evaluated prior to occupancy. Based on the results of the SVI, further mitigation of indoor air impacts in the on-site building may be required.

7.6 Recommended Remedial Alternative

Based on the alternative analysis evaluation and the IRM described in **Section 7** below, the recommended remedy for the Site is no further action. The IRM is fully protective of public health and the environment. This remedy is protective of human health and the environment, and was implemented in one construction season The IRM included the following:

- The excavation and off-site disposal of all fill and all layers of contaminated native soils. **Figure 8** depicts a Track 1 Cleanup Plan with the required excavation depths based on analytical results in each grid on the property;
- The placement of backfill consisting of clean fill and/or building materials (stone, concrete); and
- No environmental easements or continuing monitoring programs such as an SMP would be required.

8 INTERIM REMEDIAL MEASURES

Interim Remedial Measures were implemented to remove contaminated fill/soil material across the Site. An IRM excavation of all material exceeding applicable SCOs was implemented to prevent exposure to contaminated fill and soil material. As part of the IRMs, the following were identified as steps to remediate the soil at the Site:

- Excavation and disposal of historic fill material and impacted native soil exceeding Unrestricted Use SCOs from across the entire Site.

Soil excavation began on December 12, 2019. Excavation depths were determined from native soil sampling completed during the Remedial Investigation. Soil sampling followed a grid system on the Site. The Site was divided into eighteen, 50 by 50 foot grids, with a boring located in the middle of each grid. Native soil in the 18 on-site grid locations was visually assessed and sampled. To assess the impact of fill on the underlying native soil, a soil sample was collected from the top one foot of native material in each location. Two additional native soil samples were collected at one foot intervals below this first sample and held pending the results of the previous sample. The samples held by the laboratory immediately underneath those samples with contraventions of SCOs were analyzed for those specific analytes exceeding the SCOs. This process was repeated until the concentrations met the necessary SCOs for the Site. This sampling approach served as confirmatory soil sampling to determine final excavation depth and show compliance with Unrestricted Use Soil Cleanup Objectives. **Table 9** provides confirmatory sample results from the bottom of each grid.

In addition to analytical results, in field observation served as the final approval method to ensure all impacted fill/soil media was removed. Excavation efforts were monitored by C&S to ensure the predetermined excavation depths visually corresponded to clean material across each grid. **Figure 9** presents the final excavation elevations from each grid.

During the IRM excavation work, three underground storage tanks (USTs) were discovered at the site. Two of the tanks were approximately 500 gallons in size, while the third was approximately 250 gallons in size. All three of the tanks were discovered within grid Cell C1. The tanks were believed to contain gasoline, however no product was found within USTs. Excavations in this areas was completed to the excavation depths determined from native soil sampling. Additional sampling was then completed below the tank locations to ensure native soil was not impacted by leaking petroleum products.

Excavated fill was direct-loaded onto trucks for off-site disposal. Good housekeeping practices were followed during excavation activities to prevent leaving contaminated material on the ground surface and from being tracked onto the road during transportation. Transportation of all wastes was completed by properly permitted vehicles. To the extent practicable, trucks traveled along routes that avoided residential areas.

Contaminated soil and fill material was loaded onto dump trucks and transported to an appropriate disposal facility. The material included:

- A total of 16,423.28 tons of contaminated soil and fill material was disposed at Republic Services Landfill in Niagara Falls, New York.

At the completion of the IRM described above, remediation at the Site to a Track 1 Cleanup was achieved.

FIGURES

F:\Project\V20 - D'Youville College\V20001002 - D'Youville BCP\Planning-Study\CADD\Sheet Files\01 SITE LOCATION.dwg

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301 CONNECTICUT STREET SITE
BROWNFIELD CLEANUP PROGRAM
SITE NO. C915345
CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	V20.001.002
DATE:	JANUARY 7, 2019
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

SITE LOCATION

FIGURE 1

LEGEND

BROWNFIELD CLEANUP BOUNDARY

NOTES

1) TOPOGRAPHIC SURVEY FROM NUSSBAUMER & CLARKE, INC., D'YOUVILLE PARKING LOT, OCTOBER 26, 2018 (JOB NO. 07J2-1173B).

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301 CONNECTICUT STREET SITE
BROWNFIELD CLEANUP PROGRAM
SITE NO. C915345

CITY OF BUFFALO, NY

MARK	DATE	DESCRIPTION

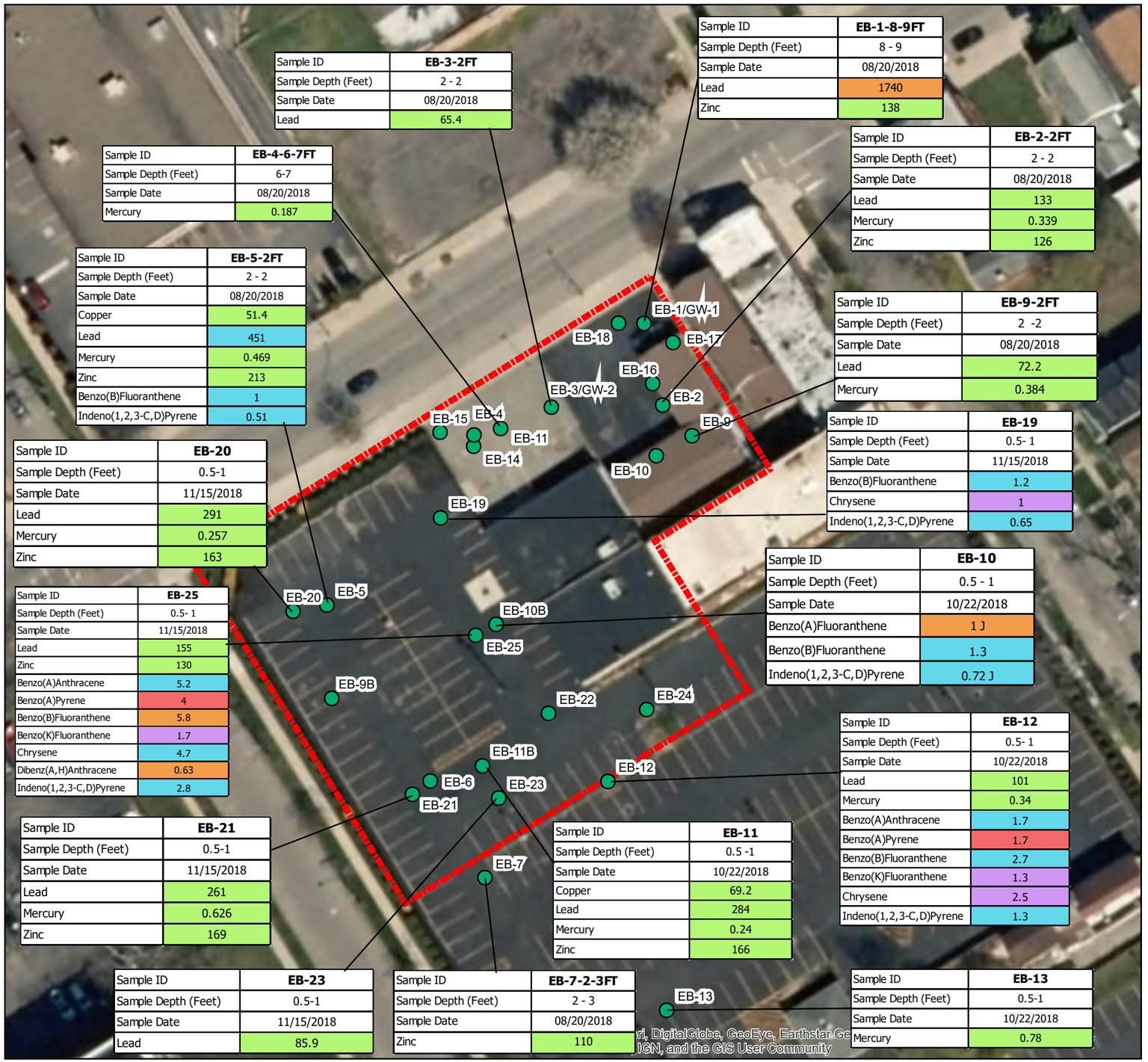
REVISIONS

PROJECT NO:	V20.001.002
DATE:	11/16/2018
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

SITE DETAIL

FIGURE 2

F:\Projects\V20 - D'Youville College\V20001002 - D'Youville BOP\Planning\Study\CADD\Sheet Files\02 SITE DETAILS.dwg



Sample ID	EB-3-2FT
Sample Depth (Feet)	2 - 2
Sample Date	08/20/2018
Lead	65.4

Sample ID	EB-1-8-9FT
Sample Depth (Feet)	8 - 9
Sample Date	08/20/2018
Lead	1740
Zinc	138

Sample ID	EB-4-6-7FT
Sample Depth (Feet)	6-7
Sample Date	08/20/2018
Mercury	0.187

Sample ID	EB-2-2FT
Sample Depth (Feet)	2 - 2
Sample Date	08/20/2018
Lead	133
Mercury	0.339
Zinc	126

Sample ID	EB-5-2FT
Sample Depth (Feet)	2 - 2
Sample Date	08/20/2018
Copper	51.4
Lead	451
Mercury	0.469
Zinc	213
Benzo(B)Fluoranthene	1
Indeno(1,2,3-C,D)Pyrene	0.51

Sample ID	EB-9-2FT
Sample Depth (Feet)	2 -2
Sample Date	08/20/2018
Lead	72.2
Mercury	0.384

Sample ID	EB-19
Sample Depth (Feet)	0.5- 1
Sample Date	11/15/2018
Benzo(B)Fluoranthene	1.2
Chrysene	1
Indeno(1,2,3-C,D)Pyrene	0.65

Sample ID	EB-20
Sample Depth (Feet)	0.5-1
Sample Date	11/15/2018
Lead	291
Mercury	0.257
Zinc	163

Sample ID	EB-10
Sample Depth (Feet)	0.5 - 1
Sample Date	10/22/2018
Benzo(A)Fluoranthene	1 J
Benzo(B)Fluoranthene	1.3
Indeno(1,2,3-C,D)Pyrene	0.72 J

Sample ID	EB-25
Sample Depth (Feet)	0.5- 1
Sample Date	11/15/2018
Lead	155
Zinc	130
Benzo(A)Anthracene	5.2
Benzo(A)Pyrene	4
Benzo(B)Fluoranthene	5.8
Benzo(K)Fluoranthene	1.7
Chrysene	4.7
Dibenz(A,H)Anthracene	0.63
Indeno(1,2,3-C,D)Pyrene	2.8

Sample ID	EB-12
Sample Depth (Feet)	0.5- 1
Sample Date	10/22/2018
Lead	101
Mercury	0.34
Benzo(A)Anthracene	1.7
Benzo(A)Pyrene	1.7
Benzo(B)Fluoranthene	2.7
Benzo(K)Fluoranthene	1.3
Chrysene	2.5
Indeno(1,2,3-C,D)Pyrene	1.3

Sample ID	EB-21
Sample Depth (Feet)	0.5-1
Sample Date	11/15/2018
Lead	261
Mercury	0.626
Zinc	169

Sample ID	EB-11
Sample Depth (Feet)	0.5 -1
Sample Date	10/22/2018
Copper	69.2
Lead	284
Mercury	0.24
Zinc	166

Sample ID	EB-23
Sample Depth (Feet)	0.5-1
Sample Date	11/15/2018
Lead	85.9

Sample ID	EB-7-2-3FT
Sample Depth (Feet)	2 - 3
Sample Date	08/20/2018
Zinc	110

Sample ID	EB-13
Sample Depth (Feet)	0.5-1
Sample Date	10/22/2018
Mercury	0.78

Legend

PROPOSED BCP BOUNDARY

2018 SOIL BORING LOCATIONS

Sample ID	EB-X
Sample Depth (Feet)	X - X
Sample Date	MM/DD/YY
Unrestricted Use Exceedance	
Residential Use Exceedance	
Restricted Residential Use Exceedance	
Commercial Use Exceedance	
Industrial Use Exceedance	

Notes

1) ONLY PART 375 EXCEEDANCES ARE SHOWN.

2) CONCENTRATIONS ARE LISTED IN PPM.

0 25 50 100 Feet

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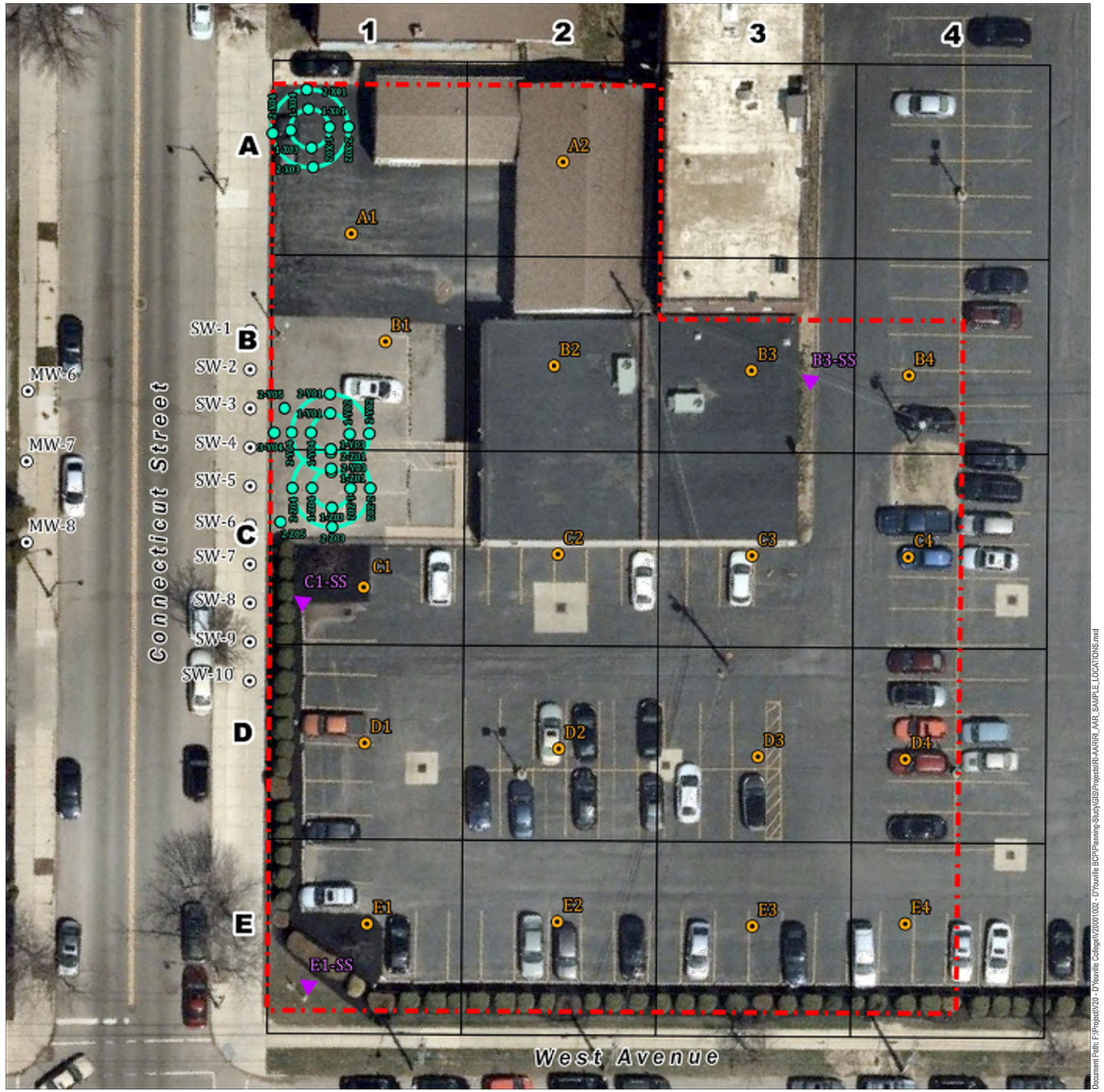
BROWNFIELD CLEANUP PROGRAM
SITE NO. C915345
CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	V20.001.002
DATE:	11/26/2018
DRAWN BY:	A. DEMARCHI
DESIGNED BY:	A. DEMARCHI
CHECKED BY:	C. MARTIN

2018 SITE CHARACTERIZATION LOCATIONS AND RESULTS

FIGURE 3



Legend

- BROWNFIELD CLEANUP (BCP) BOUNDARY
- 50-FT X 50-FT BCP GRID
- SUBSURFACE SOIL BORING LOCATION
- DELINEATION SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION
- OFFSITE SAMPLE LOCATIONS

0 15 30 60 Feet

Document Path: F:\Project\V20 - D'Youville College\V20001002 - D'Youville BCP\Planning-Study\GIS\Projects\RI-AARIRI_AAR_SAMPLE_LOCATIONS.mxd

F:\Project\V20 - D'Youville College\V20001002 - D'Youville BCP\Planning-Study\CADD\Sheet Files\1 SAMPLE LOCATIONS.dwg

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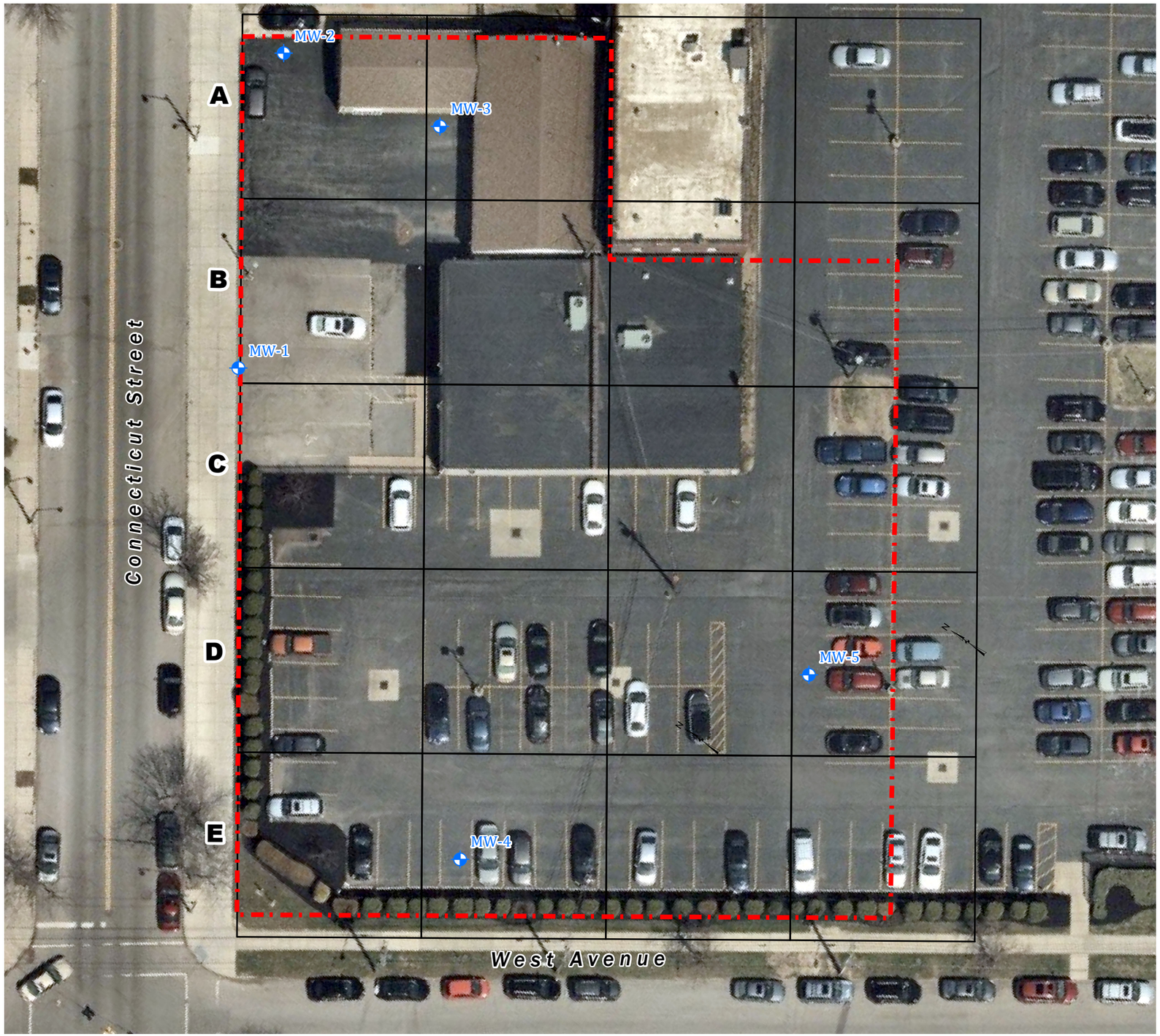
PROJECT NO:	V20.001.002
DATE:	SEPTEMBER 20, 2019
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

SAMPLE LOCATIONS

FIGURE 4



Legend

- PROPOSED BROWNFIELD CLEANUP (BCP) BOUNDARY
- 50-FT X 50-FT BCP GRID
- GROUNDWATER MONITORING WELL LOCATION

0 15 30 60 Feet

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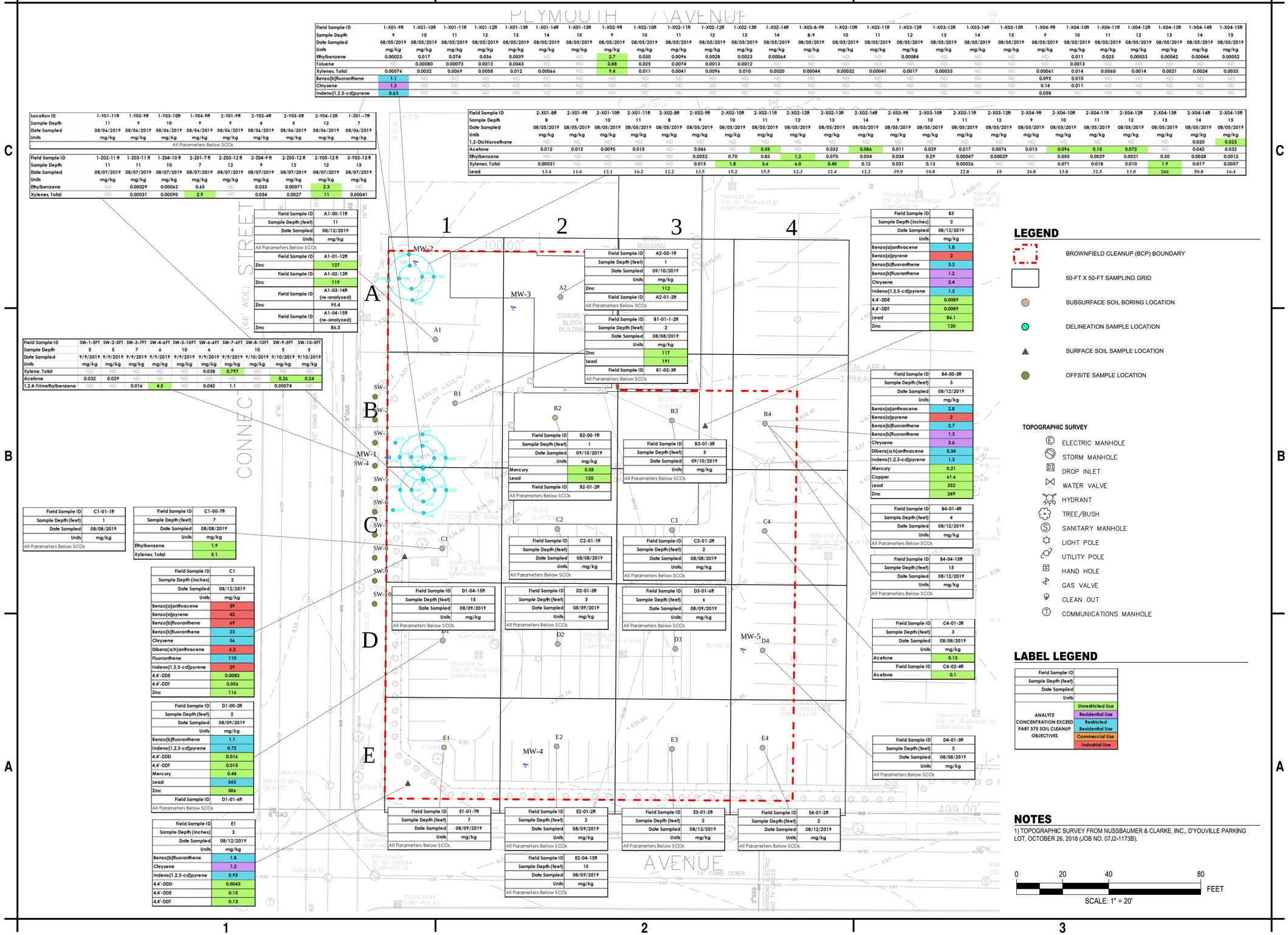
MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	V20.001.002
DATE:	05/17/2019
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	C. MARTIN

GROUNDWATER MONITORING WELL LOCATIONS

FIGURE 5



Field Sample ID	1-X01-9ft	1-X01-10ft	1-X01-11ft	1-X01-12ft	1-X01-13ft	1-X01-14ft	1-X01-15ft	1-X02-9ft	1-X02-10ft	1-X02-11ft	1-X02-12ft	1-X02-13ft	1-X02-14ft	1-X03-8-9ft	1-X03-10ft	1-X03-11ft	1-X03-12ft	1-X03-13ft	1-X03-14ft	1-X03-15ft	1-X04-9ft	1-X04-10ft	1-X04-11ft	1-X04-12ft	1-X04-13ft	1-X04-14ft	1-X04-15ft
Sample Depth	9	10	11	12	13	14	15	9	10	11	12	13	14	8-9	10	11	12	13	14	15	9	10	11	12	13	14	15
Date Sampled	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ethylbenzene	0.00023	0.017	0.074	0.036	0.0039	ND	ND	2.7	0.030	0.0076	0.0028	0.0023	0.00064	ND	ND	ND	0.00084	ND	ND	ND	ND	0.011	0.025	0.00033	0.00042	0.00044	0.00052
Toluene	ND	0.00080	0.00073	0.0012	0.0043	ND	ND	0.88	0.025	0.0074	0.0013	0.0012	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0013	ND	ND	ND	ND	ND
Xylenes, Total	0.00076	0.0032	0.0069	0.0058	0.012	0.00066	ND	9.4	0.011	0.0041	0.0096	0.010	0.0020	0.00044	0.00032	0.00041	0.0017	0.00033	ND	ND	0.00061	0.014	0.0060	0.0014	0.0021	0.0024	0.0033
Benzo[b]fluoranthene	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.095	0.010	ND	ND	ND	ND	ND
Chrysene	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14	0.011	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.058	ND	ND	ND	ND	ND	ND

Location ID	1-Y01-11ft	1-Y02-9ft	1-Y03-10ft	1-Y04-9ft	2-Y01-9ft	2-Y02-4ft	2-Y03-5ft	2-Y04-12ft	1-Z01--7ft
Sample Depth	11	9	10	9	9	4	5	12	7
Date Sampled	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/04/2019
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
All Parameters Below SCOs									

Field Sample ID	1-Z02-11ft	1-Z03-11ft	1-Z04-10ft	2-Z01-7ft	2-Z03-12ft	2-Z04-9ft	2-Z05-12ft	2-Y05-12ft	3-Y03-13ft
Sample Depth	11	11	10	7	12	9	12	12	13
Date Sampled	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ethylbenzene	ND	0.00029	0.00062	0.65	ND	0.033	0.00071	2.3	ND
Xylenes, Total	ND	0.00031	0.00090	2.9	ND	0.054	0.0027	11	0.00041

Field Sample ID	2-X01-8ft	2-X01-9ft	2-X01-10ft	2-X01-11ft	2-X02-8ft	2-X02-9ft	2-X02-10ft	2-X02-11ft	2-X02-12ft	2-X02-13ft	2-X02-14ft	2-X03-9ft	2-X03-10ft	2-X03-11ft	2-X03-12ft	2-X04-9ft	2-X04-10ft	2-X04-11ft	2-X04-12ft	2-X04-13ft	2-X04-14ft	2-X04-15ft
Sample Depth	8	9	10	11	8	9	10	11	12	13	14	9	10	11	12	9	10	11	12	13	14	15
Date Sampled	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,2-DichloroethaneNOT	NOT	NOT	ND	ND	ND	ND	NOT	NOT	NOT	NOT	NOT	NOT	NOT	NOT	NOT	NOT	NOT	NOT	NOT	ND	0.020	0.023
Acetone	0.012	0.013	0.0095	0.015	ND	0.044	ND	0.55	ND	0.032	0.086	0.011	0.029	0.017	0.0074	0.013	0.096	0.10	0.072	ND	0.042	0.032
Ethylbenzene	ND	ND	ND	ND	ND	0.0052	0.70	0.83	1.2	0.070	0.034	0.034	0.29	0.00047	0.00029	ND	0.050	0.0029	0.0021	0.30	0.0028	0.0012
Xylenes, Total	0.00031	ND	ND	ND	ND	0.015	1.8	3.6	6.0	0.40	0.12	0.021	0.13	0.00026	ND	ND	0.071	0.018	0.010	1.9	0.017	0.0057
Lead	13.4	11.6	12.1	16.2	12.2	13.5	15.2	15.5	12.3	12.4	12.2	39.9	10.8	22.8	10	26.8	13.8	32.5	13.0	266	50.8	16.4

Field Sample ID	A1-00-11ft
Sample Depth (feet)	11
Date Sampled	08/12/2019
Units	mg/kg
All Parameters Below SCOs	
Field Sample ID	A1-01-12ft
Zinc	127
Field Sample ID	A1-02-13ft
Zinc	119
Field Sample ID	A1-03-14ft (re-analyzed)
Zinc	95.4
Field Sample ID	A1-04-15ft (re-analyzed)
Zinc	84.3

Field Sample ID	A2-00-1ft
Sample Depth (feet)	1
Date Sampled	09/10/2019
Units	mg/kg
Zinc	112
Field Sample ID	A2-01-2ft
All Parameters Below SCOs	

Field Sample ID	B1-01-1-2ft
Sample Depth (feet)	2
Date Sampled	08/08/2019
Units	mg/kg
Zinc	117
Lead	191
Field Sample ID	B1-02-3ft
All Parameters Below SCOs	

Field Sample ID	B2-00-1ft
Sample Depth (feet)	1
Date Sampled	09/10/2019
Units	mg/kg
Mercury	0.58
Lead	120
Field Sample ID	B2-01-2ft
All Parameters Below SCOs	

Field Sample ID	B3-01-3ft
Sample Depth (feet)	3
Date Sampled	09/10/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	B3
Sample Depth (inches)	2
Date Sampled	08/12/2019
Units	mg/kg
Benzo[a]anthracene	1.8
Benzo[a]pyrene	2
Benzo[b]fluoranthene	3.2
Benzo[k]fluoranthene	1.2
Chrysene	2.4
Indeno[1,2,3-cd]pyrene	1.3
4,4'-DDE	0.0089
4,4'-DDT	0.0089
Lead	86.1
Zinc	120

Field Sample ID	B4-00-3ft
Sample Depth (feet)	3
Date Sampled	08/12/2019
Units	mg/kg
Benzo[a]anthracene	2.8
Benzo[a]pyrene	2
Benzo[b]fluoranthene	2.7
Benzo[k]fluoranthene	1.3
Chrysene	2.6
Dibenz(a,h)anthracene	0.34
Indeno[1,2,3-cd]pyrene	1.3
Mercury	0.21
Copper	61.6
Lead	332
Zinc	249

Field Sample ID	B4-01-4ft
Sample Depth (feet)	4
Date Sampled	08/12/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	B4-04-15ft
Sample Depth (feet)	15
Date Sampled	08/12/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	C1-01-1ft
Sample Depth (feet)	1
Date Sampled	08/08/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	C1-00-7ft
Sample Depth (feet)	7
Date Sampled	08/08/2019
Units	mg/kg
Ethylbenzene	1.9
Xylenes, Total	5.1

Field Sample ID	C1
Sample Depth (inches)	2
Date Sampled	08/12/2019
Units	mg/kg
Benzo[a]anthracene	39
Benzo[a]pyrene	42
Benzo[b]fluoranthene	69
Benzo[k]fluoranthene	23
Chrysene	56
Dibenz(a,h)anthracene	6.2
Fluoranthene	110
Indeno[1,2,3-cd]pyrene	29
4,4'-DDE	0.0083
4,4'-DDT	0.056
Zinc	116

Field Sample ID	C2-01-1ft
Sample Depth (feet)	1
Date Sampled	08/08/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	C3-01-2ft
Sample Depth (feet)	2
Date Sampled	08/08/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	C4-01-3ft
Sample Depth (feet)	3
Date Sampled	08/08/2019
Units	mg/kg
Acetone	0.13
Field Sample ID	C4-02-4ft
Acetone	0.1

Field Sample ID	D1-04-15ft
Sample Depth (feet)	15
Date Sampled	08/09/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	D2-01-3ft
Sample Depth (feet)	3
Date Sampled	08/09/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	D3-01-4ft
Sample Depth (feet)	6
Date Sampled	08/09/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	D4-01-3ft
Sample Depth (feet)	3
Date Sampled	08/08/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	D1-00-2ft
Sample Depth (feet)	2
Date Sampled	08/09/2019
Units	mg/kg
Benzo[b]fluoranthene	1.1
Indeno[1,2,3-cd]pyrene	0.72
4,4'-DDD	0.016
4,4'-DDT	0.015
Mercury	0.44
Lead	545
Zinc	386
Field Sample ID	D1-01-4ft
All Parameters Below SCOs	

Field Sample ID	E1
Sample Depth (inches)	2
Date Sampled	08/12/2019
Units	mg/kg
Benzo[b]fluoranthene	1.8
Chrysene	1.2
Indeno[1,2,3-cd]pyrene	0.95
4,4'-DDD	0.0043
4,4'-DDE	0.15
4,4'-DDT	0.13

Field Sample ID	E1-01-7ft
Sample Depth (feet)	7
Date Sampled	08/09/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	E2-01-2ft
Sample Depth (feet)	2
Date Sampled	08/09/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	E2-04-15ft
Sample Depth (feet)	15
Date Sampled	08/09/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	E3-01-2ft
Sample Depth (feet)	2
Date Sampled	08/12/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	E4-01-2ft
Sample Depth (feet)	2
Date Sampled	08/12/2019
Units	mg/kg
All Parameters Below SCOs	

Field Sample ID	SW-1-5FT	SW-2-5FT	SW-3-7FT	SW-4-6FT	SW-5-10FT	SW-6-6FT	SW-7-6FT	SW-8-10FT	SW-9-5FT	SW-10-5FT
Sample Depth	5	5	7	6	10	6	6	10	5	5
Date Sampled	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/10/2019	9/10/2019	9/10/2019
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Xylene, Total	ND	ND	ND	ND	ND	0.038	0.797	ND	0.26	0.24
Acetone	0.032	0.029	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	0.016	4.5	ND	0.042	1.1	ND	0.00074	ND

LEGEND

- BROWNFIELD CLEANUP (BCP) BOUNDARY
- 50-FT X 50-FT SAMPLING GRID
- SUBSURFACE SOIL BORING LOCATION
- DELINEATION SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION
- OFFSITE SAMPLE LOCATION

TOPOGRAPHIC SURVEY

- ELECTRIC MANHOLE
- STORM MANHOLE
- DROP INLET
- WATER VALVE
- HYDRANT
- TREE/BUSH
- SANITARY MANHOLE
- LIGHT POLE
- UTILITY POLE
- HAND HOLE
- GAS VALVE
- CLEAN OUT
- COMMUNICATIONS MANHOLE

LABEL LEGEND

Field Sample ID	
Sample Depth (feet)	
Date Sampled	
Units	
ANALYTE CONCENTRATION EXCEED PART 375 SOIL CLEANUP OBJECTIVES	Unrestricted Use
	Residential Use
	Restricted Residential Use
	Commercial Use
	Industrial Use

NOTES

1) TOPOGRAPHIC SURVEY FROM NUSSBAUMER & CLARKE, INC., D'YOUVILLE PARKING LOT, OCTOBER 26, 2018 (JOB NO. 07J2-1173B).

0 20 40 80 FEET

SCALE: 1" = 20'

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301 CONNECTICUT STREET SITE
BROWNFIELD CLEANUP PROGRAM
SITE NO. C915345
CITY OF BUFFALO, NY

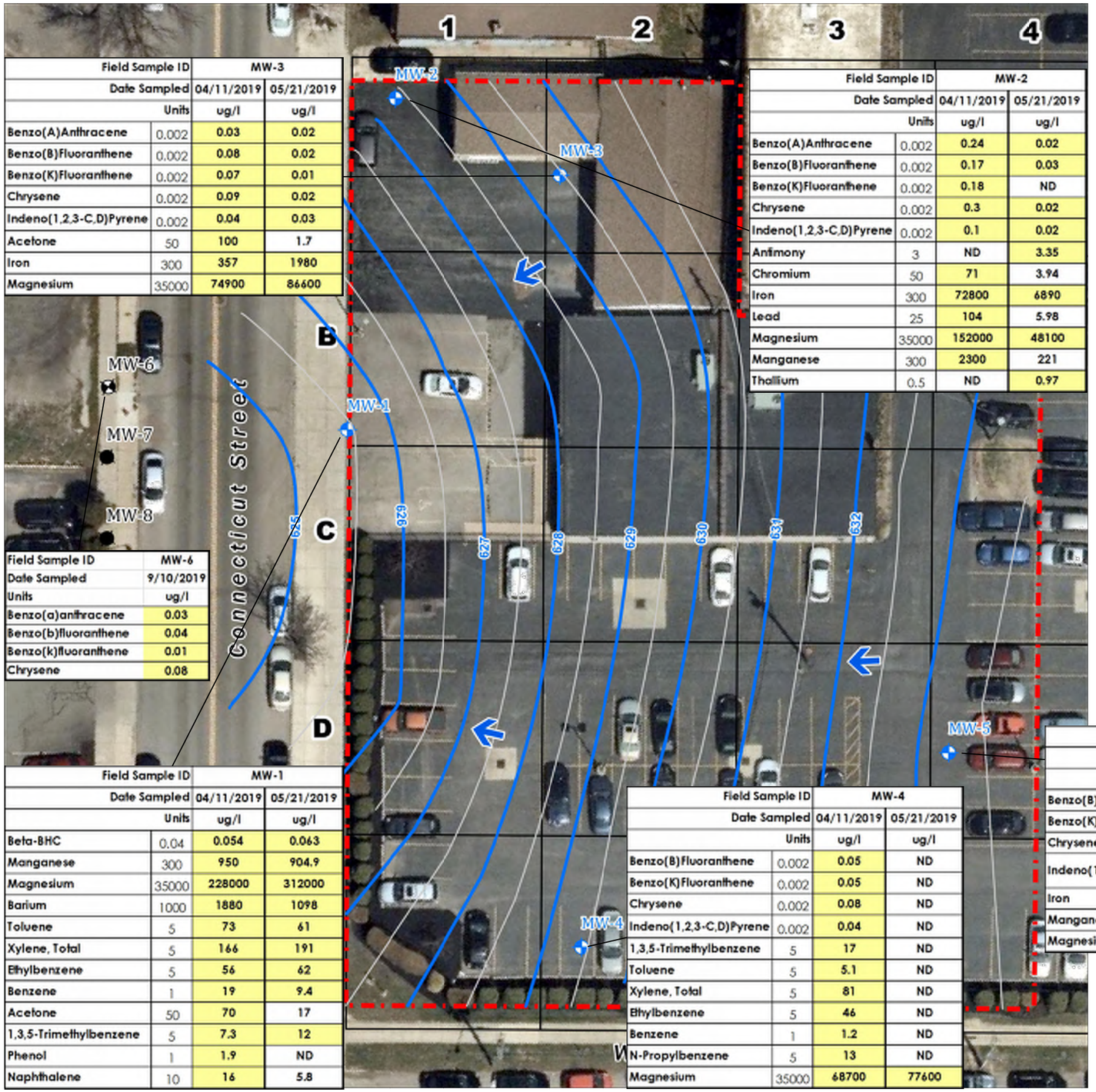
MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	V20.001.002
DATE:	10/01/2019
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

FILL / SOIL CONTAMINATION

FIGURE 6



Field Sample ID		MW-3	
Date Sampled		04/11/2019	05/21/2019
Units		ug/l	ug/l
Benzo(A)Anthracene	0.002	0.03	0.02
Benzo(B)Fluoranthene	0.002	0.08	0.02
Benzo(K)Fluoranthene	0.002	0.07	0.01
Chrysene	0.002	0.09	0.02
Indeno(1,2,3-C,D)Pyrene	0.002	0.04	0.03
Acetone	50	100	1.7
Iron	300	357	1980
Magnesium	35000	74900	86600

Field Sample ID		MW-2	
Date Sampled		04/11/2019	05/21/2019
Units		ug/l	ug/l
Benzo(A)Anthracene	0.002	0.24	0.02
Benzo(B)Fluoranthene	0.002	0.17	0.03
Benzo(K)Fluoranthene	0.002	0.18	ND
Chrysene	0.002	0.3	0.02
Indeno(1,2,3-C,D)Pyrene	0.002	0.1	0.02
Antimony	3	ND	3.35
Chromium	50	71	3.94
Iron	300	72800	6890
Lead	25	104	5.98
Magnesium	35000	152000	48100
Manganese	300	2300	221
Thallium	0.5	ND	0.97

Field Sample ID	MW-6
Date Sampled	9/10/2019
Units	ug/l
Benzo(a)anthracene	0.03
Benzo(b)fluoranthene	0.04
Benzo(k)fluoranthene	0.01
Chrysene	0.08

Field Sample ID		MW-1	
Date Sampled		04/11/2019	05/21/2019
Units		ug/l	ug/l
Beta-BHC	0.04	0.054	0.063
Manganese	300	950	904.9
Magnesium	35000	228000	312000
Barium	1000	1880	1098
Toluene	5	73	61
Xylene, Total	5	166	191
Ethylbenzene	5	56	62
Benzene	1	19	9.4
Acetone	50	70	17
1,3,5-Trimethylbenzene	5	7.3	12
Phenol	1	1.9	ND
Naphthalene	10	16	5.8

Field Sample ID		MW-4	
Date Sampled		04/11/2019	05/21/2019
Units		ug/l	ug/l
Benzo(B)Fluoranthene	0.002	0.05	ND
Benzo(K)Fluoranthene	0.002	0.05	ND
Chrysene	0.002	0.08	ND
Indeno(1,2,3-C,D)Pyrene	0.002	0.04	ND
1,3,5-Trimethylbenzene	5	17	ND
Toluene	5	5.1	ND
Xylene, Total	5	81	ND
Ethylbenzene	5	46	ND
Benzene	1	1.2	ND
N-Propylbenzene	5	13	ND
Magnesium	35000	68700	77600

Field Sample ID		MW-5	
Date Sampled		04/11/2019	05/21/2019
Units		ug/l	ug/l
Benzo(B)Fluoranthene	0.002	0.03	0.02
Benzo(K)Fluoranthene	0.002	0.03	ND
Chrysene	0.002	0.04	ND
Indeno(1,2,3-C,D)Pyrene	0.002	0.02	ND
Iron	300	101	601
Manganese	300	172	302.9
Magnesium	35000	207000	251000

Legend

- PROPOSED BROWNFIELD CLEANUP (BCP) BOUNDARY
- 50-FT X 50-FT BCP GRID
- MAJOR GROUNDWATER ELEVATION CONTOUR (1 FOOT)
- MINOR GROUNDWATER ELEVATION CONTOUR (0.5 FOOT)
- GROUNDWATER MONITORING WELL LOCATION
- TEMPORARY GROUNDWATER MONITORING WELL LOCATION
- DRY (NOT SAMPLED) TEMPORARY GROUNDWATER MONITORING WELL LOCATION

0 15 30 60 Feet

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301 CONNECTICUT STREET SITE
BROWNFIELD CLEANUP PROGRAM
SITE NO. C915345
CITY OF BUFFALO, NEW YORK

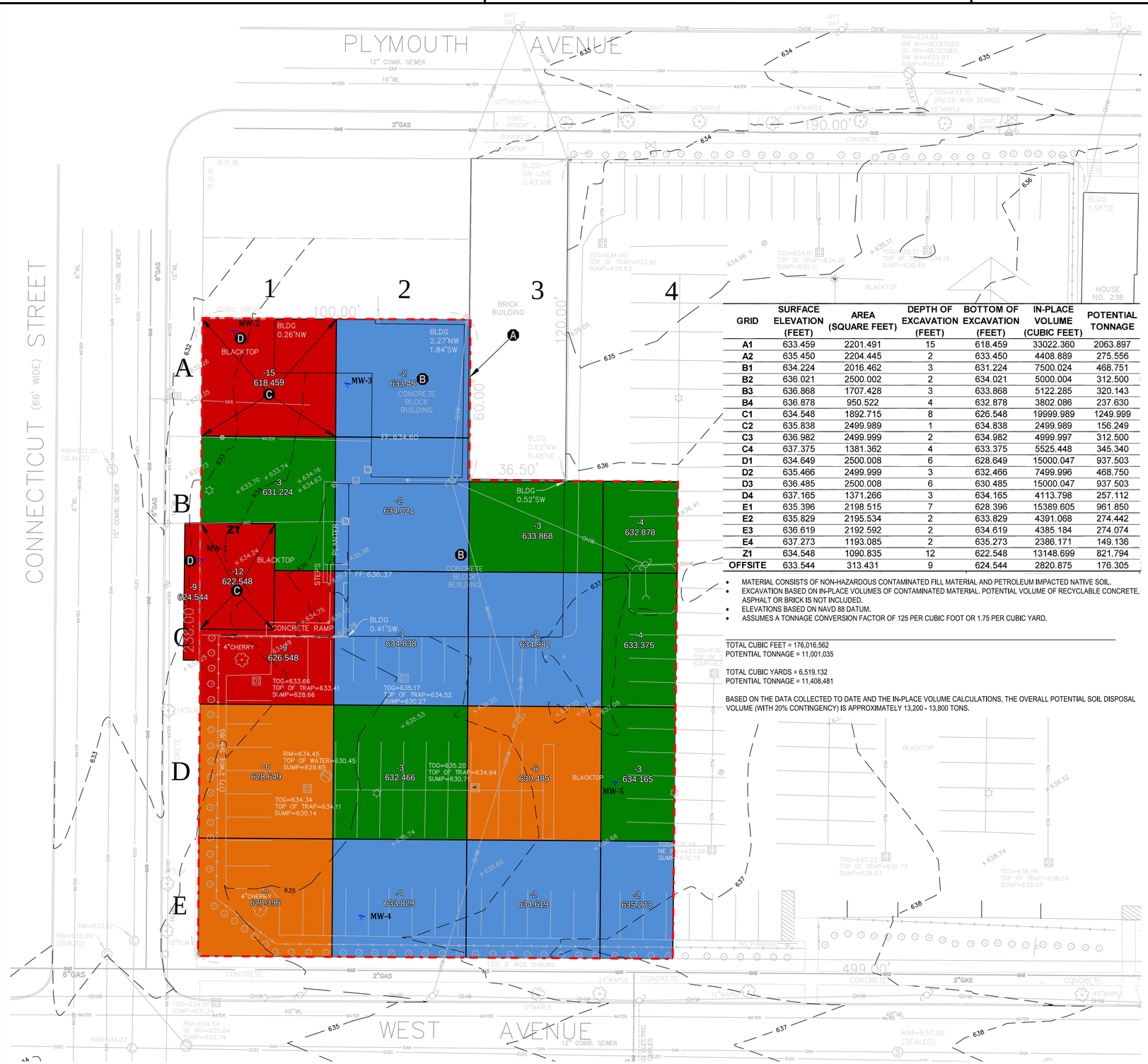
MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	V20.001.002
DATE:	SEPTEMBER 20, 2019
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

GROUNDWATER SAMPLE RESULTS

FIGURE 7

F:\Project\V20 - D'Youville College\V20001002 - D'Youville BCP\Planning-Study\CADD\Sheet Files\3 GW RESULTS.dwg



GRID	SURFACE ELEVATION (FEET)	AREA (SQUARE FEET)	DEPTH OF EXCAVATION (FEET)	BOTTOM OF EXCAVATION (FEET)	IN-PLACE VOLUME (CUBIC FEET)	POTENTIAL TONNAGE
A1	633.459	2201.491	15	618.459	33022.360	2063.897
A2	635.450	2204.445	2	633.450	4408.889	275.556
B1	634.224	2016.462	3	631.224	7500.024	468.751
B2	636.021	2500.002	2	634.021	5000.004	312.500
B3	636.868	1707.428	3	633.868	5122.285	320.143
B4	636.878	950.522	4	632.878	3802.086	237.630
C1	634.548	1892.715	8	626.548	19999.989	1249.999
C2	635.838	2499.989	1	634.838	2499.989	156.249
C3	636.982	2499.999	2	634.982	4999.997	312.500
C4	637.375	1381.362	4	633.375	5525.448	345.340
D1	634.649	2500.008	6	628.649	15000.047	937.503
D2	635.466	2499.999	3	632.466	7499.996	468.750
D3	636.485	2500.008	6	630.485	15000.047	937.503
D4	637.165	1371.266	3	634.165	4113.798	257.112
E1	635.396	2198.515	7	628.396	15389.605	961.850
E2	635.829	2195.534	2	633.829	4391.068	274.442
E3	636.619	2192.592	2	634.619	4385.184	274.074
E4	637.273	1193.085	2	635.273	2386.171	149.136
Z1	634.548	1090.835	12	622.548	13148.699	821.794
OFFSITE	633.544	313.431	9	624.544	2820.875	176.305

- MATERIAL CONSISTS OF NON-HAZARDOUS CONTAMINATED FILL MATERIAL AND PETROLEUM IMPACTED NATIVE SOIL.
- EXCAVATION BASED ON IN-PLACE VOLUMES OF CONTAMINATED MATERIAL. POTENTIAL VOLUME OF RECYCLABLE CONCRETE, ASPHALT OR BRICK IS NOT INCLUDED.
- ELEVATIONS BASED ON NAVD 88 DATUM.
- ASSUMES A TONNAGE CONVERSION FACTOR OF 125 PER CUBIC FOOT OR 1.75 PER CUBIC YARD.

TOTAL CUBIC FEET = 176,016.562
POTENTIAL TONNAGE = 11,001.035

TOTAL CUBIC YARDS = 6,519.132
POTENTIAL TONNAGE = 11,408.481

BASED ON THE DATA COLLECTED TO DATE AND THE IN-PLACE VOLUME CALCULATIONS, THE OVERALL POTENTIAL SOIL DISPOSAL VOLUME (WITH 20% CONTINGENCY) IS APPROXIMATELY 13,200 - 13,800 TONS.

LEGEND

BROWNFIELD CLEANUP (BCP) BOUNDARY / AREA OF EXCAVATION

50-FT X 50-FT EXCAVATION GRID

EXCAVATION (FEET)

- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 15

TOPOGRAPHIC SURVEY

- ELECTRIC MANHOLE
- STORM MANHOLE
- DROP INLET
- WATER VALVE
- HYDRANT
- TREE/BUSH
- SANITARY MANHOLE
- LIGHT POLE
- UTILITY POLE
- HAND HOLE
- GAS VALVE
- CLEAN OUT
- COMMUNICATIONS MANHOLE

NOTES

1) TOPOGRAPHIC SURVEY FROM NUSSBAUMER & CLARKE, INC., D'YOUVILLE PARKING LOT, OCTOBER 26, 2018 (JOB NO. 07J2-1173B).

A TRACK 1 LEVEL CLEANUP: COMPLETE REMOVAL OF CONTAMINATED FILL AND SOIL FROM WITHIN THE BCP BOUNDARY. EXCAVATION ALONG THE BCP BOUNDARY MUST BE A VERTICAL CUT - SIDEWALLS CAN NOT BE BENCHED.

B BUILDING DEMOLITION AND FLOOR SLAB REMOVAL COMPLETED BY OTHERS.

C DEWATERING ACTIVITIES FROM THESE AREAS MUST INCLUDE STORAGE, SAMPLING AND POSSIBLE TREATMENT FOR PETROLEUM IMPACTS IN ACCORDANCE WITH BUFFALO SEWER AUTHORITY REQUIREMENTS PRIOR TO DISCHARGE.

D GROUNDWATER MONITORING WELLS TO BE REMOVED AND/OR DECOMMISSIONED IN ACCORDANCE WITH NYSDEC CP-43.

0 20 40 80 FEET

SCALE: 1" = 20'

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301 CONNECTICUT STREET SITE
BROWNFIELD CLEANUP PROGRAM
SITE NO. C915345

CITY OF BUFFALO, NY

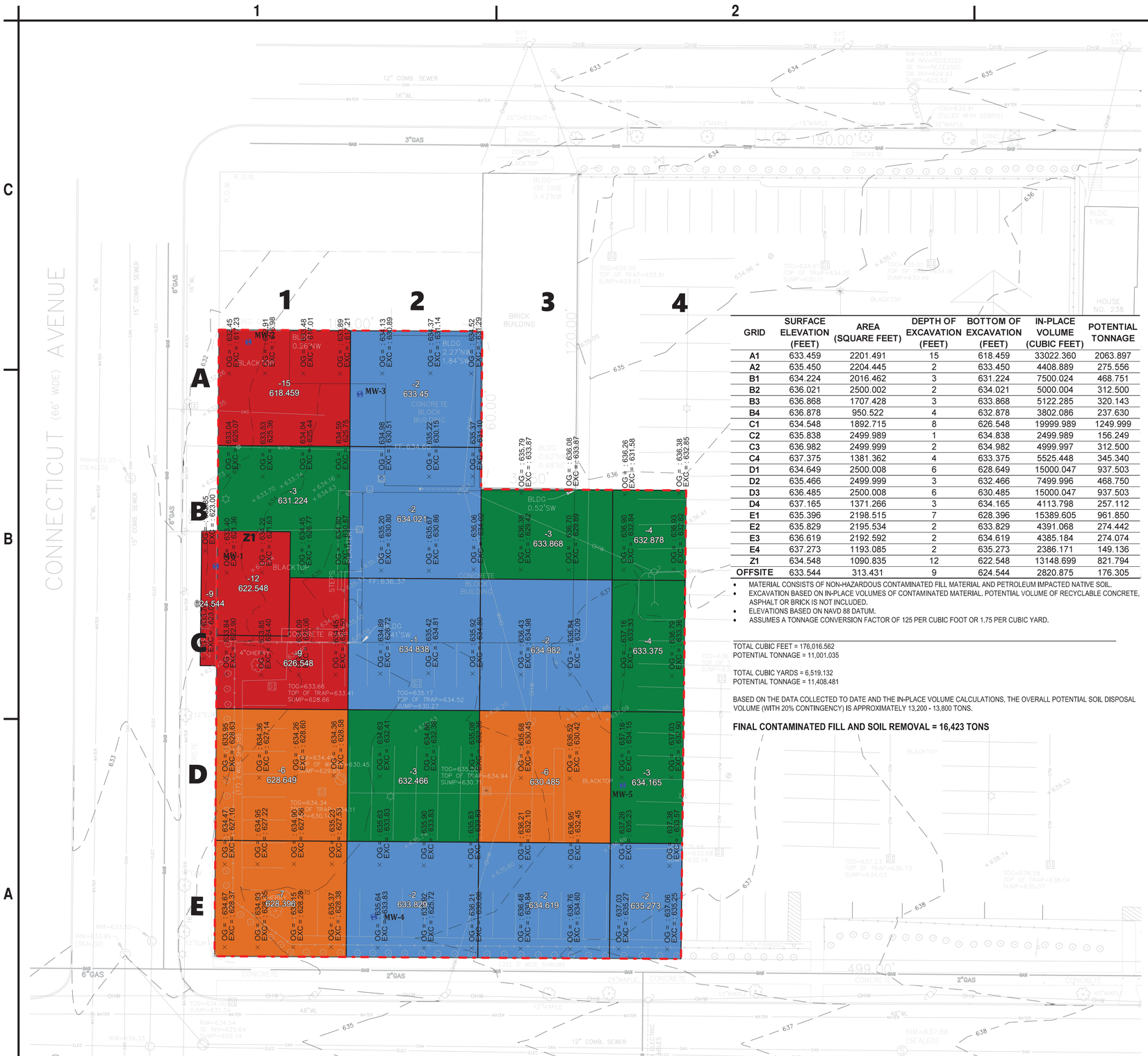
MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	V20.001.002
DATE:	10/01/2019
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

TRACK 1 CLEANUP PLAN

FIGURE 8

F:\Projects\V20 - D'Youville College\V20001002 - D'Youville BCP\Planning-Study\CADD\Sheet Files\4 TRACK 1 CLEANUP.dwg



GRID	SURFACE ELEVATION (FEET)	AREA (SQUARE FEET)	DEPTH OF EXCAVATION (FEET)	BOTTOM OF EXCAVATION (FEET)	IN-PLACE VOLUME (CUBIC FEET)	POTENTIAL TONNAGE
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C4	637.375	1381.362	4	633.375	5525.448	345.340
D1	634.649	2500.008	6	628.649	15000.047	937.503
D2	635.466	2499.999	3	632.466	7499.996	468.750
D3	636.485	2500.008	6	630.485	15000.047	937.503
D4	637.165	1371.266	3	634.165	4113.798	257.112
E1	635.396	2198.515	7	628.396	15389.605	961.850
E2	635.829	2195.534	2	633.829	4391.068	274.442
E3	636.619	2192.592	2	634.619	4385.184	274.074
E4	637.273	1193.085	2	635.273	2386.171	149.136
Z1	634.548	1090.835	12	622.548	13148.699	821.794
OFFSITE	633.544	313.431	9	624.544	2820.875	176.305

- MATERIAL CONSISTS OF NON-HAZARDOUS CONTAMINATED FILL MATERIAL AND PETROLEUM IMPACTED NATIVE SOIL.
- EXCAVATION BASED ON IN-PLACE VOLUMES OF CONTAMINATED MATERIAL. POTENTIAL VOLUME OF RECYCLABLE CONCRETE, ASPHALT OR BRICK IS NOT INCLUDED.
- ELEVATIONS BASED ON NAVD 88 DATUM.
- ASSUMES A TONNAGE CONVERSION FACTOR OF 125 PER CUBIC FOOT OR 1.75 PER CUBIC YARD.

TOTAL CUBIC FEET = 176,016.562
POTENTIAL TONNAGE = 11,001.035

TOTAL CUBIC YARDS = 6,519.132
POTENTIAL TONNAGE = 11,408.481

BASED ON THE DATA COLLECTED TO DATE AND THE IN-PLACE VOLUME CALCULATIONS, THE OVERALL POTENTIAL SOIL DISPOSAL VOLUME (WITH 20% CONTINGENCY) IS APPROXIMATELY 13,200 - 13,800 TONS.

FINAL CONTAMINATED FILL AND SOIL REMOVAL = 16,423 TONS

LEGEND

BROWNFIELD CLEANUP (BCP) BOUNDARY / AREA OF EXCAVATION

50-FT X 50-FT EXCAVATION GRID

EXCAVATION (FEET)

- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 8
- 8 - 15

TOPOGRAPHIC SURVEY

- ELECTRIC MANHOLE
- STORM MANHOLE
- DROP INLET
- WATER VALVE
- HYDRANT
- TREE/BUSH
- SANITARY MANHOLE
- LIGHT POLE
- UTILITY POLE
- HAND HOLE
- GAS VALVE
- CLEAN OUT
- COMMUNICATIONS MANHOLE

OG = ORIGINAL GRADE (FEET)
EXC = EXCAVATION GRADE (FEET)

NOTES

1) TOPOGRAPHIC SURVEY FROM NUSSBAUMER & CLARKE, INC., D'YOUVILLE PARKING LOT, OCTOBER 26, 2018 (JOB NO. 07J2-1173B).

2) EXCAVATION DATA FROM PINTO CONSTRUCTION SERVICES, OG VS EXCAVATION SURVEY, JANUARY 21, 2020.

3) VERTICAL DATUM IN NAVD 88 (FEET)

0 20 40 80 FEET

SCALE: 1" = 20'

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PINTO CONSTRUCTION SERVICES INC
Pinto Construction Services, Inc.
132 Dingens Street
Buffalo, NY 14206
Phone: (716) 825-6666
Fax: (716) 825-6773

301 CONNECTICUT STREET SITE
BROWNFIELD CLEANUP PROGRAM
SITE NO. C915345
CITY OF BUFFALO, NY

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	V20.001.002
DATE:	06/05/2020
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

STATE OF NEW YORK
JOHN T. CAMP
LICENSED PROFESSIONAL ENGINEER
NO. 092215

TRACK 1 EXCAVATION SURVEY

FIGURE 9

F:\Project\V2\ - D'Youville College\V2001002 - D'Youville BCP\Rezoning-Study\CAD\Sheet Files\TRACK 1 CLEANUP SURVEY.dwg

TABLES

TABLE 1

SURFACE SOIL RESULTS - 8/12/2019
GRID SAMPLING
301 CONNECTICUT STREET SITE
BCP SITE C915345

	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	B3	C1	E1
LOCATION - SAMPLE DEPTH						B3	C1	E1
SAMPLING DATE						08/12/2019	08/12/2019	08/12/2019
SAMPLE TYPE						SOIL	SOIL	SOIL
UNITS						mg/kg	mg/kg	mg/kg
VOCs								
1,1-Dichloroethane	0.27	19	26	240	480	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000	ND	ND	ND
Acetone	0.05	100	100	500	1000	ND	ND	ND
Benzene	0.06	2.9	4.8	44	89	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000	ND	ND	ND
Cyclohexane						ND	ND	ND
Ethylbenzene	1	30	41	390	780	ND	ND	ND
Isopropylbenzene						ND	ND	ND
Methyl tert-butyl ether	0.93	62	100	500	1000	0.00044 J	ND	0.00027 J
Methylcyclohexane						ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000	ND	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300	ND	ND	ND
Toluene	0.7	100	100	500	1000	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000	ND	ND	ND
SVOCs								
Benzo[a]anthracene	1	1	1	5.6	11	1.8	39	0.74
Benzo[a]pyrene	1	1	1	1	1.1	2.0	42	1.0
Benzo[b]fluoranthene	1	1	1	5.6	11	3.2	69	1.8
Benzo[g,h,i]perylene	100	100	100	500	1000	1.1	25	0.90
Benzo[k]fluoranthene	0.8	1	3.9	56	110	1.2	23	0.56
Chrysene	1	1	3.9	56	110	2.4	56	1.2
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1	0.22	6.2	0.20
Dibenzofuran	7	14	59	350	1000	0.034 J	1.2 J	ND
Fluoranthene	100	100	100	500	1000	4.3	110	1.8
Fluorene	30	100	100	500	1000	0.083 J	3.3 J	0.020 J
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11	1.3	29	0.95
Naphthalene	12	100	100	500	1000	0.017 J	0.25 J	ND
Phenanthrene	100	100	100	500	1000	1.7	53	0.49
Pyrene	100	100	100	500	1000	3.6	89	1.5
Pesticides								
4,4'-DDD	0.0033	2.6	13	92	180	ND	ND	0.0043 Jp
4,4'-DDE	0.0033	1.8	8.9	62	120	0.0089	0.0083 J	0.15 p
4,4'-DDT	0.0033	1.7	7.9	47	94	0.0089	0.056	0.13 p
Dieldrin	0.005	0.039	0.2	1.4	2.8	0.0023	ND	ND
PCBs								
Total PCBs	0.1	1	1	1	25	ND	ND	ND
Herbicidies								
Silvex (2,4,5-TP)	3.8	58	100	500	1000	ND	ND	ND
Metals								
Aluminum						13300	6270	13700
Mercury	0.18	0.81	0.81	2.8	5.7	0.092	0.040	0.046
Arsenic	13	16	16	16	16	6.7	4.3 J	3.6
Barium	350	350	400	400	10000	112	120	77.3
Beryllium	7.2	14	72	590	2700	0.77	0.40 J	0.57
Cadmium	2.5	2.5	4.3	9.3	60	0.46 J	0.54 J	0.16 J
Calcium						29200	32900	6340
Chromium						18.2	17.7	17.0

TABLE 1

SURFACE SOIL RESULTS - 8/12/2019
GRID SAMPLING
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	B3		C1		E1	
						SAMPLING DATE	08/12/2019		08/12/2019		08/12/2019	
						SAMPLE TYPE	SOIL		SOIL		SOIL	
						UNITS	mg/kg		mg/kg		mg/kg	
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use							
Cobalt							**8.4**	**J**	**4.4**	**J**	**6.6**	**J**
Copper	50	270	270	270	10000		**21.2**		**24.0**		**16.8**	
Iron							**28700**		**12900**		**19000**	
Lead	63	400	400	1000	3900		**86.1**		**46.3**		**25.5**	
Magnesium							**9430**		**4600**		**3470**	
Manganese	1600	2000	2000		10000		**705**		**775**		**299**	
Nickel	30	140	310	310	10000		**18.8**		**13.0**	**J**	**14.6**	
Potassium							**1840**		**964**	**J**	**1510**	
Selenium	3.9	36	180	1500	6800		ND		ND		ND	
Silver	2	36	180	1500	6800		ND		ND		ND	
Sodium							**761**	**J**	ND		**87.7**	**J**
Vanadium							**28.9**		**15.3**	**J**	**26.1**	
Zinc	109	2200			10000		**120**		**116**		**80.2**	
WetChem												
Chromium, hexavalent	1	22	110	400	800		ND		ND		ND	
Cyanide, Total	27	27	27	27	10000		**0.20**	**J**	**0.80**		**0.28**	**J**
Per- and Poly-fluoroalkyl Substances												
Perfluorobutanoic acid (PFBA)							ND		**0.68**		**0.22**	**J**
Perfluoropentanoic acid (PFPeA)							ND		ND		ND	
Perfluorohexanoic acid (PFHxA)							ND		ND		**0.15**	**J**
Perfluoroheptanoic acid (PFHpA)							**0.056**	**J**	ND		**0.14**	**J**
Perfluorooctanoic acid (PFOA)							**0.35**		**0.19**	**J**	**0.38**	
Perfluorononanoic acid (PFNA)							**0.16**	**J**	**0.11**	**J**	**0.21**	**J**
Perfluorodecanoic acid (PFDA)							**0.22**		**0.17**	**J**	**0.22**	**J**
Perfluoroundecanoic acid (PFUnA)							**0.12**	**J**	**0.19**	**J**	**0.12**	**J**
Perfluorododecanoic acid (PFDoA)							**0.098**	**J**	ND		**0.082**	**J**
Perfluorotridecanoic acid (PFTriA)							ND		ND		ND	
Perfluorotetradecanoic acid (PFTeA)							ND		ND		ND	
Perfluorobutanesulfonic acid (PFBS)							ND		ND		ND	
Perfluorohexanesulfonic acid (PFHxS)							ND		ND		**0.049**	**J**
Perfluoroheptanesulfonic Acid (PFHpS)							ND		ND		ND	
Perfluorooctanesulfonic acid (PFOS)							**1.4**		**0.55**	**J**	**1.3**	
Perfluorodecanesulfonic acid (PFDS)							ND		ND		**0.079**	**J**
Perfluorooctanesulfonamide (FOSA)							ND		ND		ND	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)							ND		ND		ND	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)							ND		ND		ND	
6:2 FTS							**0.24**	**J**	ND		**0.30**	**J**
8:2 FTS							ND		ND		ND	

Analytical Data compared to Part 375 Standards and DER-10
ND indicates analyte was not detected.
Blank space indicates analyte was not analyzed for in that sample.
* - LCS or LCSD is outside acceptance limits.
F1 - MS and/or MSD Recovery is outside acceptance limits.
F2 - MS/MSD RPD exceeds control limits
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p - The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	A1-00-11ft	A1-01-12ft	A1-02-13ft	A1-03-14ft	A1-04-15ft	A2-00-1ft	A2-01-2ft	B1-01-1-2ft	B1-02-3ft	DUP-D-080819	B2-00-1ft	B2-01-2ft	B3-01-3ft	B4-00-3ft	B4-01-4ft
						SAMPLING DATE	08/12/2019	08/12/2019	08/12/2019	08/12/2019	08/12/2019	09/10/2019	09/10/2019	08/08/2019	08/08/2019	08/08/2019	09/10/2019	09/10/2019	09/10/2019	08/12/2019	08/12/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use																
VOCs																					
1,1-Dichloroethane	0.27	19	26	240	480		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		ND	ND			ND	ND	**0.0030 J**	ND		ND	ND	ND	ND	**0.0058**	ND
Acetone	0.05	100	100	500	1000		ND	**0.011**			**0.0094**	ND	**0.016**	**0.0065 J**		**0.010**	ND	ND	ND	**0.034**	**0.021**
Benzene	0.06	2.9	4.8	44	89		ND	ND			**0.0027**	ND	ND	ND		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND	ND			**0.0012**	ND	ND	ND		ND	ND	ND	ND	ND	ND
Cyclohexane							**0.00074 J**	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
Ethylbenzene	1	30	41	390	780		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
Isopropylbenzene							ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	0.93	62	100	500	1000		**0.00043 J**	**0.0017**			**0.012**	ND	ND	ND		ND	ND	ND	ND	ND	ND
Methylcyclohexane							**0.0012**	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000		ND	ND			ND	**0.00095 J**	ND	ND		ND	**0.00072 J**	**0.00084 J**	ND	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300		ND	ND			ND	**0.046**	**0.067**	ND		ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000		**0.00060 J**	ND			ND	ND	ND	ND		**0.0018 J**	ND	ND	ND	ND	ND
SVOCs																					
Benzo[a]anthracene	1	1	1	5.6	11		ND	ND			**0.024 J**	**0.047**	ND	**0.051**		**0.085**	**0.073**	ND	ND	**2.8**	ND
Benzo[a]pyrene	1	1	1	1	1.1		ND	ND			**0.017 J**	ND	ND	**0.039 J**		**0.081**	**0.050**	ND	ND	**2.0**	ND F1
Benzo[b]fluoranthene	1	1	1	5.6	11		ND	ND			**0.026 J**	**0.11**	ND	**0.068**		**0.13**	**0.089**	ND	**0.025 J**	**2.7**	ND F1
Benzo[k]fluoranthene	0.8	1	3.9	56	110		ND	ND			**0.0086 J**	**0.030 J**	ND	**0.026 J**		**0.058**	**0.028 J**	ND	ND	**1.3**	ND F1
Chrysene	1	1	3.9	56	110		ND	ND			**0.025 J**	**0.10 J**	ND	**0.070 J**		**0.12 J**	**0.077 J**	ND	ND	**2.6**	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND	ND			ND	**0.021 J**	ND	ND		ND	ND	ND	ND	**0.34**	ND
Dibenzofuran	7	14	59	350	1000		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	**0.64 J**	ND F1
Fluoranthene	100	100	100	500	1000		ND	ND			**0.040 J**	**0.061 J**	ND	**0.10 J**		**0.20 J**	**0.13 J**	ND	**0.025 J**	**7.0**	ND
Fluorene	30	100	100	500	1000		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	**0.97 J**	ND F1
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		ND	ND			**0.017 J**	**0.049**	ND	**0.039 J**		**0.080**	**0.035 J**	ND	ND	**1.3**	ND
Naphthalene	12	100	100	500	1000		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	**0.30 J**	ND F1
Phenanthrene	100	100	100	500	1000		**0.028 J**	ND			**0.013 J**	**0.024 J**	ND	**0.051 J**		**0.094 J**	**0.092 J**	ND	**0.020 J**	**7.2**	ND
Pyrene	100	100	100	500	1000		ND	ND			**0.035 J**	**0.055 J**	ND	**0.093 J**		**0.19 J**	**0.11 J**	ND	**0.020 J**	**5.6**	ND
Pesticides																					
4,4'-DDD	0.0033	2.6	13	92	180		ND	ND			ND	ND					ND	ND		ND	
4,4'-DDE	0.0033	1.8	8.9	62	120		ND	ND			ND	ND					ND	ND		**0.0030 J**	
4,4'-DDT	0.0033	1.7	7.9	47	94		ND	ND			ND	ND					ND	ND		ND	
PCBs																					
Total PCBs	0.1	1	1	1	25		ND	ND			ND	ND					**0.091**	ND		ND	
Herbicides																					
Silvex (2,4,5-TP)	3.8	58	100	500	1000		ND	ND			ND	ND					ND	ND		ND	
Metals																					

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	LOCATION - SAMPLE DEPTH	A1-00-11ft	A1-01-12ft	A1-02-13ft	A1-03-14ft	A1-04-15ft	A2-00-1ft	A2-01-2ft	B1-01-1-2ft	B1-02-3ft	DUP-D-080819	B2-00-1ft	B2-01-2ft	B3-01-3ft	B4-00-3ft	B4-01-4ft
						SAMPLING DATE	08/12/2019	08/12/2019	08/12/2019	08/12/2019	08/12/2019	09/10/2019	09/10/2019	08/08/2019	08/08/2019	08/08/2019	09/10/2019	09/10/2019	09/10/2019	08/12/2019	08/12/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum							579	4290			4440	11100	14500	11400		10400	10000	12700	12100	9820	13600
Mercury	0.18	0.81	0.81	2.8	5.7		ND	ND			ND	0.14	0.070	0.16		0.15	0.58	0.021	0.093	0.21	0.016 J
Arsenic	13	16	16	16	16		ND	1.8 J			1.7 J	9.0	4.5	6.0		6.3	5.8	3.0	4.6	5.6	3.9
Barium	350	350	400	400	10000		2.4 J	39.4 J			44.5	192	115	110		97.2	86.4	57.4	106	115	96.0
Beryllium	7.2	14	72	590	2700		ND	0.23 J			0.24 J	0.58	0.78	0.66		0.63	0.55	0.65	0.64	0.63	0.67
Cadmium	2.5	2.5	4.3	9.3	60		ND	0.42 J			0.35 J	ND	ND	ND		ND	ND	ND	ND	0.66 J	ND
Calcium							195000	87000			84100	77200	5470	25400		20300	39000	3850	3800	47900	16400
Chromium							3.2	6.7			7.2	17.3	21.5	17.3		16.0	15.1	19.0	18.6	15.3	19.0
Cobalt							ND	2.9 J			3.2 J	8.3 J	9.7 J	7.5 J		8.7 J	6.4 J	7.1 J	8.4 J	6.9 J	8.4 J
Copper	50	270	270	270	10000		3.5 J	12.8			12.2	17.5	18.2	18.9		15.3	19.4	13.2	13.8	61.6	15.0
Iron							1730	8960			9400	23400	25700	19100		21000	18100	21200	22900	18800	22900
Lead	63	400	400	1000	3900		ND	11.4			10.1	28.7	25.5	191	18.9	96.1	120	18.3	20.3	332	15.0
Magnesium							3970	36000			30500	29000	6570	12400		10500	16400	5040	4800	18300	12800
Manganese	1600	2000	2000		10000		61.0	389			418	1040	335	392		545	372	203	397	576	297
Nickel	30	140	310	310	10000		4.0 J	6.6 J			7.1 J	18.5	24.0	16.9		17.0	15.1	18.6	19.1	18.2	20.9
Potassium							298 J	1190			1230	1930	1700	1460		1200	1570	1560	1620	1640	2130
Selenium	3.9	36	180	1500	6800		ND	ND			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND	ND F1			ND	ND	ND	ND		ND	ND	ND	ND	ND	ND
Sodium							260 J	505 J			466 J	803 J	574 J	894 J		811 J	214 J	167 J	88.1 J	382 J	238 J
Vanadium							2.3 J	11.9			13.0	27.3	28.1	23.3		24.3	22.1	20.2	24.3	22.0	26.1
Zinc	109	2200			10000		8.9	127	119	95.4	86.3	112	93.5	117	67.4	96.4	94.9	76.2	81.2	249	85.9
WetChem																					
Chromium, hexavalent	1	22	110	400	800		ND	ND			ND	ND					ND	ND		ND	
Cyanide, Total	27	27	27	27	10000		ND	ND			ND	0.18 J	ND	ND		ND F1	0.15 J	ND	ND	0.25 J	ND

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

LOCATION - SAMPLE DEPTH						B4-04-15ft	C1-00-7ft	C1-01-1ft	C2-01-1ft	C3-01-2ft	C4-01-3ft	C4-02-4ft	D1-00-2ft	D1-01-6ft	D1-04-15ft	DUP-C-080919	D2-01-3ft	D3-01-6ft	D4-01-3ft	E1-01-7ft	E2-00-1ft
SAMPLING DATE						08/12/2019	08/08/2019	08/08/2019	08/08/2019	08/08/2019	08/08/2019	08/08/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/08/2019	08/09/2019	08/09/2019
SAMPLE TYPE						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use																
VOCs																					
1,1-Dichloroethane	0.27	19	26	240	480	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
1,2-Dichloroethane	0.02	2.3	3.1	30	60	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000	ND	ND	ND	ND	ND	**0.017**		ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000	ND	ND	ND	ND	ND	**0.13**	**0.10**	**0.023**	ND	**0.011**	**0.012**	**0.011**	ND	**0.011**	ND	**0.015 F1**
Benzene	0.06	2.9	4.8	44	89	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
cis-1,2-Dichloroethene	0.25	59	100	500	1000	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Cyclohexane						ND	**3.1** *	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND
Ethylbenzene	1	30	41	390	780	ND	**1.9**	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Isopropylbenzene						ND	**0.83**	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Methyl tert-butyl ether	0.93	62	100	500	1000	**0.00034 J**	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND F1
Methylcyclohexane						ND	**17**	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000	ND	ND	ND	ND	ND	ND		**0.0010 J**	**0.0020**	**0.0029**	**0.0032**	**0.0013**	**0.00064 J**	**0.00083 J**	ND	**0.00081 JF**
Tetrachloroethene	1.3	5.5	19	150	300	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Toluene	0.7	100	100	500	1000	ND	**0.12**	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Xylenes, Total	0.26	100	100	500	1000	ND	**5.1**	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND F1	ND	ND	ND F1
SVOCs																					
Benzo[a]anthracene	1	1	1	5.6	11	ND		ND	**0.12**	**0.065**	ND		**0.73**	ND	**0.041**	**0.093**	**0.019 J**	ND	ND	ND	**0.055**
Benzo[a]pyrene	1	1	1	1	1.1	ND		ND	**0.10**	**0.054**	ND		**0.74**	**0.014 J**	**0.040**	**0.075**	**0.019 J**	ND F1	ND	ND	**0.043 F1**
Benzo[b]fluoranthene	1	1	1	5.6	11	ND		**0.019 J**	**0.16**	**0.087**	ND		**1.1**	**0.022 J**	**0.062**	**0.13**	**0.032 J**	ND	ND	ND	**0.088 F1**
Benzo[k]fluoranthene	0.8	1	3.9	56	110	ND		ND	**0.070**	**0.037 J**	ND		**0.42**	ND	**0.026 J**	**0.042 J**	**0.0094 J**	ND F1	ND	ND	**0.027 JF**
Chrysene	1	1	3.9	56	110	ND		ND	**0.17 J**	**0.073 J**	ND		**1.0**	**0.020 J**	**0.072 J**	**0.12 J**	**0.026 J**	ND	ND	ND	**0.077 J**
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1	ND		ND	**0.023 J**	ND	ND		**0.16**	ND	ND	**0.020 J**	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000	ND		ND	ND	ND	ND		**0.037 J**	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Fluoranthene	100	100	100	500	1000	ND		ND	**0.36 J**	**0.10 J**	ND		**2.0**	**0.028 J**	**0.13 J**	**0.18 J**	**0.043 J**	**0.016 J**	ND	ND	**0.17 JF**
Fluorene	30	100	100	500	1000	ND		ND	ND	ND	ND		**0.064 J**	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11	ND		ND	**0.095**	**0.047**	ND		**0.72**	ND	**0.031 J**	**0.067**	**0.024 J**	ND	ND	ND	**0.046**
Naphthalene	12	100	100	500	1000	ND		ND	ND	ND	ND		**0.019 J**	ND	ND	ND	ND	ND F1	ND	ND	ND F1
Phenanthrene	100	100	100	500	1000	ND		ND	**0.18 J**	**0.056 J**	ND		**1.2**	ND	**0.081 J**	**0.11 J**	**0.026 J**	ND F1	ND	ND	**0.078 JF**
Pyrene	100	100	100	500	1000	ND		ND	**0.34 J**	**0.11 J**	ND		**1.9**	**0.029 J**	**0.13 J**	**0.17 J**	**0.040 J**	ND	ND	ND	**0.16 J**
Pesticides																					
4,4'-DDD	0.0033	2.6	13	92	180	ND				ND	ND		**0.016**		ND	ND					ND
4,4'-DDE	0.0033	1.8	8.9	62	120	ND				ND	ND		ND		ND	ND					ND *
4,4'-DDT	0.0033	1.7	7.9	47	94	ND				ND	ND		**0.015**		ND	ND					ND
PCBs																					
Total PCBs	0.1	1	1	1	25	ND				ND	ND		ND		ND	ND					ND
Herbicidies																					
Silvex (2,4,5-TP)	3.8	58	100	500	1000	ND				ND	ND		ND		ND	ND					ND
Metals																					

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	B4-04-15ft	C1-00-7ft	C1-01-1ft	C2-01-1ft	C3-01-2ft	C4-01-3ft	C4-02-4ft	D1-00-2ft	D1-01-6ft	D1-04-15ft	DUP-C-080919	D2-01-3ft	D3-01-6ft	D4-01-3ft	E1-01-7ft	E2-00-1ft
						SAMPLING DATE	08/12/2019	08/08/2019	08/08/2019	08/08/2019	08/08/2019	08/08/2019	08/08/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/08/2019	08/09/2019	08/09/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use																	
Aluminum							11900		15000	12100	7450	15200		6070	6700	5670	11800	6770	6660	9870	5310	12600
Mercury	0.18	0.81	0.81	2.8	5.7		ND		0.034	ND	0.013 J	0.025		0.44	0.078	ND	0.080	ND	ND	0.013 J	0.086	0.019
Arsenic	13	16	16	16	16		3.4		3.4	4.0	4.8	5.0		8.3	5.7	2.9	4.5	3.2 J	3.3 J	3.3 J	3.3	5.0
Barium	350	350	400	400	10000		119		129	104	64.6	135		143	57.6	56.5	92.8	62.7	53.1	56.5	43.5	115
Beryllium	7.2	14	72	590	2700		0.64		0.72	0.75	0.44 J	0.85		0.41 J	0.34 J	0.29 J	0.66	0.37 J	0.43 J	0.52	0.31 J	0.68
Cadmium	2.5	2.5	4.3	9.3	60		0.29 J		ND	ND	ND	ND		0.57 J	ND	ND	ND	ND	ND	ND	ND	0.31 J
Calcium							73000		2960	18900	84700	3690		29900	68400	66600	25400	77300	83400	25100	79700	80600
Chromium							17.2		20.4	18.5	15.2	22.0		17.8	11.0	9.8	18.4	11.2	10.8	15.4	9.5	18.3
Cobalt							9.5 J		8.6 J	7.3 J	5.3 J	10.2 J		5.0 J	5.4 J	4.7 J	7.8 J	5.8 J	5.6 J	6.1 J	4.6 J	8.4 J
Copper	50	270	270	270	10000		18.8		10.5	14.4	14.8	14.0		37.6	16.0	10.9	19.8	10.8	13.6	12.3	15.6	19.9
Iron							20600		22700	23100	15200	25500		20000	13700	11900	20000	12900	14000	17600	11900	22600
Lead	63	400	400	1000	3900		13.2		15.9	18.1	41.4	17.9		545	45.9	10.8	48.4	13.3	12.0	14.6	15.7	19.0
Magnesium							26000		4240	13000	23200	5470		8390	21000	26600	15300	26700	31800	16100	30300	29100
Manganese	1600	2000	2000		10000		597		221	234	368	541		212	337	358	358	407	413	164	329	573
Nickel	30	140	310	310	10000		23.1		19.8	18.4	13.7	24.3		14.8	13.3	11.2	19.8	12.4	12.8	16.2	10.6	20.4
Potassium							2920		1530	1510	1460	1770		945 J	1260	1350	1790	1300	1450	1460	1290	2440 F1
Selenium	3.9	36	180	1500	6800		ND		ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND		ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium							204 J		546 J	795 J	916 J	591 J		1810	728 J	159 J	1680	1280	688 J	1000 J	424 J	1040
Vanadium							25.2		26.1	26.3	19.0	27.7		15.7	15.7	14.7	23.0	15.2	17.9	19.7	15.6	27.5
Zinc	109	2200			10000		93.4		76.1	87.3	73.9	90.1		386	70.5	53.3	122	58.3	63.2	67.9	85.2	74.5
WetChem																						
Chromium, hexavalent	1	22	110	400	800		ND				ND	ND		ND		ND	ND					ND
Cyanide, Total	27	27	27	27	10000		ND		0.15 J	ND	ND	ND		0.25 J	ND	ND	ND	ND	ND	ND	ND	ND F1

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	E2-01-2ft	E2-04-15ft	E3-01-2ft	E4-01-2ft	E4-04-15ft
						SAMPLING DATE	08/09/2019	08/09/2019	08/12/2019	08/12/2019	08/12/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use						
VOCs											
1,1-Dichloroethane	0.27	19	26	240	480		ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		ND	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000		**0.0078**	ND	ND	**0.0066 J**	ND
Benzene	0.06	2.9	4.8	44	89		ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND	ND	ND	ND	ND
Cyclohexane							ND	ND	ND	ND	ND
Ethylbenzene	1	30	41	390	780		ND	ND	ND	ND	ND
Isopropylbenzene							ND	ND	ND	ND	ND
Methyl tert-butyl ether	0.93	62	100	500	1000		ND	ND	ND	ND	ND
Methylcyclohexane							ND	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000		**0.00096 J**	**0.00082 J**	ND	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300		ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		ND	ND	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000		ND	ND	ND	ND	ND
SVOCs											
Benzo[a]anthracene	1	1	1	5.6	11		ND	ND	ND	**0.018 J**	ND
Benzo[a]pyrene	1	1	1	1	1.1		ND	ND	ND	**0.011 J**	ND
Benzo[b]fluoranthene	1	1	1	5.6	11		ND	ND	ND	**0.019 J**	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110		ND	ND	ND	ND	ND
Chrysene	1	1	3.9	56	110		ND	ND	ND	**0.014 J**	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000		ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000		ND	ND	ND	**0.023 J**	ND
Fluorene	30	100	100	500	1000		ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000		ND	ND	ND	ND	ND
Phenanthrene	100	100	100	500	1000		ND	ND	ND	**0.014 J**	ND
Pyrene	100	100	100	500	1000		ND	ND	ND	ND	ND
Pesticidies											
4,4'-DDD	0.0033	2.6	13	92	180			ND	ND F2		ND
4,4'-DDE	0.0033	1.8	8.9	62	120			ND	ND F2		ND
4,4'-DDT	0.0033	1.7	7.9	47	94			ND	ND F2		ND
PCBs											
Total PCBs	0.1	1	1	1	25			ND	ND		ND
Herbicidies											
Silvex (2,4,5-TP)	3.8	58	100	500	1000			ND	ND		ND
Metals											

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	E2-01-2ft	E2-04-15ft	E3-01-2ft	E4-01-2ft	E4-04-15ft
						SAMPLING DATE	08/09/2019	08/09/2019	08/12/2019	08/12/2019	08/12/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use						
Aluminum							**10300**	**5600**	**12600**	**19600**	**6420**
Mercury	0.18	0.81	0.81	2.8	5.7		**0.013 J**	**0.011 J**	**0.024**	ND	ND
Arsenic	13	16	16	16	16		**3.4**	**2.6 J**	**3.9**	**4.7**	**3.2**
Barium	350	350	400	400	10000		**78.2**	**64.8**	**115**	**164**	**101**
Beryllium	7.2	14	72	590	2700		**0.56**	**0.28 J**	**0.68**	**0.98**	**0.37**
Cadmium	2.5	2.5	4.3	9.3	60		**0.17 J**	ND	ND	ND	**0.19 J**
Calcium							**63100**	**74900**	**5060**	**4000**	**82700**
Chromium							**16.3**	**9.9**	**17.8**	**27.1**	**10.2**
Cobalt							**7.2 J**	**4.6 J**	**10.3**	**11.7**	**6.7 J**
Copper	50	270	270	270	10000		**14.0**	**13.8**	**14.0**	**17.8**	**14.6**
Iron							**18600**	**11500**	**22600**	**30500**	**13000**
Lead	63	400	400	1000	3900		**15.9**	**11.1**	**17.7**	**16.9**	**11.4**
Magnesium							**29200**	**31300**	**6360**	**7490**	**34600**
Manganese	1600	2000	2000		10000		**477**	**350**	**568**	**568**	**430**
Nickel	30	140	310	310	10000		**18.1**	**11.3**	**21.4**	**29.9**	**13.1**
Potassium							**2010**	**1360**	**1490**	**2750**	**1580**
Selenium	3.9	36	180	1500	6800		ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND	ND	ND	ND	ND
Sodium							**770 J**	**163 J**	**477 J**	**964 J**	**634 J**
Vanadium							**21.5**	**15.0**	**23.4**	**33.4**	**15.0**
Zinc	109	2200			10000		**71.8**	**76.8**	**77.0**	**96.5**	**68.6**
WetChem											
Chromium, hexavalent	1	22	110	400	800			ND	ND		ND
Cyanide, Total	27	27	27	27	10000		ND	ND	ND F1	ND	ND

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 AND 8/12/2019
FILL MATERIAL AND NATIVE SOIL RESULTS - EMERGING CONTAMINANTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	A1-00-11ft	A1-01-12ft	A1-04-15ft	A2-01-2ft	B1-01-1-2ft	DUP-D-080819	B2-00-1ft	B2-01-2ft	B3-01-3ft	B4-00-3ft	B4-01-4ft	B4-04-15ft	C1-01-1ft	C2-01-1ft	C3-01-2ft
LOCATION - SAMPLE DEPTH						A1-00-11ft	A1-01-12ft	A1-04-15ft	A2-01-2ft	B1-01-1-2ft	DUP-D-080819	B2-00-1ft	B2-01-2ft	B3-01-3ft	B4-00-3ft	B4-01-4ft	B4-04-15ft	C1-01-1ft	C2-01-1ft	C3-01-2ft
SAMPLING DATE						08/12/2019	08/12/2019	08/12/2019	09/10/2019	08/08/2019	08/08/2019	09/10/2019	09/10/2019	09/10/2019	08/12/2019	08/12/2019	08/12/2019	08/08/2019	08/08/2019	08/08/2019
SAMPLE TYPE						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS						ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SOIL TYPE						FILL	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
Per- and Poly-fluoroalkyl Substances																				
Perfluorobutanoic acid (PFBA)						ND	ND	ND	**0.077 JB**	ND	ND	**0.15 JB**	**0.096 JB**	**0.096 JB**	ND	ND	ND	ND	ND	ND
Perfluoropentanoic acid (PFPeA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic acid (PFHxA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.062 J**	ND	ND	ND
Perfluoroheptanoic acid (PFHpA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanoic acid (PFOA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.17 J**	ND	ND	ND	ND	ND
Perfluorononanoic acid (PFNA)						**0.046 J**	ND	ND	ND	ND	ND	ND	ND	ND	**0.047 J**	ND	ND	ND	ND	ND
Perfluorodecanoic acid (PFDA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.046 J**	ND	ND	ND	ND	ND
Perfluoroundecanoic acid (PFUnA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic acid (PFDoA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic acid (PFTriA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic acid (PFTeA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanesulfonic acid (PFBS)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonic acid (PFHxS)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonic Acid (PFHpS)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonic acid (PFOS)						ND	ND	ND	ND	ND	**0.23 J**	ND	ND	ND	**0.68**	ND	ND	**0.27 J**	ND	ND
Perfluorodecanesulfonic acid (PFDS)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (FOSA)						ND	ND	**0.23**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2 FTS						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.42 J**	ND	ND	ND
8:2 FTS						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

B - Compound was found in the blank and sample.

TABLE 2

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 AND 8/12/2019
FILL MATERIAL AND NATIVE SOIL RESULTS - EMERGING CONTAMINANTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use														
LOCATION - SAMPLE DEPTH						**C4-01-3ft**	**D1-00-2ft**	**D1-01-6ft**	**D1-04-15ft**	**DUP-C-080919**	**D2-01-3ft**	**D3-01-6ft**	**D4-01-3ft**	**E1-01-7ft**	**E2-00-1ft**	**E2-01-2ft**	**E2-04-15ft**	**E3-01-2ft**	**E4-01-2ft**	**E4-04-15ft**
SAMPLING DATE						08/08/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/08/2019	08/09/2019	08/09/2019	08/09/2019	08/09/2019	08/12/2019	08/12/2019	08/12/2019
SAMPLE TYPE						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS						ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SOIL TYPE						NATIVE	FILL	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
Per- and Poly-fluoroalkyl Substances																				
Perfluorobutanoic acid (PFBA)						ND	**0.069 J**	ND	**0.089 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoropentanoic acid (PFPeA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic acid (PFHxA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic acid (PFHpA)						ND	ND	ND	ND	**0.043 J**	ND	ND	ND	ND	ND	ND	ND	ND	**0.044 J**	ND
Perfluorooctanoic acid (PFOA)						ND	ND	ND	ND	**0.28**	ND	ND	ND	ND	ND	ND	ND	ND	**0.23 J**	ND
Perfluorononanoic acid (PFNA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanoic acid (PFDA)						ND	**0.065 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.049 J**	ND
Perfluoroundecanoic acid (PFUnA)						ND	**0.063 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic acid (PFDoA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic acid (PFTriA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic acid (PFTeA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanesulfonic acid (PFBS)						ND	ND	ND	ND	ND	ND	**0.032 J**	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonic acid (PFHxS)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonic Acid (PFHpS)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonic acid (PFOS)						ND	**2.2**	ND	ND	**0.51 J**	ND	ND	ND	ND	ND	ND	ND	ND	**0.84**	ND
Perfluorodecanesulfonic acid (PFDS)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonamide (FOSA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2 FTS						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.20 J**	ND	ND
8:2 FTS						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

B - Compound was found in the blank and sample.

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

					LOCATION - SAMPLE DEPTH	1-X01-9ft	1-X01-10ft	1-X01-11ft	1-X01-12ft	1-X01-13ft	1-X01-14ft	1-X01-15ft	DUP-A-080519	1-X02-9ft	1-X02-10ft
					SAMPLING DATE	8/5/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
					SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use										
VOCs															
1,1-Dichloroethane	0.27	19	26	240	480	ND	ND	ND	ND	ND	ND	0.00035 J	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60	ND	ND	ND	ND	ND	0.00045 J	0.0039	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000	ND	0.0036 J	ND	0.0047 J	0.017	ND	ND	ND	ND	0.016
Acetone	0.05	100	100	500	1000	0.0071	0.012	0.0067	0.014	0.041	0.014	0.0087	0.0073	ND	0.022
Benzene	0.06	2.9	4.8	44	89	ND	0.0013	0.0010 J	0.0024	0.011	ND	ND	0.0029	ND	0.0055
cis-1,2-Dichloroethene	0.25	59	100	500	1000	ND	ND	ND	ND	0.00017 J	ND	ND	ND	ND	ND
Cyclohexane						0.0010	0.0064	0.016	0.018	0.038	0.00076 J	ND	0.0053	1.4	0.013
Ethylbenzene	1	30	41	390	780	0.00023 J	0.017	0.074	0.036	0.0039	ND	ND	0.041	2.7	0.030
Isopropylbenzene						ND	0.0024	0.0046	0.0036	0.0084	0.00021 J	ND	0.0033	0.28	0.0039
Methyl tert-butyl ether	0.93	62	100	500	1000	0.00039 J	0.00042 J	ND	0.00026 J	0.0013	0.0018	0.012	0.00021 J	ND	0.00068 J
Methylcyclohexane						0.0013	0.013	0.021	0.011	0.015	ND	ND	0.0053	3.9	0.018
Methylene Chloride	0.05	51	100	500	1000	0.0021	ND	ND	ND	ND	0.0023	ND	0.0013	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000	ND	0.00080 J	0.00073 J	0.0012	0.0043	ND	ND	0.0011	0.88	0.025
Xylenes, Total	0.26	100	100	500	1000	0.00076 J	0.0032	0.0069	0.0058	0.012	0.00066 J	ND	0.0050	9.4	0.011
SVOCs															
Benzo[a]anthracene	1	1	1	5.6	11	0.91	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	1	1	1	1	1.1	0.83	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	1	1	1	5.6	11	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110	0.57	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	56	110	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000	0.11 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000	2.4	ND	ND	ND	0.033 J	ND	ND	ND	ND	ND
Fluorene	30	100	100	500	1000	0.16 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11	0.63	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000	ND	0.072 J	0.17 J	0.12 J	0.048 J	ND	ND	0.20 J	0.072 J	0.039 J
Phenanthrene	100	100	100	500	1000	1.8	ND	ND	ND	0.027 J	ND	ND	ND	ND	ND
Pyrene	100	100	100	500	1000	2.2	ND	ND	ND	0.027 J	ND	ND	ND	ND	ND
PCBs															
Total PCBs	0.1	1	1	1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals															
Aluminum						248	5450	8130	7380	6780	6230	6010	6930	7370	4490
Mercury	0.18	0.81	0.81	2.8	5.7	ND	0.011 J	0.017 J	0.019	0.017 J	0.012 J	ND	0.015 J	ND	ND
Arsenic	13	16	16	16	16	1.2 J	3.0	4.4	3.6	3.5	3.5	2.4 J	3.7	3.1	3.3
Barium	350	350	400	400	10000	2.7 J	65.2	85.9	82.9	72.8	72.3	62.3	74.1	112	66.8

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	1-X01-9ft	1-X01-10ft	1-X01-11ft	1-X01-12ft	1-X01-13ft	1-X01-14ft	1-X01-15ft	DUP-A-080519	1-X02-9ft	1-X02-10ft
						SAMPLING DATE	8/5/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use											
Beryllium	7.2	14	72	590	2700		ND	**0.29 J**	**0.39 J**	**0.41**	**0.35**	**0.31 J**	**0.27 J**	**0.31 J**	**0.37**	**0.25 J**
Cadmium	2.5	2.5	4.3	9.3	60		ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.15 J**
Calcium							**154000**	**51000**	**99100**	**74700**	**73100**	**73200**	**68500**	**86100**	**72900**	**93000**
Chromium							**2.2**	**9.2**	**12.7**	**12.1**	**11.5**	**10.1**	**9.6**	**11.3**	**11.7**	**7.3**
Cobalt							ND	**4.2 J**	**6.2 J**	**6.9 J**	**5.7 J**	**4.5 J**	**4.8 J**	**4.7 J**	**5.8 J**	**4.1 J**
Copper	50	270	270	270	10000		ND	**12.3**	**15.0**	**15.0**	**12.7**	**31.5**	**12.3**	**12.1**	**15.6**	**16.9**
Iron							**1480**	**11800**	**15300**	**14300**	**13400**	**13300**	**11500**	**13600**	**14500**	**9300**
Lead	63	400	400	1000	3900		**1.9**	**5.7**	**12.7**	**13.9**	**11.7**	**11.5**	**10.2**	**10.6**	**14.3**	**13.8**
Magnesium							**5460**	**14000**	**44200**	**29200**	**26800**	**28600**	**28600**	**34500**	**25900**	**41100**
Manganese	1600	2000	2000		10000		**49.6**	**293**	**420**	**401**	**406**	**351**	**347**	**375**	**398**	**387**
Nickel	30	140	310	310	10000		**3.0 J**	**8.7**	**14.0**	**14.5**	**13.6**	**11.5**	**10.9**	**11.7**	**12.7**	**8.1**
Potassium							**174 J**	**1200**	**2040**	**1730**	**1560**	**1460**	**1480**	**1670**	**1700**	**1260**
Selenium	3.9	36	180	1500	6800		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium							**201 J**	**457 J**	**602 J**	**505 J**	**452 J**	**359 J**	**299 J**	**542 J**	**517 J**	**423 J**
Vanadium							**1.5 J**	**15.6**	**17.9**	**17.5**	**16.0**	**15.4**	**15.1**	**16.2**	**17.6**	**13.1**
Zinc	109	2200			10000		ND	**71.0**	**89.6**	**74.5**	**65.2**	**62.5**	**71.0**	**83.7**	**64.8**	**84.0**

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	1-X02-11ft	1-X02-12ft	1-X02-13ft	1-X02-14ft	1-X03-8-9ft	1-X03-10ft	1-X03-11ft	1-X03-12ft	1-X03-13ft	1-X03-14ft	1-X03-15ft
						SAMPLING DATE	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use												
VOCs																	
1,1-Dichloroethane	0.27	19	26	240	480		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND	0.0028	0.0073	0.0024	ND	ND	ND	ND	0.00054 J	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		0.011	0.0036 J	0.0028 J	ND	0.0045 J	ND	0.0040 J	ND	0.0037 J	ND	ND
Acetone	0.05	100	100	500	1000		0.019	0.0076	0.0060 J	0.0079	0.011	0.0088	0.011	ND	0.012	0.0094	0.011
Benzene	0.06	2.9	4.8	44	89		0.0024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane							0.0049	0.00048 J	0.0015	ND	ND	ND	0.0015	ND	ND	ND	ND
Ethylbenzene	1	30	41	390	780		0.0096	0.0028	0.0023	0.00064 J	ND	ND	ND	0.00084 J	ND	ND	ND
Isopropylbenzene							0.0029	0.00023 J	0.00027 J	ND	ND	ND	0.00065 J	0.00069 J	ND	ND	ND
Methyl tert-butyl ether	0.93	62	100	500	1000		0.00063 J	0.0075	0.018	0.015	0.00024 J	0.00018 J	0.00032 J	ND	0.0027	0.031	0.030
Methylcyclohexane							0.0096	0.00061 J	0.0017	ND	ND	ND	0.0023	0.0041	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000		0.00083 J	0.0012	0.00053 J	0.00071 J	0.00078 J	0.00071 J	0.0011	ND	0.0015	0.0012	0.0015
Tetrachloroethene	1.3	5.5	19	150	300		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		0.0074	0.0013	0.0012	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000		0.0041	0.0096	0.010	0.0020 J	0.00044 J	0.00032 J	0.00041 J	0.0017 J	0.00033 J	ND	ND
SVOCs																	
Benzo[a]anthracene	1	1	1	5.6	11		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	1	1	1	1	1.1		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	1	1	1	5.6	11		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	56	110		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000		ND	ND	ND	ND	ND	ND	0.018 J	0.023 J	ND	ND	ND
Fluorene	30	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000		0.055 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	100	100	100	500	1000		ND	ND	ND	ND	ND	ND	0.014 J	0.022 J	ND	ND	ND
PCBs																	
Total PCBs	0.1	1	1	1	25		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals																	
Aluminum							3920	6060	6410	6040	3140	3180	4930	4380	4310	6450	6270
Mercury	0.18	0.81	0.81	2.8	5.7		ND	0.013 J	ND	ND	ND	ND	ND	ND	0.013 J	0.011 J	0.012 J
Arsenic	13	16	16	16	16		3.1	3.5	2.9	3.0	2.5 J	1.8 J	2.7 J	2.8	3.1	3.1	3.4
Barium	350	350	400	400	10000		61.4	56.0	65.7	61.3	34.8 J	25.9 J	63.6	51.4	44.5	65.2	64.3

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	1-X02-11ft	1-X02-12ft	1-X02-13ft	1-X02-14ft	1-X03-8-9ft	1-X03-10ft	1-X03-11ft	1-X03-12ft	1-X03-13ft	1-X03-14ft	1-X03-15ft
						SAMPLING DATE	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use												
Beryllium	7.2	14	72	590	2700		**0.21 J**	**0.31 J**	**0.30 J**	**0.31 J**	**0.15 J**	**0.11 J**	**0.23 J**	**0.20 J**	**0.19 J**	**0.35**	**0.32 J**
Cadmium	2.5	2.5	4.3	9.3	60		**0.23 J**	ND	ND	ND	ND	**0.16 J**	**0.16 J**	ND	ND	ND	ND
Calcium							**103000**	**88000**	**81100**	**79600**	**111000**	**139000**	**85800**	**110000**	**115000**	**66300**	**68800**
Chromium							**6.4**	**10.8**	**10.5**	**10.3**	**5.9**	**5.4**	**8.3**	**7.6**	**7.3**	**10.7**	**10.1**
Cobalt							**3.4 J**	**4.1 J**	**4.6 J**	**4.8 J**	**2.3 J**	**2.1 J**	**3.1 J**	**3.4 J**	**3.4 J**	**5.5 J**	**5.3 J**
Copper	50	270	270	270	10000		**13.6**	**13.7**	**12.8**	**14.4**	**12.7**	**7.3**	**12.5**	**13.7**	**9.3**	**13.1**	**13.3**
Iron							**8520**	**12100**	**12500**	**12000**	**6870**	**8440**	**10000**	**8660**	**8910**	**12800**	**12400**
Lead	63	400	400	1000	3900		**12.9**	**24.2**	**11.6**	**11.6**	**10.2**	**6.2**	**9.8**	**9.9**	**11.0**	**12.4**	**13.3**
Magnesium							**39900**	**29900**	**32600**	**34500**	**27100**	**75100**	**28900**	**26700**	**52400**	**26900**	**27800**
Manganese	1600	2000	2000		10000		**403**	**331**	**352**	**381**	**290**	**372**	**357**	**310**	**391**	**368**	**364**
Nickel	30	140	310	310	10000		**6.8**	**11.2**	**11.2**	**11.3**	**5.9 J**	**5.7 J**	**8.4**	**7.7**	**7.6**	**12.6**	**12.2**
Potassium							**1010**	**1430**	**1550**	**1450**	**832 J**	**970**	**1180**	**1130**	**1180**	**1530**	**1520**
Selenium	3.9	36	180	1500	6800		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium							**414 J**	**379 J**	**281 J**	**248 J**	**457 J**	**399 J**	**552 J**	**468 J**	**472 J**	**326 J**	**287 J**
Vanadium							**11.1**	**15.7**	**15.9**	**15.3**	**8.8 J**	**8.0 J**	**13.5**	**11.4**	**12.0**	**15.4**	**15.0**
Zinc	109	2200			10000		**88.7**	**75.9**	**65.7**	**59.1**	**65.8**	**57.7**	**108**	**80.8**	**81.1**	**67.0**	**52.7**

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	1-X04-9ft	1-X04-10ft	1-X04-11ft	1-X04-12ft	1-X04-13ft	1-X04-14ft	1-X04-15ft	2-X01-8ft	2-X01-9ft	2-X01-10ft	2-X01-11ft
						SAMPLING DATE	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use												
VOCs																	
1,1-Dichloroethane	0.27	19	26	240	480		ND	ND	ND	0.00041 J	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND	ND	ND	0.0035	0.0052	0.0045	0.0059	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		ND	ND	ND	0.0034 J	0.0041 J	0.0035 J	0.0035 J	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000		ND	ND	ND	0.020	0.013	0.0078	0.010	0.012	0.013	0.0095	0.015
Benzene	0.06	2.9	4.8	44	89		ND	0.0027	0.0021	0.00058 J	0.00036 J	0.00053 J	0.00070 J	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane							0.0011	0.0016	0.0042	0.00037 J	ND	0.00041 J	0.00055 J	ND	ND	ND	ND
Ethylbenzene	1	30	41	390	780		ND	0.011	0.025	0.00033 J	0.00042 J	0.00044 J	0.00052 J	ND	ND	ND	ND
Isopropylbenzene							ND	0.00098 J	0.0022	ND	ND	0.00016 J	0.00020 J	ND	ND	ND	0.00016 J
Methyl tert-butyl ether	0.93	62	100	500	1000		ND	0.00034 J	0.00018 J	0.0088	0.0097	0.044	0.032	ND	ND	ND	0.00013 J
Methylcyclohexane							0.0019	0.0043	0.0081	ND	ND	0.00054 J	0.00095 J	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000		0.0015	ND	ND	0.00094 J	0.0011	ND	ND	0.0015	0.0028	ND	0.00059 J
Tetrachloroethene	1.3	5.5	19	150	300		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		ND	0.0013	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000		0.00061 J	0.014	0.0060	0.0014 J	0.0021	0.0024	0.0033	0.00031 J	ND	ND	ND
SVOCs																	
Benzo[a]anthracene	1	1	1	5.6	11		0.086	0.020 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	1	1	1	1	1.1		0.063	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	1	1	1	5.6	11		0.095	0.010 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110		0.028 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	56	110		0.14 J	0.011 J	ND	ND	ND	ND	ND	0.022 J	ND	ND	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000		0.021 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000		0.27 J	0.017 J	ND	ND	ND	ND	ND	0.041 J	ND	ND	ND
Fluorene	30	100	100	500	1000		0.033 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		0.058	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000		ND	0.074 J	0.27 J	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100	100	100	500	1000		0.27 J	0.021 J	ND	ND	ND	ND	ND	0.027 J	ND	ND	ND
Pyrene	100	100	100	500	1000		0.29 J	0.020 J	ND	ND	ND	ND	ND	0.033 J	ND	ND	ND
PCBs																	
Total PCBs	0.1	1	1	1	25		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals																	
Aluminum							803	6340	6410	8090	6940	4850	6450	6380	7310	7060	6630
Mercury	0.18	0.81	0.81	2.8	5.7		0.012 J	0.013 J	0.014 J	0.013 J	0.014 J	0.012 J	0.013 J	ND	ND	ND	0.012 J
Arsenic	13	16	16	16	16		1.7 J	2.9	3.7	3.9	4.4	3.2	3.6	2.4 J	2.6 J	3.0 J	2.5 J
Barium	350	350	400	400	10000		19.3 J	100	71.1	79.8	70.8	43.5	65.1	58.7	83.8	65.7	69.1

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	**1-X04-9ft**		**1-X04-10ft**	**1-X04-11ft**	**1-X04-12ft**	**1-X04-13ft**	**1-X04-14ft**	**1-X04-15ft**	**2-X01-8ft**	**2-X01-9ft**	**2-X01-10ft**	**2-X01-11ft**
						SAMPLING DATE	**08/05/2019**		**08/05/2019**	**08/05/2019**	**08/05/2019**	**08/05/2019**	**08/05/2019**	**08/05/2019**	**08/05/2019**	**08/05/2019**	**08/05/2019**	**08/05/2019**
						SAMPLE TYPE	**SOIL**		**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
						UNITS	**mg/kg**		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
						SOIL TYPE	**NATIVE**		**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**
	Unrestricted Use	**Residential Use**	**Restricted Residential Use**	**Commercial Use**	**Industrial Use**													
Beryllium	7.2	14	72	590	2700		ND		**0.33**	**0.34**	**0.36**	**0.35**	**0.22**	**J** **0.33**	**0.33**	**J** **0.40**	**J** **0.38**	**J** **0.35**	**J**
Cadmium	2.5	2.5	4.3	9.3	60		**0.13**	**J** ND		ND	**0.16**	**J** ND	ND	ND	ND	ND	ND	**0.18**	**J**
Calcium							**207000**		**68700**	**74300**	**78800**	**74500**	**99300**	**83300**	**82100**	**87700**	**67100**	**69300**
Chromium							**4.1**		**10.3**	**10.1**	**12.6**	**11.4**	**8.7**	**10.2**	**10.9**	**12.3**	**11.8**	**11.4**
Cobalt							ND		**4.3**	**J** **5.9**	**J** **6.1**	**J** **5.2**	**J** **4.0**	**J** **5.1**	**J** **5.1**	**J** **5.5**	**J** **5.7**	**J** **5.7**	**J**
Copper	50	270	270	270	10000		**4.1**		**13.3**	**16.7**	**15.3**	**14.0**	**10.0**	**12.2**	**12.3**	**14.1**	**12.9**	**15.6**
Iron							**3050**		**11700**	**12000**	**13900**	**13400**	**9920**	**12600**	**12500**	**14100**	**14500**	**13900**
Lead	63	400	400	1000	3900		**50.7**		**17.9**	**15.5**	**14.0**	**16.5**	**12.3**	**27.7**	**13.4**	**11.6**	**12.1**	**16.2**
Magnesium							**6730**		**25900**	**30500**	**32100**	**30000**	**37400**	**34700**	**29300**	**35200**	**27500**	**27800**
Manganese	1600	2000	2000		10000		**79.8**		**341**	**427**	**399**	**359**	**320**	**401**	**405**	**395**	**381**	**387**
Nickel	30	140	310	310	10000		**7.0**		**10.0**	**12.6**	**14.3**	**12.4**	**9.8**	**12.0**	**12.0**	**12.8**	**13.1**	**12.9**
Potassium							**379**	**J**	**1600**	**1600**	**1980**	**1710**	**1300**	**1620**	**1650**	**1900**	**1720**	**1510**
Selenium	3.9	36	180	1500	6800		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium							**342**	**J**	**477**	**J** **430**	**J** **328**	**J** **295**	**J** **233**	**J** **250**	**J** **480**	**J** **614**	**J** **534**	**J** **519**	**J**
Vanadium							**3.4**	**J**	**16.8**	**15.2**	**17.8**	**15.7**	**11.8**	**14.5**	**16.2**	**18.6**	**16.9**	**16.1**
Zinc	109	2200			10000		**38.1**		**74.2**	**63.8**	**66.9**	**59.2**	**63.6**	**56.4**	**70.1**	**67.8**	**70.7**	**76.5**

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	2-X02-8ft	2-X02-9ft	2-X02-10ft	2-X02-11ft	2-X02-12ft	2-X02-13ft	2-X02-14ft	2-X03-9ft	2-X03-10ft	2-X03-11ft	2-X03-12ft
						SAMPLING DATE	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use												
VOCs																	
1,1-Dichloroethane	0.27	19	26	240	480		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		ND	0.016	ND	ND	ND	0.014	0.051	0.0072	0.011	ND	ND
Acetone	0.05	100	100	500	1000		ND	0.046	ND	0.55	ND	0.032	0.086	0.011	0.029	0.017	0.0076
Benzene	0.06	2.9	4.8	44	89		ND	ND	ND	ND	ND	ND	ND	0.00065 J	0.0095	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane							ND	ND	0.64	ND	0.77	ND	0.0061	0.0036	ND	ND	ND
Ethylbenzene	1	30	41	390	780		ND	0.0052	0.70	0.83	1.2	0.070	0.034	0.034	0.29	0.00047 J	0.00029 J
Isopropylbenzene							ND	0.0017	0.19	0.15	0.14	0.011	0.0022	0.0016	0.035	ND	ND
Methyl tert-butyl ether	0.93	62	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0091	0.018
Methylcyclohexane							ND	0.11	2.7	1.1	2.4	0.20	0.016	0.0061	0.084	ND	ND
Methylene Chloride	0.05	51	100	500	1000		ND	ND	ND	ND	ND	ND	0.0032	0.00092 J	ND	0.0032	0.00096 J
Tetrachloroethene	1.3	5.5	19	150	300		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		ND	ND	0.053 J	0.038 J	0.10 J	0.0092	0.0035	0.0043	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000		ND	0.015	1.8	3.6	6.0	0.40	0.12	0.021	0.13	0.00026 J	ND
SVOCs																	
Benzo[a]anthracene	1	1	1	5.6	11		0.30	0.68	ND	ND	0.60	0.041	ND	0.022 J	0.028 J	ND	ND
Benzo[a]pyrene	1	1	1	1	1.1		0.24	0.51	ND	ND	0.45	0.029 J	ND	0.015 J	0.019 J	ND	ND
Benzo[b]fluoranthene	1	1	1	5.6	11		0.33	0.75	ND	ND	0.65	0.042	ND	0.023 J	0.020 J	ND	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110		0.14	0.29	ND	ND	0.27	0.014 J	ND	ND	0.021 J	ND	ND
Chrysene	1	1	3.9	56	110		0.34 J	0.84	ND	ND	0.66	0.046 J	ND	0.019 J	0.029 J	ND	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		0.047	0.088	ND	ND	0.077	ND	ND	ND	0.016 J	ND	ND
Dibenzofuran	7	14	59	350	1000		0.081 J	0.35 J	ND	ND	0.21 J	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000		1.0	2.7	ND	ND	2.0	0.12 J	ND	0.041 J	0.020 J	ND	ND
Fluorene	30	100	100	500	1000		0.094 J	0.37 J	ND	ND	0.21 J	0.011 J	ND	0.0098 J	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		0.21	0.40	ND	ND	0.36	0.023 J	ND	ND	0.018 J	ND	ND
Naphthalene	12	100	100	500	1000		ND	0.12 J	0.50	0.75	0.63	0.16 J	0.10 J	0.44	ND	ND	ND
Phenanthrene	100	100	100	500	1000		0.87	2.8	ND	ND	1.8	0.10 J	ND	0.054 J	ND	ND	ND
Pyrene	100	100	100	500	1000		0.81	2.5	ND	ND	1.7	0.11 J	ND	0.039 J	0.024 J	ND	ND
PCBs																	
Total PCBs	0.1	1	1	1	25		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals																	
Aluminum							8440	6410	6880	6470	6360	6090	5400	7600	3900	2760	5340
Mercury	0.18	0.81	0.81	2.8	5.7		0.010 J	ND	ND	ND	ND	0.022	ND	ND	ND	0.023	0.013 J
Arsenic	13	16	16	16	16		2.6 J	3.2	2.9	3.1	2.5	2.6	2.2 J	3.3	1.6 J	3.6	1.9 J
Barium	350	350	400	400	10000		61.5	49.7	55.3	50.8	51.8	47.4	61.8	70.9	49.6	24.5 J	52.1

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	2-X02-8ft	2-X02-9ft	2-X02-10ft	2-X02-11ft	2-X02-12ft	2-X02-13ft	2-X02-14ft	2-X03-9ft	2-X03-10ft	2-X03-11ft	2-X03-12ft
						SAMPLING DATE	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use												
Beryllium	7.2	14	72	590	2700		0.42	0.34 J	0.36 J	0.34 J	0.33	0.31 J	0.26 J	0.43	0.21 J	0.16 J	0.27 J
Cadmium	2.5	2.5	4.3	9.3	60		0.13 J	0.12 J	0.14 J	0.13 J	ND	0.12 J	0.21 J	ND	0.29 J	0.29 J	ND
Calcium							86700	97700	79900	77600	71200	74800	89300	56400	93200	126000	117000
Chromium							13.1	10.4	10.8	10.1	11.1	10	8.1	11.6	6.6	4.9	8.7
Cobalt							6.2 J	5.2 J	5.6 J	5.3 J	4.7 J	5.1 J	4.4 J	5.2 J	3.1 J	3.5 J	5.3 J
Copper	50	270	270	270	10000		13.4	14.7	13.0	12.6	11.6	12.3	15.1	21.4	12.2	10.5	10.6
Iron							15100	13300	13700	13700	12500	12700	10700	12400	8390	7150	11900
Lead	63	400	400	1000	3900		12.2	13.5	15.2	15.5	12.3	12.4	12.2	39.9	10.8	22.8	10
Magnesium							34600	28500	31900	31500	27300	29400	36500	15300	38400	65900	56300
Manganese	1600	2000	2000		10000		432	418	426	412	374	409	421	256	436	332	350
Nickel	30	140	310	310	10000		14.5	12.2	11.7	11.9	10.9	11.1	9.8	13.1	7.4	8.6	12.8
Potassium							1670	1330	1390	1350	1290	1290	1480	1230	1030	951	1400
Selenium	3.9	36	180	1500	6800		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium							564 J	456 J	493 J	450 J	455 J	323 J	263 J	807 J	483 J	400 J	324 J
Vanadium							18.2	18.8	16.0	15.8	15.5	15.2	12.8	16.5	11.5	8.1	13.3
Zinc	109	2200			10000		63.1	59.6	69.8	68.3	61.9	62.3	81.9	66.8	104	67.6	46.5

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

					LOCATION - SAMPLE DEPTH	DUP-B-080519	2-X04-9ft	2-X04-10ft	2-X04-11ft	2-X04-12ft	2-X04-13ft	2-X04-14ft	2-X04-15ft
					SAMPLING DATE	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
					SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use								
VOCs													
1,1-Dichloroethane	0.27	19	26	240	480	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60	ND	ND	ND	ND	ND	ND	0.020	0.023
2-Butanone (MEK)	0.12	100	100	500	1000	ND	ND	0.0089	0.0067	0.0048 J	ND	ND	ND
Acetone	0.05	100	100	500	1000	0.0096	0.013	0.096	0.10	0.072	ND	0.042	0.032
Benzene	0.06	2.9	4.8	44	89	ND	ND	0.0038	0.0011	0.00055 J	0.053 J	0.00041 J	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000	ND	ND	ND	0.00028 J	0.00019 J	ND	ND	ND
Cyclohexane						ND	ND	0.0020	0.011	0.0055	0.069 J	0.00030 J	0.00041 J
Ethylbenzene	1	30	41	390	780	ND	ND	0.050	0.0029	0.0021	0.30	0.0028	0.0012
Isopropylbenzene						ND	ND	0.0052	0.0022	0.0032	0.036 J	0.00042 J	0.00018 J
Methyl tert-butyl ether	0.93	62	100	500	1000	0.041	0.033	0.0043	0.015	0.015	ND	0.016	0.030
Methylcyclohexane						ND	ND	0.0073	0.011	0.0027	0.15	0.00067 J	0.00077 J
Methylene Chloride	0.05	51	100	500	1000	0.0021	0.00065 J	0.0022	0.0014	0.0012	ND	0.0013	0.0030
Tetrachloroethene	1.3	5.5	19	150	300	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000	ND	ND	0.0074	0.0014	0.00083 J	0.60	0.0029	0.0011
Xylenes, Total	0.26	100	100	500	1000	ND	ND	0.071	0.018	0.010	1.9	0.017	0.0057
SVOCs													
Benzo[a]anthracene	1	1	1	5.6	11	ND	ND	ND	ND	ND	0.043	ND	ND
Benzo[a]pyrene	1	1	1	1	1.1	ND	ND	ND	ND	ND	0.020 J	ND	ND
Benzo[b]fluoranthene	1	1	1	5.6	11	ND	ND	ND	ND	ND	0.026 J	ND	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110	ND	ND	ND	ND	ND	0.0095 J	ND	ND
Chrysene	1	1	3.9	56	110	ND	ND	ND	ND	ND	0.066 J	ND	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000	ND	ND	ND	ND	ND	0.014 J	ND	ND
Fluoranthene	100	100	100	500	1000	ND	ND	ND	ND	ND	0.072 J	ND	ND
Fluorene	30	100	100	500	1000	ND	ND	ND	ND	ND	0.051 J	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000	ND	0.18 J	0.025 J	0.020 J	ND	0.78 F1	0.011 J	0.016 J
Phenanthrene	100	100	100	500	1000	ND	ND	ND	ND	ND	0.15 J	ND	ND
Pyrene	100	100	100	500	1000	ND	ND	ND	ND	ND	0.14 J	ND	ND
PCBs													
Total PCBs	0.1	1	1	1	25	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Aluminum						5380	6420	7080	6670	7930	6880	7350	7040
Mercury	0.18	0.81	0.81	2.8	5.7	0.020	0.014 J	0.015 J	0.019	0.016 J	0.018	0.019	0.015 J
Arsenic	13	16	16	16	16	2.8	2.8	2.8	2.3 J	3.4	2.8 J	1.8 J	2.1 J
Barium	350	350	400	400	10000	33.1 J	172	74.2	65.1	75.0	117	75.5	79.3

TABLE 3

SUBSURFACE SOIL RESULTS - 8/5/2019
X DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

					LOCATION - SAMPLE DEPTH	DUP-B-080519	2-X04-9ft	2-X04-10ft	2-X04-11ft	2-X04-12ft	2-X04-13ft	2-X04-14ft	2-X04-15ft
					SAMPLING DATE	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019	08/05/2019
					SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use								
Beryllium	7.2	14	72	590	2700	**0.22 J**	**0.35**	**0.35 J**	**0.35 J**	**0.42 J**	**0.35 J**	**0.37 J**	**0.38 J**
Cadmium	2.5	2.5	4.3	9.3	60	**0.18 J**	**0.18 J**	**0.23 J**	ND	ND	**0.15 J**	ND	ND
Calcium						**71600**	**80200**	**84100**	**90900**	**92400**	**79400**	**80900**	**92300**
Chromium						**8.5**	**10.4**	**11.2**	**11.0**	**12.8**	**11.5**	**11.9**	**11.4**
Cobalt						**4.6 J**	**5.8 J**	**4.9 J**	**4.5 J**	**5.2 J**	**4.8 J**	**5.5 J**	**5.6 J**
Copper	50	270	270	270	10000	**10.4**	**13.4**	**13.0**	**12.5**	**12.9**	**10.7**	**12.3**	**13.5**
Iron						**13000**	**13300**	**14200**	**13200**	**15300**	**12500**	**12900**	**13400**
Lead	63	400	400	1000	3900	**7.9**	**26.8**	**13.8**	**32.5**	**13.0**	**266**	**50.8**	**16.4**
Magnesium						**29700**	**32200**	**35900**	**34400**	**39300**	**30700**	**33500**	**40200**
Manganese	1600	2000	2000		10000	**625**	**401**	**375**	**377**	**438**	**369**	**405**	**422**
Nickel	30	140	310	310	10000	**10.4**	**12.7**	**12.0**	**11.0**	**12.6**	**11.1**	**13.1**	**12.5**
Potassium						**1020**	**1560**	**1670**	**1710**	**2060**	**1800**	**1970**	**1890**
Selenium	3.9	36	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND
Sodium						**330 J**	**376 J**	**387 J**	**340 J**	**380 J**	**348 J**	**320 J**	**331 J**
Vanadium						**12.5**	**16.5**	**17.0**	**16.0**	**18.6**	**15.7**	**16.9**	**17.3**
Zinc	109	2200			10000	**86.6**	**65.2**	**73.5**	**63.3**	**68.1**	**68.6**	**65.7**	**61.9**

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 4

SUBSURFACE SOIL RESULTS - 8/6/2019 AND 8/7/2019
Y AND Z DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	1-Y01-11ft	1-Y02-9ft	1-Y03-10ft	1-Y04-9ft	2-Y01-9ft	2-Y02-4ft	2-Y03-5ft	2-Y04-12ft	2-Y05-12 ft	3-Y04-13 ft
						SAMPLING DATE	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/07/2019	08/07/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use											
VOCs																
1,1-Dichloroethane	0.27	19	26	240	480		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000		ND	ND	**0.011**	ND	ND	ND	ND	ND	ND	ND
Benzene	0.06	2.9	4.8	44	89		ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.00029 J**
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane							ND	ND	ND	**0.0042**	ND	ND	ND	ND	**3.0**	ND
Ethylbenzene	1	30	41	390	780		ND	ND	**0.00085 J**	**0.0044**	ND	ND	ND	ND	**2.3**	ND
Isopropylbenzene							ND	ND	**0.00019 J**	**0.00085 J**	ND	ND	ND	ND	**0.41**	ND
Methyl tert-butyl ether	0.93	62	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane							ND	ND	ND	**0.015**	ND	ND	ND	ND	**8.3**	ND
Methylene Chloride	0.05	51	100	500	1000		**0.00056 J**	**0.00060 J**	ND	**0.0010 J**	**0.00074 J**	**0.00075 J**	ND	ND	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	**0.61**	ND
Xylenes, Total	0.26	100	100	500	1000		ND	**0.00035 J**	**0.00040 J**	**0.0078**	ND	ND	ND	ND	**11**	**0.00041 J**
SVOCs																
Benzo[a]anthracene	1	1	1	5.6	11		ND F1	**0.086**	ND	ND	**0.030 J**	ND	ND	ND	ND	ND
Benzo[a]pyrene	1	1	1	1	1.1		ND F1	**0.082**	ND	ND	**0.019 J**	**0.015 J**	ND	ND	ND	ND
Benzo[b]fluoranthene	1	1	1	5.6	11		ND F1	**0.14**	ND	ND	**0.032 J**	**0.042**	ND	ND	ND	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110		ND F1	**0.043**	ND	ND	**0.016 J**	**0.020 J**	ND	ND	ND	ND
Chrysene	1	1	3.9	56	110		ND	**0.095 J**	ND	ND	**0.025 J**	**0.032 J**	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND F1 F2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000		ND F1	ND	ND	ND	**0.013 J**	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000		ND F1	**0.19 J**	ND	ND	**0.027 J**	**0.073 J**	**0.024 J**	ND	ND	ND
Fluorene	30	100	100	500	1000		ND F1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		ND F2	**0.082**	ND	ND	**0.020 J**	ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000		ND F1	ND	ND	**0.00031 J**	**0.025 J**	ND	ND	ND	**0.27 J**	ND
Phenanthrene	100	100	100	500	1000		ND F1	**0.041 J**	ND	ND	**0.029 J**	**0.047 J**	**0.030 J**	ND	ND	ND
Pyrene	100	100	100	500	1000		ND	**0.15 J**	ND	ND	**0.022 J**	**0.048 J**	**0.021 J**	ND	ND	ND

TABLE 4

SUBSURFACE SOIL RESULTS - 8/6/2019 AND 8/7/2019
Y AND Z DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	1-Y01-11ft	1-Y02-9ft	1-Y03-10ft	1-Y04-9ft	2-Y01-9ft	2-Y02-4ft	2-Y03-5ft	2-Y04-12ft	2-Y05-12 ft	3-Y04-13 ft
LOCATION - SAMPLE DEPTH						1-Y01-11ft	1-Y02-9ft	1-Y03-10ft	1-Y04-9ft	2-Y01-9ft	2-Y02-4ft	2-Y03-5ft	2-Y04-12ft	2-Y05-12 ft	3-Y04-13 ft
SAMPLING DATE						08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/06/2019	08/07/2019	08/07/2019
SAMPLE TYPE						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SOIL TYPE						NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
Metals															
Aluminum						5920	7290	7280	7580	7930	8620	8570	7520	8140	6020
Mercury	0.18	0.81	0.81	2.8	5.7	ND	ND	0.012 J	0.015 J	0.019	0.012 J	ND	0.012 J	ND	0.012 J
Arsenic	13	16	16	16	16	2.7 J	3.8	3.0 J	5.4	3.6	4.9	3.2 J	3.2 J	3.3 J	3.1 J
Barium	350	350	400	400	10000	51.3	63.7	48.2	60.5	49.4	69.8	65.7	75.0	93.5	81.0
Beryllium	7.2	14	72	590	2700	0.27 J	0.38 J	0.35 J	0.39 J	0.40 J	0.45	0.44	0.39 J	0.53	0.37 J
Cadmium	2.5	2.5	4.3	9.3	60	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16 J
Calcium						73800	63400	59800	72100	64600	72600	73700	67500	55800	89400
Chromium						10.6	11.9	11.4	12.4	13.2	12.8	12.8	12.0	13.5	10.6
Cobalt						4.6 J	5.3 J	5.3 J	5.7 J	5.1 J	6.1 J	6.1 J	6.1 J	6.1 J	4.2 J
Copper	50	270	270	270	10000	13.7	13.5	12.1	14.6	13.5	15.7	14.1	13.7	18.0	11.0
Iron						11400	13200	12600	14500	13600	16500	14800	13700	16000	11900
Lead	63	400	400	1000	3900	12.1	14.7	12.1	15.9	39.6	13.1	11.6	10.5	11.0	10.4
Magnesium						29700	25000	22400	29500	24300	24500	24200	27800	18700	40000
Manganese	1600	2000	2000		10000	382	338	347	366	395	393	339	366	347	328
Nickel	30	140	310	310	10000	9.1	11.8	11.5	12.6	12.8	13.6	13.9	12.4	13.7	11.3
Potassium						1500	1810	1810	1870	1930	1860	1970	1950	2070	1630
Selenium	3.9	36	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium						289 J	344 J	968 J	1190	1560	1230	1480	938 J	889 J	796 J
Vanadium						14.7	17.6	16.8	18.3	18.2	21.3	20.0	18.1	24.2	15.0
Zinc	109	2200			10000	77.3	59.5	59.8	63.0	72.3	61.4	59.4	64.4	84.9	66.0

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 4

SUBSURFACE SOIL RESULTS - 8/6/2019 AND 8/7/2019
Y AND Z DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	1-Z01-7ft	1-Z02-11 ft	1-Z03-11 ft	1-Z04-10 ft	2-Z01-7 ft	2-Z03-12 ft	2-Z04-9 ft	2-Z05-12 ft
LOCATION - SAMPLE DEPTH						1-Z01-7ft	1-Z02-11 ft	1-Z03-11 ft	1-Z04-10 ft	2-Z01-7 ft	2-Z03-12 ft	2-Z04-9 ft	2-Z05-12 ft
SAMPLING DATE						08/06/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019	08/07/2019
SAMPLE TYPE						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SOIL TYPE						NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
VOCs													
1,1-Dichloroethane	0.27	19	26	240	480	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000	ND	ND	ND	ND	ND	ND	**0.010**	ND
Acetone	0.05	100	100	500	1000	ND	ND	**0.0086**	ND	ND	ND	**0.018**	**0.0057**
Benzene	0.06	2.9	4.8	44	89	ND	ND	ND	ND	ND	ND	**0.0021**	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane						**0.51**	ND	**0.00026 J**	**0.0013**	**0.86**	ND	**0.014**	**0.0045**
Ethylbenzene	1	30	41	390	780	**0.28**	ND	**0.00029 J**	**0.00062 J**	**0.65**	ND	**0.033**	**0.00071 J**
Isopropylbenzene						**0.14**	ND	ND	**0.00017 J**	**0.17**	ND	**0.0056**	**0.00092 J**
Methyl tert-butyl ether	0.93	62	100	500	1000	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane						**1.9**	ND	ND	**0.00077 J**	**3.4**	ND	**0.047**	**0.046**
Methylene Chloride	0.05	51	100	500	1000	ND	**0.00053 J**	ND	**0.00081 J**	ND	ND	ND	**0.00060 J**
Tetrachloroethene	1.3	5.5	19	150	300	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000	ND	ND	ND	ND	ND	ND	**0.0092**	ND
Xylenes, Total	0.26	100	100	500	1000	**0.25**	ND	**0.00031 J**	**0.00090 J**	**2.9**	ND	**0.054**	**0.0027**
SVOCs													
Benzo[a]anthracene	1	1	1	5.6	11	**0.031 J**	ND	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	1	1	1	1	1.1	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	1	1	1	5.6	11	**0.019 J**	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	0.8	1	3.9	56	110	**0.012 J**	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	56	110	**0.025 J**	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000	**0.037 J**	ND	ND	ND	ND	ND	ND	**0.011 J**
Fluorene	30	100	100	500	1000	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000	ND	ND	ND	ND	**0.41**	ND	**0.024 J**	ND
Phenanthrene	100	100	100	500	1000	**0.045 J**	ND	ND	ND	ND	ND	ND	ND
Pyrene	100	100	100	500	1000	**0.029 J**	ND	ND	ND	ND	ND	ND	ND

TABLE 4

SUBSURFACE SOIL RESULTS - 8/6/2019 AND 8/7/2019
Y AND Z DELINEATION RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

					LOCATION - SAMPLE DEPTH	**1-Z01-7ft**	**1-Z02-11 ft**	**1-Z03-11 ft**	**1-Z04-10 ft**	**2-Z01-7 ft**	**2-Z03-12 ft**	**2-Z04-9 ft**	**2-Z05-12 ft**
					SAMPLING DATE	**08/06/2019**	**08/07/2019**	**08/07/2019**	**08/07/2019**	**08/07/2019**	**08/07/2019**	**08/07/2019**	**08/07/2019**
					SAMPLE TYPE	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
					UNITS	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
					SOIL TYPE	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**	**NATIVE**
	Unrestricted Use	**Residential Use**	**Restricted Residential Use**	**Commercial Use**	**Industrial Use**								
Metals													
Aluminum						**6940**	**8120**	**6100**	**6800**	**6500**	**6490**	**5120**	**7840**
Mercury	0.18	0.81	0.81	2.8	5.7	**0.013 J**	ND	**0.014 J**	ND	ND	ND	ND	**0.016 J**
Arsenic	13	16	16	16	16	**4.3**	**3.2**	**2.7 J**	**2.8 J**	**3.0 J**	**3.1 J**	**2.9 J**	**2.5 J**
Barium	350	350	400	400	10000	**54.5**	**78.5**	**44.9**	**84.4**	**60.0**	**94.5**	**39.4 J**	**64.4**
Beryllium	7.2	14	72	590	2700	**0.37 J**	**0.50**	**0.38 J**	**0.38 J**	**0.39 J**	**0.37 J**	**0.30 J**	**0.48**
Cadmium	2.5	2.5	4.3	9.3	60	ND	ND	ND	ND	ND	**0.15 J**	ND	ND
Calcium						**74900**	**65800**	**76500**	**81900**	**74800**	**84100**	**75600**	**75400**
Chromium						**11.1**	**15.5**	**9.9**	**10.9**	**10.5**	**9.6**	**9.0**	**12.9**
Cobalt						**5.3 J**	**6.5 J**	**4.8 J**	**5.0 J**	**5.0 J**	**4.9 J**	**3.9 J**	**5.7 J**
Copper	50	270	270	270	10000	**11.6**	**14.6**	**11.9**	**12.3**	**12.4**	**14.0**	**10.1**	**15.1**
Iron						**13500**	**15900**	**11600**	**12800**	**13100**	**12000**	**11000**	**14000**
Lead	63	400	400	1000	3900	**12.3**	**9.6**	**9.2**	**11.7**	**13.2**	**10.5**	**12.3**	**8.7**
Magnesium						**29000**	**22900**	**30900**	**34500**	**29100**	**34000**	**31900**	**27500**
Manganese	1600	2000	2000		10000	**383**	**399**	**375**	**390**	**403**	**411**	**393**	**353**
Nickel	30	140	310	310	10000	**11.8**	**14.1**	**10.7**	**12.0**	**11.6**	**11.4**	**9.0**	**12.7**
Potassium						**1640**	**1860**	**1560**	**1750**	**1550**	**1600**	**1240**	**1960**
Selenium	3.9	36	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND
Sodium						**1110 J**	**1210**	**684 J**	**1020 J**	**1280**	**445 J**	**1250**	**1050 J**
Vanadium						**17.1**	**20.5**	**15.4**	**16.3**	**16.7**	**16.8**	**14.4**	**19.3**
Zinc	109	2200			10000	**67.2**	**61.6**	**67.2**	**73.0**	**66.0**	**85.7**	**61.8**	**64.1**

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 5

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 AND 8/12/2019
WASTE CHARACTERIZATION SAMPLING
301 CONNECTICUT STREET SITE
BCP SITE C915345

	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	LOCATION - SAMPLE DEPTH	A1-WC	A1-WC	A1-WC	B1-WC	B1-WC	B1-WC	B4-WC
						SAMPLING DATE	08/12/2019	08/12/2019	08/12/2019	08/08/2019	08/08/2019	08/08/2019	08/12/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mm/sec	su	mg/kg	mm/sec	su	mg/kg
PCBs													
Aroclor 1016							ND			ND			ND
Aroclor 1221							ND			ND			ND
Aroclor 1232							ND			ND			ND
Aroclor 1242							ND			ND			ND
Aroclor 1248							ND			ND			ND
Aroclor 1254							ND			ND			ND
Aroclor 1260							ND			ND			ND
Aroclor-1262							ND			ND			ND
Aroclor 1268							ND			ND			ND
Total PCBs	0.1	1	1	1	25		ND			ND			ND
WetChem													
Burn Rate								ND			ND		
Cyanide, Reactive							ND			ND			ND
pH									**8.4 HF**			**8.1 HF**	
Sulfide, Reactive							ND			ND			ND

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

HF - Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

TABLE 5

SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 AND 8/12/2019
WASTE CHARACTERIZATION SAMPLING
301 CONNECTICUT STREET SITE
BCP SITE C915345

B4-WC 08/12/2019 SOIL mm/sec	B4-WC 08/12/2019 SOIL su	D1-WC 08/09/2019 SOIL mg/kg	D1-WC 08/09/2019 SOIL mm/sec	D1-WC 08/09/2019 SOIL su	E2-WC 08/09/2019 SOIL mg/kg	E2-WC 08/09/2019 SOIL mm/sec	E2-WC 08/09/2019 SOIL su
		ND			ND		
		ND			ND		
		ND			ND		
		ND			ND		
		ND			ND		
		ND			ND		
		ND			ND		
		ND			ND		
		ND			ND		
		ND			ND		
ND			ND			ND	
		ND			ND		
	8.1 HF			**8.5 HF**			**8.1 HF**
		ND			ND		

TABLE 6

OFFSITE INVESTIGATION SUBSURFACE SOIL RESULTS - 9/9/2019 AND 9/10/2019
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	SW-1-5FT	SW-2-5FT	SW-3-7FT	SW-4-6FT	SW-5-10FT	SW-6-6FT	SW-7-6FT	SW-8-10FT	SW-9-5FT	SW-10-5FT
						SAMPLING DATE	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/10/2019	9/10/2019	9/10/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
General Chemistry																
Solids, Total (%)							87.2	88.4	87.4	86.8	87.3	87.9	90.5	90.6	88.5	88.5
Semivolatile Organics by GC/MS																
Acenaphthene	20	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	0.042 J	ND
Hexachlorobenzene	0.33	0.33	1.2	6	12		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000		ND	0.049 J	ND	ND	ND	ND	0.055 J	ND	0.51	ND
Naphthalene	12	100	100	500	1000		ND	ND	ND	0.087 J	ND	0.023 J	0.31	0.031 J	0.024 J	ND
Benzo(a)anthracene	1	1	1	5.6	11		ND	0.029 J	ND	ND	ND	ND	0.022 J	ND	0.23	ND
Benzo(a)pyrene	1	1	1	1	1.1		ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND
Benzo(b)fluoranthene	1	1	1	5.6	11		ND	0.04 J	ND	ND	ND	ND	0.03 J	ND	0.24	ND
Benzo(k)fluoranthene	0.8	1	3.9	56	110		ND	ND	ND	ND	ND	ND	ND	ND	0.086 J	ND
Chrysene	1	1	3.9	56	110		ND	0.034 J	ND	ND	ND	ND	0.022 J	ND	0.23	ND
Acenaphthylene	100	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	100	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	0.099 J	ND
Benzo(ghi)perylene	100	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	0.1 J	ND
Fluorene	30	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	0.057 J	ND
Phenanthrene	100	100	100	500	1000		ND	0.038 J	ND	ND	ND	ND	0.039 J	ND	0.51	ND
Dibenzo(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND	ND	ND	ND	ND	ND	ND	ND	0.033 J	ND
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	5.6	11		ND	ND	ND	ND	ND	ND	ND	ND	0.12 J	ND
Pyrene	100	100	100	500	1000		ND	0.044 J	ND	ND	ND	ND	0.043 J	ND	0.42	ND
Dibenzofuran	7	14	59	350	1000		ND	ND	ND	ND	ND	ND	ND	ND	0.029 J	ND
Pentachlorophenol	0.8	2.4	6.7	6.7	55		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	0.33	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	0.33	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Methylphenol/4-Methylphenol	0.33	34	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organics by GC/MS																
Methylene chloride	0.05	51	100	500	1000		ND		ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.27	19	26	240	480		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.37	10	49	350	700		0.00018 J	0.00021 J	ND	ND	0.01 J	ND	ND	0.0096 J	0.00029 J	0.00028 J
Carbon tetrachloride	0.76	1.4	2.4	22	44		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.1	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.68	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.06	2.9	4.8	44	89		0.00016 J	0.00017 J	ND	ND	ND	ND	ND	0.0081 J	0.00019 J	ND
Toluene	0.7	100	100	500	1000		0.00067 J	0.0009 J	ND	ND	ND	ND	0.055	ND	ND	ND
Ethylbenzene	1	30	41	390	780		ND	ND	ND	ND	0.029 J	ND	0.28	ND	ND	ND
Vinyl chloride	0.02	0.21	0.9	13	27		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.33	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.19	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.47	10	21	200	400		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1.1	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2.4	17	49	280	560		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.8	9.8	13	130	250		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert butyl ether	0.93	62	100	500	1000		0.00046 J	0.00063 J	ND	ND	ND	ND	ND	ND	0.0016 J	0.0019 J
p/m-Xylene							ND	ND	ND	ND	ND	0.038 J	0.7	ND	ND	ND
o-Xylene							ND	ND	ND	ND	ND	0.024 J	0.097	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000		0.032	0.029	ND	ND	ND	ND	ND	ND	0.26	0.24
Carbon disulfide							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	0.12	100	100	500	1000		ND	ND	ND	ND	ND	ND	ND	ND	0.0071 J	ND
n-Butylbenzene	12	100	100	500	1000		ND	ND	0.12	1.5	ND	ND	0.1	0.01 J	ND	ND
sec-Butylbenzene	11	100	100	500	1000		ND	ND	0.35	0.82	ND	0.18	0.04 J	0.022 J	ND	ND

TABLE 6

OFFSITE INVESTIGATION SUBSURFACE SOIL RESULTS - 9/9/2019 AND 9/10/2019
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	SW-1-5FT	SW-2-5FT	SW-3-7FT	SW-4-6FT	SW-5-10FT	SW-6-6FT	SW-7-6FT	SW-8-10FT	SW-9-5FT	SW-10-5FT
						SAMPLING DATE	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/9/2019	9/10/2019	9/10/2019	9/10/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use											
tert-Butylbenzene	5.9	100	100	500	1000		ND	ND	0.032 J	0.096 J	ND	0.031 J	ND	ND	ND	ND
Isopropylbenzene							ND	ND	0.075	0.44	0.0071 J	0.071	0.058	0.007 J	ND	ND
p-Isopropyltoluene							ND	ND	0.22	1.2	ND	0.033 J	0.05 J	0.0067 J	ND	ND
Naphthalene	12	100	100	500	1000		ND	ND	ND	ND	0.054 J	0.14 J	0.36	ND	ND	ND
n-Propylbenzene	3.9	100	100	500	1000		ND	ND	0.14	1.5	0.02 J	0.15	0.2	ND	ND	ND
1,2,4-Trichlorobenzene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8.4	47	52	190	380		ND	ND	ND	0.14 J	ND	0.043 J	0.41	ND	0.00035 J	ND
1,2,4-Trimethylbenzene	3.6	47	52	190	380		ND	ND	0.016 J	4.5	ND	0.042 J	1.1	ND	0.00074 J	ND
Methyl Acetate							ND	ND	ND	ND	ND	ND	ND	ND	0.052	0.065
Cyclohexane							ND	ND	0.17 J	4.2	ND	0.26 J	0.26 J	0.065 J	0.00084 J	ND
Methyl cyclohexane							ND	ND	1	15	0.083 J	1.6	0.72	0.12 J	0.00088 J	ND

Analytical Data compared to Part 375 Standards and DER-10
ND indicates analyte was not detected.
Blank space indicates analyte was not analyzed for in that sample.
* - LCS or LCSD is outside acceptance limits.
F1 - MS and/or MSD Recovery is outside acceptance limits.
F2 - MS/MSD RPD exceeds control limits
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 7

OFFSITE INVESTIGATION GROUNDWATER RESULTS - 9/10/2019
301 CONNECTICUT STREET SITE
BCP SITE C915345

			LOCATION	MW-6	
			SAMPLING DATE	9/10/2019	
			SAMPLE TYPE	WATER	
	NY-TOGS	Units			
Semivolatile Organics by GC/MS					
Bis(2-chloroethyl)ether	1	ug/l	ND		
3,3'-Dichlorobenzidine	5	ug/l	ND		
2,4-Dinitrotoluene	5	ug/l	ND		
2,6-Dinitrotoluene	5	ug/l	ND		
Bis(2-chloroisopropyl)ether	5	ug/l	ND		
Bis(2-chloroethoxy)methane	5	ug/l	ND		
Hexachlorocyclopentadiene	5	ug/l	ND		
Isophorone	50	ug/l	ND		
Nitrobenzene	0.4	ug/l	ND		
NDPA/DPA	50	ug/l	ND		
Bis(2-ethylhexyl)phthalate	5	ug/l	2.4	J	
Butyl benzyl phthalate	50	ug/l	ND		
Di-n-butylphthalate	50	ug/l	ND		
Di-n-octylphthalate	50	ug/l	ND		
Diethyl phthalate	50	ug/l	ND		
Dimethyl phthalate	50	ug/l	ND		
Biphenyl		ug/l	ND		
4-Chloroaniline	5	ug/l	ND		
2-Nitroaniline	5	ug/l	ND		
3-Nitroaniline	5	ug/l	ND		
4-Nitroaniline	5	ug/l	ND		
Dibenzofuran		ug/l	ND		
1,2,4,5-Tetrachlorobenzene	5	ug/l	ND		
Acetophenone		ug/l	ND		
2,4-Dichlorophenol	2	ug/l	ND		
2,4-Dimethylphenol	2	ug/l	ND		
2,4-Dinitrophenol	2	ug/l	ND		
4,6-Dinitro-o-cresol		ug/l	ND		
Phenol	2	ug/l	ND		
Carbazole		ug/l	ND		
Atrazine	7.5	ug/l	ND		
Benzaldehyde		ug/l	ND		
Caprolactam		ug/l	ND		
Semivolatile Organics by GC/MS-SIM					
Acenaphthene	20	ug/l	ND		
2-Chloronaphthalene	10	ug/l	ND		
Fluoranthene	50	ug/l	0.04	J	
Hexachlorobutadiene	0.5	ug/l	ND		
Naphthalene	10	ug/l	2.1		
Benzo(a)anthracene	0.002	ug/l	0.03	J	
Benzo(a)pyrene	0	ug/l	ND		
Benzo(b)fluoranthene	0.002	ug/l	0.04	J	
Benzo(k)fluoranthene	0.002	ug/l	0.01	J	
Chrysene	0.002	ug/l	0.08	J	
Acenaphthylene		ug/l	ND		
Anthracene	50	ug/l	ND		
Fluorene	50	ug/l	ND		
Phenanthrene	50	ug/l	0.06	J	
Indeno(1,2,3-cd)pyrene	0.002	ug/l	ND		
Pyrene	50	ug/l	0.07	J	
Pentachlorophenol	2	ug/l	ND		
Hexachlorobenzene	0.04	ug/l	ND		
Hexachloroethane	5	ug/l	ND		
Volatile Organics by GC/MS					
Methylene chloride	5	ug/l	ND		
Chloroform	7	ug/l	ND		
1,2-Dichloropropane	1	ug/l	ND		
1,1,2-Trichloroethane	1	ug/l	ND		
Tetrachloroethene	5	ug/l	ND		
Chlorobenzene	5	ug/l	ND		
Trichlorofluoromethane	5	ug/l	ND		
1,2-Dichloroethane	0.6	ug/l	ND		
1,1,1-Trichloroethane	5	ug/l	ND		
trans-1,3-Dichloropropene	0.4	ug/l	ND		
cis-1,3-Dichloropropene	0.4	ug/l	ND		
Bromoform	50	ug/l	ND		
1,1,2,2-Tetrachloroethane	5	ug/l	ND		
Benzene	1	ug/l	ND		
Toluene	5	ug/l	ND		
Ethylbenzene	5	ug/l	ND		
Bromomethane	5	ug/l	ND		
Vinyl chloride	2	ug/l	ND		
Chloroethane	5	ug/l	ND		
trans-1,2-Dichloroethene	5	ug/l	ND		
Trichloroethene	5	ug/l	ND		
1,2-Dichlorobenzene	3	ug/l	ND		
1,3-Dichlorobenzene	3	ug/l	ND		
1,4-Dichlorobenzene	3	ug/l	ND		
Methyl tert butyl ether	10	ug/l	ND		
p/m-Xylene	5	ug/l	ND		
o-Xylene	5	ug/l	ND		
cis-1,2-Dichloroethene	5	ug/l	ND		
Styrene	930	ug/l	ND		
Dichlorodifluoromethane	5	ug/l	ND		
Acetone	50	ug/l	5		
Carbon disulfide	60	ug/l	ND		
2-Butanone	50	ug/l	ND		
2-Hexanone	50	ug/l	ND		
1,2-Dibromoethane	0.0006	ug/l	ND		
n-Butylbenzene	5	ug/l	ND		
sec-Butylbenzene	5	ug/l	ND		
tert-Butylbenzene	5	ug/l	ND		
1,2-Dibromo-3-chloropropane	0.04	ug/l	ND		
Isopropylbenzene	5	ug/l	ND		
p-Isopropyltoluene	5	ug/l	ND		
Naphthalene	10	ug/l	ND		
n-Propylbenzene	5	ug/l	ND		
1,2,4-Trichlorobenzene	5	ug/l	ND		
1,3,5-Trimethylbenzene	5	ug/l	ND		
1,2,4-Trimethylbenzene	5	ug/l	ND		
Freon-113	5	ug/l	ND		

* Comparison is not performed on parameters with non-numeric criteria.

NY-TOGS-GA: New York TOGS 111 Groundwater Effluent Limitations criteria reflects all addendum to criteria through June 2004.

TABLE 8

GROUNDWATER SAMPLE RESULTS
301 CONNECTICUT STREET
BUFFALO, NEW YORK
BCP SITE C915345

	Location ID	MW-1	MW-2	MW-3	MW-4	DUP (MW-4)	MW-5	MW-1	MW-2
	Sample Matrix	WG	WG	WG	WG	WG	WG	WG	WG
	Date Sampled	04/11/2019	04/11/2019	04/11/2019	04/11/2019	04/11/2019	04/11/2019	05/21/2019	05/21/2019
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	NYS TOGS Groundwater Standand & Guidance Value								
SVOC									
Acenaphthene	20.0 ug/l	0.07 J	0.22	0.03 J	0.06 J	0.06 J	ND	0.08 J	0.06 J
Acenaphthylene		ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	50.0 ug/l	0.02 J	0.14	0.02 J	0.03 J	0.02 J	0.01 J	0.04 J	0.02 J
Benzo(A)Anthracene	0.002 ug/l	ND	0.24	0.03 J	ND	ND	ND	0.05 J	0.02 J
Benzo(A)Pyrene		ND	0.17	0.05 J	0.05 J	ND	0.03 J	0.02 J	ND
Benzo(B)Fluoranthene	0.002 ug/l	ND	0.17	0.08 J	0.05 J	ND	0.03 J	0.04 J	0.03 J
Benzo(G,H,I)Perylene		ND	0.11	0.05 J	0.05 J	ND	0.02 J	0.03 J	0.01 J
Benzo(K)Fluoranthene	0.002 ug/l	ND	0.18	0.07 J	0.05 J	ND	0.03 J	0.03 J	ND
Bis(2-ethylhexyl)phthalate	5.0 ug/l	2 J	ND	6.3	ND	ND	2.4 J	3.8	ND
Chrysene	0.002 ug/l	ND	0.3	0.09 J	0.08 J	ND	0.04 J	0.05	0.02 J
Di-n-butylphthalate	50.0 ug/l	ND	ND	2 J	ND	2 J		ND	ND
Dibenz(A,H)Anthracene		ND	0.04 J	ND	ND	ND	ND	0.02 J	ND
2, 4-Dimethylphenol	2.0 ug/l	ND	ND	ND	ND	ND	ND	1.8 J	ND
Fluoranthene	50.0 ug/l	0.04 J	0.83	0.28	0.4	0.14	0.16	0.08 J	0.09 J
Fluorene	50.0 ug/l	0.22	0.19	0.03 J	0.05 J	0.05 J	0.02 J	0.06 J	0.04 J
Indeno(1,2,3-C,D)Pyrene	0.002 ug/l	ND	0.1	0.04 J	0.04 J	ND	0.02 J	0.03 J	0.02 J
Naphthalene	10.0 ug/l	16	0.09 J	0.06 J	0.16 J	0.16	ND	5.8	0.14
2-Methylnaphthalene		1.1	0.05 J	0.02 J	0.5	0.09 J		0.26	0.03 J
2-Methylphenol (O-Cresol)		2.2 J	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol (P-Cresol)		2.2 J	ND	ND	ND	ND	ND	1.4 J	ND
Pentachlorophenol	1.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	50.0 ug/l	0.29	0.94	0.11	0.18 J	0.09 J	0.14	0.12	0.12
Phenol	1.0 ug/l	1.90 J	0.46 J	0.43 J	0.42 J			ND	ND
Pyrene	50.0 ug/l	0.02 J	0.64	0.20	0.26	0.1 J	0.1	0.06 J	0.07 J
VOC									
1,1,1-Trichloroethane	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene		25	ND	ND	15	34	ND	21	ND
1,2-Dichlorobenzene	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6 ug/l	0.44 J	0.46 J	ND	0.34 J	0.32 J	ND	0.39 J	0.16 J
1,3,5-Trimethylbenzene (Mesitylene)	5.0 ug/l	7.3	ND	ND	17	29	ND	12	ND
1,3-Dichlorobenzene	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane (P-Dioxane)		ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	50.0 ug/l	ND	ND	ND	18	28	2.3 J	ND	ND
Acetone	50.0 ug/l	70	14	100	36	49	38	17	2.9 J
Benzene	1.0 ug/l	19	0.16 J	ND	1.2	2	ND	9.4	ND
Carbon Tetrachloride	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	7.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethylene	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.0 ug/l	56	ND	ND	46	120	ND	62	ND
Hexachlorobenzene	0.04 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
N-Butylbenzene	5.0 ug/l	ND	ND	ND	1.7 J	4	ND	ND	ND
N-Propylbenzene	5.0 ug/l	1.9 J	ND	ND	13	55	ND	2.3 J	ND
Sec-Butylbenzene	5.0 ug/l	0.74 J	ND	ND	1.2 J	2 J	ND	ND	ND
Methyl Ethyl Ketone (2-Butanone)	50.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Tert-Butyl Methyl Ether		ND	8.6	ND	ND	ND	ND	ND	3.3
p/m-Xylene	5.0 ug/l	150	ND	ND	43	74	ND	170	ND
o-Xylene	5.0 ug/l	16	ND	ND	38	58	ND	21	ND
Tetrachloroethylene (PCE)	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5.0 ug/l	73	ND	ND	5.1	8.8	ND	61	ND
Trans-1,2-Dichloroethene	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran		ND	ND	ND	ND	ND	ND	ND	ND
Metals									
Aluminum		94 J	42100	376	208	666	60 J	202	2080
Antimony	3.0 ug/l	ND	ND	ND	ND	ND	ND	ND	3.35 J
Arsenic	25.0 ug/l	7	16	4 J	5	ND	ND	ND	2.49
Barium	1000.0 ug/l	1880	797	197	475	582	436	1098	354
Beryllium	3.0 ug/l	ND	1 J	ND	ND	ND	ND	ND	0.11 J
Cadmium	5.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Calcium		666000	727000	127000	159000	174000	409000	504000	133000

TABLE 8

GROUNDWATER SAMPLE RESULTS
301 CONNECTICUT STREET
BUFFALO, NEW YORK
BCP SITE C915345

	Location ID	MW-1	MW-2	MW-3	MW-4	DUP (MW-4)	MW-5	MW-1	MW-2
	Sample Matrix	WG	WG	WG	WG	WG	WG	WG	WG
	Date Sampled	04/11/2019	04/11/2019	04/11/2019	04/11/2019	04/11/2019	04/11/2019	05/21/2019	05/21/2019
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	NYS TOGS Groundwater Standand & Guidance Value								
Chromium	50.0 ug/l	ND	71	ND	3 J	4 J	ND	ND	3.94
Cobalt		8 J	40	ND	ND	ND	3 J	7.16	2.13
Copper	200.0 ug/l	10 J	114.0	10	6.0 J	11	7 J	4.02 J	5.76
Cyanide	200.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Iron	300.0 ug/l	179	72800	357	276	997	101	2340	6890
Lead	25.0 ug/l	ND	104	ND	ND	10 J	ND	ND	5.98
Magnesium	35000.0 ug/l	228000	152000	74900	68700	71400	207000	312000	48100
Manganese	300.0 ug/l	950	2300.0	88	102	157	172	904.9	221
Mercury	0.7 ug/l	ND	0.14 J	ND	ND	ND	ND	ND	ND
Nickel	100.0 ug/l	9 J	92.0	33 J	4 J	4 J	4 J	10.71 J	6.43
Potassium		17000	18200	7920	8390	7860	10700	13800	6220
Selenium	10.0 ug/l	ND	9 J	ND	ND	ND	ND	ND	2.51 J
Silver	50.0 ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Sodium		3770000	757000	255000	190000	199000	709000	4010000	1020000
Thallium	0.5 ug/l	ND	ND	ND	ND	ND	ND	ND	0.97 J
Zinc	2000.0 ug/l	10.0 J	509	9 J	11 J	20 J	8 J	ND	30.36
PCBs									
Aroclor 1016	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1262	0.09	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	0.09	ND	ND	ND	ND	ND	ND	ND	ND
PCBs, Total		ND	ND	ND	ND	ND	ND	ND	ND
Pesticides									
Delta-BHC	0.04	ND	ND	ND	ND	ND	ND	ND	ND
Lindane	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC	0.01	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC	0.04	0.054 IP	ND	ND	ND	ND	ND	0.063 IP	ND
Heptachlor	0.04	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	0	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	0	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.004	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.2	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	0.3	ND	0.006 J	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I		ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II		ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate		ND	ND	ND	ND	ND	ND	ND	ND
cis-Chlordane		ND	ND	ND	ND	ND	ND	ND	ND

TABLE 8

GROUNDWATER SAMPLE RESULTS
301 CONNECTICUT STREET
BUFFALO, NEW YORK
BCP SITE C915345

	Location ID	MW-3		MW-4		DUP (MW-4)		MW-5	
	Sample Matrix	WG		WG		WG		WG	
	Date Sampled	05/21/2019		05/21/2019		05/21/2019		05/21/2019	
	Units	ug/l		ug/l		ug/l		ug/l	
	NYS TOGS Groundwater Standand & Guidance Value								
SVOC									
Acenaphthene	20.0 ug/l	ND		ND		ND		ND	
Acenaphthylene		ND		ND		ND		ND	
Anthracene	50.0 ug/l	ND		ND		ND		ND	
Benzo(A)Anthracene	0.002 ug/l	0.02	J	ND		ND		ND	
Benzo(A)Pyrene		ND		ND		0.02	J	ND	
Benzo(B)Fluoranthene	0.002 ug/l	0.02	J	ND		0.04	J	0.02	J
Benzo(G,H,I)Perylene		0.02	J	ND		0.04	J	ND	
Benzo(K)Fluoranthene	0.002 ug/l	0.01	J	ND		0.01	J	ND	
Bis(2-ethylhexyl)phthalate	5.0 ug/l	ND		ND		ND		ND	
Chrysene	0.002 ug/l	0.02	J	ND		ND		ND	
Di-n-butylphthalate	50.0 ug/l			ND		ND		ND	
Dibenz(A,H)Anthracene		ND		ND		ND		ND	
2, 4-Dimethylphenol	2.0 ug/l			ND		ND		ND	
Fluoranthene	50.0 ug/l	0.04	J	ND		ND		0.05	J
Fluorene	50.0 ug/l	ND		ND		ND		ND	
Indeno(1,2,3-C,D)Pyrene	0.002 ug/l	0.03	J	ND		0.05	J	ND	
Naphthalene	10.0 ug/l	ND		ND		ND		ND	
2-Methylnaphthalene		0.04		ND		ND		ND	
2-Methylphenol (O-Cresol)		ND		ND		ND		ND	
4-Methylphenol (P-Cresol)		ND		ND		ND		ND	
Pentachlorophenol	1.0 ug/l	ND		ND		ND		ND	
Phenanthrene	50.0 ug/l	ND		ND		ND		ND	
Phenol	1.0 ug/l			ND		ND		ND	
Pyrene	50.0 ug/l	0.04		ND		ND		0.03	J
VOC									
1,1,1-Trichloroethane	5.0 ug/l	ND		ND		ND		ND	
1,1-Dichloroethane	5.0 ug/l	ND		ND		ND		ND	
1,1-Dichloroethene	5.0 ug/l	ND		ND		ND		ND	
1,2,4-Trimethylbenzene		ND		ND		ND		ND	
1,2-Dichlorobenzene	3.0 ug/l	ND		ND		ND		ND	
1,2-Dichloroethane	0.6 ug/l	ND		0.23	J	0.38	J	ND	
1,3,5-Trimethylbenzene (Mesitylene)	5.0 ug/l	ND		ND		ND		ND	
1,3-Dichlorobenzene	3.0 ug/l	ND		ND		ND		ND	
1,4-Dichlorobenzene	3.0 ug/l	ND		ND		ND		ND	
1,4-Dioxane (P-Dioxane)		ND		ND		ND		ND	
2-Butanone	50.0 ug/l	ND		ND		ND		ND	
Acetone	50.0 ug/l	1.7	J	1.6	J	2.8	J	2.2	J
Benzene	1.0 ug/l	ND		ND		ND		ND	
Carbon Tetrachloride	5.0 ug/l	ND		ND		ND		ND	
Chlorobenzene	5.0 ug/l	ND		ND		ND		ND	
Chloroform	7.0 ug/l	ND		ND		ND		ND	
Cis-1,2-Dichloroethylene	5.0 ug/l	ND		ND		ND		ND	
Ethylbenzene	5.0 ug/l	ND		ND		ND		ND	
Hexachlorobenzene	0.04 ug/l	ND		ND		ND		ND	
Methylene Chloride	5.0 ug/l	ND		ND		ND		ND	
N-Butylbenzene	5.0 ug/l	ND		ND		ND		ND	
N-Propylbenzene	5.0 ug/l	ND		ND		ND		ND	
Sec-Butylbenzene	5.0 ug/l	ND		ND		ND		ND	
Methyl Ethyl Ketone (2-Butanone)	50.0 ug/l	ND		ND		ND		ND	
Tert-Butyl Methyl Ether		ND		ND		ND		ND	
p/m-Xylene	5.0 ug/l	ND		ND		ND		ND	
o-Xylene	5.0 ug/l	ND		ND		ND		ND	
Tetrachloroethylene (PCE)	5.0 ug/l	ND		ND		ND		ND	
Toluene	5.0 ug/l	ND		ND		ND		ND	
Trans-1,2-Dichloroethene	5.0 ug/l	ND		ND		ND		ND	
Trichloroethylene (TCE)	5.0 ug/l	ND		ND		ND		ND	
Vinyl Chloride	2.0 ug/l	ND		ND		ND		ND	
Dibenzofuran		ND		ND		ND		ND	
Metals									
Aluminum		1220		39		219		567	
Antimony	3.0 ug/l	ND		ND		ND		ND	
Arsenic	25.0 ug/l	2.57		1.2		1.24		1.43	
Barium	1000.0 ug/l	152		229		210		394	
Beryllium	3.0 ug/l	ND		ND		ND		ND	
Cadmium	5.0 ug/l	ND		ND		ND		ND	
Calcium		150000		141000		113000		480000	

TABLE 8

GROUNDWATER SAMPLE RESULTS
301 CONNECTICUT STREET
BUFFALO, NEW YORK
BCP SITE C915345

	Location ID	MW-3	MW-4	DUP (MW-4)	MW-5
	Sample Matrix	WG	WG	WG	WG
	Date Sampled	05/21/2019	05/21/2019	05/21/2019	05/21/2019
	Units	ug/l	ug/l	ug/l	ug/l
	NYS TOGS Groundwater Standand & Guidance Value				
Chromium	50.0 ug/l	**4.54**	**0.35 J**	**1.04**	**1.34**
Cobalt		**1.28**	**0.6**	**0.85**	**2.67**
Copper	200.0 ug/l	**4.71**	**1.12**	**1.22**	**2.12**
Cyanide	200.0 ug/l	ND	ND	ND	ND
Iron	300.0 ug/l	**1980**	**55.1**	**174**	**601**
Lead	25.0 ug/l	**5.3**	**0.43 J**	**0.56 J**	**0.93 J**
Magnesium	35000.0 ug/l	**86600**	**77600**	**78200**	**251000**
Manganese	300.0 ug/l	**152.2**	**91.6**	**92**	**302.9**
Mercury	0.7 ug/l	ND	ND	ND	ND
Nickel	100.0 ug/l	**4.47**	**1.7 J**	**2.3**	**5.31**
Potassium		**14200**	**6950**	**6880**	**10600**
Selenium	10.0 ug/l	**2.49 J**	ND	**1.88 J**	ND
Silver	50.0 ug/l	**3.3**	ND	ND	**0.29 J**
Sodium		**194000**	**170000**	**179000**	**640000**
Thallium	0.5 ug/l	ND	ND	ND	ND
Zinc	2000.0 ug/l	**18.73**	ND	**3.76 J**	**7.85 J**
PCBs					
Aroclor 1016	0.09	ND	ND	ND	ND
Aroclor 1221	0.09	ND	ND	ND	ND
Aroclor 1232	0.09	ND	ND	ND	ND
Aroclor 1242	0.09	ND	ND	ND	ND
Aroclor 1248	0.09	ND	ND	ND	ND
Aroclor 1254	0.09	ND	ND	ND	ND
Aroclor 1260	0.09	ND	ND	ND	ND
Aroclor 1262	0.09	ND	ND	ND	ND
Aroclor 1268	0.09	ND	ND	ND	ND
PCBs, Total		ND	ND	ND	ND
Pesticides					
Delta-BHC	0.04	ND	ND	ND	ND
Lindane	0.05	ND	ND	ND	ND
Alpha-BHC	0.01	ND	ND	ND	ND
Beta-BHC	0.04	ND	ND	ND	ND
Heptachlor	0.04	ND	ND	ND	ND
Aldrin	0	ND	ND	ND	ND
Endrin	0	ND	ND	ND	ND
Dieldrin	0.004	ND	ND	ND	ND
4,4'-DDE	0.2	ND	ND	ND	ND
4,4'-DDD	0.3	ND	ND	ND	ND
4,4'-DDT	0.2	ND	ND	ND	ND
Endosulfan I		ND	ND	ND	ND
Endosulfan II		ND	ND	ND	ND
Endosulfan sulfate		ND	ND	ND	ND
cis-Chlordane		ND	ND	ND	ND

Table 8

GROUNDWATER SAMPLE RESULTS - EMERGING CONTAMINANTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

Well Location	MW-1		MW-5	
Sample ID	MW-1		MW-5	
Date Sampled	4/11/2019		4/11/2019	
Sample Matrix	Water		Water	
Units	ng/l		ng/l	
PFOA / PFOS				
Perfluorobutanoic acid (PFBA)	1.23	J	4.65	
Perfluoropentanoic acid (PFPeA)	7.19		1.04	J
Perfluorobutanesulfonic Acid (PFBS)	ND		0.569	J
Perfluorohexanoic acid (PFHxA)	6.4		1	J
Perfluoroheptanoic acid (PFHpA)	4.7		0.518	J
Perfluorohexanesulfonic acid (PFHxS)	0.947	J	1.81	J
Perfluorooctanoic acid (PFOA)	5.89		3	
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ND	
Perfluorononanoic acid (PFNA)	2.75		ND	
Perfluorooctanesulfonic Acid (PFOS)	7.14		ND	
Perfluorodecanoic acid (PFDA)	ND		ND	
Perfluoroundecanoic acid (PFUnA)	ND		ND	
Perfluorodecanesulfonic Acid (PFDS)	ND		ND	
Perfluorooctanesulfonamide (FOSA)	ND		ND	
Perfluorododecanoic acid (PFDoA)	ND		ND	
Perfluorotridecanoic acid (PFTrA)	ND		ND	
Perfluorotetradecanoic acid (PFTA)	ND		ND	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.299	J
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		ND	
6:2 FTS	0.502	J	0.219	J
8:2 FTS	ND		ND	
Total PFOA/PFOS	13.00		3.00	
Units	ug/l		ug/l	
1,4-Dioxane	ND		ND	

ND indicates analyte was not detected.

* - RPD of the LCS and LCSD exceeds the control limits

^ - ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 9

CONFIRMATORY BOTTOM SAMPLES
SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	A1-01-12ft	A1-02-13ft	A1-03-14ft	A2-01-2ft	B1-01-1-2ft	B1-02-3ft	B2-01-2ft	B3-01-3ft	B4-01-4ft	C1-01-1ft	C2-01-1ft	C3-01-2ft
						SAMPLING DATE	08/12/2019	08/12/2019	08/12/2019	09/10/2019	08/08/2019	08/08/2019	09/10/2019	09/10/2019	08/12/2019	08/08/2019	08/08/2019	08/08/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use													
VOCs																		
1,1-Dichloroethane	0.27	19	26	240	480		ND			ND	ND		ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND			ND	ND		ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		ND			**0.0030 J**	ND		ND	ND	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000		**0.011**			**0.016**	**0.0065 J**		ND	ND	**0.021**	ND	ND	ND
Benzene	0.06	2.9	4.8	44	89		ND			ND	ND		ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND			ND	ND		ND	ND	ND	ND	ND	ND
Cyclohexane							ND			ND	ND		ND	ND	ND	ND	ND	ND
Ethylbenzene	1	30	41	390	780		ND			ND	ND		ND	ND	ND	ND	ND	ND
Isopropylbenzene							ND			ND	ND		ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	0.93	62	100	500	1000		**0.0017**			ND	ND		ND	ND	ND	ND	ND	ND
Methylcyclohexane							ND			ND	ND		ND	ND	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000		ND			ND	ND		**0.00084 J**	ND	ND	ND	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300		ND			**0.067**	ND		ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		ND			ND	ND		ND	ND	ND	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000		ND			ND	ND		ND	ND	ND	ND	ND	ND
SVOCs																		
Benzo[a]anthracene	1	1	1	5.6	11		ND			ND	**0.051**		ND	ND	ND	ND	**0.12**	**0.065**
Benzo[a]pyrene	1	1	1	1	1.1		ND			ND	**0.039 J**		ND	ND	ND F1	ND	**0.10**	**0.054**
Benzo[b]fluoranthene	1	1	1	5.6	11		ND			ND	**0.068**		ND	**0.025 J**	ND F1	**0.019 J**	**0.16**	**0.087**
Benzo[k]fluoranthene	0.8	1	3.9	56	110		ND			ND	**0.026 J**		ND	ND	ND F1	ND	**0.070**	**0.037 J**
Chrysene	1	1	3.9	56	110		ND			ND	**0.070 J**		ND	ND	ND	ND	**0.17 J**	**0.073 J**
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND			ND	ND		ND	ND	ND	ND	**0.023 J**	ND
Dibenzofuran	7	14	59	350	1000		ND			ND	ND		ND	ND	ND F1	ND	ND	ND
Fluoranthene	100	100	100	500	1000		ND			ND	**0.10 J**		ND	**0.025 J**	ND	ND	**0.36 J**	**0.10 J**
Fluorene	30	100	100	500	1000		ND			ND	ND		ND	ND	ND F1	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		ND			ND	**0.039 J**		ND	ND	ND	ND	**0.095**	**0.047**
Naphthalene	12	100	100	500	1000		ND			ND	ND		ND	ND	ND F1	ND	ND	ND
Phenanthrene	100	100	100	500	1000		ND			ND	**0.051 J**		ND	**0.020 J**	ND	ND	**0.18 J**	**0.056 J**
Pyrene	100	100	100	500	1000		ND			ND	**0.093 J**		ND	**0.020 J**	ND	ND	**0.34 J**	**0.11 J**
Pesticidies																		
4,4'-DDD	0.0033	2.6	13	92	180		ND						ND					ND
4,4'-DDE	0.0033	1.8	8.9	62	120		ND						ND					ND
4,4'-DDT	0.0033	1.7	7.9	47	94		ND						ND					ND
PCBs																		
Total PCBs	0.1	1	1	1	25		ND						ND					ND
Herbicidies																		
Silvex (2,4,5-TP)	3.8	58	100	500	1000		ND						ND					ND

TABLE 9

CONFIRMATORY BOTTOM SAMPLES
SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	A1-01-12ft	A1-02-13ft	A1-03-14ft	A2-01-2ft	B1-01-1-2ft	B1-02-3ft	B2-01-2ft	B3-01-3ft	B4-01-4ft	C1-01-1ft	C2-01-1ft	C3-01-2ft
						SAMPLING DATE	08/12/2019	08/12/2019	08/12/2019	09/10/2019	08/08/2019	08/08/2019	09/10/2019	09/10/2019	08/12/2019	08/08/2019	08/08/2019	08/08/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use													
Metals																		
Aluminum							4290			14500	11400		12700	12100	13600	15000	12100	7450
Mercury	0.18	0.81	0.81	2.8	5.7		ND			0.070	0.16		0.021	0.093	0.016 J	0.034	ND	0.013 J
Arsenic	13	16	16	16	16		1.8 J			4.5	6.0		3.0	4.6	3.9	3.4	4.0	4.8
Barium	350	350	400	400	10000		39.4 J			115	110		57.4	106	96.0	129	104	64.6
Beryllium	7.2	14	72	590	2700		0.23 J			0.78	0.66		0.65	0.64	0.67	0.72	0.75	0.44 J
Cadmium	2.5	2.5	4.3	9.3	60		0.42 J			ND	ND		ND	ND	ND	ND	ND	ND
Calcium							87000			5470	25400		3850	3800	16400	2960	18900	84700
Chromium							6.7			21.5	17.3		19.0	18.6	19.0	20.4	18.5	15.2
Cobalt							2.9 J			9.7 J	7.5 J		7.1 J	8.4 J	8.4 J	8.6 J	7.3 J	5.3 J
Copper	50	270	270	270	10000		12.8			18.2	18.9		13.2	13.8	15.0	10.5	14.4	14.8
Iron							8960			25700	19100		21200	22900	22900	22700	23100	15200
Lead	63	400	400	1000	3900		11.4			25.5	191	18.9	18.3	20.3	15.0	15.9	18.1	41.4
Magnesium							36000			6570	12400		5040	4800	12800	4240	13000	23200
Manganese	1600	2000	2000		10000		389			335	392		203	397	297	221	234	368
Nickel	30	140	310	310	10000		6.6 J			24.0	16.9		18.6	19.1	20.9	19.8	18.4	13.7
Potassium							1190			1700	1460		1560	1620	2130	1530	1510	1460
Selenium	3.9	36	180	1500	6800		ND			ND	ND		ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800		ND F1			ND	ND		ND	ND	ND	ND	ND	ND
Sodium							505 J			574 J	894 J		167 J	88.1 J	238 J	546 J	795 J	916 J
Vanadium							11.9			28.1	23.3		20.2	24.3	26.1	26.1	26.3	19.0
Zinc	109	2200			10000		127	119	95.4	93.5	117	67.4	76.2	81.2	85.9	76.1	87.3	73.9
WetChem																		
Chromium, hexavalent	1	22	110	400	800		ND						ND					ND
Cyanide, Total	27	27	27	27	10000		ND			ND	ND		ND	ND	ND	0.15 J	ND	ND

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 9

CONFIRMATORY BOTTOM SAMPLES
SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

						LOCATION - SAMPLE DEPTH	C4-01-3ft	C4-02-4ft	D1-01-6ft	D2-01-3ft	D3-01-6ft	D4-01-3ft	E1-01-7ft	E2-01-2ft	E3-01-2ft	E4-01-2ft
						SAMPLING DATE	08/08/2019	08/08/2019	08/09/2019	08/09/2019	08/09/2019	08/08/2019	08/09/2019	08/09/2019	08/12/2019	08/12/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use											
VOCs																
1,1-Dichloroethane	0.27	19	26	240	480		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60		ND		ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.12	100	100	500	1000		**0.017**		ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000		**0.13**	**0.10**	ND	**0.011**	ND	**0.011**	ND	**0.0078**	ND	**0.0066 J**
Benzene	0.06	2.9	4.8	44	89		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100	500	1000		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Cyclohexane							ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Ethylbenzene	1	30	41	390	780		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Isopropylbenzene							ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Methyl tert-butyl ether	0.93	62	100	500	1000		ND		ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane							ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000		ND		**0.0020**	**0.0013**	**0.00064 J**	**0.00083 J**	ND	**0.00096 J**	ND	ND
Tetrachloroethene	1.3	5.5	19	150	300		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Xylenes, Total	0.26	100	100	500	1000		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
SVOCs																
Benzo[a]anthracene	1	1	1	5.6	11		ND		ND	**0.019 J**	ND	ND	ND	ND	ND	**0.018 J**
Benzo[a]pyrene	1	1	1	1	1.1		ND		**0.014 J**	**0.019 J**	ND F1	ND	ND	ND	ND	**0.011 J**
Benzo[b]fluoranthene	1	1	1	5.6	11		ND		**0.022 J**	**0.032 J**	ND	ND	ND	ND	ND	**0.019 J**
Benzo[k]fluoranthene	0.8	1	3.9	56	110		ND		ND	**0.0094 J**	ND F1	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	56	110		ND		**0.020 J**	**0.026 J**	ND	ND	ND	ND	ND	**0.014 J**
Dibenz(a,h)anthracene	0.33	0.33	0.33	0.56	1.1		ND		ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59	350	1000		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	500	1000		ND		**0.028 J**	**0.043 J**	**0.016 J**	ND	ND	ND	ND	**0.023 J**
Fluorene	30	100	100	500	1000		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	0.5	0.5	0.5	5.6	11		ND		ND	**0.024 J**	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	500	1000		ND		ND	ND	ND F1	ND	ND	ND	ND	ND
Phenanthrene	100	100	100	500	1000		ND		ND	**0.026 J**	ND F1	ND	ND	ND	ND	**0.014 J**
Pyrene	100	100	100	500	1000		ND		**0.029 J**	**0.040 J**	ND	ND	ND	ND	ND	ND
Pesticidies																
4,4'-DDD	0.0033	2.6	13	92	180		ND								ND F2	
4,4'-DDE	0.0033	1.8	8.9	62	120		ND								ND F2	
4,4'-DDT	0.0033	1.7	7.9	47	94		ND								ND F2	
PCBs																
Total PCBs	0.1	1	1	1	25		ND								ND	
Herbicidies																
Silvex (2,4,5-TP)	3.8	58	100	500	1000		ND								ND	

TABLE 9

CONFIRMATORY BOTTOM SAMPLES
SUBSURFACE SOIL RESULTS - 8/8/2019 - 8/9/2019 8/12/2019 AND 9/10/2019
FILL MATERIAL AND NATIVE SOIL RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

					LOCATION - SAMPLE DEPTH	C4-01-3ft	C4-02-4ft	D1-01-6ft	D2-01-3ft	D3-01-6ft	D4-01-3ft	E1-01-7ft	E2-01-2ft	E3-01-2ft	E4-01-2ft
					SAMPLING DATE	08/08/2019	08/08/2019	08/09/2019	08/09/2019	08/09/2019	08/08/2019	08/09/2019	08/09/2019	08/12/2019	08/12/2019
					SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					SOIL TYPE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE
	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use										
Metals															
Aluminum						15200		6700	6770	6660	9870	5310	10300	12600	19600
Mercury	0.18	0.81	0.81	2.8	5.7	0.025		0.078	ND	ND	0.013 J	0.086	0.013 J	0.024	ND
Arsenic	13	16	16	16	16	5.0		5.7	3.2 J	3.3 J	3.3 J	3.3	3.4	3.9	4.7
Barium	350	350	400	400	10000	135		57.6	62.7	53.1	56.5	43.5	78.2	115	164
Beryllium	7.2	14	72	590	2700	0.85		0.34 J	0.37 J	0.43 J	0.52	0.31 J	0.56	0.68	0.98
Cadmium	2.5	2.5	4.3	9.3	60	ND		ND	ND	ND	ND	ND	0.17 J	ND	ND
Calcium						3690		68400	77300	83400	25100	79700	63100	5060	4000
Chromium						22.0		11.0	11.2	10.8	15.4	9.5	16.3	17.8	27.1
Cobalt						10.2 J		5.4 J	5.8 J	5.6 J	6.1 J	4.6 J	7.2 J	10.3	11.7
Copper	50	270	270	270	10000	14.0		16.0	10.8	13.6	12.3	15.6	14.0	14.0	17.8
Iron						25500		13700	12900	14000	17600	11900	18600	22600	30500
Lead	63	400	400	1000	3900	17.9		45.9	13.3	12.0	14.6	15.7	15.9	17.7	16.9
Magnesium						5470		21000	26700	31800	16100	30300	29200	6360	7490
Manganese	1600	2000	2000		10000	541		337	407	413	164	329	477	568	568
Nickel	30	140	310	310	10000	24.3		13.3	12.4	12.8	16.2	10.6	18.1	21.4	29.9
Potassium						1770		1260	1300	1450	1460	1290	2010	1490	2750
Selenium	3.9	36	180	1500	6800	ND		ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	36	180	1500	6800	ND		ND	ND	ND	ND	ND	ND	ND	ND
Sodium						591 J		728 J	1280	688 J	1000 J	424 J	770 J	477 J	964 J
Vanadium						27.7		15.7	15.2	17.9	19.7	15.6	21.5	23.4	33.4
Zinc	109	2200			10000	90.1		70.5	58.3	63.2	67.9	85.2	71.8	77.0	96.5
WetChem															
Chromium, hexavalent	1	22	110	400	800	ND								ND	
Cyanide, Total	27	27	27	27	10000	ND		ND	ND	ND	ND	ND	ND	ND F1	ND

Analytical Data compared to Part 375 Standards and DER-10

ND indicates analyte was not detected.

Blank space indicates analyte was not analyzed for in that sample.

* - LCS or LCSD is outside acceptance limits.

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 10

POST REMEDIATION GROUNDWATER SAMPLE RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

	LOCATION	MW-1R	MW-2R	MW-3R	MW-1R	MW-2R	MW-3R
	SAMPLING DATE	2/12/2020	2/12/2020	2/12/2020	3/9/2020	3/9/2020	3/9/2020
	SAMPLE TYPE	WATER	WATER	WATER	WATER	WATER	WATER
	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	NY-TOGS-GA						
Volatile Organics by GC/MS							
Methylene chloride	5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1	ND	ND	ND	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	5	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	ND	0.24 J	ND	ND	0.48 J	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND
Bromodichloromethane	50	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.4	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.4	ND	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND	ND	ND	ND	ND	ND
Chloromethane		ND	ND	ND	ND	ND	0.7 J
Bromomethane	5	ND	ND	ND	ND	ND	ND
Vinyl chloride	2	ND	ND	ND	ND	ND	ND
Chloroethane	5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND
Methyl tert butyl ether	10	ND	24	ND	ND	29	ND
p/m-Xylene	5	ND	ND	ND	ND	ND	ND
o-Xylene	5	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	ND	ND	ND	ND	ND	ND
Styrene	930	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND	ND
Acetone	50	2.1 J	6	9.6	15	3 J	6
Carbon disulfide	60	ND	ND	ND	ND	ND	ND
2-Butanone	50	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone		ND	ND	ND	ND	1.1 J	ND
2-Hexanone	50	ND	ND	ND	ND	ND	ND
Bromochloromethane	5	ND	ND	ND	- -	- -	- -
1,2-Dibromoethane	0.0006	ND	ND	ND	ND	ND	ND
n-Butylbenzene	5	-	-	-	ND	ND	ND
sec-Butylbenzene	5	-	-	-	ND	ND	ND
tert-Butylbenzene	5	-	-	-	ND	ND	ND
1,2-Dibromo-3-chloropropane	0.04	ND	ND	ND	ND	ND	ND
Isopropylbenzene	5	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	-	-	-	ND	ND	ND
Naphthalene	10	-	-	-	0.92 J	ND	ND
n-Propylbenzene	5	-	-	-	ND	ND	ND
1,2,3-Trichlorobenzene	5	ND	ND	ND	- -	- -	- -
1,2,4-Trichlorobenzene	5	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	-	-	-	ND	ND	ND
1,2,4-Trimethylbenzene	5	-	-	-	ND	ND	ND
Methyl Acetate		ND	ND	ND	ND	ND	ND
Cyclohexane		ND	ND	ND	0.33 J	ND	ND
1,4-Dioxane		ND	ND	ND	- -	- -	- -
Freon-113	5	ND	ND	ND	ND	ND	ND
Methyl cyclohexane		ND	ND	ND	0.76 J	0.51 J	ND
Total VOCs		2.1 -	30.24 -	9.6 -	17.01 -	34.09 -	6.7 -
Volatile Organics by GC/MS-TIC							
Unknown		-	-	-	-	-	2.01 J
iso-Propyl Alcohol		2.54 NJ	2.91 NJ	- -	- -	- -	- -
No Tentatively Identified Compounds		-	-	ND	ND	ND	-
Total TIC Compounds		2.54 J	2.91 J	-	-	-	2.01 J
Semivolatile Organics by GC/MS							
Bis(2-chloroethyl)ether	1	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	5	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	5	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	5	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether		ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether		ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl)ether	5	ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy)methane	5	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	5	ND	ND	ND	ND	ND	ND
Isophorone	50	ND	ND	ND	ND	ND	ND
Nitrobenzene	0.4	ND	ND	ND	ND	ND	ND
NDPA/DPA	50	ND	ND	ND	ND	ND	ND
n-Nitrosodi-n-propylamine		ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	5	8.6	ND	ND	ND	ND	ND
Butyl benzyl phthalate	50	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	50	ND	ND	0.57 J	ND	ND	ND
Di-n-octylphthalate	50	ND	ND	ND	ND	ND	ND

TABLE 10

POST REMEDIATION GROUNDWATER SAMPLE RESULTS
301 CONNECTICUT STREET SITE
BCP SITE C915345

	LOCATION	MW-1R		MW-2R		MW-3R		MW-1R		MW-2R		MW-3R	
	SAMPLING DATE	2/12/2020		2/12/2020		2/12/2020		3/9/2020		3/9/2020		3/9/2020	
	SAMPLE TYPE	WATER		WATER		WATER		WATER		WATER		WATER	
	UNITS	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
	NY-TOGS-GA												
Diethyl phthalate	50	0.38	J	ND		ND		ND		ND		ND	
Dimethyl phthalate	50	ND		ND		ND		ND		ND		ND	
Biphenyl		ND		ND		ND		ND		ND		ND	
4-Chloroaniline	5	ND		ND		ND		ND		ND		ND	
2-Nitroaniline	5	ND		ND		ND		ND		ND		ND	
3-Nitroaniline	5	ND		ND		ND		ND		ND		ND	
4-Nitroaniline	5	ND		ND		ND		ND		ND		ND	
Dibenzofuran		ND		ND		ND		ND		ND		ND	
1,2,4,5-Tetrachlorobenzene	5	ND		ND		ND		ND		ND		ND	
Acetophenone		ND		ND		ND		ND		ND		ND	
2,4,6-Trichlorophenol		ND		ND		ND		ND		ND		ND	
p-Chloro-m-cresol		ND		ND		ND		ND		ND		ND	
2-Chlorophenol		ND		ND		ND		ND		ND		ND	
2,4-Dichlorophenol	2	ND		ND		ND		ND		ND		ND	
2,4-Dimethylphenol	2	ND		ND		ND		ND		ND		ND	
2-Nitrophenol		ND		ND		ND		ND		ND		ND	
4-Nitrophenol		ND		ND		ND		ND		ND		ND	
2,4-Dinitrophenol	2	ND		ND		ND		ND		ND		ND	
4,6-Dinitro-o-cresol		ND		ND		ND		ND		ND		ND	
Phenol	2	ND		ND		ND		ND		ND		ND	
2-Methylphenol		-		-		-		ND		ND		ND	
3-Methylphenol/4-Methylphenol		ND		ND		ND		ND		ND		ND	
2,4,5-Trichlorophenol		ND		ND		ND		ND		ND		ND	
Carbazole		ND		ND		ND		ND		ND		ND	
Atrazine	7.5	ND		ND		ND		ND		ND		ND	
Benzaldehyde		ND		ND		ND		ND		ND		ND	
Caprolactam		ND		ND		ND		ND		ND		ND	
2,3,4,6-Tetrachlorophenol		ND		ND		ND		ND		ND		ND	
Total SVOCs		8.98	-	-	-	0.57	-	-	-	-	-	-	-
Semivolatile Organics by GC/MS-SIM													
Acenaphthene	20	ND		ND		ND		0.04	J	ND		ND	
2-Chloronaphthalene	10	ND		ND		ND		ND		ND		ND	
Fluoranthene	50	0.06	J	0.03	J	0.05	J	ND		ND		ND	
Hexachlorobutadiene	0.5	ND		ND		ND		ND		ND		ND	
Naphthalene	10	ND		ND		ND		ND		ND		ND	
Benzo(a)anthracene	0.002	0.03	J	ND		ND		ND		ND		ND	
Benzo(a)pyrene	0	0.02	J	ND		ND		ND		ND		ND	
Benzo(b)fluoranthene	0.002	0.06	J	0.01	J	0.02	J	ND		ND		ND	
Benzo(k)fluoranthene	0.002	0.02	J	ND		ND		ND		ND		ND	
Chrysene	0.002	0.03	J	ND		ND		ND		ND		ND	
Acenaphthylene		ND		ND		ND		ND		ND		ND	
Anthracene	50	ND		ND		ND		ND		ND		ND	
Benzo(ghi)perylene		0.04	J	ND		ND		ND		ND		ND	
Fluorene	50	ND		0.01	J	ND		0.03	J	ND		ND	
Phenanthrene	50	0.03	J	ND		ND		ND		ND		ND	
Dibenzo(a,h)anthracene		ND		ND		ND		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	0.002	0.04	J	ND		ND		ND		ND		ND	
Pyrene	50	0.05	J	0.02	J	0.03	J	ND		ND		ND	
2-Methylnaphthalene		ND		ND		ND		0.03	J	0.03	J	ND	
Pentachlorophenol	2	ND		ND		ND		ND		ND		ND	
Hexachlorobenzene	0.04	ND		ND		ND		ND		ND		ND	
Hexachloroethane	5	ND		ND		ND		ND		ND		ND	
Total SVOCs		0.38	-	0.07	-	0.1	-	0.1	-	0.03	-	-	-
Semivolatile Organics by GC/MS-TIC													
Aldol Condensates (A)		23.6	J	21	J	25.4	J	-	-	-	-	-	-
Unknown Organic Acid		4.11	J	-		2.36	J	-	-	-	-	-	-
Unknown Alcohol		13.2	J	-	-	-	-	-	-	-	-	-	-
Unknown Phenol		-		-		45.9	J	5.82	J	-	-	-	-
Unknown Alkane		-		-		-		-		1.78	J	-	-
Unknown		1.56	J	4.04	J	-	-	-	-	-	-	-	-
Unknown		6.69	J	1.93	J	-	-	-	-	-	-	-	-
Unknown		1.67	J	2.22	J	-	-	-	-	-	-	-	-
Unknown		10	J	2.47	J	6.58	J	-	-	-	-	-	-
Unknown		10.4	J	1.67	J	1.82	J	-	-	-	-	-	-
Unknown		26.9	J	1.85	J	3.16	J	-	-	-	-	-	-
Unknown		1.74	J	2.29	J	2.76	J	-	-	-	-	-	-
Unknown		2.18	J	2.76	J	2.4	J	-	-	-	-	-	-
Unknown		3.24	J	3.53	J	3.53	J	-	-	-	-	-	-
Unknown		5.05	J	5.67	J	5.42	J	-		1.53	J	2.54	J
Unknown		2.11	J	1.64	J	2.11	J	1.85	J	1.78	J	1.89	J
Unknown		6.58	J	2.04	J	1.53	J	1.71	J	2.94	J	1.93	J
Cyclic Octaatomic Sulfur		-		-		-		-		2.8	NJ	-	-
Total TIC Compounds		119	J	53.1	J	103	J	9.38	J	10.8	J	6.36	J
Total Metals													
Lead, Total	50	2.45		3.04		0.6	J	ND		ND		ND	

* Comparison is not performed on parameters with non-numeric criteria.
NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
NY-TOGS-GA: New York TOGS 111 Groundwater Effluent Limitations criteria reflects all addendum to criteria through June 2004.

Table 11
Remedial Investigation Sampling Program

Matrix	Sample Type	Lab Analysis	No. Samples	Field Duplicates	Matrix Spike	Matrix Spike Duplicate	Trip Blank	Total
Soil	Surface	TCL VOC	3	0	0	0	--	3
		TCL SVOC	3	0	0	0	--	3
		TCL Pesticides	3	0	0	0	--	3
		Total PCB	3	0	0	0	--	3
		TAL Metals	3	0	0	0	--	3
		Cyanide	3	0	0	0	--	3
		Hexavalent Chromium	0	0	0	0	--	0
		Silvex	0	0	0	0	--	0
		PFAS	3	0	0	0	--	3
		1,4-Dioxane	3	0	0	0	--	3
	Fill Material	TCL VOC	7	1	1	1	--	10
		TCL SVOC	0	0	0	0	--	0
		TCL Pesticides	6	1	1	1	--	9
		Total PCB	6	1	1	1	--	9
		TAL Metals	0	0	0	0	--	0
		Cyanide	0	0	0	0	--	0
		Hexavalent Chromium	6	1	1	1	--	9
		Silvex	6	1	1	1	--	9
		PFAS	5	1	1	1	--	8
		1,4-Dioxane	5	1	1	1	--	8
	Lead Delineation	TCL VOC	49	2	2	2	--	55
		TCL SVOC	49	2	2	2	--	55
		TCL Pesticides	0	0	0	0	--	0
		Total PCB	49	2	2	2	--	55
		TAL Metals (Lead Only)	49	2	2	2	--	55
		Cyanide	0	0	0	0	--	0
		Hexavalent Chromium	0	0	0	0	--	0
		Silvex	0	0	0	0	--	0
		PFAS	0	0	0	0	--	0
		1,4-Dioxane	0	0	0	0	--	0
	Petroluem Delieation	TCL VOC	18	0	0	0	--	18
		TCL SVOC	18	0	0	0	--	18
		TCL Pesticides	0	0	0	0	--	0
		Total PCB	0	0	0	0	--	0
		TAL Metals	18	0	0	0	--	18
		Cyanide	0	0	0	0	--	0
		Hexavalent Chromium	0	0	0	0	--	0
		Silvex	0	0	0	0	--	0
		PFAS	0	0	0	0	--	0
		1,4-Dioxane	0	0	0	0	--	0
	Native Soil	TCL VOC	18	1	1	1	--	21
		TCL SVOC	18	1	1	1	--	21
		TCL Pesticides	5	1	1	1	--	8
		Total PCB	5	1	1	1	--	8
		TAL Metals	18	1	1	1	--	21
		Cyanide	18	1	1	1	--	21
		Hexavalent Chromium	5	1	1	1	--	8
		Silvex	5	1	1	1	--	8
		PFAS	18	1	1	1	--	21
		1,4-Dioxane	18	1	1	1	--	21
	Deep Native Soil	TCL VOC	5	0	0	0	--	5
		TCL SVOC	5	0	0	0	--	5
		TCL Pesticides	5	0	0	0	--	5
		Total PCB	5	0	0	0	--	5
		TAL Metals	5	0	0	0	--	5
		Cyanide	5	0	0	0	--	5
		Hexavalent Chromium	5	0	0	0	--	5
		Silvex	5	0	0	0	--	5
		PFAS	5	0	0	0	--	5
		1,4-Dioxane	5	0	0	0	--	5
	Waste Characterization	TCLP VOC	5	--	--	--	--	5
		TCLP SVOC	5	--	--	--	--	5
		PCB	5	--	--	--	--	5
		TCLP Metal	5	--	--	--	--	5
		Reactivity	5	--	--	--	--	5
		Corrosivity	5	--	--	--	--	5
		Ignitability	5	--	--	--	--	5
		pH	5	--	--	--	--	5
		Percent Solids	5	--	--	--	--	5
	Off-site Soil	TCL VOC	10	0	0	0	--	10
		TCL SVOC	10	0	0	0	--	10
		TCL Pesticides	0	0	0	0	--	0
		Total PCB	0	0	0	0	--	0
		TAL Metals	0	0	0	0	--	0
		Cyanide	0	0	0	0	--	0
		Hexavalent Chromium	0	0	0	0	--	0
		Silvex	0	0	0	0	--	0
		PFAS	0	0	0	0	--	0
		1,4-Dioxane	0	0	0	0	--	0

Table 11
Remedial Investigation Sampling Program

Matrix	Sample Type	Lab Analysis	No. Samples	Field Duplicates	Matrix Spike	Matrix Spike Duplicate	Trip Blank	Total
Water	Groundwater	Part 375 VOC	10	2	2	2	2	18
		Part 375 SVOC	10	2	2	2	0	16
		Part 375 Pesticides	10	2	2	2	0	16
		Total PCB	10	2	2	2	0	16
		Part 375 Metals	10	2	2	2	0	16
		Cyanide	10	2	2	2	0	16
		Hexavalent Chromium	0	0	0	0	0	0
		Silvex	0	0	0	0	0	0
		1,4 Dioxane	2	1	1	1	0	5
		PFOA/PFOS	2	1	1	1	0	5
	Off-site Groundwater	Part 375 VOC	1	0	0	0	1	2
		Part 375 SVOC	1	0	0	0	0	1
		Part 375 Pesticides	0	0	0	0	0	0
		Total PCB	0	0	0	0	0	0
		Part 375 Metals	0	0	0	0	0	0
		Cyanide	0	0	0	0	0	0
		Hexavalent Chromium	0	0	0	0	0	0
		Silvex	0	0	0	0	0	0
		1,4 Dioxane	0	0	0	0	0	0
		PFOA/PFOS	0	0	0	0	0	0

APPENDICES

APPENDIX A

SOIL BORING LOGS

C&S Engineers, Inc. 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454	**BORING LOG**	***Boring No.***	A1
		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program							***Surface Elev.:***	
Location:	301 Connecticut Street, Buffalo, NY							***Datum:***	
Client:	D'Youville College							***Start Date:***	8/5/19
Drilling Firm:	TREC							***Finish Date:***	8/12/19
Groundwater	***Depth***	***Date & Time***	***Drill Rig:***					***Inspector:***	J. Alt-Winzig
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***		
Before Casing Removal:			***Sampler:***		***Other:***				
After Casing Removal:			***Hammer:***						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine **MATERIAL DESCRIPTION** S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%	**COMMENTS** (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.4 ft - Asphalt, gravel and sand, fill	
				0.4-3.7 ft - Gravel fill and sand	
2					
3					
4					
5				***PID - 0 ppm***	3.7 ft Recovered
6				0-1.8 ft - Gravel fill and sand	
7					
8					
9					
10				***PID - 0 ppm***	1.8 ft Recovered
11	A1-00			0-1.7 ft - Gravel fill and sand	
				1.7-5.0 ft - Brown silty clay, moist	
12	A1-01				
13	A1-02				
14	A1-03				
15	A1-04			***PID - 0 ppm***	5.0 ft Recovered
16				***End of Boring at 15 ft***	
17				**A1-00-11 ft** **A1-01-12 ft**	
18				**A1-02-13 ft** **A1-03-14 ft**	
19				**A1-04-15 ft** **A1-WC**	
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	A2
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
				0-0.5 ft - Concrete gravel	
1	A2-00			0.5-0.8 ft - Sub-base gravel and sand	
				0.8-1.4 ft - Brown silty clay and gravel	1.4 ft Recovered
2	A2-01			***PID - 0 ppm***	
3	A2-02			0-0.2 ft - Brown silty clay and gravel	
				0.2-2.9 ft - Brown silty clay, dry	
4	A2-03			2.9-3.9 ft - Brown silty clay, moist	
5					
				PID - 0 ppm	3.9 ft Recovered
6					
7				0-3.1 ft - Brown silty clay, moist	
8					
9					
				PID - 0 ppm	3.1 ft Recovered
10					
11				0-2.4 ft - Brown silty clay, moist	
12					
13					
				PID - 0 ppm	2.3 ft Recovered
14					
				End of Boring at 14 ft	
15					
				A2-00-1 ft	
16				**A2-01-2 ft**	
				A2-02-3 ft	
17				**A2-03-4 ft**	
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.
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Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	B1
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.6 ft - Asphalt, gravel, some dark brown sand, fill	
2	B1-01 DUP-D			0.6-1.8 ft - Black silty clay	
3	B1-02			1.8-5.0 ft - Brown silty clay	
4	B1-03				
5				***PID - 0 ppm***	5.0 ft Recovered
6				0-5.0 ft - Brown silty clay	
7					
8					
9					
10				***PID - 0 ppm***	5.0 ft Recovered
11				***Hit Refusal at 10 ft***	
12				***End of Boring at 10 ft***	
13					
14					
15					
16					
17				**B1-01-1 to 2 ft**	
18				**B1-02-3 ft**	
19				**B1-03-4 ft**	
20				**B1-WC**	
21				**DUP-D-080819**	
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	B2
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
				0-0.6 ft - Concrete gravel	
1	B2-00			0.6-1.2 ft - Sub-base gravel, some asphalt	
				1.2-1.6 ft - Dark brown silty clay, dry	1.6 ft Recovered
2	B2-01			***PID - 0 ppm***	
3	B2-02			0-0.2 ft - Dark brown silty clay and gravel, dry	
				0.2-2.9 ft - Brown silty clay	
4	B2-03				
5					
				PID - 0 ppm	3.9 ft Recovered
6					
7				0-3.8 ft - Brown silty clay, saturated	
8					
9					
				PID - 0 ppm	3.8 ft Recovered
10					
11				0-3.9 ft - Brown silty clay, saturated	
12					
13					
				PID - 0 ppm	3.9 ft Recovered
14					
				End of Boring at 14 ft	
15					
				B2-00-1 ft	
16				**B2-01-2 ft**	
				B2-02-3 ft	
17				**B2-03-4 ft**	
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	B3
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10% S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
				0-0.5 ft - Concrete gravel	
1				0.5-0.7 ft - Sub-base gravel and sand, some asphalt	
				0.7-1.1 ft - Dark brown silty clay, trace brick	1.1 ft Recovered
2				***PID - 0 ppm***	
3	B3-01			0-0.2 ft - Dark brown silty clay, trace brick	
				0.2-2.5 ft - Sandy clay	
4	B3-02			2.5-3.7 ft - Brown silty clay	
5	B3-03				
				PID - 0 ppm	3.7 ft Recovered
6					
7				0-3.9 ft - Brown silty clay, moist	
8					
9					
				PID - 0 ppm	3.9 ft Recovered
10					
11				0-2.6 ft - Brown silty clay, moist	
12					
13					
				PID - 0 ppm	2.6 ft Recovered
14					
				End of Boring at 14 ft	
15					
				B3-01-3 ft	
16				**B3-02-4 ft**	
				B3-03-5 ft	
17					
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	B4
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.9 ft - Asphalt, gravel and sand, fill	
				0.9-1.8 ft - Brick and sand, fill	
2				1.8-3.5 ft - Black silty clay	
				3.5-4.7 ft - Brown silty clay, moist	
3	B4-00				
4	B4-01				
				PID - 0 ppm	4.7 ft Recovered
5	B4-02				
6	B4-03			0-5.0 ft - Brown silty clay, moist	
7					
8					
9					
				PID - 0 ppm	5.0 ft Recovered
10					
11				0-4.8 ft - Brown silty clay, moist	
12					
13					
14					
				PID - 0 ppm	4.8 ft Recovered
15	B4-04				
				End of Boring at 15 ft	
16					
				B4-00-3 ft	
17				**B4-01-4 ft**	
				B4-02-5 ft	
18				**B4-03-6 ft**	
				B4-04-15 ft	
19				**B4-WC**	
20					
21					
22					
23					

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BORING LOG

Boring No.	C1
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1	C1-01			0-0.7 ft - Asphalt, gravel and sand, fill	
				0.7-1.0 ft - Black silty clay	
2	C1-02			1.0-5.0 ft - Brown silty clay	
3	C1-03				
4					
				PID - 0 ppm	5.0 ft Recovered
5					
6				0-5.0 ft - Brown silty clay, saturated, **petroleum odor**	
7	C1-00				
8				***PID - 3000 ppm at 7 ft***	
				PID - 4300 ppm at 8 ft	
9				***PID - 200 ppm at 9 ft***	
				PID - 5 ppm at 10 ft	5.0 ft Recovered
10					
11				0-0.4 ft - Sand, dry	
				0.4-5.0 ft - Silty clay, moist	
12					
13					
14				***PID - 5ppm at 11 ft***	
				PID - 0 ppm at 12 to 15 ft	5.0 ft Recovered
15					
				End of Boring at 15 ft	
16					
				C1-01-1 ft	
17				**C1-02-2 ft**	
				C1-03-3 ft	
18				**C1-00-7 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc. 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454	**BORING LOG**	***Boring No.***	C2
		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program						***Surface Elev.:***		
Location:	301 Connecticut Street, Buffalo, NY						***Datum:***		
Client:	D'Youville College						***Start Date:***	8/5/19	
Drilling Firm:	TREC						***Finish Date:***	8/12/19	
Groundwater	***Depth***	***Date & Time***	***Drill Rig:***				***Inspector:***	J. Alt-Winzig	
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***		
Before Casing Removal:			***Sampler:***		***Other:***				
After Casing Removal:			***Hammer:***						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1	C2-01			0-0.4 ft - Asphalt, gravel, fill	
				0.4-3.6 ft - Brown silty clay and sand	
2	C2-02				
3	C2-03				
4					
5				***PID - 0 ppm***	3.6 ft Recovered
6				0-4.8 ft - Brown silty clay, moist	
7					
8					
9					
10				***PID - 0 ppm***	4.8 ft Recovered
11				0-4.9 ft - Brown silty clay, moist	
12					
13					
14					
15				***PID - 0 ppm***	4.9 ft Recovered
16				***End of Boring at 15 ft***	
17				**C2-01-1 ft**	
				C2-02-2 ft	
18				**C2-03-3 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	C3
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.4 ft - Asphalt, gravel, fill	
				1.4-1.9 ft - Large gravel and silt, saturated	
2	C3-01			1.9-2.8 ft - Brown silty clay, moist	
3	C3-02				
4	C3-03				
5				***PID - 0 ppm***	2.8 ft Recovered
6				0-5.0 ft - Brown silty clay, moist	
7					
8					
9					
10				***PID - 0 ppm***	5.0 ft Recovered
				Hit Refusal at 9 ft	
11				***End of Boring at 10 ft***	
12					
13					
14					
15					
16					
17				**C3-01-2 ft**	
				C3-02-3 ft	
18				**C3-03-4 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	C4
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.8 ft - Asphalt, gravel, fill	
				0.8-2.7 ft - Black silty clay	
2				2.7-4.6 ft - Brown silty clay	
3	C4-01				
4	C4-02				
				PID - 0 ppm	4.6 ft Recovered
5	C4-03				
6				0-4.8 ft - Brown silty clay	
7					
8					
9					
				PID - 0 ppm	4.8 ft Recovered
10					
11				0-5.0 ft - Brown silty clay	
12					
13					
14					
				PID - 0 ppm	5.0 ft Recovered
15					
				End of Boring at 15 ft	
16					
				C4-01-3 ft	
17				**C4-02-4 ft**	
				C4-03-5 ft	
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	D1
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.8 ft - Asphalt, gravel, some sand, fill	
				0.8-1.9 ft - Large gravel and sand	
2	D1-00			1.9-2.5 ft - Brown silty clay	
	DUP-C			2.5-2.8 ft - Asphalt	
3				2.8-3.6 ft - Gravel and sand, some brick	
4					
5				***PID - 0 ppm***	3.6 ft Recovered
6	D1-01			0-0.9 ft - Gravel and sand, some brick	
				0.9-4.8 ft - Brown silty clay, moist	
7	D1-02				
8	D1-03				
9					
10				***PID - 0 ppm***	4.8 ft Recovered
11				0-5.0 ft - Brown silty clay, moist	
12					
13					
14					
15	D1-04			***PID - 0 ppm***	5.0 ft Recovered
16				***End of Boring at 15 ft***	
17				**D1-00-2 ft** **D1-01-6 ft**	
18				**D1-02-7ft** **D1-03-8ft**	
19				**D1-04-15 ft** **DUP-C-080919**	
20				**D1-WC**	
21					
22					
23					

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BORING LOG

Boring No.	D2
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.1 ft - Asphalt, gravel, fill	
				1.1-2.8 ft - Large gravel and sand	
2				2.8-4.1 ft - Brown silty clay, moist	
3	D2-01				
4	D2-02				
				PID - 0 ppm	4.1 ft Recovered
5	D2-03				
6				0-4.9 ft - Brown silty clay, moist	
7					
8					
9					
				PID - 0 ppm	4.9 ft Recovered
10					
11				0-0.4 ft - Brown silty clay, moist	
				0.4-2.6 ft - Small gravel, some sand, saturated	
12				2.6-4.6 ft - Brown silty clay, moist	
13					
14					
				PID - 0 ppm	4.6 ft Recovered
15					
				End of Boring at 15 ft	
16					
				D2-01-3 ft	
17				**D2-02- 4 ft**	
				D2-03-5 ft	
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	D3
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.4 ft - Asphalt, gravel, fill	
				1.4-1.9 ft - Brown silty clay	
2				1.9-3.6 ft - Gravel and sand, moist	
3					
4					
5				***PID - 0 ppm***	3.6 ft Recovered
6	D3-01			0-0.4 ft - Gravel and sand, moist	
	MS/MSD			0.4-4.8 ft - Silty clay, moist	
7	D3-02				
8	D3-03				
9					
10				***PID - 0 ppm***	4.8 ft Recovered
11				0-3.4 ft - Small gravel, some sand, saturated	
				3.4-5.0 - Brown silty clay, moist	
12					
13					
14					
15				***PID - 0 ppm***	5.0 ft Recovered
16				***End of Boring at 15 ft***	
17				**D3-01-6 ft** **D3-01-6 ft MS/MSD**	
18				**D3-02-7 ft** **D3-03-8 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	D4
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.8 ft - Asphalt, gravel, and sand, fill, moist	
				1.8-2.5 ft - Sand, saturated	
2				2.5-4.3 ft - Brown silty clay, saturated	
3	D4-01				
4	D4-02				
5	D4-03			***PID - 0 ppm***	4.3 ft Recovered
6				0-4.3 ft - Brown silty clay, moist	
7					
8					
9					
10				***PID - 0 ppm***	4.3 ft Recovered
				Hit Refusal at 9 to 10 ft	
11				***End of Boring at 10 ft***	
12					
13					
14					
15					
16					
17				**D4-01-3 ft**	
				D4-02-4 ft	
18				**D4-03-5 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	E1
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-2.6 ft - Tolsoil loam, little gravel	
				2.6-3.4 ft - Gravel, fill	
2				3.4-4.3 ft - Black silty clay, moist	
				4.3-4.8 ft - Brown silty clay	
3					
4					
5				***PID - 0 ppm***	4.8 ft Recovered
6				0-2.0 ft - Black silty clay and gravel	
				2.0-5.0 ft - Brown silty clay	
7	E1-01				
8	E1-02				
9	E1-03				
10				***PID - 0 ppm***	5.0 ft Recovered
11				0-5.0 ft - Brown silty clay	
12					
13					
14					
15				***PID - 0 ppm***	5.0 ft Recovered
16				***End of Boring at 15 ft***	
17				**E1-01-7 ft** **E1-02-8 ft**	
18				**E1-03-9 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	E2
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1	E2-00			0-0.6 ft - Asphalt, gravel, and sand, fill	
	MS/MSD			0.6-4.8 ft - Brown silty clay	
2	E2-01				
3	E2-02				
4	E2-03				
5				***PID - 0 ppm***	4.8 ft Recovered
6				0-4.8 ft - Brown silty clay, dense	
7					
8					
9					
10				***PID - 0 ppm***	4.8 ft Recovered
11				0-4.8 ft - Brown silty clay, dense	
12					
13					
14					
15	E2-04			***PID - 0 ppm***	4.8 ft Recovered
16				***End of Boring at 15 ft***	
17				**E2-00-1 ft** **E2-00-1 ft MS/MSD**	
18				**E2-01-2 ft** **E2-02-3 ft**	
19				**E2-03-4 ft** **E2-04-15 ft**	
20				**E2-WC**	
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	E3
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Finish Date:**	8/12/19
Client:	D'Youville College							**Inspector:**	J. Alt-Winzig
Drilling Firm:	TREC								
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**						
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10% S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.8 ft - Asphalt, gravel, and sand, fill	
				0.8-1.4 ft - Black silty clay, moist	
2	E3-01			1.4-5.0 ft - Brown silty clay	
3	E3-02				
4	E3-03				
				PID - 0 ppm	5.0 ft Recovered
5					
6				0-5.0 ft - Brown silty clay	
7					
8					
9					
				PID - 0 ppm	5.0 ft Recovered
10					
11				0-5.0 ft - Brown silty clay	
12					
13					
14					
				PID - 0 ppm	5.0 ft Recovered
15					
				End of Boring at 15 ft	
16					
				E3-01-2 ft	
17				**E3-02-3 ft**	
				E3-03-4 ft	
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	E4
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.7 ft - Asphalt, gravel, and sand, fill	
				0.7-1.3 ft - Black silty clay and sand, moist	
2	E4-01			1.3-4.7 ft - Brown silty clay	
3	E4-02				
4	E4-03				
5				***PID - 0 ppm***	4.7 ft Recovered
6				0-4.8 ft - Brown silty clay	
7					
8					
9					
10				***PID - 0 ppm***	4.8 ft Recovered
11				0-5.0 ft - Brown silty clay, moist	
12					
13					
14					
15	E4-04			***PID - 0 ppm***	5.0 ft Recovered
16				***End of Boring at 15 ft***	
17				**E4-01-2 ft**	
				E4-02-3 ft	
18				**E4-03-4 ft**	
				E4-04-15 ft	
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	1-X01
141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Surface Elev.:**	
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	8/5/19
Drilling Firm:	TREC							**Finish Date:**	8/12/19
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					**Inspector:**	J. Alt-Winzig
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.7 ft - Asphalt, gravel, sub-base, fill	
2					
3					
4				***PID - 0 ppm***	1.7 ft Recovered
5				0-0.7 ft - Gravel backfill, water, saturated	
6					
7					
8				***PID - 0 ppm***	0.7 ft Recovered
9	1-X01			0-1.1 ft - Gravel backfill, water, saturated	
10	1-X01 DUP-A			1.1-2.6 ft - Brown silty clay, trace gravel, soft, moist	
11	1-X01				
12	1-X01			***PID - 0 ppm***	2.6 ft Recovered
13	1-X01			0-2.6 ft - Brown silty clay, soft, moist	
14	1-X01				
15	1-X01				
16				***PID - 0 ppm***	2.6 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-X01-9 ft** **1-X01-10 ft**	
19				**1-X01-11 ft** **1-X01-12 ft**	
20				**1-X01-13 ft** **1-X01-14 ft**	
21				**1-X01-15 ft** **DUP-A-080519**	
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	1-X02
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	8/5/19
Drilling Firm:	TREC							**Finish Date:**	8/12/19
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					**Inspector:**	J. Alt-Winzig
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine **MATERIAL DESCRIPTION** S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%	**COMMENTS** (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.9 ft - Asphalt, gravel, sub-base, fill, dry	
2					
3					
4				***PID - 0 ppm***	1.9 ft Recovered
5				0-0.9 ft - Gravel backfill	
6					
7					
8				***PID - 0 ppm***	0.9 ft Recovered
9	1-X02			0-1.0 ft - Slag	
10	1-X02			1.0-2.6 ft - Brown silty clay, moist	
11	1-X02			***PID - 700 ppm at 9 ft***	
12	1-X02			***PID - 0 ppm at 10 ft***	2.6 ft Recovered
13	1-X02			0-3.8 ft - Brown silty clay, saturated	
14	1-X02				
15					
16				***PID - 0 ppm***	3.8 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-X02-9 ft** **1-X02-10 ft**	
19				**1-X02-11 ft** **1-X02-12 ft**	
20				**1-X02-13 ft** **1-X02-14 ft**	
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	1-X03
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	8/5/19
Drilling Firm:	TREC							**Finish Date:**	8/12/19
Groundwater		**Depth**	**Date & Time**	**Drill Rig:**				**Inspector:**	J. Alt-Winzig
While Drilling:				**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:				**Sampler:**		**Other:**			
After Casing Removal:				**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-2.6 ft - Asphalt, gravel, sub-base, fill, dry	
2					
3					
4				***PID - 0 ppm***	2.6 ft Recovered
5				0-0.7 ft - Gravel backfill	
6					
7					
8				***PID - 0 ppm***	0.7 ft Recovered
9	1-X03			0-2.2 ft - Brown silty clay	
10	1-X03				
11	1-X03				
12	1-X03			***PID - 0 ppm***	2.2 ft Recovered
13	1-X03			0-3.3 ft - Brown silty clay	
14	1-X03				
15	1-X03				
16				***PID - 0 ppm***	3.3 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-X03-8 to 9 ft** **1-X03-10 ft**	
19				**1-X03-11 ft** **1-X03-12 ft**	
20				**1-X03-13 ft** **1-X03-14 ft**	
21				**1-X03-15 ft**	
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	1-X04
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Finish Date:**	8/12/19
Client:	D'Youville College							**Inspector:**	J. Alt-Winzig
Drilling Firm:	TREC								
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**						
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.5 ft - Asphalt, gravel, sub-base, fill	
2					
3					
4				***PID - 0 ppm***	1.5 ft Recovered
5				0-0.7 ft - Gravel backfill, water, saturated	
6					
7					
8				***PID - 0 ppm***	0.7 ft Recovered
9	1-X04			0-1.1 ft - Gravel backfill, water, saturated	
10	1-X04			1.1-1.6 ft - Brown silty clay, moist	
11	1-X04			***PID - 203 ppm at 10 ft***	
12	1-X04			***PID - 0 ppm at 11 ft***	1.6 ft Recovered
13	1-X04			0-2.6 ft - Brown silty clay, moist	
14	1-X04				
15	1-X04			***PID - 74 ppm at 12 ft***	
				PID - 13 ppm at 13 ft	
16				***PID - 5 ppm at 15 ft***	2.6 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-X04-9 ft**	
				1-X04-10 ft	
19				**1-X04-11 ft**	
				1-X04-12 ft	
20				**1-X04-13 ft**	
				1-X04-14 ft	
21				**1-X04-15 ft**	
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	2-X01
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.3 ft - Asphalt, gravel, fill, dry	
2					
3					
4				***PID - 0 ppm***	1.3 ft Recovered
5				0-0.6 ft - Gravel fill, dry	
6				0.6-1.8 ft - Brown silty clay, saturated	
7					
8	2-X01			***PID - 0 ppm***	1.8 ft Recovered
9	2-X01			0-0.4 ft - Asphalt and gravel fill	
10	2-X01			0.4-3.8 ft - Brown silty clay, trace gravel, moist	
11	2-X01				
12				***PID - 0 ppm***	3.8 ft Recovered
13				***Hit Refusal at 12 ft***	
14				***End of Boring at 12 ft***	
15					
16					
17					
18				**2-X01-8 ft**	
19				**2-X01-9 ft** **2-X01-10 ft** **2-X01-11 ft**	
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	2-X02
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Finish Date:**	8/12/19
Client:	D'Youville College							**Inspector:**	J. Alt-Winzig
Drilling Firm:	TREC								
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**						
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.5 ft - Asphalt, gravel, fill	
				0.5-3.0 ft - Brown silty clay and gravel	
2					
3					
4				***PID - 0 ppm***	3.0 ft Recovered
5					
				0-1.7 ft - Brown silty clay and gravel	
6				1.7-3.8 ft - Brown silty clay	
7				***PID - 73 ppm at 7 ft***	
8	2-X02			***PID - 240 ppm at 8 ft***	3.8 ft Recovered
9	2-X02				
				0-1.0 ft - Brown silty clay and gravel, moist	
10	2-X02			1.0-3.9 ft - Brown silty clay, saturated	
11	2-X02			***PID - 77 ppm at 9 ft***	
12	2-X02			***PID - 61 ppm at 10 ft***	
13	2-X02			***PID - 0 ppm at 11 ft***	3.9 ft Recovered
				0-2.5 ft - Brown silty clay, saturated	
14	2-X02				
15	2-X02				
16				***PID - 0 ppm***	2.5 ft Recovered
17				***End of Boring at 16 ft***	
				2-X02-8 ft	
18				**2-X02-9 ft**	
19				**2-X02-10 ft**	
20				**2-X02-11 ft**	
21				**2-X02-12 ft**	
22				**2-X02-13 ft**	
23				**2-X02-14 ft**	

C&S Engineers, Inc.	BORING LOG	Boring No.	2-X03
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	8/5/19
Drilling Firm:	TREC							**Finish Date:**	8/12/19
Groundwater		**Depth**	**Date & Time**	**Drill Rig:**				**Inspector:**	J. Alt-Winzig
While Drilling:				**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:				**Sampler:**		**Other:**			
After Casing Removal:				**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-2.4 ft - Asphalt, gravel, fill	
2					
3					
4				***PID - 0 ppm***	2.4 ft Recovered
5				0-0.9 ft - Gravel fill	
6					
7					
8				***PID - 0 ppm***	0.9 ft Recovered
9	2-X03			0-0.9 ft - Gravel fill	
10	2-X03			0.9-2.3 ft - Brown silty clay, moist	
11	2-X03			***PID - 66 ppm at 9 ft***	
12	2-X03			***PID - 0 ppm at 10 ft***	2.3 ft Recovered
13				0-0.6 ft - Slag	
14				0.6-4.0 - Brown silty clay, moist	
15					
16				***PID - 0 ppm***	4.0 ft Recovered
17				***End of Boring at 16 ft***	
18				**2-X03-9 ft**	
19				**2-X03-10 ft** **2-X03-11 ft** **2-X03-12 ft**	
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	2-X04
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Finish Date:**	8/12/19
Client:	D'Youville College							**Inspector:**	J. Alt-Winzig
Drilling Firm:	TREC								
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**						
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.7 ft - Asphalt, gravel, sub-base, fill, dry	
2					
3					
4				***PID - 0 ppm***	1.7 ft Recovered
5				0-1.4 ft - Gravel backfill, saturated	
6					
7					
8				***PID - 0 ppm***	1.4 ft Recovered
9	2-X04			0-0.7 ft - Gravel, saturated	
10	2-X04			0.7-3.5 ft - Brown silty clay, saturated	
11	2-X04			***PID - 130 ppm at 10 ft***	
12	2-X04			***PID - 23 ppm at 11 ft***	
				PID - 0 ppm at 12 ft	3.5 ft Recovered
13	2-X04			0-3.7 ft - Brown silty clay, saturated	
14	2-X04				
15	2-X04				
16				***PID - 0 ppm***	3.7 ft Recovered
17				***End of Boring at 16 ft***	
18				**2-X04-9 ft**	
19				**2-X04-10 ft** **2-X04-11 ft** **2-X04-12 ft**	
20				**2-X04-13 ft** **2-X04-14 ft**	
21				**2-X04-15 ft**	
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	1-Y01
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.9 ft - Asphalt, gravel, and sand, fill	
				0.9-1.6 ft - Dark brown silty sand	
2				1.6-3.5 ft - Light brown silty sand	
3					
4				***PID - 0 ppm***	3.5 ft Recovered
5				0-1.7 ft - Black silty clay, dry	
				1.7-3.9 ft - Brown silty clay, moist	
6					
7				***PID - 5 ppm at 5 to 6 ft***	
8				***PID - 0 ppm at 7 to 8 ft***	3.9 ft Recovered
9				0-1.4 ft - Dark brown silty clay, some gravel, moist	
				1.4-3.9 ft - Brown silty clay, moist	
10					
11	1-Y01				
12				***PID - 0 ppm***	3.9 ft Recovered
13				0-3.9 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.9 ft Recovered
17				***End of Boring at 16 ft***	
				1-Y01-11 ft	
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	1-Y02
141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Surface Elev.:**	
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	8/5/19
Drilling Firm:	TREC							**Finish Date:**	8/12/19
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					**Inspector:**	J. Alt-Winzig
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine **MATERIAL DESCRIPTION** S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%	**COMMENTS** (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.8 ft - Asphalt, gravel, and sand, fill	
				0.8-2.3 ft - Dark brown silty clay, some sand	
2					
3					
4				***PID - 0 ppm***	2.3 ft Recovered
5				0-0.3 ft - Dark brown silty clay, some sand	
				0.3-0.6 ft - Black silty clay	
6				0.6-0.9 ft - Dark brown silty clay	
7					
8				***PID - 0 ppm***	0.9 ft Recovered
9	1-Y02			0-1.5 ft - Dark brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	1.5 ft Recovered
13				0-3.9 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.9 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-Y02-9 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	1-Y03
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.1 ft - Asphalt, gravel, fill	
				1.1-2.6 ft - Brown silty clay	
2					
3					
4				***PID - 0 ppm***	2.6 ft Recovered
5				0-2.0 ft - Brown silty clay, some gravel	
				2.0-3.2 ft - Brown silty clay, moist	
6					
7				***PID - 60 ppm at 6 ft***	
				PID - 40 ppm at 7 ft	
8				***PID - 0 ppm at 8 ft***	3.2 ft Recovered
9				0-3.9 ft - Brown silty clay, moist	
10	1-Y03				
11					
12				***PID - 0 ppm***	3.9 ft Recovered
13				***End of Boring at 12 ft***	
14					
15					
16					
17					
18				**1-Y03-10 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc. 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454	**BORING LOG**	***Boring No.***	1-Y04
		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program							***Surface Elev.:***	
Location:	301 Connecticut Street, Buffalo, NY							***Datum:***	
Client:	D'Youville College							***Start Date:***	8/5/19
Drilling Firm:	TREC							***Finish Date:***	8/12/19
Groundwater	***Depth***	***Date & Time***	***Drill Rig:***					***Inspector:***	J. Alt-Winzig
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***		
Before Casing Removal:			***Sampler:***		***Other:***				
After Casing Removal:			***Hammer:***						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine **MATERIAL DESCRIPTION** S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%	**COMMENTS** (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.9 ft - Asphalt, gravel, and sand, fill	
2				0.9-2.4 ft - Sandy clay, little gravel	
3					
4				***PID - 0 ppm***	2.4 ft Recovered
5				0-1.1 ft - Sandy clay, little gravel	
6				1.1-2.0 ft - Black silty clay	
7				***PID - 80 ppm at 5 to 6 ft***	
8				***PID - 5 ppm at 6-7 ft*** ***PID - 0 ppm at 8 ft***	2.0 ft Recovered
9	1-Y04			0-0.6 ft - Black silty clay	
10				0.6-3.8 ft - Brown silty clay, saturated	
11					
12				***PID - 0 ppm***	3.8 ft Recovered
13				0-3.3 ft - Brown silty clay, saturated	
14					
15					
16				***PID - 0 ppm***	3.3 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-Y04-9 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	2-Y01
141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program	**Surface Elev.:**	
Location:	301 Connecticut Street, Buffalo, NY	**Datum:**	
Client:	D'Youville College	**Start Date:**	8/5/19
Drilling Firm:	TREC	**Finish Date:**	8/12/19
Groundwater	**Depth** / **Date & Time**	**Inspector:**	J. Alt-Winzig
While Drilling:			
Before Casing Removal:			
After Casing Removal:			

Drill Rig:					
Casing:		**Rock Core:**		**Undist:**	
Sampler:		**Other:**			
Hammer:					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.7 ft - Asphalt, gravel, and black sand, fill	
				0.7-1.9 ft - Black silty clay, moist	
2					
3					
4				***PID - 0 ppm***	1.9 ft Recovered
5				0-2.0 ft - Black silty clay, moist	
				2.0-3.9 ft - Brown silty clay, moist	
6					
7				***PID - 17 ppm at 6 ft***	
8				***PID - 2 ppm at 7 ft***	3.9 ft Recovered
9	2-Y01			0-2.2 ft - Brown silty clay, trace sand, moist	
				2.2-3.7 ft - Silty clay	
10					
11				***PID - 1 ppm at 9 ft***	
12				***PID - 0 ppm at 10 ft***	3.7 ft Recovered
13				0-3.9 ft - Brown silty clay	
14					
15					
16				***PID - 0 ppm***	3.9 ft Recovered
17				***End of Boring at 16 ft***	
18				**2-Y01-9 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	2-Y02
141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program	**Surface Elev.:**	
Location:	301 Connecticut Street, Buffalo, NY	**Datum:**	
Client:	D'Youville College	**Start Date:**	8/5/19
Drilling Firm:	TREC	**Finish Date:**	8/12/19
Groundwater	**Depth** / **Date & Time**	**Inspector:**	J. Alt-Winzig
While Drilling:			
Before Casing Removal:			
After Casing Removal:			

Drill Rig:							
Casing:		**Rock Core:**		**Undist:**			
Sampler:		**Other:**					
Hammer:							

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10% S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.1 ft - Asphalt, gravel, and black sand, fill	
				1.1-2.7 ft - Dark brown silty clay	
2					
3					
4	2-Y02			***PID - 0 ppm***	2.7 ft Recovered
5				0-3.4 ft - Dark brown silty clay, some gravel	
6					
7					
8				***PID - 0 ppm***	3.4 ft Recovered
9				0-3.8 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	3.8 ft Recovered
13				0-3.7 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.7 ft Recovered
17				***End of Boring at 16 ft***	
18				**2-Y02-4 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	2-Y03
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	
		Start Date:	8/5/19
		Finish Date:	8/12/19
		Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program						
Location:	301 Connecticut Street, Buffalo, NY						
Client:	D'Youville College						
Drilling Firm:	TREC						
Groundwater	Depth	Date & Time	Drill Rig:				
While Drilling:			Casing:		Rock Core:		Undist:
Before Casing Removal:			Sampler:		Other:		
After Casing Removal:			Hammer:				

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.6 ft - Asphalt, gravel, fill	
				0.6-2.9 ft - Sandy clay, dry	
2					
3					
4				***PID - 0 ppm***	2.9 ft Recovered
5	2-Y03			0-2.8 ft - Sandy clay, dry	
				2.8-3.6 ft - Silty clay, moist	
6					
7					
8				***PID - 0 ppm***	3.6 ft Recovered
9				0-3.8 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	3.8 ft Recovered
13				0-3.6 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.6 ft Recovered
17				***End of Boring at 16 ft***	
18				**2-Y03-5 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	2-Y04
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.9 ft - Asphalt, gravel, fill	
2				0.9-1.8 ft - Black sand, petroleum odor	
3					
4				***PID - 2500 ppm at 2 ft***	1.8 ft Recovered
5				0-1.4 ft - Black sand, petroleum odor, moist	
6					
7					
8				***PID - 4000 ppm at 5 ft***	1.4 ft Recovered
9				0-1.8 ft - Black sand, petroleum odor, moist	
10				1.8-3.8 ft - Silty sand, moist	
11				***PID - 500 ppm at 9 ft***	
12	2-Y04			***PID - 100 ppm at 10 ft*** ***PID - 90 ppm at 11 ft*** ***PID - 5 ppm at 12 ft***	3.8 ft Recovered
13				0-3.2 ft - Brown silty sand, moist	
14					
15					
16				***PID - 0 ppm***	3.2 ft Recovered
17				***End of Boring at 16 ft***	
18				**2-Y04-12 ft**	
19				**Boring was moved 5 ft further from delineation center (15 ft from center) in order to try and find extent of petroleum odor/contamination**	
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	2-Y05
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Asphalt, gravel, fill	
				0.2-3.0 ft - Sandy clay	
2					
3					
4				***PID - 20 ppm at 3 ft***	3.0 ft Recovered
5				0-1.2 ft - Sandy clay	
				1.2-3.9 ft - Brown silty clay	
6					
7				***PID - 250 ppm at 5 ft***	
				PID - 130 ppm at 6 ft	
8				***PID - 110 ppm at 7 ft***	3.9 ft Recovered
9				***PID - 73 ppm at 8 ft***	
				0-3.9 ft - Brown silty clay	
10					
11				***PID - 130 ppm at 9 ft***	
				PID - 40 ppm at 10 ft	
12	2-Y05			***PID - 0 ppm at 11 ft***	3.9 ft Recovered
13				***End of Boring at 12 ft***	
14					
15					
16					
17					
				2-Y05-12 ft	
18					
19				**Boring added on Northeast corner of "Y" delineation 10 ft from center**	
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	3-Y04
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	
		Start Date:	8/5/19
		Finish Date:	8/12/19
		Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program						
Location:	301 Connecticut Street, Buffalo, NY						
Client:	D'Youville College						
Drilling Firm:	TREC						
Groundwater	Depth	Date & Time	Drill Rig:				
While Drilling:			Casing:		Rock Core:	Undist:	
Before Casing Removal:			Sampler:		Other:		
After Casing Removal:			Hammer:				

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse, m - medium, f - fine **MATERIAL DESCRIPTION** S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%	**COMMENTS** (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.2 ft - Asphalt, gravel, fill	
				1.2-2.7 ft - Black and brown silty clay	
2					
3					
4				***PID - 0 ppm***	2.7 ft Recovered
5				0-1.6 ft - Black and brown silty clay	
				1.6-3.9 ft - Brown silty clay, petroleum odor, moist	
6					
7				***PID - 630 ppm at 5 ft***	
				PID - 5500 ppm at 6 ft	
8				***PID - 430 ppm at 7 ft***	3.9 ft Recovered
				PID - 130 pmm at 8 ft	
9				0-2.6 ft - Brown silty clay, moist	
10					
11				***PID - 55 ppm at 9 ft***	
				PID - 20 ppm at 10 ft	
12				***PID - 15 ppm at 11 ft***	2.6 ft Recovered
				PID - 0 ppm at 12 ft	
13	3-Y04			0-2.2 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	2.2 ft Recovered
17				***End of Boring at 16 ft***	
18				**3-Y04-13 ft**	
19				**Boring was added 5 ft further from delineation center (20 ft from center) in order to try and find extent of petroleum odor/contamination**	
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	1-Z01
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.2 ft - Asphalt, gravel, fill	
				1.2-3.4 ft - Brown sandy clay	
2					
3					
4				***PID - 0 ppm***	3.4 ft Recovered
5				0-3.9 ft - Brown with black stains sandy clay, some gravel	
6					
7	1-Z01			***PID - 60 ppm at 8 ft***	
				PID - 40 ppm at 7 ft	
8				***PID - 0 ppm at 8 ft***	3.9 ft Recovered
9				0-2.9 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	2.9 ft Recovered
13				0-3.6 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.6 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-Z01-7 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	1-Z02
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.6 ft - Asphalt, gravel, fill	
2					
3					
4				***PID - 0 ppm***	0.6 ft Recovered
5				0-1.1 ft - Asphalt, gravel, fill	
6				1.1-2.6 ft - Brown silty clay	
7				***PID - 60 ppm at 8 ft***	
8				***PID - 40 ppm at 7 ft***	
				PID - 0 ppm at 8 ft	2.6 ft Recovered
9				0-0.6 ft - Asphalt	
10				0.6-3.8 ft - Brown silty clay	
11	1-Z02			***PID - 67 ppm at 9 ft***	
12				***PID - 5 ppm at 10 ft***	
				PID - 0 ppm at 11 ft	3.8 ft Recovered
13				***Hit Refusal at 12 ft***	
14				***End of Boring at 12 ft***	
15					
16					
17					
18				**1-Z02-11 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	1-Z03
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***	
Before Casing Removal:			***Sampler:***		***Other:***			
After Casing Removal:			***Hammer:***					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-1.0 ft - Asphalt, gravel, and sand fill	
				1.0-2.1 ft - Gravel	
2					
3					
4				***PID - 0 ppm***	2.1 ft Recovered
5				0-1.4 ft - Gravel	
				1.4-2.5 ft - Sandy clay and gravel	
6					
7				***PID - 3500 ppm at 7 ft***	
8				***PID - 400 ppm at 8 ft***	2.5 ft Recovered
9				0-1.2 ft - Sandy clay and gravel	
				1.2-3.8 ft - Brown silty clay	
10					
11	1-Z03			***PID - 400 ppm at 9 ft***	
12				***PID - 0 ppm at 10 ft***	3.8 ft Recovered
13				0-3.9 ft - Brown silty clay	
14					
15					
16				***PID - 0 ppm***	3.9 ft Recovered
17				***End of Boring at 16 ft***	
18				**1-Z03-11 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc. 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454	**BORING LOG**	***Boring No.***	1-Z04
		Sheet 1 of:	
		Project No.:	V20.001.005

Project Name:	301 Connecticut Street Brownfield Cleanup Program							***Surface Elev.:***	
Location:	301 Connecticut Street, Buffalo, NY							***Datum:***	
Client:	D'Youville College							***Start Date:***	8/5/19
Drilling Firm:	TREC							***Finish Date:***	8/12/19
Groundwater	***Depth***	***Date & Time***	***Drill Rig:***					***Inspector:***	J. Alt-Winzig
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***		
Before Casing Removal:			***Sampler:***		***Other:***				
After Casing Removal:			***Hammer:***						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine **MATERIAL DESCRIPTION** S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%	**COMMENTS** (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1					
				0-0.6 ft - Asphalt, gravel, and sub-base stone, fill	
				0.6-3.0 ft - Tan sandy clay, dry	
2					
3					
				PID - 0 ppm	3.0 ft Recovered
4					
5				0-1.1 ft - Brown silty clay	
				1.1-3.8 ft - Sandy clay, trace gravel	
6					
				PID - 26 ppm at 5 ft	
7				***PID - 15 ppm at 6 ft***	
				PID - 8 ppm at 7 ft	3.8 ft Recovered
8				***PID - 0 ppm at 8 ft***	
9				0-2.9 ft - Brown silty clay	
10	1-Z04				
11					
				PID - 0 ppm	2.9 ft Recovered
12					
13				0-2.8 ft - Brown silty clay	
14					
15					
				PID - 0 ppm	2.8 ft Recovered
16					
				End of Boring at 16 ft	
17					
				1-Z04-10 ft	
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	2-Z01
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.8 ft - Asphalt, gravel, fill	
				0.8-1.2 ft - Black silty sand	
2				1.2-3.1 ft - Brown silty clay	
3					
4				***PID - 0 ppm***	3.1 ft Recovered
5				0-1.8 ft - Brown silty clay, some gravel	
				1.8-2.9 ft - Brown silty clay, moist	
6					
7	2-Z01			***PID - 20 ppm at 5 ft***	
				PID - 400 ppm at 6 ft	
8				***PID - 160 ppm at 7 ft***	2.9 ft Recovered
				PID - 0 ppm at 8 ft	
9				0-3.8 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	3.8 ft Recovered
13				0-1.8 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	1.8 ft Recovered
17				***End of Boring at 16 ft***	
18				**2-Z01-7 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	2-Z03
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***	
Before Casing Removal:			***Sampler:***		***Other:***			
After Casing Removal:			***Hammer:***					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.7 ft - Asphalt, gravel, fill	
				0.7-1.6 ft - Dark brown silty clay	
2					
3					
4				***PID - 0 ppm***	1.6 ft Recovered
5				**No Recovery**	
6					
7					
8					0 ft Recovered
9				0-0.6 ft - Brown silty clay and gravel	
10				0.6-3.9 ft - Brown silty clay	
11				***PID - 120 ppm at 9 ft***	
				PID - 40 ppm at 10 ft	
12	2-Z03			***PID - 0 ppm at 11 ft***	3.9 ft Recovered
13				***End of Boring at 12 ft***	
14					
15					
16					
17					
18				**2-Z03-12 ft**	
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	2-Z04
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	8/5/19
Finish Date:	8/12/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***	
Before Casing Removal:			***Sampler:***		***Other:***			
After Casing Removal:			***Hammer:***					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.5 ft - Asphalt, gravel, fill	
				0.5-0.8 ft - Black silty clay	
2				0.8-3.0 ft - Brown silty clay, little gravel	
3				***PID - 400 ppm at 2 ft***	
4				***PID - 1500 ppm at 3 ft***	3.0 ft Recovered
				PID - 1200 ppm at 4 ft	
5				0-3.6 ft - Brown silty clay	
6				***PID - 1650 ppm at 6 ft***	
7				***PID - 200 ppm at 7 ft***	
				PID - 0 ppm at 8 ft	3.6 ft Recovered
8					
9	2-Z04			0-3.3 ft - Brown silty clay, moist	
10					
11					
				PID - 0 ppm	3.3 ft Recovered
12					
13				0-0.8 ft - Brown silty clay, moist	
				0.8-2.2 ft - Brown silty clay, saturated	
14				2.2-3.6 ft - Brown silty clay, moist	
15					
				PID - 0 ppm	3.6 ft Recovered
16					
				End of Boring at 16 ft	
17					
				2-Z04-9 ft	
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	2-Z05
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	8/5/19
Location:	301 Connecticut Street, Buffalo, NY							**Finish Date:**	8/12/19
Client:	D'Youville College							**Inspector:**	J. Alt-Winzig
Drilling Firm:	TREC								
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**						
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.7 ft - Asphalt, gravel, fill	
				0.7-1.1 ft - Brown sand	
2				1.1-1.9 ft - Black stained silty clay, petroleum odor	
3					
4				***PID - 2800 ppm at 2 ft***	1.9 ft Recovered
5				0-1.9 ft - Black stained silty clay, petroleum odor	
6					
7				***PID - 2600 ppm at 5 ft***	
8				***PID - 2200 ppm at 6 ft***	1.9 ft Recovered
9				0-1.1 ft - Black stained silty clay, petroleum odor	
10				1.1-3.7 ft - Brown silty clay	
11				***PID - 150 ppm at 10 ft***	
				PID - 50 ppm at 11 ft	
12	2-Z05			***PID - 0 ppm at 12 ft***	3.7 ft Recovered
13				***End of Boring at 12 ft***	
14					
15					
16					
17					
18				**2-Z05-12 ft**	
19				**Boring added on Northwest corner of "Z" delineation 10 ft from center**	
20					
21					
22					
23					

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BORING LOG

Boring No.	SW-1
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.1 ft - Concrete, sub-base stone	
				0.1-2.6 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	2.6 ft Recovered
5	SW-1			0-3.9 ft - Brown silty clay, trace gravel, dry	
6					
7					
8				***PID - 0 ppm***	3.9 ft Recovered
9				0-3.9 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	3.9 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-1-5 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	SW-2
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.3 ft - Concrete, sub-base stone	
				0.3-2.7 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	2.7 ft Recovered
5	SW-2			0-0.3 ft - Black silty clay	
				0.3-3.8 ft - Brown silty clay, trace gravel, moist	
6					
7					
8				***PID - 0 ppm***	3.8 ft Recovered
9				0-3.9 ft - Brown silty clay, saturated	
10					
11					
12				***PID - 0 ppm***	3.9 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-2-5 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	SW-3
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Concrete, sub-base stone	
				0.2-2.2 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	2.2 ft Recovered
5				0-3.9 ft - Dark brown silty clay, moist	
6					
7	SW-3			***PID - 50 ppm at 6 ft***	
				PID - 500 ppm at 7 ft	
8				***PID - 30 ppm at 8 ft***	3.9 ft Recovered
9				0-2.8 ft - Brown silty clay, moist	
10					
11				***PID - 28 oom at 9 ft***	
				PID - 23 ppm at 10 ft	
12				***PID - 0 ppm at 11 ft***	2.8 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-3-7 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	SW-4
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***	
Before Casing Removal:			***Sampler:***		***Other:***			
After Casing Removal:			***Hammer:***					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.3 ft - Concrete, sub-base stone	
				0.3-1.7 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	1.7 ft Recovered
5	SW-4			0-2.1 ft - Black silty clay	
6					
7				***PID - 412 ppm at 5 ft***	
				PID - 1850 ppm at 6 ft	
8				***PID - 370 ppm at 7 ft***	2.1 ft Recovered
9				0-0.3 ft - Black silty clay	
				0.3-3.3 ft - Brown silty clay, moist	
10					
11				***PID - 30 ppm at 9 ft***	
12				***PID - 0 ppm at 10 ft***	3.3 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-4-6 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

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BORING LOG

Boring No.	SW-5
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Concrete, sub-base stone	
				0.2-1.2 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	1.2 ft Recovered
5				0-3.7 ft - Brown silty clay, moist	
6					
7					
8				***PID - 0 ppm***	3.7 ft Recovered
9				0-3.4 ft - Brown silty clay, moist	
10	SW-5				
11				***PID - 45 ppm at 9 ft***	
				PID - 100 ppm at 10 ft	
12				***PID - 0 ppm at 11 ft***	3.4 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-5-10 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

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Fax: 716-847-1454

BORING LOG

Boring No.	SW-6
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***	
Before Casing Removal:			***Sampler:***		***Other:***			
After Casing Removal:			***Hammer:***					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Concrete, sub-base stone	
				0.2-1.7 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	1.7 ft Recovered
5				0-3.8 ft - Brown silty clay, moist	
6	SW-6				
7				***PID - 2600 ppm at 6 ft***	
8				***PID - 25 ppm at 7 ft***	3.8 ft Recovered
9				0-2.2 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	2.2 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-6-6 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	SW-7
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	9/9/19
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	9/9/19
Drilling Firm:	TREC							**Finish Date:**	9/10/19
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					**Inspector:**	J. Alt-Winzig
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION c - coarse, m - medium, f - fine a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10% S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Concrete, sub-base stone	
				0.2-2.5 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	2.5 ft Recovered
5	SW-7			0-3.8 ft - Dark brown silty clay	
6				***PID - 1500 ppm at 5 ft***	
7				***PID - 2600 ppm at 6 ft***	
8				***PID - 0 ppm at 7 ft***	
				PID - 100 ppm at 8 ft	3.8 ft Recovered
9				0-0.7 ft - Dark brown silty clay, some black staining	
10				0.7-3.6 ft - Brown silty clay, moist	
11				***PID - 45 ppm at 9 ft***	
12				***PID - 10 ppm at 10 ft***	3.6 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-7-6 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	SW-8
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	9/9/19
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	9/9/19
Drilling Firm:	TREC							**Finish Date:**	9/10/19
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					**Inspector:**	J. Alt-Winzig
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.5 ft - Concrete, sub-base stone	
				0.5-1.5 ft - Brown silty clay, moist	
2					
3					
4				***PID- 0 ppm***	1.5 ft Recovered
5				0-0.5 ft - Brown silty clay, moist	
				0.5-0.9 ft - Brown sand, moist	
6				0.9-1.2 ft - Black clayey silt, ashphalt, and sand, moist	
7					
8				***PID - 0 ppm***	1.2 ft Recovered
9				0-0.1 ft - Black silty clay	
				0.1-2.6 ft - Brown silty clay	
10	SW-8				
11				***PID - 0 ppm at 9 ft***	
				PID - 40 ppm at 10 ft	
12				***PID - 0 ppm at 11 ft***	2.6 ft Recovered
13				0-1.2 ft - Brown sandy clay, moist	
				1.2-3.4 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.4 ft Recovered
17				***End of Boring at 16 ft***	
18				**SW-8-10 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.	BORING LOG	Boring No.	SW-9
141 Elm Street		Sheet 1 of:	
Buffalo, New York 14203		Project No.:	V20.001.005
Phone: 716-847-1630		Surface Elev.:	
Fax: 716-847-1454		Datum:	

Project Name:	301 Connecticut Street Brownfield Cleanup Program							**Start Date:**	9/9/19
Location:	301 Connecticut Street, Buffalo, NY							**Datum:**	
Client:	D'Youville College							**Start Date:**	9/9/19
Drilling Firm:	TREC							**Finish Date:**	9/10/19
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					**Inspector:**	J. Alt-Winzig
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**		
Before Casing Removal:			**Sampler:**		**Other:**				
After Casing Removal:			**Hammer:**						

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Concrete, sub-base stone	
				0.2-0.9 ft - Brown sandy clay, dry	
2					
3					
4				***PID- 0 ppm***	0.9 ft Recovered
5	SW-9			0-1.1 ft - Dark brown sandy clay	
6					
7					
8				***PID - 0 ppm***	1.1 ft Recovered
9				0-1.4 ft - Dark brown sandy clay	
10					
11					
12				***PID - 0 ppm***	1.4 ft Recovered
13				0-1.7 ft - Dark brown sandy clay, moist	
14					
15					
16				***PID - 0 ppm***	1.7 ft Recovered
17				***End of Boring at 16 ft***	
18				**SW-9-5 ft**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	SW-10
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				**NO RECOVERY**	
2					
3					
4					0 ft Recovered
5	SW-10			0-3.4 ft - Brown silty clay, moist	
6					
7					
8				***PID - 0 ppm***	3.4 ft Recovered
9				0-3.7 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	3.7 ft Recovered
13				***End of Boring at 12 ft***	
14				**SW-10-5 ft**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	MW-6
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***	
Before Casing Removal:			***Sampler:***		***Other:***			
After Casing Removal:			***Hammer:***					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Concrete, sub-base stone	
				0.2-2.0 ft - Brown sandy clay	
2					
3					
4				***PID- 0 ppm***	2.0 ft Recovered
5				0-1.9 ft - Dark brown silty clay, some black staining	
				1.9-3.6 ft - Brown silty clay, moist	
6					
7					
8				***PID - 0 ppm***	3.6 ft Recovered
9				0-1.1 ft - Brown silty clay,moist	
				1.1-1.4 ft - Black silty sand	
10				1.3-3.1 ft - Brown silty clay, moist	
11					
12				***PID - 0 ppm***	3.1 ft Recovered
13				0-3.9 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.9 ft Recovered
17				***End of Boring at 16 ft***	
18				**Groundwater Sample Taken**	
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	MW-7
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			**Casing:**		**Rock Core:**		**Undist:**	
Before Casing Removal:			**Sampler:**		**Other:**			
After Casing Removal:			**Hammer:**					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.2 ft - Concrete, sub-base stone	
				0.2-1.5 ft - Brown silty clay, dry	
2					
3					
4				***PID - 0 ppm***	1.5 ft Recovered
5				0-1.7 ft - Brown silty clay	
				1.7-3.9 - Brown silty clay, moist	
6					
7					
8				***PID - 0 ppm***	3.9 ft Recovered
9				0-3.9 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	3.9 ft Recovered
13				***End of Boring at 12 ft***	
14				**No Samples Taken**	
15					
16					
17					
18					
19					
20					
21					
22					
23					

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

BORING LOG

Boring No.	MW-8
Sheet 1 of:	
Project No.:	V20.001.005
Surface Elev.:	
Datum:	
Start Date:	9/9/19
Finish Date:	9/10/19
Inspector:	J. Alt-Winzig

Project Name:	301 Connecticut Street Brownfield Cleanup Program							
Location:	301 Connecticut Street, Buffalo, NY							
Client:	D'Youville College							
Drilling Firm:	TREC							
Groundwater	**Depth**	**Date & Time**	**Drill Rig:**					
While Drilling:			***Casing:***		***Rock Core:***		***Undist:***	
Before Casing Removal:			***Sampler:***		***Other:***			
After Casing Removal:			***Hammer:***					

(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION (c - coarse, m - medium, f - fine; a - and - 35-50%, s - some - 20-35%, l - little - 10-20%, t - trace - 0-10%; S - Sand, $ - Silt, G - Gravel, C - Clay, cly - clayey)	COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-0.3 ft - Concrete, sub-base stone	
				0.3-3.1 ft - Brown silty clay, dry	
2					
3					
4				***PID- 0 ppm***	3.1 ft Recovered
5					
				0-2.4 ft - Brown silty clay	
6				2.4-3.9 - Brown silty clay, moist	
7					
8				***PID - 0 ppm***	3.9 ft Recovered
9					
				0-3.7 ft - Brown silty clay, moist	
10					
11					
12				***PID - 0 ppm***	3.7 ft Recovered
13					
				0-3.9 ft - Brown silty clay, moist	
14					
15					
16				***PID - 0 ppm***	3.9 ft Recovered
17				***End of Boring at 16 ft***	
18				**No Samples Taken**	
19					
20					
21					
22					
23					

APPENDIX B

GROUNDWATER WELL CONSTRUCTION & SAMPLING LOGS

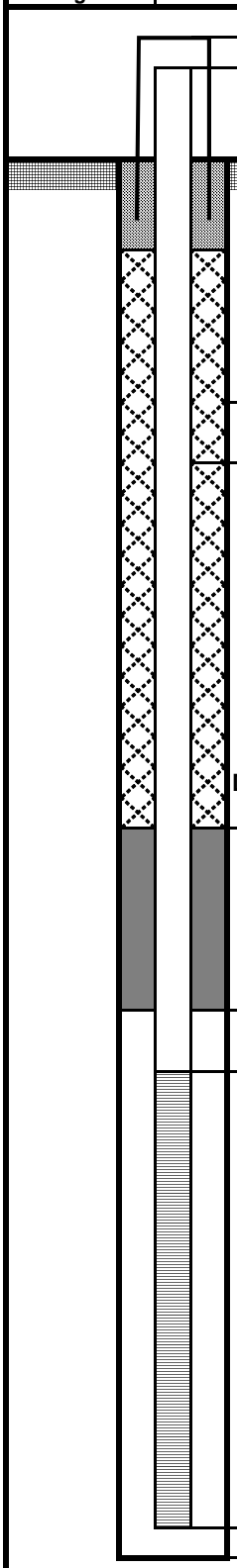
C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

GROUNDWATER OBSERVATION WELL CONSTRUCTION LOG

Well No.	**MW-1**
Project No.:	V20.001.001
Surface Elev.:	633.569
Datum:	NAVD 88
Start Date:	4/2/19
Finish Date:	4/2/19
Inspector:	C. MARTIN
Casing:	

Project Name:	301 CONNECTICUT STREET BROWNFIED CLEANUP PROGRAM
Location:	301 CONNECTICUT STREET
Client:	D'YOUVILLE COLLEGE
Drilling Firm:	TREC
Drill Rig:	

Notes: (provide description of observation well location, method of construction, development method and any other information)



0" Top Protective Casing
-3" Top of Riser
0" Ground Surface

Surface Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

6" Bore Hole Diameter

2" Well Diameter

Well Material
- [x] PVC
- [ ] Stainless Steel

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
6' Top of Seal

Seal Material
- [x] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

8' Top of Filter Pack
10' Top of Screen

Screen Slot Size
- [x] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in

Filter Material
- [x] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

20' Bottom of Screen
21' Bottom of Bore Hole

Groundwater Measurement Data

Date	Time	Depth to Water	Water Elevation	Tide Status
4/11/2019		5.7	627.869	
5/11/2019		5.6	627.969	

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

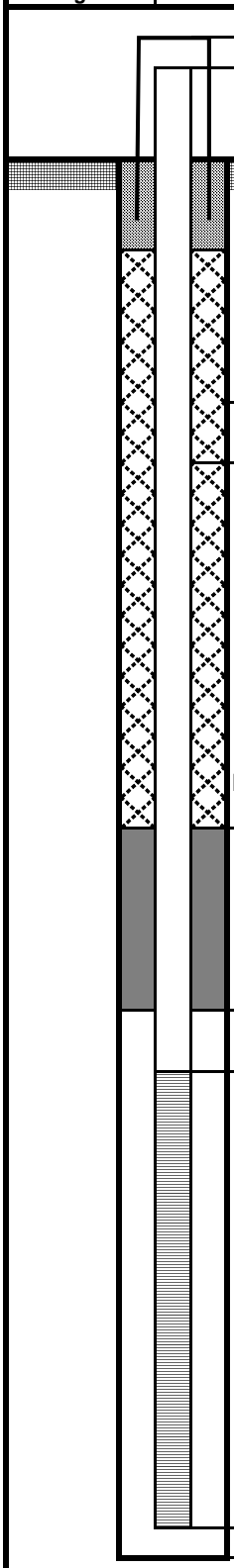
GROUNDWATER OBSERVATION WELL CONSTRUCTION LOG

Well No.	**MW-2**
Project No.:	V20.001.001
Surface Elev.:	632.698
Datum:	NAVD 88
Start Date:	4/2/19
Finish Date:	4/2/19
Inspector:	C. MARTIN

Project Name:	301 CONNECTICUT STREET BROWNFIELD CLEANUP PROGRAM
Location:	301 CONNECTICUT STREET
Client:	D'YOUVILLE COLLEGE
Drilling Firm:	TREC

Drill Rig: **Casing:**

Notes: (provide description of observation well location, method of construction, development method and any other information)



0" **Top Protective Casing**
-3" **Top of Riser**
0" **Ground Surface**

Surface Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

6" **Bore Hole Diameter**
2" **Well Diameter**

Well Material
- [x] PVC
- [ ] Stainless Steel

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
6' **Top of Seal**

Seal Material
- [x] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

8' **Top of Filter Pack**
10' **Top of Screen**

Screen Slot Size
- [x] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in

Filter Material
- [x] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

20' **Bottom of Screen**
21' **Bottom of Bore Hole**

Groundwater Measurement Data

Date	Time	Depth to Water	Water Elevation	Tide Status
4/11/2019		5.3	627.398	
5/11/2019		5.4	627.298	

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

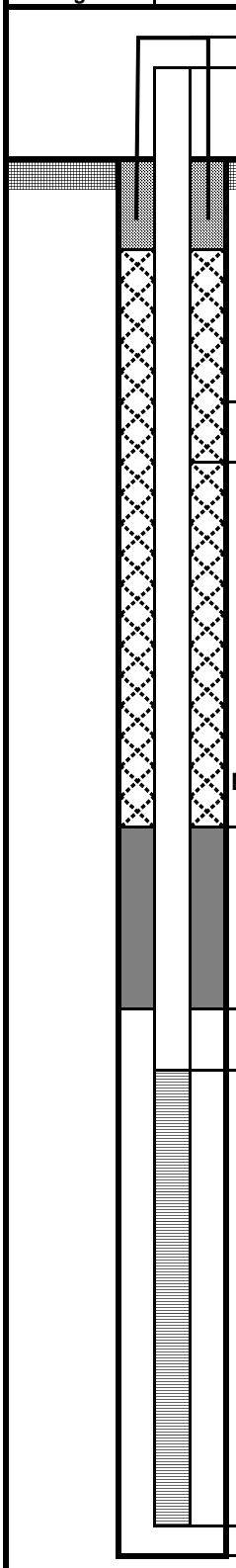
GROUNDWATER OBSERVATION WELL CONSTRUCTION LOG

Well No.	**MW-3**
Project No.:	V20.001.001
Surface Elev.:	634.687
Datum:	NAVD 88
Start Date:	4/3/19
Finish Date:	4/3/19
Inspector:	R. BACKERT

Project Name:	301 CONNECTICUT STREET BROWNFIED CLEANUP PROGRAM
Location:	301 CONNECTICUT STREET
Client:	D'YOUVILLE COLLEGE
Drilling Firm:	TREC

Drill Rig: **Casing:**

Notes: (provide description of observation well location, method of construction, development method and any other information)



0" **Top Protective Casing**
-3" **Top of Riser**
0" **Ground Surface**

Surface Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

6" **Bore Hole Diameter**
2" **Well Diameter**

Well Material
- [x] PVC
- [ ] Stainless Steel

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
6' **Top of Seal**

Seal Material
- [x] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

8' **Top of Filter Pack**
10' **Top of Screen**

Screen Slot Size
- [x] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in

Filter Material
- [x] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

20' **Bottom of Screen**
21' **Bottom of Bore Hole**

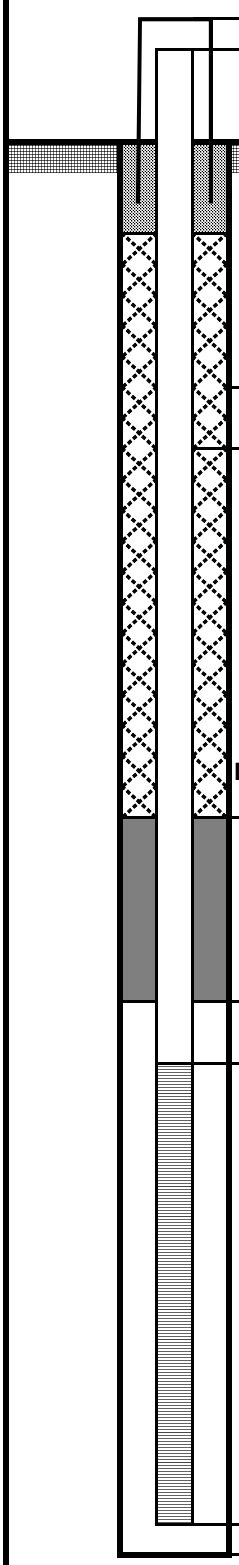
Groundwater Measurement Data

Date	Time	Depth to Water	Water Elevation	Tide Status
4/11/2019		5.7	628.987	
5/11/2019		5.8	628.887	

C&S Engineers, Inc.	GROUNDWATER OBSERVATION WELL CONSTRUCTION LOG	Well No.	MW-4
141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454		Project No.:	V20.001.001
		Surface Elev.:	635.743

Project Name:	301 CONNECTICUT STREET BROWNFIED CLEANUP PROGRAM	Datum:	NAVD 88
Location:	301 CONNECTICUT STREET	Start Date:	4/3/19
Client:	D'YOUVILLE COLLEGE	Finish Date:	4/3/19
Drilling Firm:	TREC	Inspector:	R. BACKERT
Drill Rig:		Casing:	

Notes: (provide description of observation well location, method of construction, development method and any other information)



0" Top Protective Casing

-3" Top of Riser

0" Ground Surface

Surface Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

6" Bore Hole Diameter

2" Well Diameter

Well Material
- [x] PVC
- [ ] Stainless Steel

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

Depth To:

6' Top of Seal

Seal Material
- [x] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

8' Top of Filter Pack

10' Top of Screen

Screen Slot Size
- [x] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in

Filter Material
- [x] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

20' Bottom of Screen

21' Bottom of Bore Hole

Groundwater Measurement Data

Date	Time	Depth to Water	Water Elevation	Tide Status
4/11/2019		6.4	629.343	
5/11/2019		7.6	628.143	

C&S Engineers, Inc.
141 Elm Street
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454

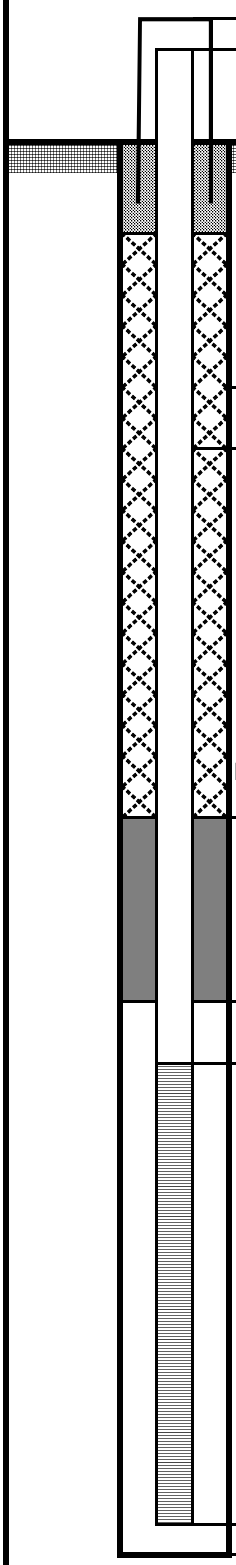
GROUNDWATER OBSERVATION WELL CONSTRUCTION LOG

Well No.	**MW-5**
Project No.:	V20.001.001
Surface Elev.:	637.424
Datum:	NAVD 88
Start Date:	4/3/19
Finish Date:	4/3/19
Inspector:	R. BACKERT

Project Name:	301 CONNECTICUT STREET BROWNFIED CLEANUP PROGRAM
Location:	301 CONNECTICUT STREET
Client:	D'YOUVILLE COLLEGE
Drilling Firm:	TREC

Drill Rig: **Casing:**

Notes: (provide description of observation well location, method of construction, development method and any other information)



0" **Top Protective Casing**
-3" **Top of Riser**
0" **Ground Surface**

Surface Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

6" **Bore Hole Diameter**
2" **Well Diameter**

Well Material
- [x] PVC
- [ ] Stainless Steel

Backfill Material
- [ ] Soil Cuttings
- [ ] Bentonite Slurry
- [x] Cement/Bentonite Grout
- [ ] Concrete

Depth To:
6' **Top of Seal**

Seal Material
- [x] Bentonite Chips/Pellets
- [ ] Bentonite Slurry
- [ ] Cement/Bentonite Grout

8' **Top of Filter Pack**
10' **Top of Screen**

Screen Slot Size
- [x] 010 in
- [ ] 015 in
- [ ] 020 in
- [ ] 025 in

Filter Material
- [x] 00 Sand Pack
- [ ] 0 Sand Pack
- [ ] 1 Sand Pack
- [ ] 2 Sand Pack
- [ ] 3 Sand Pack
- [ ] 4 Sand Pack

20' **Bottom of Screen**
21' **Bottom of Bore Hole**

Groundwater Measurement Data

Date	Time	Depth to Water	Water Elevation	Tide Status
4/11/2019		5	632.424	
5/11/2019		5	632.424	

C&S Engineers, Inc.
141 Elm Street Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name:
Site Name: 301 CONNECTICUT ST. JOHNS COLLEGE
Project No.:
Field Staff: RICH BACKERT

WELL DATA

Date		4/11/19	4/11/19	4/11/19	4/11/19	4/11/19			
Well Number		MW-4	MW-5	MW-1	MW-2	MW-3			
Diameter (inches)		2"	2"	2"	2"	2"			
Total Sounded Depth (feet)		20.3	20.2	20.4	19.3	20.2			
Static Water Level (feet)		6.4	5.0	5.7	5.3	5.7			
H_2O Column (feet)									
Pump Intake (feet)									
Well Volume (gallons)									
Amount to Evacuate (gallons)									
Amount Evacuated (gallons)									

FIELD READINGS

Date	Stabilization Criteria	4/11/19	4/11/19	4/11/19	4/11/19	4/11/19			
Time		9:30	10:30	11:30	12:15	1:15			
pH (Std. Units)	+/-0.1	7.60	7.20	6.80	7.50	7.45			
Conductivity (mS/cm)	3%	2.23	1.65	28.7	4.70	2.22			
Turbidity (NTU)	10%								
D.O. (mg/L)	10%	13.06	14.37	13.12	12.28	12.42			
Temperature (°C) (°F)	3%	9.48°C	9.19°C	9.04°C	9.40°C	9.59°C			
ORP[3](mV)	+/-10 mv	96	86	98	-141	26			
Appearance		CLEAR	CLEAR	CLEAR	SEMI TURB	CLEAR			
Free Product (Yes/No)		YES	YES	YES	YES	YES			
Odor		NONE	NONE	NONE	NONE	NONE			
Comments		#FOS + 1-4 DIOXANE COLLECTED FROM MW-5 + MW-1 * DUP FROM MW-4 # MS + MSD COLLECTED FROM MW-2							

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

C&S Engineers, Inc.
141 Elm Street Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
www.cscos.com

Well Sampling Field Data Sheet

Well Casing Unit Volume (gal/l.f.)		
1¼" = 0.08	2" = 0.17	3" = 0.38
4" = 0.66	6" = 1.5	8" = 2.6

Client Name:
Site Name: 301 CONNECTICUT
Project No.:
Field Staff: JESSE + RICH

WELL DATA

Date		5/21/19	5/21/19	5/21/19	5/21/19	5/21/19			
Well Number		MW-1	MW-2	MW-3	MW-4	MW-5			
Diameter (inches)		2	2	2"	2	2			
Total Sounded Depth (feet)		20.4	19.3	20.2	20.3	20.2			
Static Water Level (feet)		5.6	5.4	5.8	7.6	5.0			
H_2O Column (feet)									
Pump Intake (feet)									
Well Volume (gallons)									
Amount to Evacuate (gallons)									
Amount Evacuated (gallons)									

FIELD READINGS

Date	Stabilization Criteria	5/21/19	5/21/19	5/21/19	5/21/19	5/21/19			
Time		9:45am	10:45am	11:30	12:15	12:45			
pH (Std. Units)	+/-0.1	6.7	6.9	7.5	7.02	6.73			
Conductivity (mS/cm)	3%	35.7	7.3	2.7	2.4	8.78			
Turbidity (NTU)	10%								
D.O. (mg/L)	10%	1.25	1.69	2.90	3.88	3.38			
Temperature (°C) (°F)	3%	10.4	10.7	11.6	10.85	12.40			
ORP[3](mV)	+/-10 mv	-108	-178	-35	19	35			
Appearance		Clear	Semi Turbid	Clear	Clear	Clear			
Free Product (Yes/No)		~~No~~ Yes	~~No~~ Yes	~~No~~ Yes	Yes	Yes			
Odor		None	None	None	None	None			
Comments		MW-4 has build-up of mud in well casing							

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

APPENDIX C

DATA USABILITY SUMMARY REPORT

DATA USABILITY SUMMARY REPORT (DUSR)

Site: 301 Connecticut Street BCP
Buffalo, NY
NYS DEC BCP # C915345

SDGs: 460-188451-1, 460-188451-2, 460-188674-1, 460-188683-1, 460-188946-1, 460-188946-2, 460-188946-4, 460-189159-1, L1914947, L1921374 and L1941139.

150 Soil and Water Samples

Prepared for:

C&S Companies
141 Elm Street, Suite 100
Buffalo, NY 14203
Attention: Cody Martin

October 2019

EDU Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156

Table of Contents

Tables

REVIEWER'S NARRATIVE
C & S Companies 301 Connecticut Street BCP

The data associated with these Sample Delivery Groups (SDGs), analyzed by Eurofins TestAmerica Edison, NJ and Alpha Analytical Westborough Ma have been reviewed in accordance with assessment criteria provided by the New York State Department of Environmental Conservation following the review procedures provided in the USEPA Functional Guidelines for evaluating organic and inorganic data.

All analytical results reported by the laboratory are considered valid and acceptable except results that have been qualified as rejected, "R". Results qualified as estimated "J", or as non-detects, "U", are considered usable for the purpose of evaluating water and/or soil quality. However, these qualifiers indicate that the accuracy and/or precision of the analytical result is questionable. A summary of all data that have been qualified and the reasons for qualification are provided in the following data usability summary report (DUSR).

Two facts should be noted by all data users. First, the "R" qualifier means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the analyte is present or not. Values qualified with an "R" should not appear on the final data tables because they cannot be relied upon, even as the last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error.

Reviewer's Signature: Michael K. Perry Date: 10/2/19

Michael K. Perry
Chemist

1.0 SUMMARY

SITE: 301 Connecticut Street
Buffalo, NY
BCP No. C915345

SAMPLING DATE: April - September, 2019

SAMPLE TYPE: 150 soil samples and water samples

LABORATORYS: 1) Eurofins TestAmerica
Edison, NJ
2) ALPHA Analytical
Westborough, MA

SDG No.: 460-188451-1, 460-188451-2, 460-188674-1, 460-188683-1, 460-188946-1, 460-188946-2, 460-188946-4, 460-189159-1, L1914947, L1921374 and L1941139.

2.0 INTRODUCTION

This data usability summary report (DUSR) was prepared in accordance with guidance provided by the New York State Department of Environmental Conservation (NYSDEC). The DUSR is based on a review and evaluation of the laboratory analytical data package. Specifically, the NYSDEC guidance recommends review and evaluation of the following elements of the data package:

- Completeness of the data package as defined under the requirements of the NYSDEC Analytical Services Protocols (ASP) Category B or the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) deliverables,
- Compliance with established analyte holding times,
- Adherence to quality control (QC) limits and specifications for blanks, instrument tuning and calibration, surrogate recoveries, spike recoveries, laboratory duplicate analyses, and other QC criteria,
- Adherence to established analytical protocols,

- Conformance of data summary sheets with raw analytical data, and
- Use of correct data qualifiers.

Data deficiencies, analytical protocol deviations, and quality control problems identified using the review criteria above and their effect on the analytical results are discussed in this report.

3.0 SAMPLE AND ANALYSIS SUMMARY

A summary of the laboratory data deliverables is provided in Table 3-1. The data were supplied on 4 compact disks (CDs) that contained the analytical data for one or more sample delivery groups (SDGs). The information provided in Table 3-1 is categorized according SDG to provide a reference for future access to the data by other data users. (It is assumed that the data will continue to be managed using this same format).

As shown in Table 3-1, the laboratory deliverables consisted of 11 SDGs that contained the analytical results for 150 total samples collected from April to September 2019. Samples were analyzed for some or all of the following volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides (silvex), polychlorinated biphenyls (PCBs), total cyanide (TCN), metals, 1,4-Dioxane and PFAAs.

The sample IDs associated with each SDG are provided with the validated analytical results in Appendix A.

All analyses were performed by Eurofins TestAmerica, Edison, NJ and ALPHA Analytical, Westborough, MA. The analytical results were provided in NYSDEC ASP Category B format, which includes all raw analytical data and laboratory QC data.

4.0 GUIDANCE DOCUMENTS AND DATA REVIEW CRITERIA

The guidance documents used for reviewing laboratory quality control (QC) data and assigning data qualifiers (flags) to analytical results are listed in Table 4-1. The QC limits established in the documents applicable to this data review were used to assess the quality of the analytical results. In some cases, however, QC limits established internally by the laboratory were taken into

Table 3-1

Summary of Laboratory Deliverables
301 Connecticut Street
BCP No. C915345

Data SDG No.	SDG	Sample Date	No. of Samples	Matrix	Analysis
1	460-188451-1	08/05/19	28	soils	VOCs,SVOC,PCBs,Metals
2	460-188451-2	08/05/19	23	soils	VOCs,SVOC,PCBs,Metals
3	460-188674-1	08/06/19	9	soils	VOCs,SVOC,Metals
4	460-188683-1	08/07/19	9	soils	VOCs,SVOC,Metals
5	460-188946-1	08/08/19	20	soils	VOCs,SVOC,Pests,PCBs,Herbs,Metals,TCN
6	460-188946-2	08/08/19	17	soils	PFAAs by 537
7	460-188946-4	08/08/19	3	soils	TCLP VOCs,TCLP SVOC,PCBs,TCLP Metals
7	480-189159-1	08/12/19	14	soils	VOCs,SVOC,Pests,PCBs,Herbs,Metals,TCN,CR+6
9	L1914947	04/11/19	6	water	VOCs,SVOC,SVOC-SIM,Pests,PCBs,Metals,TCN
			3	water	PFAAs by 537,1,4-Dioxane by 8270-SIM
10	L1921374	05/21/19	7	water	VOCs,SVOC,SVOC-SIM,Pests,PCBs,Metals,TCN
11	L1941139	9/9/19 + 9/10/19	10	soil	VOCs, SVOCs
			1	water	VOCs, SVOCs, SVOCs-SIM

TOTALS

SDGs	SAMPLES	ANALYTES
11	150	17972

REJECTS	% USABILITY
16	99.9%

TABLE 4-1

DATA VALIDATION GUIDANCE DOCUMENTS

Analyte Type	Validation Guidance
VOCs	USEPA, 2008, Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry; SW-846 Method 8260B; SOP # HW-24, Rev. 2. USEPA, 2008, Statement of Work for Organic Analysis of Low/Medium Concentration of Volatile Organic Compounds SOM01.2; SOP HW-33, Rev. 2.
SVOCs	USEPA, 2007, Statement of Work for Organic Analysis of Low/Medium Concentration of Semivolatile Organic Compounds SOM01.2; SOP HW-35, Rev. 1.
Pesticides/PCBs	USEPA, 2006, CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO 4.3); SOP # HW-6, Rev. 14, Part C.
Metals	USEPA, 2006, Validation of Metals for the Contract Laboratory Program (CLP) based on SOW ILMO 5.3 (SOP Revision 13), SOP # HW-2, Rev. 13.
Gen Chemistry	NYSDEC, 2005, Analytical Services Protocols (ASP)
VOCs (Ambient air)	USEPA, 2006, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canister by Method TO-15; SOP # HW-31, Rev. 4.
Perfluoroalkyl Substances (PFASs)	USEPA, 2018, Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537

account to determine data quality. Note for the organics, metals and total cyanide only the SW-846 8000 series methods were evaluated.

The QC criteria considered for assessing the usability of the reported analytical results provided for each analyte type (i.e. VOCs, SVOCs, metals, etc.) are listed in Table 4-2. These criteria may vary with the analytical method utilized by the laboratory. These criteria comply with the guidance recommended in Section 2.0 above.

5.0 DATA VALIDATION QUALIFIERS

The letter qualifiers (flags) used to define data usability are described briefly below. These letters are assigned by the data validator to analytical results having questionable accuracy and/or precision as determined by reviewing the laboratory QC data associated with the analytical results.

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality

TABLE 4-2

QUALITY CONTROL CRITERIA USED FOR VALIDATING LABORATORY ANALYTICAL DATA

VOCs	SVOCs	Pesticides/PCBs	Metals	Gen Chemistry	Method TO-15
Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg	Completeness of Pkg
Sample Preservation	Sample Preservation	Sample Preservation	Sample Preservation	Sample Preservation	Sample Preservation
Holding Time	Holding Time	Holding Time	Holding Time	Holding Times	Holding Time
System Monitoring Compounds	Surrogate Recoveries	Surrogate Recoveries	Initial/Continuing Calibration	Calibration	Canister Certification
Lab Control Sample	Lab Control Sample	Matrix Spikes	CRDL Standards	Lab Control Samples	Lab Control Sample
Matrix Spikes	Matrix Spikes	Blanks	Blanks	Blanks	Instrument Tuning
Blanks	Blanks	Instrument Calibration & Verification	Interference Check Sample	Spike Recoveries	Blanks
Instrument Tuning	Instrument Tuning	Analyte ID	Spike Recoveries	Lab Duplicates	Initial Calibration & System Performance
Internal Standards	Internal Standards	Lab Qualifiers	Lab Duplicate		Daily Calibration
Initial Calibration	Initial Calibration	Field Duplicate	Lab Control Sample		Field Duplicate
Continuing Calibration	Continuing Calibration		ICP Serial Dilutions		
Lab Qualifiers	Lab Qualifiers		Lab Qualifiers		
Field Duplicate	Field Duplicate		Field Duplicate		

PFASs
Completeness of Pkg
Sample Preservation
Holding Time
Instr Performance Check
Initial Calibration
Continuing Calibration
Blanks
Surrogates
Lab Fortified Blank
Matrix Spikes
Internal Standards

control criteria. The presence or absence of the analyte cannot be verified.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".

JN The analyte is considered to be "presumptively present." The associated numerical value represents its *approximate* concentration.

The validated analytical results are attached to this report. Validation qualifiers (flags) are indicated using red ink. Data sheets having qualified data are signed and dated by the data reviewer.

6.0 RESULTS OF THE DATA REVIEW

The results of the data review are summarized in Tables 6-1 through 6-11, which correspond to the data and SDGs listed in Table 3-1. The tables provide the sample IDs in each SDG where QC criteria were found to exceed acceptable limits and the actions taken to qualify the affected sample results.

Listings of the sample IDs included with each SDG and the sample results (Form 1s) that required qualification are provided in Appendix A. Only the Form 1s that required qualification are included.

Appendix B provides the QC documentation that identifies the specific QC criteria that were found to be outside acceptable limits.

7.0 TOTAL USABLE DATA

For the 301 Connecticut Street BCP project, 150 samples were analyzed and results were reported for 17972 analytes. Sixteen results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99.9 %) are considered usable. See the summary tables for the analyses that have been flagged and the associated QC reasons.

NOTE: 1) As noted by the laboratory, the soil samples were not collected following SW846 5035A protocol. This adds an element of uncertainty to the analytical results for volatile organic analytes (VOAs). Although not specifically indicated on the final data sheets with a "J" flag, the VOA analytical results should be considered estimated, but usable.

Table 6-1

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-188451-1

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-188451-1	08/05/19	8260C	1-X01-9ft	Bromoform	UJ/J	8
			1-X01-10ft	Bromoform	UJ/J	8
			1-X01-11ft	Bromoform	UJ/J	8
			1-X01-12ft	Bromoform	UJ/J	8
			DUP-A	Bromoform	UJ/J	8
			1-X04-10ft	Bromoform	UJ/J	8
			1-X04-11ft	Bromoform	UJ/J	8
			1-X03-12ft	Bromoform	UJ/J	8
			1-X01-10ft	Ethylbenzene	J	4
			DUP-A	Ethylbenzene	J	4
		8270D	1-X01-10ft	Several Analytes	UJ/J	2
			All Samples	2,4-Dinitrotoluene	UJ/J	8
				Indeno(1,2,3-cd)pyrer	UJ/J	8
		6010C/7471B	1-X01-10ft	Ca,Pb,Mg	J	4
			DUP-A	Ca,Pb,Mg	J	4
			1-X01-10ft	Sb	UJ/J	2
			1-X01-10ft	As	J	3

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-2

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-188451-2

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-188451-2	08/05/19	8260C	2-X02-10ft	Carbon Tet and 1,1,2,2TCA	UJ/J	8
			2-X02-11ft	Carbon Tet and 1,1,2,2TCA	UJ/J	8
			2-X01-12ft	Carbon Tet and 1,1,2,2TCA	UJ/J	8
			2-X04-13ft	Carbon Tet and 1,1,2,2TCA	UJ/J	8
			2-X03-11ft	MTBE	J	4
			DUP-B	MTBE	J	4
		8270D	2-X01-8ft	PCP,2-NP,2,6-DNT	UJ/J	8,13
			2-X01-9ft	PCP,2-NP,2,6-DNT	UJ/J	8,13
			2-X01-10ft	PCP,2-NP,2,6-DNT	UJ/J	8,13
			2-X01-11ft	PCP,2-NP,2,6-DNT	UJ/J	8,13
			2-X02-8ft	PCP	UJ/J	8
			2-X02-12ft	PCP	UJ/J	8
			2-X04-12ft	PCP	UJ/J	8
			2-X04-13ft	2,2'-oxybis(1-chloropropane)	UJ/J	8
			2-X04-14ft	2,2'-oxybis(1-chloropropane)	UJ/J	8
			2-X04-15ft	2,2'-oxybis(1-chloropropane)	UJ/J	8
		8082A	2-X01-8ft	PCB 1016	UJ/J	2
			2-X04-13ft	PCB 1016 and PCB 1260	UJ/J	2
		6010C/7471B	2-X03-11ft	Al,Ca,Cr,Fe,Pb,Mg,Mn,V	J	4
			DUP-B	Al,Ca,Cr,Fe,Pb,Mg,Mn,V	J	4

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-3

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-188674-1

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-188674-1	08/06/19	8260C	All Samples	Bromoform	UJ/J	8
		8270D	1-Y01-11ft	Most Analytes	UJ/J	2
			All Samples	Nitrobenzene	UJ/J	8
			All Samples	Caprolactum	UJ/J	8
			1-Y03-10ft	4,6-Dinitro-2-methylphenol	J	12
		6010C/7471B	All Samples	All Metals		0

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-4

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-188683-1

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-188683-1	08/07/18	8260C	All Samples	Bromoform	UJ/J	8
		8270D	All Samples	All analytes		0
		6010C/7471B	All Samples	All metals		0

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-5

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-188946-1

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-188946-1	08/09/19	8260C	D3-01-6ft	All analytes	UJ/J	6
			All Samples	DCDFM	UJ/J	13
			C1-00-7ft	Cyclohexane	J	12
			D3-01-6ft	34 analytes	UJ/J	2
			E2-00-1ft	31 analytes	UJ/J	2
			B1-01-2ft	DBCP	UJ/J	4
			DUP-D	DBCP	UJ/J	4
		8270D	D3-01-6ft	36 analytes	UJ/J	2
			E2-00-1ft	32 analytes	UJ/J	2
		8081C	D1-00-2ft	4,4'-DDT	J	10
		8082A	All Samples	PCBs		0
		8151B	All Samples	Silvex		0
		9012B	All Samples	TCN		0
		7196A	All Samples	CR+6		0
		6010C/7470B	D3-01-6ft	Sb	UJ/J	2
			E2-00-1ft	Sb,K	UJ/J	2
			B1-01-2ft	Pb	J	4
			DUP-D	Pb	J	4
			D1-04-15ft	Pb	R	4
			DUP-C	Pb	R	4
			D1-04-15ft	Al,As,Ba,Ca,Cr,Fe,Mg	J	4
			DUP-C	Al,As,Ba,Ca,Cr,Fe,Mg	J	4

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-6

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-188946-2

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-188946-2	08/09/19	PFAAs by 537	All Samples	PFAAs		0

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-7

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-188946-4

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-188946-4	08/09/19	TCLP 8260C	All Samples	CCL4,1,2DCA	UJ/J	8
		TCLP 8270D	All Samples			0
		8082A	All Samples	PCBs		0
		6010C/7471B	All Samples	TCLP Metals		0
		RCI	All Samples	Reac,Corr,Ign		0

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-8

SUMMARY OF DATA VALIDATION RESULTS

SDG 460-189159-1

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
460-189159-1	08/12/19	8260C	All Samples	1,1,1-TCA,2-Hexanone	UJ/J	13
			All Samples	Carbon Disulfide	UJ/J	13
			All Samples	1,1,1-TCA,CCL4	J	12
			All Samples	1,2-DCP,DBCP	UJ/J	8
			All Samples	Bromoform	UJ/J	8
			B1-01-2ft	DBCP	UJ/J	8
		8270D	B4-01-4ft	33 analytes	UJ/J	2
			All Samples	2,2'-oxybis(1-chloropro)	UJ/J	8
		8081C	E3-01-2ft	Endrin Aldehyde	UJ/J	2
			C1	4,4'-DDT	J	10
			E1	4,4'-DDE,4,4'-DDT	J	10
			E1	4,4'-DDD	JN	10
		8082A	All Samples	PCBs		0
		8151B	All Samples	Silvex		0
		9012B		TCN		0
		7196A		CR+6		0
		6010C/7470B	A1-01-12ft	Sb,Ag	UJ/J	2

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-9

SUMMARY OF DATA VALIDATION RESULTS

SDG L1914947

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
L1914947	04/11/19	8260C	All Samples	1,4-Dioxane	R	7
			MW-2	MTBE,Acetone	UJ/J	2
			MW-2	MEK	J	2
			MW-3	CCL4,MTBE,n-Prop.benz	UJ/J	8,13
			MW-4	CCL4,MTBE,n-Prop.benz	UJ/J	8,13
			DUP (MW-4)	CCL4,MTBE,n-Prop.benz	UJ/J	8,13
			MW-5	CCL4,MTBE,n-Prop.benz	UJ/J	8,13
			MW-4	N-Propylbenzene	J	4
			DUP (MW-4)	N-Propylbenzene	J	4
		8270D	MW-2	4-Chloroaniline	UJ/J	2,13
			MW-3	4-Chloroaniline	UJ/J	13
			DUP (MW-4)	4-Chloroaniline	UJ/J	13
			MW-5	4-Chloroaniline	UJ/J	13
			MW-2	3,3'-Dichlorobenzidine	UJ/J	2
			MW-4	2,4-Dimethylphenol	UJ/J	8
		8270D-SIM	MW-1	Naphthalene	CRQL-U	11
			MW-2	Naphthalene	CRQL-U	11
			MW-3	Naphthalene	CRQL-U	11
			All Samples	Acenaphthene,Fluorene	UJ/J	8
		8081C	MW-2	All detected analytes	J	3
			MW-1	b-BHC	J	10
		8082A	All Samples	PCBs		0
		EPA 537	All Samples	6:2FTS	CRQL-U	11
			MW-1	PFBA	UJ/J	2
		8270D-SIM	All Samples	1,4-Dioxane		0
		9012B	All Samples	TCN		0
		6010C/7470B	MW-2	Sb,Tl	UJ/J	2
			MW-2	Mn	J	3
			MW-4	Al,Fe,Mn	J	4
			DUP (MW-4)	Al,Fe,Mn	J	4
			MW-2	Mg	J	14

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

Table 6-10

SUMMARY OF DATA VALIDATION RESULTS

SDG L1921374

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
L1921374	05/21/19	8260C	All Samples	1,4-Dioxane	R	7
			MW-1	Vinyl Chloride	UJ/J	8
			MW-3	Vinyl Chloride	UJ/J	8
			MW-4	Vinyl Chloride	UJ/J	8
			DUP (MW-4)	Vinyl Chloride	UJ/J	8
			MW-5	Vinyl Chloride	UJ/J	8
			All Samples	Acetone	CRQL-U	15
		8270D	MW-2	3,3'-Dichlorobenzidine	UJ/J	2
			MW-2	4-Chloroaniline	UJ/J	2
			MW-2	2,4-Dimethylphenol	UJ/J	2
		8270D-SIM	All Samples	All analytes		0
		8081C	MW-1	b-BHC	UJ/J	10
		8082A	All Samples	PCBs		0
		6010C/7470B	MW-4	Cr,Fe	J	4
			DUP (MW-4)	Cr,Fe	J	4
			MW-2	Al,Ca,Mg,Mn,K	J	14
		9012B	All Samples	TCN		0

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %
15	Field Blank contamination

Table 6-11

SUMMARY OF DATA VALIDATION RESULTS

SDG L1941139

SDG	Sample Date	Analysis	Sample ID	Analyte	Qualifier	Code
L1941139	09/09/19	8260C	SW-4-6ft	All detects	J	5
			SW-6-6ft	All detects	J	5
			SW-1-5ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-2-5ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-3-7ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-5-10ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-6-6ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-7-6ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-8-10ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-9-5ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			SW-10-5ft	DCDFM,CCL4,1,2DCA	UJ/J	8
			MW-6	Bromomethane,MECL	UJ/J	8
			MW-6	Benzene,1,1,2,2-TCA	UJ/J	8
			MW-6	Methylcyclohexane	UJ/J	8,13
			All samples	Chloroform	CRQL-U	11
		8270D	MW-6	4-Nitroanalimie	UJ/J	2
			MW-6	BEHP	CRQL-U	11
		8270D-SIM	MW-6	Indeno(1,2,3-cd)pyrene	UJ/J	8

Validation Codes

0	No analytical results were qualified
1	% recovery in spike sample > control limit results may be biased high
2	% recovery in spike sample < control limit results may be biased low
3	Relative percent difference between duplicate lab samples > control limit
4	Relative percent difference between field duplicate and sample > control limit
5	Surrogate recoveries > QC control limit
6	Surrogate recoveries < QC control limit
7	Minimum RF of 0.005 not met
8	%D for CCV exceeded for various compounds:
9	ICAL was not a minimum of 5 calibration points
10	%D for dual column analysis was exceeded
11	Laboratory Blank contamination
12	LCS Recovery > QC limit
13	LCS Recovery < QC limit
14	Serial Dilution > 10 %

ACRONYMS

BSP	Blank Spike
CCAL	Continuing Calibration
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
%D	Percent Difference
ICAL	Initial Calibration
ICB	Initial Calibration Blank
IS	Internal Standard
LCS	Laboratory Control Sample
MS/MSD	Matrix Spike/Matrix Spike Duplicate
QA	Quality Assurance
QC	Quality Control
%R	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
%RSD	Percent Relative Standard Deviation
TAL	Target Analyte List (metals)
TCL	Target Compound List (organics)