

**REMEDIAL INVESTIGATION REPORT**

**FOR**

**19 NORTH STREET**  
**CITY OF BUFFALO, ERIE COUNTY, NEW YORK**  
**NYSDEC SITE No. C915303**

*Prepared by:*



**C&S ENGINEERS, INC.**  
141 ELM STREET, SUITE 100  
BUFFALO, NEW YORK 14203

*Prepared on Behalf of:*

**23 NORTH STREET, LLC.**  
4508 MAIN STREET  
AMHERST, NEW YORK 14226

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## **ACRONYM LIST**

BCP	BROWNFIELD CLEANUP PROGRAM
DUSR	DATA USABILITY AND SUMMARY REPORT
IRM	INTERIM REMEDIAL MEASURES
NAPLs	NON-AQUEOUS PHASE LIQUIDS
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PCBs	POLYCHLORINATED BIPHENYLS
PID	PHOTO-IONIZATION DETECTOR
PPM	PARTS PER MILLION
RAOs	REMEDIAL ACTION OBJECTIVES
RI	REMEDIAL INVESTIGATION
SCO	SOIL CLEANUP OBJECTIVES
SITE	19 NORTH STREET BUFFALO, NEW YORK
SVOC	SEMI-VOLATILE ORGANIC COMPOUNDS
TAL	TARGET ANALYTE LIST
TCL	TARGET COMPOUND LIST
USEPA	UNITED STATE ENVIRONMENTAL PROTECTION AGENCY
VOC	VOLATILE ORGANIC COMPOUNDS
QAQC	QUALITY ASSURANCE QUALITY CONTROL

## INTRODUCTION

C&S Engineers, Inc. (C&S) has prepared this Remedial Investigation (RI) Report on behalf of the applicant to the Brownfield Cleanup Program (BCP), 23 North Street, LLC (hereafter known as “Applicant”), for the remediation and redevelopment of 19 North Street in the City of Buffalo, New York (the “Site”).

On January 19, 2016, the Applicant submitted a BCP Application to remediate the Site at 19 North Street in the City of Buffalo, New York. Investigative actions covered under the RI included the entire 0.5-acre Site, which formerly occupied two addresses: 23 North Street and 19 North Street, Buffalo, New York.

Initial limited sampling indicated the presence of urban fill 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 limited characterization, C&S prepared an RI 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 fill material. The intent of this RI Report is to present the results of the investigation.

## **EXECUTIVE SUMMARY**

### **ES 1. Site Setting**

#### **a. Physical Setting**

The BCP Site is located within an urban developed area just north of downtown Buffalo, New York. Development at the Site first occurred in the mid-1800s, which consisted of residential dwellings that were later turned into a radio station and tower in the mid-1900s. Currently, the generally flat Site fronts to North Street and is primarily vacant, except for a small surface parking lot in the eastern portion of the Site. The Site is currently zoned as a general commercial district and classified as commercial land use. The surrounding parcels are a mix of commercial, residential, and transit station zoning districts with commercial, residential, and community service land uses.

The Site is the location of the planned infill development of a four-story apartment building that will occupy almost the entirety of the Site. The first floor of the building will contain an indoor parking garage for the building tenants.

#### **b. Subsurface Setting**

The Site contains urban fill with thicknesses ranging up to approximately 13 feet. Urban fill is defined as material coming from anthropogenic sources and re-worked to build a site to a defined grade. The urban fill material at the Site contains brick, wood, gravel, crushed coal and cinders, sand, and clay. Underlying the urban fill are native soils which are generally comprised of the following: fine, brown, silty sand; a fine, brown sand; and a brown, silty clay. A layer of brown, varve clay was observed at 24 to 25 feet below ground surface throughout the Site where investigations reached that depth.

Groundwater was observed to be approximately 16 feet below grade. The groundwater flow direction is generally to the east northeast with minor variations in direction between the southern and northern halves of the Site.

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 as the City of Buffalo has imposed a City-wide ban on the use of groundwater for drinking water supply.

### **ES 2. Remedial Investigation**

The RI for the Site consisted of the advancement of soil borings to characterize urban fill, imported backfill materials, and underlying native soils, the collection of surface samples at the Site, and the installation of groundwater wells to characterize groundwater conditions at the Site.

#### *ES2.1 Surface Soil*

Four surface soil samples were collected during this investigation. No volatile organic compounds (VOCs) or polychlorinated biphenyls (PCBs) were detected in the surface soil samples. Semi-volatile organic compounds (SVOCs), primarily polycyclic aromatic

hydrocarbons (PAHs), exceeding the Industrial Use SCOs, Commercial Use SCOs, Restricted Residential Use SCOs, Residential Use SCOs, and Unrestricted Use SCOs were detected in surface soils on the Site. The pesticides DDE and DDT and metals nickel and zinc were detected in the surface soils at concentrations above Unrestricted Use SCOs but below the Restricted Residential Use SCOs.

#### *ES2.2 Urban Fill and Imported Backfill*

A total of 15 fill samples were collected during this investigation. Eight fill samples were taken inside the former building footprint of the imported backfill. Seven fill samples were taken outside the former building footprint of urban fill. No VOCs and PCBs were detected at concentrations exceeding Unrestricted Use SCOs. SVOCs, primarily PAHs, exceeding Restricted Residential Use SCOs, Residential Use SCOs, and Unrestricted Use SCOs were detected in the fill samples outside the former building footprint. While SVOCs were detected in the imported backfill samples inside the former building footprint, no concentrations were detected above Unrestricted Use SCOs. Imported backfill samples inside the former building footprint contained DDE, DDT, and DDD at concentrations exceeding Unrestricted Use SCOs. Metals detected in the fill samples above Unrestricted Use SCOs, but below Restricted Residential Use SCOs, include zinc, selenium, mercury, and lead.

#### *ES2.3 Native Soil*

A total of 41 native samples were collected during this portion of the RI, which included 35 native samples, three duplicate samples, and three additional soil samples from within an area in the northeastern corner of the Site. No VOCs, SVOCs, PCBs, pesticides or metals were detected at concentrations exceeding Unrestricted Use SCOs.

#### *ES2.4 Groundwater*

The first groundwater sampling event took place in September 2016. Five groundwater samples, which includes a duplicate, were collected from the four newly installed 2-inch monitoring wells.

During the first sampling event, three VOCs were detected above Ambient Water Quality Guidance and Standards (AWQGS) and guidance in one well, MW-2-A3. No SVOCs or PCBs were detected during the first sampling event. Additionally, pesticides, dieldrin and endrin, were detected at concentrations above AWQGS in one well. Iron, magnesium and sodium were detected at concentrations above AWQGS in each of the three wells sample for metals. While manganese was also detected in each well, it was detected at a concentration that exceeds AWQGS in only one well.

The second sampling event took place in January 2017. During the second sampling event, no VOCs, SVOCs, or pesticides were detected at concentrations above AWQGS in any of the wells. Sodium was detected at concentrations above AWQGS in each well, magnesium and iron concentrations exceeded AWQGS in two wells, and manganese was detected at a concentration above AWQGS in only one well, MW-2-A3.

## **REMEDIAL INVESTIGATION**

### **1.1 Project Background**

#### **1.1.1 Site Description**

The Site is the location of a planned infill development of a four-story apartment building that will occupy a majority of the Site. The first floor of the building will contain an indoor parking garage for the building tenants. Currently, the Site is vacant with a small, paved parking area in the eastern portion of the Site. The Site fronts to North Street and is currently zoned as general commercial district and classified as a commercial land use.

The surrounding parcels are a mix of commercial, residential, and transit station zoning districts, and a mix of commercial, residential, and community service land uses.

**Figure 1-1** shows the location of the Site and **Figure 1-2** shows the immediate project area and site boundaries.

#### **1.1.2 Site History**

A 2006 Phase I Environmental Site Assessment (ESA) indicated that the Brownfield Cleanup Program (BCP) Site was occupied by residential dwellings in the late 1800s. By 1951, the residence at 23 North Street had become a radio station. By 1981, the residence at 19 North Street had been removed and replaced with a radio tower.

Following a fire at the structure formerly located on the Site, the Applicant demolished the structure and placed imported backfill within the footprint of the former structure. Approximately 720 cubic yards of structural fill was sourced from excavations completed by Swimco Pools of Lockport, New York at residential properties and delivered to the Site via dump trucks. During monitoring of the backfilling progress, there were no visual or olfactory signs of contamination in the soil.

A limited subsurface soil investigation confirmed that urban fill was historically used at the Site. Urban fill was typically used throughout the City of Buffalo when bringing properties to grade during excavation and construction.

#### **1.1.3 Previous Investigations**

Limited site characterization efforts were conducted to preliminarily assess contaminant concentrations at the Site. Site characterization efforts were documented in a 2006 Phase I Environmental Site Assessment, a June 2015 Additional Soil Sampling Report, and a November 2015 Additional Soil Sampling Report. These previous environmental reports were included as appendices to the Remedial Investigation (RI) Work Plan and BCP Application.

As part of this work, C&S conducted two preliminary sampling programs to characterize soil conditions at the BCP Site. The June 2015 characterization program consisted of the sampling and analysis of five subsurface soil samples. Each soil sample was analyzed for volatile organic compounds (VOCs) using EPA Method 8260C, semivolatile organic compounds (SVOCs) using EPA Method 8270D, and metals using EPA Method 6010. The subsequent November

2015 characterization program consisted of excavation of five test pits within the Site at depths of approximately four to seven feet below grade. The program consisted of sampling and analysis of six fill samples. Each soil sample was analyzed for VOCs, SVOCs and metals using the same methods as previous investigation.

The limited site characterization efforts identified urban fill material throughout the Site. Site soils were found to consist of up to eight feet of urban fill. Based on investigation results, the known contaminants of concern in the urban fill included SVOCs and metals such as arsenic, lead, mercury, and zinc. All the fill sampled during the investigations contained at least one contaminant at concentrations that exceeded Unrestricted Use Soil Cleanup Objectives (SCOs) and many of those contained at least one contaminant at concentrations that exceeded Restricted Residential Use SCOs. Restricted Residential Use SCOs are the guidance for properties to be used for apartments or other high density residential developments. Restricted Residential Use SCOs were exceeded in seven of the eleven total subsurface soil samples including both subsurface sampling events.

During the June 2015 investigation, lead, mercury and zinc were detected at concentrations exceeding Unrestricted Use SCOs. Lead and indeno(1,2,3-cd)pyrene were detected at concentrations that exceeded Restricted Residential Use SCOs in select samples. During the November 2015 investigation, lead, mercury, zinc, arsenic, 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD were detected at concentrations exceeding Unrestricted Use SCOs. Contaminants detected at concentrations exceeding Residential Use SCOs included SVOCs, benzo(k)fluoranthene and chrysene. Contaminants detected at concentrations exceeding Restricted Residential Use SCOs included mercury, lead, indeno(1,2,3-cd)pyrene, benzo(a)anthracene, and benzo(b)fluoranthene. Additionally, benzo(a)pyrene was detected at a concentration exceeding Industrial Use SCOs. No other analytes were detected at concentrations that exceeded the SCOs.

Analyte concentrations varied across the Site which indicated that the source of contamination in fill samples is the variable nature of the urban fill material with no discrete source located on-site or off-site.

#### 1.1.4 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 the limited site characterization, and the project objectives. The RI included the following:

- Soil Evaluation – This task consisted of four primary elements: surface soils, urban fill, imported backfill, and underlying native soils.
  - The surface soil was characterized to identify if contamination exists at the surface of the Site.

- The urban fill was characterized to identify the extent and magnitude of contamination within the fill. This material was also the subject of waste characterization sampling because subsequent remedial activities will likely include the excavation and off-site disposal of urban fill.
  - The imported backfill used to backfill the basement of the former on-site structure was characterized.
  - The underlying native soils were characterized to determine the depth of impacts from the overlying urban fill and the depths at which remedial efforts may be terminated.
- Groundwater Evaluation – Subsequent to completing the above tasks, groundwater monitoring wells were installed on-site to evaluate if the on-site urban soil has impacted groundwater quality.

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

## **1.2 Methodology**

The RI supplemented the existing, limited site characterization information through the advancement of soil borings, installation of monitoring wells, and collection and analysis of soil and groundwater samples. The investigative methods described below closely follow the RI Work Plan with one minor exception: based on a review of current NYSDEC guidance and communications with the laboratory and the NYSDEC, the analytical program utilized the NYSDEC's Part 375 analyte list rather than USEPA's Target Compound/Analyte Lists for VOCs, SVOCs, pesticides, and metals. The reasons for the modification were to maintain compliance with the NYSDEC's guidance; to have the ability to compare all generated analytical results with NYSDEC guidance values; and to generate analytical results for all analytes within those analyte suites for which NYSDEC has Part 375 SCOs.

### **1.2.1 Soil Characterization**

#### *Surface Soil Collection*

Four surface soil samples were collected from within the footprint of the former structure from zero to two inches, below the vegetative cover, as shown on **Figure 1-3**. The samples were collected with a stainless steel spoon or from the advancement of a direct push soil borings. The samples were collected and analyzed for the following:

- VOCs
- SVOCs
- Pesticides
- Polychlorinated biphenyls (PCBs)
- Metals
- Total mercury
- Total cyanide



- Hexavalent chromium (from one of four samples)

#### Boring Advancement

Soil borings were advanced across the Site to facilitate the characterization of native material and the different fill materials. To ensure complete coverage of the Site, a 30-foot by 30-foot grid was established across the Site, as shown on **Figure 1-3**, resulting in 24 grid locations. From the borings, fill and native soil samples were collected to document Site conditions. Exploration locations were located using a GPS.

Each boring location was continuously sampled in four-foot intervals using a one-inch by four-foot steel sampling tube fitted with a disposable acetate liner. All non-disposable sampling equipment was decontaminated between runs and between drill locations to avoid potential cross contamination of samples.

Soils from the borings were screened in the field for visible impairment, olfactory indications of impairment, evidence of non-aqueous phase liquids (NAPLs), and/or indication of detectable VOCs with a photoionization detector (PID), 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**.

#### Fill Sampling

Fill samples were collected from the borings based on evidence of impairment and to provide characterization across the Site. In eight of the 24 grids, one urban fill sample was collected and analyzed for the following:

- VOCs
- SVOCs
- Pesticides
- PCBs
- Metals
- Total mercury
- Total cyanide
- Hexavalent chromium (from three of eight samples)

Additionally, three samples were collected from the urban fill for waste disposal characteristics. The waste characterization analysis included:

- Toxicity Characteristic Leaching Procedure (TCLP) VOCs
- TCLP SVOCs
- TCLP pesticides/herbicides
- PCBs
- TCLP metals
- Reactivity
- Corrosivity
- Ignitability

### Native Soil Sampling

Native soil was visually assessed and sampled in each of the 24 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. In eight grid locations, an additional native soil sample was taken at a depth of 15 feet below grade. The native soil samples were analyzed for the following:

- VOCs
- SVOCs
- Pesticides
- PCBs
- Metals
- Total mercury
- Total cyanide
- Hexavalent chromium (from 11 of 33 samples)

In addition to collecting samples at the top of the native material, three 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 an SCO. If the concentrations in that sample also exceeded the SCOs, the next lower sample was also analyzed and the results compared to the SCOs. When necessary, this process was repeated for the third sample. The intent of this sampling scheme was to identify the depth of remedial investigation and to use the sampling results as confirmatory sample results during the subsequent remedial activities.

During the first round of analysis, three native soil samples (locations A1, C1, and B4) did not meet the Unrestricted Use SCOs. In accordance with the sampling plan described above, the samples collected immediately below samples were analyzed for the specific analytes detected at slightly elevated concentrations in A1 and C1. Sample volume was not available for additional analysis in location B4. During IRM site preparation, the final native samples that met SCOs were collected in A1 and B4.

### Former Structure Soil Boring Program

Four additional soil borings were advanced within the footprint of the former structure to assess the nature of the imported backfill used following the recent demolition. Each direct-push soil boring was advanced into the water table, to 16 feet below grade, or at the discretion of the project geologist. Exploration locations were located with a GPS.

Soils from these borings were continuously assessed for visible or olfactory indications of impairment, and/or indication of detectable VOCs with a PID. Positive indications from any of these screening methods are collectively referred to as “evidence of impairment.”

Soil boring logs were completed and included soil description, PID readings, etc. The boring logs are included in **Appendix A**.

Four imported backfill samples were collected from the borings and analyzed for the following:

- VOCs
- SVOCs
- Pesticides
- PCBs
- Metals
- Total mercury
- Total cyanide
- Hexavalent chromium (from two of the four samples)

#### 1.2.2 Groundwater Characterization

To characterize groundwater conditions at the Site, four monitoring wells were installed and sampled. The wells were distributed across the Site, as shown in **Figure 1-4**.

The overburden wells were constructed to straddle the water table. Each well was completed with 5 to 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.

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

Groundwater sampling followed well development and 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. 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 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 are included in **Appendix B**.

The groundwater samples were analyzed for the following analytes:

- VOCs
- TCL SVOCs
- TCL pesticides
- PCBs
- TAL metals
- Total mercury
- Total cyanide
- Hexavalent chromium (from two of four samples only)

Well 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 in January 2017. The second round of groundwater samples were analyzed for the same analytes as in the first round using the same protocols.

### 1.2.3 Quality Assurance/Quality Control Program

**Table 1-1** summarizes the sampling program described in the sections above. Additionally, Quality Assurance/Quality Control (QA/QC) samples were collected based on the following 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%

Paradigm Environmental Services, Inc., and Alpha Analytical, Inc., both 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 to prepare a Data Usability Summary Report (DUSR). The validator evaluated the analytical results for the field samples and quality assurance/quality control samples and compare the findings to USEPA guidance to determine the accuracy and validity of the results. The DUSRs are attached as **Appendix C**.

A summary of the RI activities was submitted to the NYSDEC as monthly progress reports and will be included in the Final Engineering Report. All data submitted to the NYSDEC was and will be in approved electronic data deliverable (EDD) format.

## 1.3 Findings

### 1.3.1 Geology and Hydrogeology

#### *1.3.1.1 Site Geology*

The following geologic information is based on observations made during the 2015 limited site investigation and the 2016 RI.

The Site contains urban fill with thicknesses approximately ranging from one to 13 feet. Urban fill is defined as material coming from anthropogenic sources re-worked to build a site to a defined grade. The urban fill material at the Site contains:

- Dark sand
- Clay
- Brick
- Gravel
- Crushed coal/cinders

Underlying the urban fill are native soils which are comprised of fine, brown, silty sand; a fine, brown sand; and a brown silty clay. A layer of brown varve clay was observed at 24 to 25 feet below ground surface throughout the Site where investigations reached that depth.

### 1.3.1.2 Site Hydrogeology

The principal groundwater bearing zone beneath the Site is located between 16 and 24 feet below grade. Groundwater beneath the Site generally flows towards the east-northeast. More specifically, groundwater in the southern portion of the Site appears to flow entirely to the northeast. However, groundwater in the northern portion of the Site appears to flow more easterly. Flow in this zone may be cut off or affected by a basement/foundation for the adjacent building. Therefore, MW-1-C4 is down-gradient from MW-2-A3 despite their special relationship and general groundwater flows at the Site. **Figure 1-4** presents groundwater contours at the site.

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 as the City of Buffalo has imposed a City-wide ban on the use of groundwater for drinking water supply.

### 1.3.2 Field Observations

Throughout the majority of the Site, the fill material appeared to be did not exhibit evidence of contamination. Except for the northeastern corner of the Site, no staining, odors, or elevated PID measurements were recorded.

During the boring program, an area with nuisance characteristics was observed in the northeastern corner of the Site. The native soil in this area was comprised of wet to saturated, grey, medium-grained sand with areas of dark grey staining. This was accompanied by a petroleum-like odor and PID readings up to 1,179 parts per million (ppm). The staining was observed at depths ranging from 11 to 24 feet, with the general thickness of stained material being three to six feet. Additional samples were collected and submitted to the laboratory to characterize the material and to delineate an area of concern if the analytical showed exceedances of the SCOs. As discussed below, no exceedances of the SCOs were identified in the stained soils.

### 1.3.3 Analytical Results

The following sections summarize and discuss the analytical results generated during the RI. Surface soil, fill, native soil, and groundwater samples were collected for laboratory analysis to determine the magnitude and extent of potential contamination occurring in various media at the Site. A summary of the Phase I RI sampling program, including the number and type of QA/QC samples, is presented in **Table 1-1**.

This data is compared with the Standards Criteria and Guidance values (SCGs) applicable to each medium sampled, and include:

- 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 Suability Summary Reports (DUSRs) will be included in **Appendix C**.

#### *1.3.2.1 Soil*

##### *1.3.2.1.1 Surface Soil*

Four surface soil samples were collected within the footprint of the former structure during this investigation. The analytical results are summarized in **Table 1-2**, and **Figure 1-5** shows the sampling locations and results.

#### *VOCs*

There were no VOCs detected in the surface soil.

#### *SVOCs*

SVOCs were detected in all four surface soil samples. While all samples contained multiple compounds, primarily polycyclic aromatic hydrocarbons (PAHs), two of the four samples contained various PAHs at concentrations that exceeded Unrestricted Use, Residential Use, Restricted Residential Use, Commercial Use and Industrial Use SCOs. Benzo(a)pyrene was detected in one sample at concentrations above Industrial Use SCOs and an additional sample at concentrations above Commercial Use SCOs. Benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected in both samples at concentrations above Restricted Residential Use. Chrysene and benzo(k)fluoranthene were detected in both samples at concentrations either above Unrestricted Use or Residential Use SCOs, but below Restricted Residential Use SCOs. The concentrations of SVOCs in the remaining two soil samples were below Unrestricted Use SCOs.

#### *PCBs*

There were no PCBs detected in the surface soil.

#### *Pesticides*

Pesticides were detected in all four surface soil samples. Two pesticides were detected at concentrations exceeding Unrestricted Use SCOs in three of the four surface soil samples. 4,4'-DDT and 4,4'-DDE were detected exceeding Unrestricted Use SCOs. All concentrations of pesticides were detected below Residential Use SCOs.

#### *Metals*

Several metals were detected in each of the four surface soil samples. Two samples contained metal concentrations detected above Unrestricted Use SCOs, which included zinc in both samples and nickel in one sample. All concentrations of metals were detected below Residential Use SCOs.

*1.3.2.1.2 Urban Fill and Imported Backfill*

Fifteen total fill samples within the BCP Site were collected during this investigation. Eight fill samples were taken inside the building footprint of the imported backfill. Seven fill samples were taken outside the building footprint of urban fill. The analytical results are summarized in **Table 3. Figure 1-6** shows the sampling locations and results.

*VOCs*

No VOCs were detected in the imported backfill samples inside the building footprint. Limited VOCs were detected in two of the seven urban fill samples; however, no VOCs were detected above Unrestricted Use SCOs.

*SVOCs*

SVOCs, primarily PAHs, were present in six of the eight imported backfill samples; however, no SVOCs were detected above Unrestricted Use SCOs.

PAHs were also detected in four of the seven urban fill samples outside of the former structure footprint. In one sample, benzo(k)fluoranthene was detected at a concentration exceeding Unrestricted Use SCOs, chrysene was detected at a concentration exceeding Residential Use SCOs, and benzo(b)fluoranthene and indeno(1,2,3-cd)pyrene were detected at concentrations exceeding Restricted Residential Use SCOs.

*PCBs*

No PCBs were detected in the imported backfill samples inside the building footprint and no PCBs were detected in the urban fill samples outside the building footprint.

*Pesticides*

One or more pesticides were detected in four of the eight fill samples inside the building footprint. Pesticides with concentrations exceeding Unrestricted Use SCOs were detected in two of the eight imported fill samples and included 4,4'-DDE, 4,4'-DDT, and 4,4'-DDD. The concentrations did not exceed Residential Use SCOs.

No pesticides were detected at concentrations exceeding Unrestricted Use SCOs in the urban fill.

*Metals*

Several metals were detected in the eight imported backfill samples inside the building footprint. Metals lead, mercury, and zinc were detected at concentrations exceeding Unrestricted Use SCOs but not exceeding Residential Use SCOs in three of the eight samples.

Several metals were detected in all seven urban fill samples outside the building footprint. Metals including lead, mercury, and selenium were detected at concentrations exceeding Unrestricted Use SCOs, but not exceeding Residential Use SCOs, in four of the seven samples.

#### *1.3.2.1.3 Native Soil*

A total of 41 native samples were collected during this portion of the investigation. These included 35 native samples, three duplicate samples, and three soil samples from the area with nuisance characteristics in the northeastern portion of the Site. Two of the native samples were only analyzed for a single metal to determine the extent of impact in the native material based on the original native sample. In addition, three samples collected from an area with evidence of impairment were only sampled for VOCs and SVOCs, at the direction of the NYSDEC. The analytical results for native material are summarized in **Table 1-4**. **Figure 1-7** shows the sampling locations and results.

##### *VOCs*

One or more VOCs were detected in 14 of the 37 native soil samples analyzed for VOCs. However, all concentrations were below Unrestricted Use SCOs. Low level VOCs were detected in the area of nuisance characteristics in the northeastern corner of the Site. All VOC concentrations were below Unrestricted Use SCOs.

##### *SVOCs*

One or more SVOCs, primarily PAHs, were detected in two of the 37 native soil samples analyzed for SVOCs. However, no samples contained SVOCs at concentrations exceeding Unrestricted Use SCOs.

##### *PCBs*

There were no PCBs detected in the native soil samples.

##### *Pesticides*

One or more pesticides was detected in seven of 35 samples analyzed for pesticides. All pesticide concentrations were below Unrestricted Use SCOs, except for in sample B4-10-11ft. Sample B4-10-11ft contained 4'4-DDE, 4'4-DDD, and 4'4-DDT at concentrations marginally above Unrestricted Use SCOs. The next one-foot interval sample was analyzed for these pesticides only. The sample, B4-11-11.5ft, did not contain detectable concentrations of those pesticides.

##### *Metals*

Multiple metals were detected in all 39 native soil samples analyzed for metals. Initially, in 22 of the 24 grid locations, all metals concentrations were below the Unrestricted Use SCOs. In the two remaining areas:

- Sample A1-5-6ft contained silver at a concentration slightly above Unrestricted Use SCOs. Consequently, the next one-foot interval sample was analyzed for silver only. This sample, A1-6-7ft, also contained a concentration of silver slightly above



Unrestricted Use SCOs. The next one-foot interval sample was analyzed, A1-7-7.5ft, and did not contain a detectable concentration of silver.

- Sample C1-8-9ft contained a concentration of zinc above Unrestricted Use SCOs while the zinc concentration in the underlying sample (C1-9-10ft) was below Unrestricted Use SCOs.

Therefore, metals were below Unrestricted Use SCOs in all grid locations.

#### *1.3.2.2 Groundwater*

The first groundwater sampling event took place in September 2016. Five groundwater samples, which include a duplicate, were collected from the four newly installed 2-inch monitoring wells at the Site. One monitoring well did not produce enough volume for a complete analysis, therefore, MW-2-A3 was only sampled for VOCs.

The second sampling event took place in January 2017. Five groundwater samples, which included one duplicate, were collected from the four monitoring wells at the Site. MW-2-A3 was able to produce enough volume for complete sampling analysis during this sampling event.

The analytical results for the groundwater samples are summarized in **Table 1-5** and the locations and results of sampling at the monitoring wells are depicted on **Figure 1-8**.

#### *VOCs*

During the first sampling event, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene and p-Isopropyltoluene were detected above Ambient Water Quality Guidance and Standards (AWQGS) and effluent groundwater standards in one well, MW-2-A3. However, no VOCs were detected in any of the four monitoring wells during the second sampling event.

#### *SVOCs*

No SVOCs were detected during the first sampling event. Naphthalene was detected in MW-2-A3 at a low concentration, below the AWQGS during the second event.

#### *PCBs*

No PCBs were detected during either sampling events.

#### *Pesticides*

During the first sampling event, pesticides such as 4,4-DDD, dieldrin, endrin, endrin ketone, and heptachlor were detected in one well, MW-1-C4. Dieldrin and endrin were detected at concentrations above AWQGS. No other wells contained detectable concentrations of pesticides. No pesticides were detected during the second sampling event.

#### *Metals*

During the first sampling event, iron, magnesium, and sodium were detected at concentrations above AWQGS in each of the three wells. While manganese was also detected in each well, it was detected at a concentration that exceeds AWQGS in only one well.

During the second groundwater sampling event, sodium was detected at concentrations above AWQGS in each well. Magnesium concentrations exceeded AWQGS in MW-1-C4 and MW-2-A3. Iron concentrations exceeded AWQGS in MW-2-A3 and MW-4-F2. Manganese was detected at a concentration above AWQGS in one well, MW-2-A3.

#### 1.3.4 Contaminant Assessment

##### *1.3.3.1 Nature, Extent, and Source of Contamination*

###### *Surface Soil*

No VOCs or PCBs were detected in the surface soil sampling.

SVOCs, primarily PAHs, exceeding the Industrial Use SCOs, Commercial Use SCOs, Restricted Residential Use SCOs, Residential Use SCOs, and Unrestricted Use SCOs were detected in surface soil on the Site. The presence of these PAHs is likely related to the urban setting of the source of material. PAHs are often the results of the incomplete combustion of hydrocarbons and other organic material and are commonly encountered in urban soils. Based on their ubiquity in urban settings, the relatively low concentrations (albeit above the SCOs) and lack of petroleum impacts in the surface soils, the presence of SVOCs in the surface soils at the Site does not suggest a release of petroleum at the Site.

The pesticides DDE and DDT were detected in the surface soils at concentrations above Unrestricted Use SCOs, but not exceeding Residential Use SCOs. These pesticides were used in a variety of settings and were widely dispersed prior to being banned in 1972. Based on the source of the imported backfill (residential properties) and the relatively low concentrations (albeit above the Unrestricted Use SCOs), the presence of pesticides in the surface soils at the Site is likely related to the broad application of these compounds rather than a specific release.

Nickel and zinc were detected in the surface soils at concentrations above Unrestricted Use SCOs, but not exceeding Residential Use SCOs. Metals such as nickel and zinc are often detected in urban soils at concentrations similar to those detected at the Site. The presence of these contaminants may be related to such urban impacts or to the nature of the source of the background concentrations in the areas from which the imported backfill was excavated.

###### *Fill*

Fill material is present across the Site, from the surface to depths up to 13 feet. Staining, odors, and elevated PID measurements were not detected within the fill material, with the exception of the northeastern corner of the Site.

During the boring program, an area with petroleum nuisance characteristics was observed in the northeastern corner of the Site. The native soil in this area was comprised of wet to saturated, grey, medium-grained sand with areas of dark grey staining. This was accompanied by a petroleum-like odor and elevated PID measurements. The staining was observed at depths ranging from 11 to 24 feet, with the general thickness of stained material being three to six feet. Additional samples were collected and submitted to the laboratory to characterize the material and to delineate an area of concern if the analytical showed exceedances of the SCOs. As discussed above, no exceedances of the SCOs were identified in the stained soils. The source of these observations may be from a historical auto repair shop with a gasoline tank to the east of

the Site, or a pipe and sheet metal shop located to the northeast of the Site. Additionally, the property adjacent to the east was an auto garage.

VOCs and PCBs were not detected at concentrations above the Unrestricted Use SCOs in the fill materials.

Several PAHs were detected exceeding Unrestricted Use, Residential Use and Restricted Residential Use SCOs in one urban fill sample from outside the building footprint. Additionally, a number of SVOCs were detected in the fill samples collected during the 2015 site investigations, including benzo(a)pyrene at concentrations above the Industrial Use SCOs in two samples. The presence of these contaminants is likely related to the use of urban fill and the urban setting of the Site. While SVOCs were detected in the imported backfill samples inside the building footprint, no concentrations were detected above Unrestricted Use SCOs.

Pesticides were detected at concentrations exceeding Unrestricted Use SCOs but not exceeding Residential Use in two of the imported backfill samples. As with the surface soil samples, these pesticides were used in a variety of settings and were widely dispersed prior to being banned in 1972. Based on the source of the imported backfill (residential properties) and the relatively low concentrations (albeit above the Unrestricted Use SCOs), the presence of pesticides in the imported fill at the Site is likely related to the broad application of these compounds rather than a specific release.

During the RI, metals detected in the urban fill and imported backfill samples at concentrations above Unrestricted Use SCOs, but below Restricted Residential Use SCOs, include zinc, selenium, mercury, and lead. Mercury, lead, and zinc were also detected in the urban fill at concentrations above the Unrestricted, Residential, and/or Restricted Residential SCOs in urban fill samples collected in 2015. These metals are ubiquitous in urban settings and the presence of these contaminants at these concentrations is therefore likely related to the urban setting of the Site.

#### *Native Material*

No VOCs or SVOCs were detected at concentrations exceeding Unrestricted Use SCOs. No PCBs were detected. The pesticides DDE, DDT, and DDD were detected marginally above Unrestricted Use SCOs and well below Residential Use SCOs in one sample taken at a depth of ten to eleven feet. However, those concentrations of those pesticides were not detected in the sample taken at a depth of 11 to 11.5 feet. Metals are also detected marginally above Unrestricted Use SCOs in the two samples of the native soil.

The source of these metals in the native materials is likely due to the presence of fill immediately overlaying the native material.

#### *Groundwater*

Although VOCs were detected in one sample collected during the first round of groundwater sampling, the second sample collected from that location did not contain any VOCs. Although the detection of these compounds during the first round occurred in the well installed within the stained soil in the northeastern corner of the Site, the soil sample collected from this location did not contain the VOCs detected. Additionally, the lack of these compounds in the second sample suggests that VOCs are not a concern in the groundwater at the Site.

During the first sampling event, the pesticides dieldrin and endrin were detected at concentrations exceeding AWQGS in MW-1-C4. These compounds were not detected in the urban fill sample collected at this location, nor were detected at concentrations above the Unrestricted Use SCOs in any of the fill samples collected at the Site. No pesticides were detected in the groundwater samples during the second round of sampling, suggesting that previous results may have been associated with turbidity, as pesticides tend to adhere to soil particles. Therefore, pesticides in groundwater do not appear to pose a concern at the Site.

Magnesium, manganese and sodium were detected at concentrations exceeding AWQGS in three wells samples for metals during the first sampling event. Sodium remained present in concentrations exceeding AWQGS in each well during the second sampling event, whereas magnesium was only detected in concentrations exceeding AWQGS in two wells and manganese only appeared with a concentration above AWQGS in one well. These parameters are commonly encountered in uncontaminated, natural environments and do not appear to be associated with the urban fill on the Site.

#### *1.3.3.2 Contaminant Fate and Transport*

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 a vacant property with a small surface parking lot. The planned future use of the Site is for development of a four-story apartment building. 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.

Contaminants of concern detected in the surface soils and subsurface fill occurring on the Site include PAHs, pesticides, and metals.

The PAHs detected in the fill are characterized by low solubilities and high octanol-water partition coefficients, and, therefore, have a tendency to adsorb onto soil particles. In addition, these 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 into the subsurface soil or where already present in subsurface, into native. This is supported by the lack of these compounds in the on-site groundwater.

The pesticides and metals detected in surface and subsurface fill also have low solubility and have strongly adsorbed to the soil. Additionally, metal and pesticides do not degrade quickly. Therefore, the contaminants in the surface and subsurface soil are relatively immobile, but will persist in the environment. This is supported by the lack of concentrations of these contaminants in the groundwater sample. Additionally, given the lack of an on-site source, and the time frame since the last use of the detected pesticides, further mobility or impacts not observed during this RI are not likely.

As discussed above, contaminants are generally absent in the native soils and any elevated concentrations of contaminants in the native soil is associated with the overlying fill material rather than the native material itself. Therefore, impacts to native soil do not appear to pose a concern at the Site.

The detection of certain VOCs and pesticides in the first round of groundwater sampling was not corroborated during the second round of groundwater sampling. Additionally, the relatively low concentrations of the detected compounds and the lack of these compounds at elevated concentrations in on-site fill suggests that VOCs and pesticides do not pose a significant concern relative to groundwater at the Site. Additionally, the metals detected in the groundwater at the Site are likely indicative of background concentrations rather than being associated with the fill at the Site. Additionally, the detected metals are often related to aesthetics of drinking water rather than contaminant issues. Lastly, the City of Buffalo has imposed a ban on the use of groundwater as a drinking water supply.

#### *1.3.3.3 Evaluation of Potential Receptors*

The Site is located in an area that is characterized by commercial uses and urban residential properties. A small parking garage and auto body repair shop are located to the east, an apartment and commercial building to the south, an apartment building with a surface parking lot to the west, and religious and residential uses to the north of the Site. The surrounding area is serviced by the municipal water supply system from the City of Buffalo.

The Site is currently a vacant property with a small, surface parking area in the eastern portion of the Site. The former structure on the Site was demolished and the Site was backfilled. Previous to the demolition, the Site had been utilized as residential, and later a radio station and tower. Access to the Site is currently available from the sidewalk on North Street. Access to the Site is granted for permitted parking for an adjacent residential structure. There is fencing partially enclosing the Site to the north and west.

Under current conditions, potential human receptors include persons working, trespassing, or parking on the Site; persons living and working in the area surrounding the Site; and persons involved in utility work on and adjacent to the Site. In addition, potential environmental receptors include wildlife living on or moving through the Site (e.g., rodents, birds, etc.).

The planned future use of the Site is a four-story apartment building. The first floor of the building will contain an indoor parking garage for tenants.

#### *1.3.3.4 Potential Exposure Pathways*

##### *Surface Soil*

Under the current use, persons living and working in the vicinity of the Site, persons utilizing the Site for parking and/or persons trespassing on the Site could be exposed to SVOCs (primarily PAHs), pesticides, and metals in the surface soil via inhalation of airborne particles, incidental ingestion of, or dermal contact with the contaminated media.

Construction workers, site visitors and persons living, working and traveling through the area near the Site could be exposed to the SVOCs, pesticides, and metals in the surface soil during excavation of the surface fill in connection with site redevelopment. Potential exposure routes for these receptors include inhalation of contaminated dust and incidental ingestion of, and/or dermal contact with the contaminated soil/fill. 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 would greatly minimize any risk of exposure during this stage of the project.

No complete exposure pathways to the chemical contaminants in the surface soil have been identified in connection with the post-redevelopment period.

#### *Subsurface Fill*

The presence of elevated concentrations of SVOCs, pesticides, and metals in 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 particulates that could pose an exposure risk via inhalation. This applies to all receptors.

During excavation of the contaminated fill in connection with site redevelopment activities, environmental receptors, construction workers, site visitors and persons living, working and traveling through the Site could be exposed to low level SVOCs, pesticides, and metals in the subsurface fill. Potential exposure routes for these receptors include inhalation of contaminated dust and incidental ingestion of and/or dermal contact with the contaminated fill. However, the use of appropriate personal protective equipment, dust suppression techniques and personal/air monitoring, and the development of a Health and Safety would minimize the risk of exposure during this stage of the project.

No complete exposure pathways to the chemical contaminants in the subsurface soil have been identified in connection with the post-redevelopment period.

#### *Groundwater*

There is a ban on groundwater use as a public drinking water supply in the City of Buffalo; therefore, no groundwater in the vicinity of the Site is utilized as a source of potable water. Therefore, no human exposure via ingestion of contaminated groundwater is likely.

#### *1.3.3.5 Qualitative Human and Fish/Wildlife Resources Exposure Assessment*

The Site is currently a vacant property with a small, surface parking lot in an urban area with limited wildlife exposure. Humans living, working or parking near or on the Site would be potentially exposed to contamination in the surface soils.

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 or rare plants were identified on or near the Site according to the State's data bases. Furthermore, 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 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.



Groundwater is not used for drinking water (prohibited in the City of Buffalo) and therefore there is no exposure risk through ingestion. In addition, the depth of the groundwater (greater than 16 feet below grade) reasonably precludes human contact.

#### 1.3.5 QA/QC/DUSR

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 samples would be collected for duplicate samples and Matrix Spike/Matrix Spike Duplicates (MS/MSD) at a 5% allocation as well. QA/QC samples were not collected nor analyzed for the waste characterization sampling.

During the RI activities, 57 soil samples were collected, therefore, nine QAQC samples were taken including three blind duplicates, three Matrix Spikes and three Matrix Spike Duplicates; meeting the 5% criteria. Four groundwater samples were taken with one blind duplicate, one MS/MSD and one trip blank; also meeting the 5% criteria.

Third-party data consultants, Data Validation Services and Environmental Data Usability, prepared the Data Usability and Summary Reports (DUSRs) as required in the RI/IRM Work Plan. The DUSRs are 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

## 1.4 **Conclusions and Recommendations**

Based on the findings of this RI, Remedial Action Objectives (RAOs) have been developed for various media at the Site. The following RAOs were developed:

#### *Soil*

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation exposure to contaminants volatilizing from soil.

- Prevent migration of contaminants that would result in groundwater contamination.

*Groundwater*

- Prevent the discharge of contaminants to the groundwater.

An Interim Remedial Measures Work Plan (IRM WP) was prepared following the RI to present the planned interim remedial steps that will be implemented at the Site to address the fill and soil contamination. Based on information collected during this RI, the recommendation remedial action at the Site calls for the removal and re-use or proper disposal of approximately 6,000 cubic yards of contaminated material from the Site. Following the performance of the IRMs, an IRM Report, Alternatives Analysis Report (AAR), and draft Final Engineering Report (FER) will be submitted to the NYSDEC. The FER will affirm that the remedial activities have achieved the Remedial Action Objectives (RAOs).



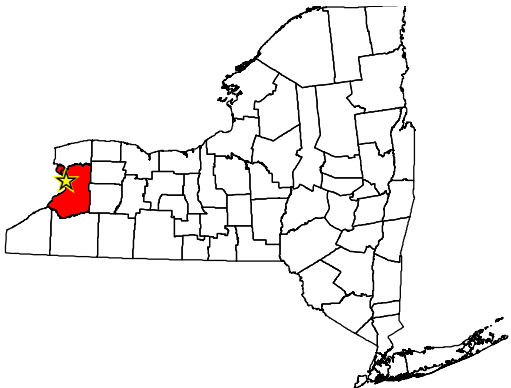
# FIGURES

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LOCATION MAP

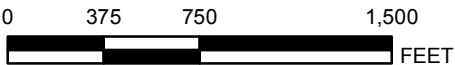


LEGEND

BCP BOUNDARY

NOTES

- 1) USGS 7.5 MINUTE QUADRANGLE MAP FROM ESRI BASEMAP LAYER.
- 2) COORDINATE SYSTEM: NAD 1983 STATEPLANE NY  
WEST FIPS 3103  
PROJECTION: TRANSVERSE MERCATOR  
DATUM: NORTH AMERICAN 1983  
UNITS: FOOT US



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

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19 NORTH STREET  
BROWNFIELD CLEANUP PROGRAM  
REMEDIAL INVESTIGATION  
BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO:	P67.001.001	
DATE:	JUNE 3 2016	
DRAWN BY:	A DeMARCHI	
DESIGNED BY:	A. DeMARCHI	
CHECKED BY:	D. RIKER	
NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW		

SITE LOCATION



FIGURE 1



Path: F:\Project\P67 - First Amherst Development Company\P67.001.001 - BCP APPIPlanning-Study\GIS\RI REPORT FIGURE1-2 PROJECT AREA.mxd

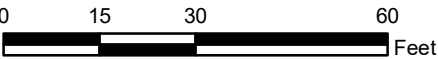


**LEGEND**

-  BCP SITE BOUNDARY
-  APPROXIMATE FOOTPRINT OF HISTORICAL BUILDING ON SITE

**NOTES**

- 1) FOOTPRINT OF HISTORICAL BUILDING DIGITIZED FROM SATELLITE IMAGERY.
- 2) COORDINATE SYSTEM: NAD 1983 STATEPLANE NY WEST FIPS 3103  
PROJECTION: TRANSVERSE MERCATOR  
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C&S Engineers, Inc.  
141 Elm Street  
Suite 100  
Buffalo, New York 14203  
Phone: 716-847-1630  
Fax: 716-847-1454  
www.cscs.com



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**BUFFALO, NEW YORK**

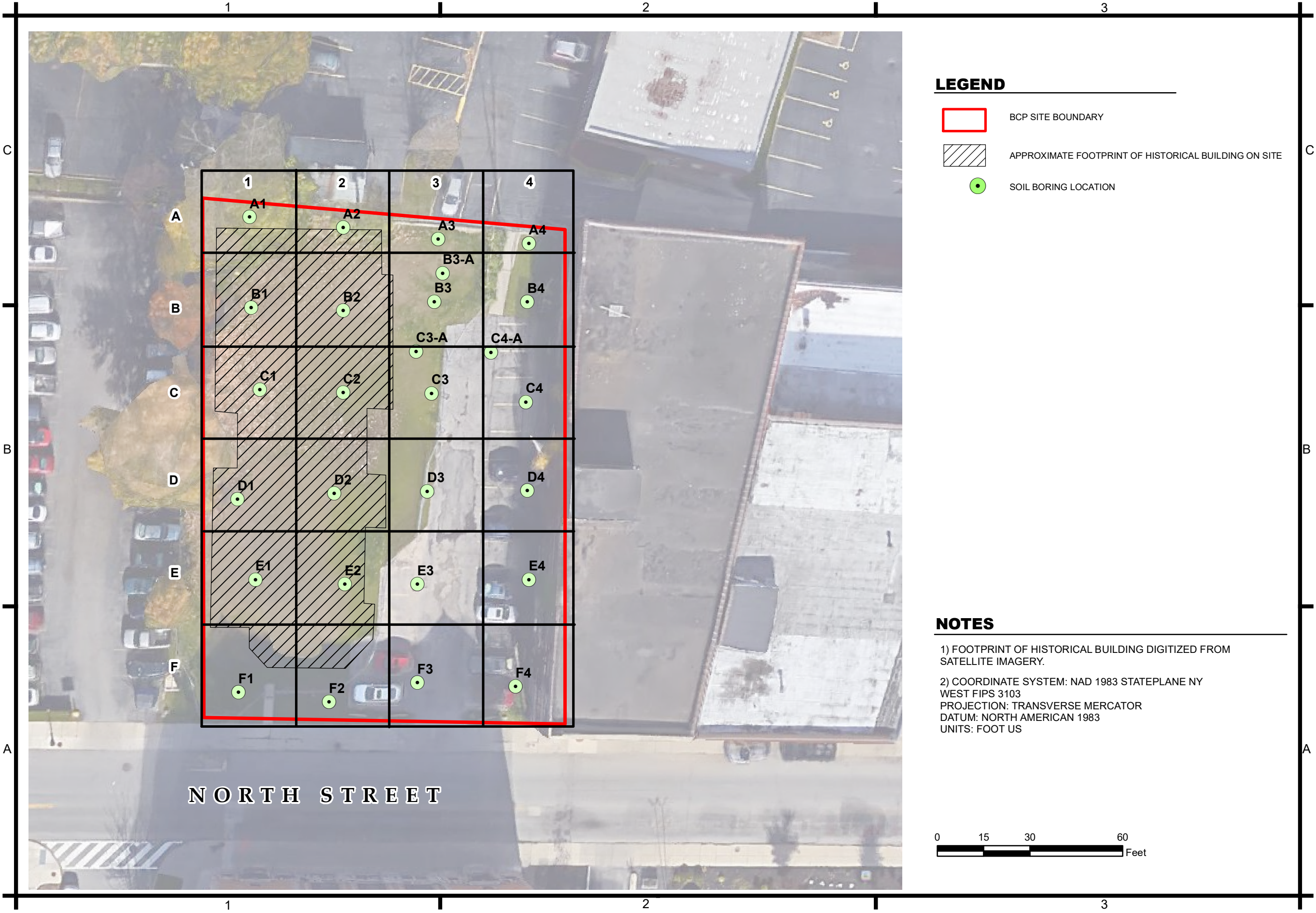
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PROJECT NO:	P67.001.001	
DATE:	11/10/16	
DRAWN BY:	A. DeMARCHI	
DESIGNED BY:	A. DeMARCHI	
CHECKED BY:	D. RIKER	
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PROJECT AREA  
AND SITE  
BOUNDARY

FIGURE 1-2



Path: F:\Project\P67 - First Amherst Development Company\P67.001.001 - BCP APP\Planning-Study\GIS\RI REPORT\FIGURE1-3 SAMPLE GRID.mxd

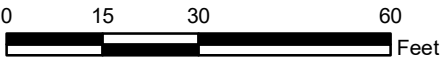


**LEGEND**

- BCP SITE BOUNDARY
- APPROXIMATE FOOTPRINT OF HISTORICAL BUILDING ON SITE
- SOIL BORING LOCATION

**NOTES**

- 1) FOOTPRINT OF HISTORICAL BUILDING DIGITIZED FROM SATELLITE IMAGERY.
- 2) COORDINATE SYSTEM: NAD 1983 STATEPLANE NY  
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141 Elm Street  
Suite 100  
Buffalo, New York 14203  
Phone: 716-847-1630  
Fax: 716-847-1454  
www.cscs.com

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SAMPLE GRID  
AND LOCATIONS

FIGURE 1-3



Path: F:\Project\P67 - First Amherst Development Company\P67.001.001 - BCP APPI\Planning-Study\GIS\RI REPORT FIGURE1-4 GW LOCS.mxd

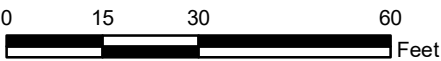


**LEGEND**

- BCP SITE BOUNDARY
- APPROXIMATE FOOTPRINT OF HISTORICAL BUILDING ON SITE
- GROUNDWATER MONITORING WELL
- GROUNDWATER ELEVATION CONTOUR

**NOTES**

- 1) GROUNDWATER ELEVATION IS IN FEET ABOVE MEAN SEA LEVEL.
- 2) FOOTPRINT OF FORMER BUILDING DIGITIZED FROM SATELLITE IMAGERY.
- 3) COORDINATE SYSTEM: NAD 1983 STATEPLANE NY WEST FIPS 3103  
PROJECTION: TRANSVERSE MERCATOR  
DATUM: NORTH AMERICAN 1983  
UNITS: FOOT US



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141 Elm Street  
Suite 100  
Buffalo, New York 14203  
Phone: 716-847-1630  
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BUFFALO, NEW YORK**

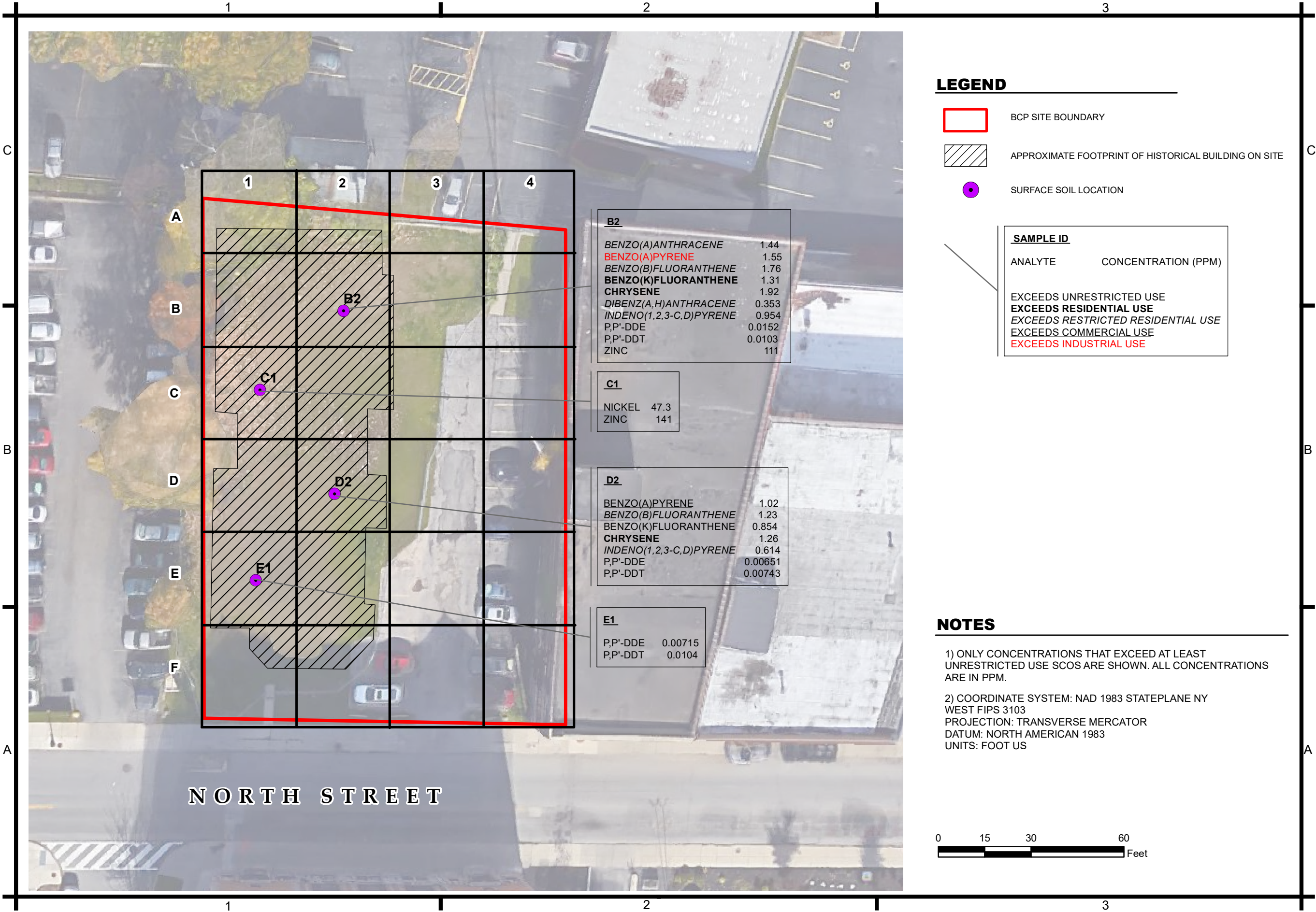
MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO:	P67.001.001	
DATE:	11/10/2016	
DRAWN BY:	A. DeMARCHI	
DESIGNED BY:	A. DeMARCHI	
CHECKED BY:	D. RIKER	

GROUNDWATER  
MONITORING WELL  
LOCATIONS AND  
CONTOURS

FIGURE 1-4



Path: F:\Project\P67 - First Amherst Development Company\P67.001.001 - BCP APP\Planning-Study\GIS\RI REPORT\FIGURE1-5 SURFACE RESULTS.mxd



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141 Elm Street  
Suite 100  
Buffalo, New York 14203  
Phone: 716-847-1630  
Fax: 716-847-1454  
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BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION

REVISIONS

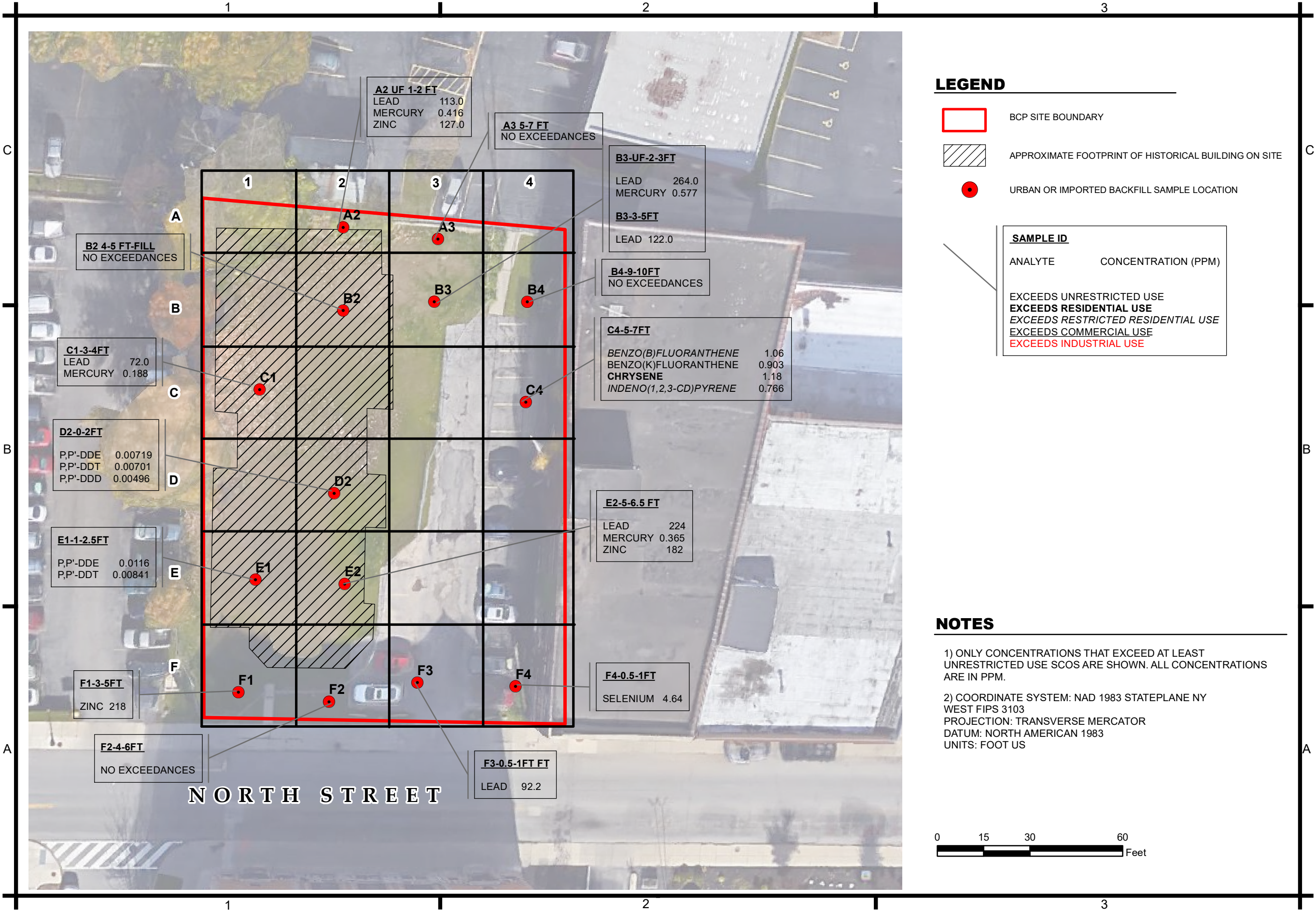
PROJECT NO:	P67.001.001
DATE:	11/10/16
DRAWN BY:	A. DeMARCHI
DESIGNED BY:	A. DeMARCHI
CHECKED BY:	D. RIKER

SURFACE SOIL  
SAMPLE LOCATIONS  
AND RESULTS

FIGURE 1-5



Path: F:\Project\P67 - First Amherst Development Company\P67.001.001 - BCP APP\Planning-Study\GIS\RI REPORT FIGURE 1-6 FILL RESULTS.mxd



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141 Elm Street  
Suite 100  
Buffalo, New York 14203  
Phone: 716-847-1630  
Fax: 716-847-1454  
www.cscs.com

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BROWNFIELD CLEANUP PROGRAM  
REMEDIAL INVESTIGATION  
BUFFALO, NEW YORK

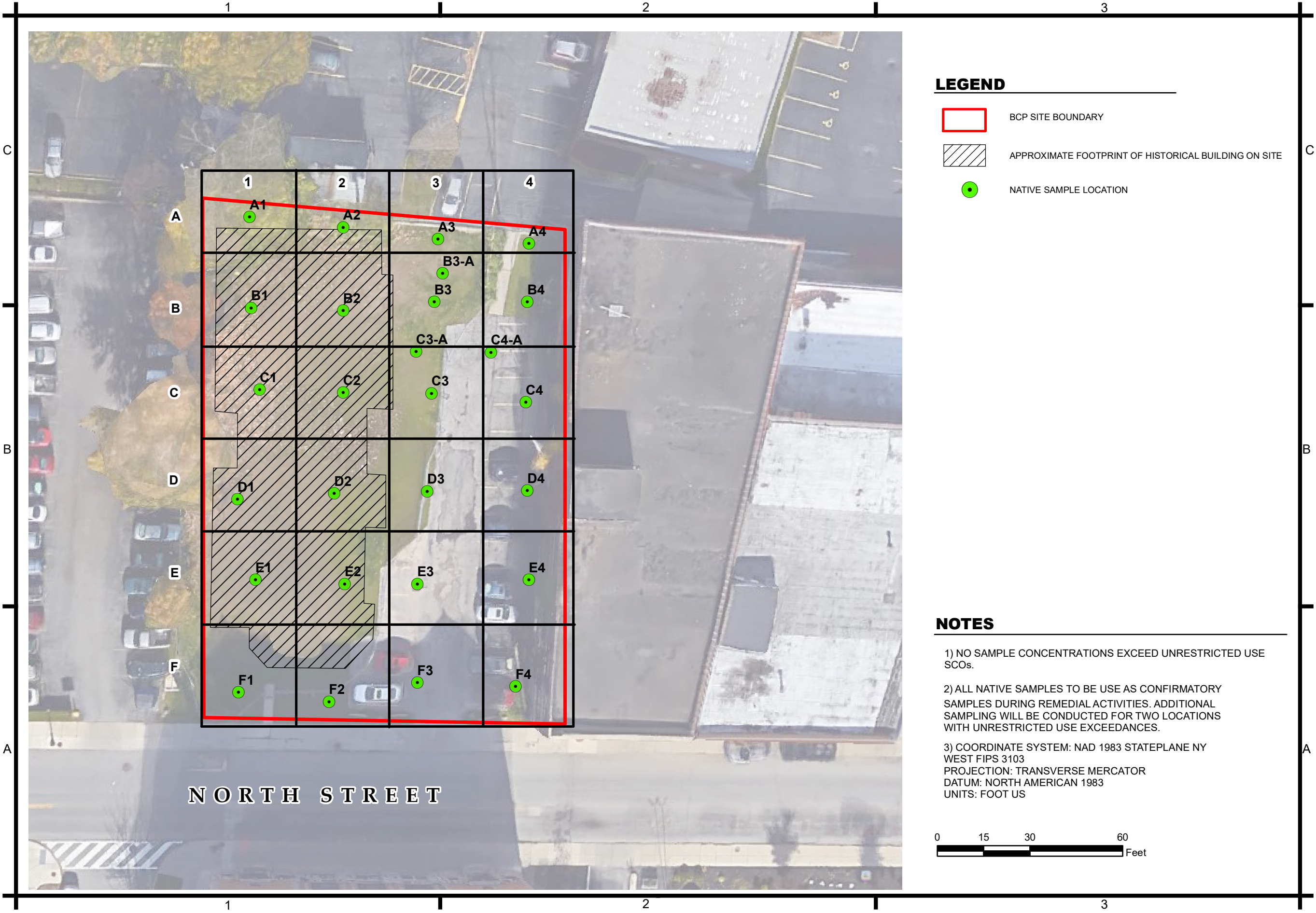
MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO:	P67.001.001	
DATE:	11/10/16	
DRAWN BY:	A. DeMARCHI	
DESIGNED BY:	A. DeMARCHI	
CHECKED BY:	D. RIKER	
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FILL SAMPLE  
LOCATIONS  
AND RESULTS

FIGURE 1-6



Path: F:\Project\P67 - First Amherst Development Company\P67.001.001 - BCP APP\Planning-Study\GIS\RI REPORT\FIGURE1-7 NATIVE RESULTS.mxd

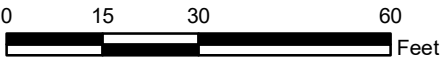


LEGEND

- BCP SITE BOUNDARY
- APPROXIMATE FOOTPRINT OF HISTORICAL BUILDING ON SITE
- NATIVE SAMPLE LOCATION

NOTES

- 1) NO SAMPLE CONCENTRATIONS EXCEED UNRESTRICTED USE SCOs.
- 2) ALL NATIVE SAMPLES TO BE USE AS CONFIRMATORY SAMPLES DURING REMEDIAL ACTIVITIES. ADDITIONAL SAMPLING WILL BE CONDUCTED FOR TWO LOCATIONS WITH UNRESTRICTED USE EXCEEDANCES.
- 3) COORDINATE SYSTEM: NAD 1983 STATEPLANE NY WEST FIPS 3103  
PROJECTION: TRANSVERSE MERCATOR  
DATUM: NORTH AMERICAN 1983  
UNITS: FOOT US



C&S Engineers, Inc.  
141 Elm Street  
Suite 100  
Buffalo, New York 14203  
Phone: 716-847-1630  
Fax: 716-847-1454  
www.cscs.com

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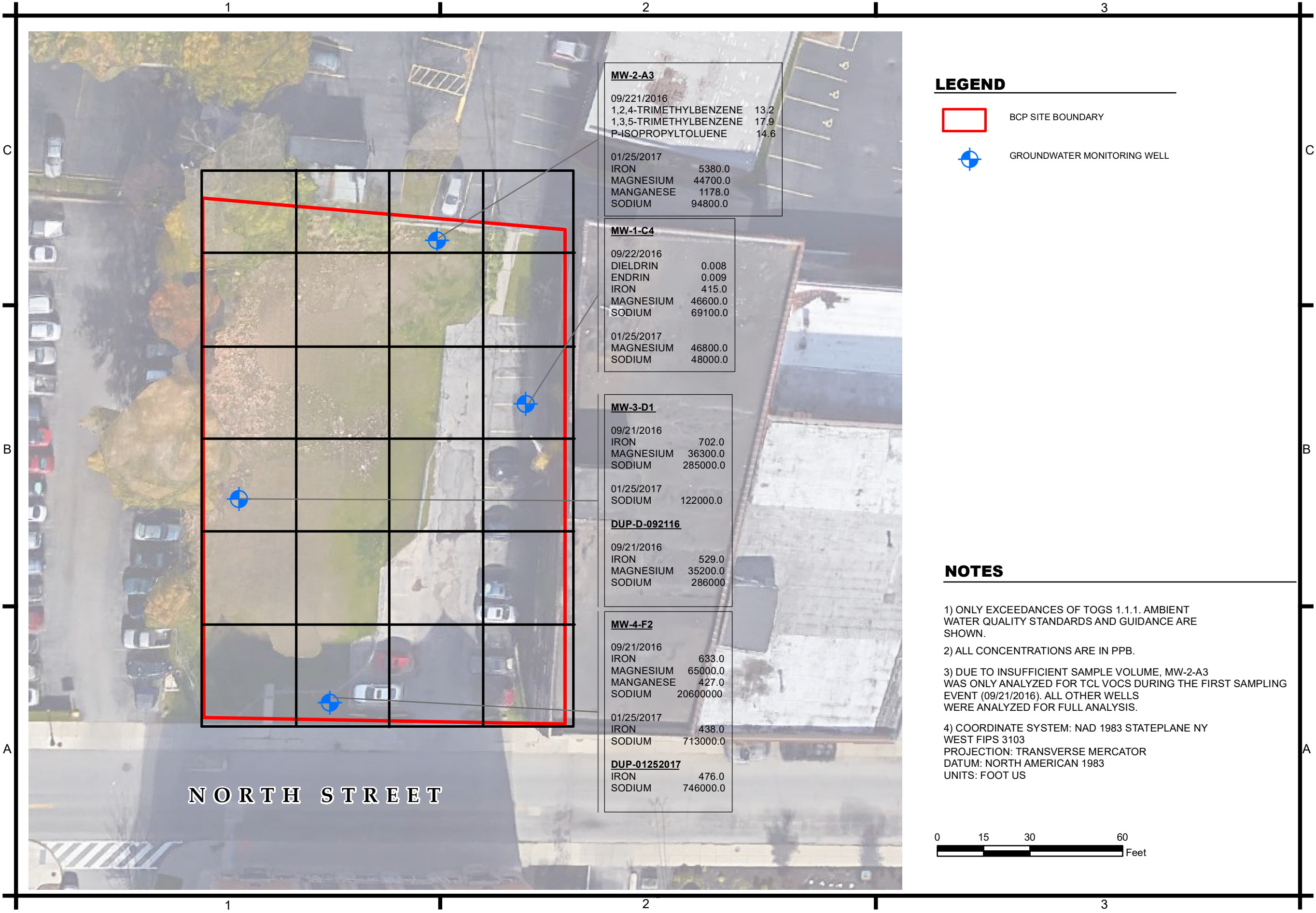
MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO:	P67.001.001	
DATE:	06/30/2017	
DRAWN BY:	A. DeMARCHI	
DESIGNED BY:	A. DeMARCHI	
CHECKED BY:	D. RIKER	
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NATIVE SAMPLE  
LOCATIONS  
AND RESULTS

FIGURE 1-7



Path: F:\Project\P67 - First Amherst Development Company\P67.001.001 - BCP APP\Planning-Study\GIS\RI REPORT FIGURE 1-8 GW RESULTS.mxd



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**19 NORTH STREET  
BROWNFIELD CLEANUP PROGRAM  
REMEDIAL INVESTIGATION  
BUFFALO, NEW YORK**

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	P67.001.001
DATE:	02-20-17
DRAWN BY:	A. DeMARCHI
DESIGNED BY:	A. DeMARCHI
CHECKED BY:	D. RIKER

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**GROUNDWATER  
MONITORING WELL  
LOCATIONS AND  
RESULTS**

**FIGURE 1-8**

# TABLES

**Table 1-1 – Remedial Investigation Sampling Program**

<b>Task</b>	<b>Location</b>	<b>Number of Samples</b>	<b>Lab Analysis</b>
<b>Surface Soil Samples</b>	Former Structure Footprint	4	SVOCs and pesticides, PCBs, TAL Metals, Cyanide, Hex Chromium (Subset only - 1 sample)
<b>Urban Fill Samples</b>	30-foot by 30-foot grid	8	VOCs, SVOCs and pesticides, PCBs, TAL Metals, Cyanide, Hex Chromium (subset only - 3 samples)
	Site-wide	3	TCLP VOCs, TCLP SVOCs, TCLP pesticides/herbicides, TCLP metals, PCBs, reactivity, corrosivity, ignitability
<b>Native Soil Samples</b>	30-foot by 30-foot grid	35	VOCs, SVOCs and pesticides, PCBs, TAL Metals, Cyanide, Hex Chromium (subset only-11 samples)
<b>Imported Backfill Samples</b>	Former Structure Footprint	4	VOCs, SVOCs and pesticides, PCBs, TAL Metals, Cyanide, Hex Chromium (subset only - 2 samples)
<b>Groundwater Samples</b>	Site-wide	8 (Two Events)	TCL VOCs, SVOCs and pesticides, PCBs, TAL Metals, Cyanide, Hex Chromium (subset only - 4 samples)

Table 1-2: Part 375 Surface Soil Analytical  
Results 19 North Street Remedial Investigation  
19 North Street Buffalo New York

Field Sample ID						B2 Surface	C1 Surface	D2 Surface	E1 Surface
Sample Depth (Inch)						0 - 2	0 - 2	0 - 2	0 - 2
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use	08/30/2016	08/31/2016	08/30/2016	08/30/2016
Volatile Organic Compounds									
1,1,1-Trichloroethane	0.68	100	100	500	1000	ND	ND	ND	ND
1,1-Dichloroethane	0.27	19	26	240	480	ND	ND	ND	ND
1,1-Dichloroethene	0.33	100	100	500	1000	ND	ND	ND	ND
1,2-Dichlorobenzene	1.1	100	100	500	1000	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1	30	60	ND	ND	ND	ND
Cis-1,2-Dichloroethylene	0.25	59	100	500	1000	ND	ND	ND	ND
Trans-1,2-Dichloroethene	0.19	100	100	500	1000	ND	ND	ND	ND
1,3-Dichlorobenzene	2.4	17	49	280	560	ND	ND	ND	ND
1,4-Dichlorobenzene	1.8	9.8	13	130	250	ND	ND	ND	ND
1,4-Dioxane (P-Dioxane)	0.1	9.8	13	130	250	ND	ND	ND	ND
Acetone	0.05	100	100	500	1000	ND	ND	ND	ND
Benzene	0.06	2.9	4.8	44	89	ND	ND	ND	ND
N-Butylbenzene	12	100	100	500	1000	ND	ND	ND	ND
Carbon Tetrachloride	0.76	1.4	2.4	22	44	ND	ND	ND	ND
Chlorobenzene	1.1	100	100	500	1000	ND	ND	ND	ND
Chloroform	0.37	10	49	350	700	ND	ND	ND	ND
Ethylbenzene	1	30	41	390	780	ND	ND	ND	ND
Hexachlorobenzene	0.33	0.41	1.2	6	12	ND	ND	ND	ND
Tert-Butyl Methyl Ether	0.93	62	100	500	1000	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	500	1000	ND	ND	ND	ND
N-Propylbenzene	3.9	100	100	500	1000	ND	ND	ND	ND
Sec-Butylbenzene	11	100	100	500	1000	ND	ND	ND	ND
Tetrachloroethylene (PCE)	1.3	5.5	19	150	300	ND	ND	ND	ND
Toluene	0.7	100	100	500	1000	ND	ND	ND	ND
Trichloroethylene (TCE)	0.47	10	21	200	400	ND	ND	ND	ND
1,3,5-Trimethylbenzene (Mesityl)	8.4	47	52	190	380	ND	ND	ND	ND
Vinyl Chloride	0.02	0.21	0.9	13	27	ND	ND	ND	ND
trans-Chlordane		0.54				ND	0.00205 JP	ND	ND
Semi-Volatile Organic Compounds									
Acenaphthene	20	100	100	500	1000	ND	ND	ND	ND
Acenaphthylene	100	100	100	500	1000	ND	ND	ND	ND
Anthracene	100	100	100	500	1000	0.371	ND	0.225 J	ND
Benzo(A)Anthracene	1	1	1	5.6	11	1.44	0.411	0.924	0.383
Benzo(A)Pyrene	1	1	1	1	1.1	1.55	0.455	1.02	0.45
Benzo(B)Fluoranthene	1	1	1	5.6	11	1.76	0.556	1.23	0.492
Benzo(G,H,I)Perylene	100	100	100	500	1000	1.17	0.4	0.777	0.377
Benzo(K)Fluoranthene	0.8	1	3.9	56	110	1.31	0.382	0.854	0.434
Chrysene	1	1	3.9	56	110	1.92	0.544	1.26	0.554
Dibenz(A,H)Anthracene	0.33	0.33	0.33	0.56	1.1	0.353	ND	0.247 J	ND
Fluoranthene	100	100	100	500	1000	3.57	1.02	2.34	1.07
Fluorene	30	100	100	500	1000	ND	ND	ND	ND
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	5.6	11	0.954	0.292 J	0.614	0.28 J
Naphthalene	12	100	100	500	1000	ND	ND	ND	ND
2-Methylphenol (O-Cresol)	0.33	100	100	500	1000	ND	ND	ND	ND
Pentachlorophenol	0.8	2.4	6.7	6.7	55	ND	ND	ND	ND
Phenanthrene	100	100	100	500	1000	1.82	0.498	1.28	0.53
Phenol	0.33	100	100	500	1000	ND	ND	ND	ND
Pyrene	100	100	100	500	1000	3.21	0.854	2.04	0.985
Pesticides									
P,P'-DDE	0.0033	1.8	8.9	62	120	0.0152	0.00318	0.00651	0.00715
P,P'-DDT	0.0033	1.7	7.9	47	94	0.0103	0.00206 J	0.00743	0.0104
P,P'-DDD	0.0033	2.6	13	92	180	ND	ND	ND PL	ND
Aldrin	0.005	0.019	0.097	0.68	1.4	ND	0.00167 JP	ND	ND
Alpha Bhc (Alpha Hexachlorocycl	0.02	0.097	0.48	3.4	6.8	ND	ND	ND	ND
Beta Bhc (Beta Hexachlorocycloh	0.036	0.072	0.36	3	14	ND	ND	ND	ND
cis-Chlordane	0.094	0.91	4.2	24	47	0.000952	JPL 0.00351 P	0.00517	0.00692
Delta BHC (Delta Hexachlorocyclk	0.04	100	100	500	1000	0.00281	PL ND	0.00335 PL	0.00416 PL
Dibenzofuran	7	14	59	350	1000	ND	ND	ND	ND
Dieldrin	0.005	0.039	0.2	1.4	2.8	ND	ND	ND	ND
Alpha Endosulfan	2.4	4.8	24	200	920	ND	ND	ND	ND
Beta Endosulfan	2.4	4.8	24	200	920	ND	ND	ND	ND
Endosulfan Sulfate	2.4	4.8	24	200	920	ND	ND	ND	ND
Endrin	0.014	2.2	11	89	410	ND	ND	ND	ND
Heptachlor	0.042	0.42	2.1	15	29	ND	ND	ND	ND
Gamma Bhc (Lindane)	0.1	0.28	1.3	9.2	23	ND	ND	ND	ND
PCBs									
PCB-1016 (Aroclor 1016)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1221 (Aroclor 1221)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1232 (Aroclor 1232)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1242 (Aroclor 1242)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1248 (Aroclor 1248)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1254 (Aroclor 1254)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1260 (Aroclor 1260)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1262 (Aroclor 1262)	0.1	1	1	1	25	ND	ND	ND	ND
PCB-1268 (Aroclor 1268)	0.1	1	1	1	25	ND	ND	ND	ND
Total Metals									
Arsenic	13	16	16	16	16	2.80	3.40	2.53	3.62
Barium	350	350	400	400	10000	78.3	84.6	85.0	87.5
Beryllium	7.2	14	72	590	2700	0.622	0.512	0.548	0.601
Cadmium	2.5	2.5	4.3	9.3	60	0.599	0.526 M	0.454	0.539
Chromium, Hexavalent	1	22	110	400	800	ND	NA	NA	NA
Chromium, Total	30	36	180	1500	6800	16.9	29.4	15.3	18.1
Copper	50	270	270	270	10000	20.4	23.3 D	14.7	18.8
Cyanide	27	27	27	27	10000	ND	0.318 J	0.897	ND
Lead	63	400	400	1000	3900	38.6	60.7 DM	24.9	59.9
Manganese	1600	2000	2000	10000	10000	423	390	947	441
Mercury	0.2	0.8	0.8	2.8	5.7	0.0655	0.0602	0.0555	0.0144
Nickel	30	140	310	310	10000	17.2	47.3 DM	15.2	18.4
Selenium	4	36	180	1500	6800	0.342 J	1.78 D	0.997	ND
Silver	2	36	180	1500	6800	ND	ND	ND	ND
Zinc	109	2200	10000	10000	10000	111	141	83.9	97.9

Notes:

ND	Not Detected
NA	Not Analyzed
J	Estimated value. Estimated between the quantatation limit and half the quantatation limit
D	Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above relative percent difference limit
M	Matrix spike recoveries outside QC limits. Matric bias indicated.
P	Concentration differs by more than 40% between the primary and secondary analytical columns
L	Laboratory Control Sample recovery outside accepted QC Limits



TABLE 1-3 -Part 375 FILL SOIL ANALYTICAL  
RESULTS 19 NORTH STREET REMEDIAL  
INVESTIGATION  
19 NORTH STREET BUFFALO, NEW YORK

Field Sample ID					
Sample Depth					
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use
Volatile Organic Compounds					
1,2-Dichlorobenzene	1.1	100	100	500	1000
1,3-Dichlorobenzene	2.4	17	49	280	560
1,4-Dichlorobenzene	1.8	9.8	13	130	250
Chlorobenzene	1.1	100	100	500	1000
Ethylbenzene	1	30	41	390	780
Methylene Chloride	0.05	51	100	500	1000
Tetrachloroethylene (PCE)	1.3	5.5	19	150	300
Semi-Volatile Organic Compounds					
Anthracene	100	100	100	500	1000
Benzo(A)Anthracene	1	1	1	5.6	11
Benzo(A)Pyrene	1	1	1	1	1.1
Benzo(B)Fluoranthene	1	1	1	5.6	11
Benzo(G,H,I)Perylene	100	100	100	500	1000
Benzo(K)Fluoranthene	0.8	1	3.9	56	110
Chrysene	1	1	3.9	56	110
Dibenz(A,H)Anthracene	0.33	0.33	0.33	0.56	1.1
Fluoranthene	100	100	100	500	1000
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	5.6	11
Phenanthrene	100	100	100	500	1000
Pyrene	100	100	100	500	1000
Pesticides					
P,P'-DDE	0.0033	1.8	8.9	62	120
P,P'-DDT	0.0033	1.7	7.9	47	94
P,P'-DDD	0.0033	2.6	13	92	180
Aldrin	0.005	0.019	0.097	0.68	1.4
Alpha Bhc (Alpha Hexachlorocyclohe	0.02	0.097	0.48	3.4	6.8
cis-Chlordane	0.094	0.91	4.2	24	47
trans-Chlordane		0.54			
Dieldrin	0.005	0.039	0.2	1.4	2.8
Total Metals					
Arsenic	13	16	16	16	16
Barium	350	350	400	400	10000
Beryllium	7.20	14	72	590	2700
Cadmium	2.50	2.50	4.30	9.30	60
Chromium, Total	30	36	180	1500	6800
Copper	50	270	270	270	10000
Cyanide	27	27	27	27	10000
Lead	63	400	400	1000	3900
Manganese	1600	2000	2000	10000	10000
Mercury	0.18	0.81	0.81	2.80	5.70
Nickel	30	140	310	310	10000
Selenium	3.9	36	180	1500	6800
Silver	2	36	180	1500	6800
Zinc	109	2200	10000	10000	10000

Notes:

All units are mg/kg

ND

Blank space

J

D

M

P

L

Not Detected

Not Analyzed

Estimated value. Estimated between the quantatation limit and half the quantatation limit

Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above relative percent difference limit

Matrix spike recoveries outside QC limits. Matric bias indicated.

Concentration differs by more than 40% between the primary and secondary analytical columns

Laboratory Control Sample recovery outside accepted QC Limits

Imported Backfill Samples inside Building Footprint										
A2 UF 1-2 ft	B2 4-5 ft - Fill		C1 3-4 ft	D2 0-2 ft		E1 1-2.5 ft	E2-5-6.5 ft		F1-3-5 ft	F2-4-6 ft
1 - 2	4 - 5		3 - 4	0 - 2		1 - 2.5	5 - 6.5		3 - 5	4 - 6
08/31/2016	08/30/2016		08/31/2016	08/30/2016		08/30/2016	09/01/2016		09/01/2016	09/01/2016
ND	ND		ND	ND		ND	ND		ND	ND
ND	ND		ND	ND		ND	ND		ND	ND
ND	ND		ND	ND		ND	ND		ND	ND
ND	ND		ND	ND		ND	ND		ND	ND
ND	ND		ND	ND		ND	ND		ND	ND
ND	ND		ND	ND		ND	ND		ND	ND
ND	ND		ND	ND		ND	ND		ND	ND
0.403	ND		ND	ND		ND	ND		ND	ND
0.944	ND		ND	0.188 J		ND	0.307 J		0.155 J	ND
0.829	ND		ND	0.184 J		ND	0.264 J		ND	ND
0.755	ND		ND	0.21 J		0.19 J	0.271 J		ND	ND
0.481	ND		ND	ND		ND	0.167 J		ND	ND
0.734	ND		ND	ND		ND	0.22 J		ND	ND
0.949	ND		ND	0.215 J		0.2 J	0.344		ND	ND
ND	ND		ND	ND		ND	ND		ND	ND
2.07	0.175 J		ND	0.457		0.378	0.684		0.281 J	ND
0.388	ND		ND	ND		ND	ND		ND	ND
1.48	ND		ND	0.174 J		ND	0.495		0.265 J	ND
1.78	0.179 J		ND	0.428		0.34	0.586		0.259 J	ND
0.00202 J	ND	ND	ND	0.00719		0.0116 P	ND	ND	ND	ND
ND	ND	ND	ND	0.00701		0.00841	ND	ND	ND	ND
ND	ND	ND	ND	0.00496		ND	ND	ND	ND	ND
0.00311 JP	ND	ND	ND	ND		ND	ND	ND	ND	ND
ND	ND	ND	ND	ND		ND	ND	ND	ND	ND
ND	ND	ND	ND	0.0213		0.0164	ND	0.00209 J	ND	ND
ND	ND	ND	ND	0.0132 PL		0.00961 PL	ND	ND	ND	ND
ND	ND	ND	ND	ND		0.000816 JPL	ND	ND	ND	ND
3.72	1.80		2.88	2.90		3.23	2.91		2.07	1.50
61.6	36.0		42.0	63.0		70.0	127		42.6	21.3
0.332	0.306		0.291	0.486		0.504	0.231 J		0.338	0.257
0.336	0.237 J		0.260	0.544		0.535	0.466		0.735	0.283
10.3	8.08		8.27	14.9		20.3	8.18		8.56	7.54
16.3	9.31		13.6	17.1		18.1	20.9		16.7	10.6
0.300 J	ND	ND	ND	ND		ND	0.541		0.278 J	ND
113	38.7		72.0	23.3		19.3	224		54.9	14.1
292	302		310	385		440	255		436	326
0.416	0.0853		0.188	0.0550		0.0317	0.365		0.134	0.0446
9.28	7.01		7.43	16.1		17.2	7.04		7.31	6.31
0.897	ND		0.558	0.716		ND	1.47		0.618	0.770
ND	ND		0.326 J	ND		ND	ND		ND	ND
127	48.2		80.4	76.4		61.8	182		218	53.8

TABLE 1-3 -Part 375 FILL SOIL ANALYTICAL  
RESULTS 19 NORTH STREET REMEDIAL  
INVESTIGATION  
19 NORTH STREET BUFFALO, NEW YORK

Field Sample ID					
Sample Depth					
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use	Industrial Use
Volatile Organic Compounds					
1,2-Dichlorobenzene	1.1	100	100	500	1000
1,3-Dichlorobenzene	2.4	17	49	280	560
1,4-Dichlorobenzene	1.8	9.8	13	130	250
Chlorobenzene	1.1	100	100	500	1000
Ethylbenzene	1	30	41	390	780
Methylene Chloride	0.05	51	100	500	1000
Tetrachloroethylene (PCE)	1.3	5.5	19	150	300
Semi-Volatile Organic Compounds					
Anthracene	100	100	100	500	1000
Benzo(A)Anthracene	1	1	1	5.6	11
Benzo(A)Pyrene	1	1	1	1	1.1
Benzo(B)Fluoranthene	1	1	1	5.6	11
Benzo(G,H,I)Perylene	100	100	100	500	1000
Benzo(K)Fluoranthene	0.8	1	3.9	56	110
Chrysene	1	1	3.9	56	110
Dibenz(A,H)Anthracene	0.33	0.33	0.33	0.56	1.1
Fluoranthene	100	100	100	500	1000
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	5.6	11
Phenanthrene	100	100	100	500	1000
Pyrene	100	100	100	500	1000
Pesticides					
P,P'-DDE	0.0033	1.8	8.9	62	120
P,P'-DDT	0.0033	1.7	7.9	47	94
P,P'-DDD	0.0033	2.6	13	92	180
Aldrin	0.005	0.019	0.097	0.68	1.4
Alpha Bhc (Alpha Hexachlorocyclohe	0.02	0.097	0.48	3.4	6.8
cis-Chlordane	0.094	0.91	4.2	24	47
trans-Chlordane		0.54			
Dieldrin	0.005	0.039	0.2	1.4	2.8
Total Metals					
Arsenic	13	16	16	16	16
Barium	350	350	400	400	10000
Beryllium	7.20	14	72	590	2700
Cadmium	2.50	2.50	4.30	9.30	60
Chromium, Total	30	36	180	1500	6800
Copper	50	270	270	270	10000
Cyanide	27	27	27	27	10000
Lead	63	400	400	1000	3900
Manganese	1600	2000	2000	10000	10000
Mercury	0.18	0.81	0.81	2.80	5.70
Nickel	30	140	310	310	10000
Selenium	3.9	36	180	1500	6800
Silver	2	36	180	1500	6800
Zinc	109	2200	10000	10000	10000

Notes:

All units are mg/kg

ND	Not Detected
Blank space	Not Analyzed
J	Estimated value. Estimated between the quantatation limit and half the quantatation limit
D	Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above relative percent difference limit
M	Matrix spike recoveries outside QC limits. Matric bias indicated.
P	Concentration differs by more than 40% between the primary and secondary analytical columns
L	Laboratory Control Sample recovery outside accepted QC Limits

Urban Fill Samples outside building footprint							
A3 5-7 ft	B3 3-5 ft	B3 UF 2-3 ft	C4 5-7 ft	F3-0.5-1 ft	F4-0.5-1 ft	B4 9-10 ft	
5 - 7	3 - 5	2 - 3	5 - 7	0.5 - 1	0.5 - 1	9 - 10	
08/31/2016	08/30/2016	08/30/2016	08/30/2016	08/29/2016	08/29/2016	08/30/2016	
ND	ND	ND	ND	ND	ND	ND	UM
ND	ND	ND	ND	ND	ND	ND	UM
ND	ND	ND	ND	ND	ND	ND	UM
ND	ND	ND	ND	ND	ND	ND	UM
ND	ND	ND	0.00245 J	ND	ND	ND	UM
ND	0.00833 J	ND	0.00783 J	ND	ND	ND	
ND	ND	ND	0.00470	ND	ND	ND	
ND	ND	ND	ND	ND	ND	ND	
ND	ND	ND	0.726	ND	0.268 J	ND	
ND	ND	ND	0.923	ND	0.396	ND	
ND	ND	ND	1.06	ND	0.469	ND	
ND	ND	ND	0.832	ND	0.646	ND	
ND	ND	ND	0.903	ND	0.376	ND	
ND	ND	ND	1.18	ND	0.44	ND	
ND	ND	ND	0.25 J	ND	ND	ND	
ND	ND	0.163 J	1.99	0.194 J	0.595	ND	
ND	ND	ND	0.766	ND	0.404	ND	
ND	ND	ND	0.909	ND	0.2 J	ND	
ND	ND	ND	1.78	0.16 J	0.541 M	ND	
ND	ND	ND	0.00102 JPL	ND	ND	ND	
ND	ND	ND	ND	ND	0.00210 J	ND	
ND	ND	ND	ND	ND	ND	ND	
0.00216 J	ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	0.00342 P	ND	
ND	ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	ND	
0.957	2.35	2.82	2.90	5.15	2.41	1.16	
45.9	48.1	339	48.2	45.3	45.9	51.8	
0.415	0.299	0.379	0.357	0.280	1.04	0.403	
ND	0.230 J	0.396	0.320	0.387	0.567	0.345	
10.8	7.72	10.2	8.96	7.83	7.66	13.0	
8.19	12.5	16.6	11.6	13.3	9.17	9.03	
ND	ND	ND	ND	ND	ND	ND	
12.3	122	264	40.1	92.2	59.7	21.2	
364	148	264	328	363	497	520	DM
0.0123	0.145	0.577	0.172	0.0940	0.0288	0.0696	
9.03	6.91	7.81	8.69	6.77	5.77	9.20	
0.507 J	ND	0.322 J	1.02	0.846	4.64	ND	
ND	ND	ND	ND	ND	0.350 J	ND	
58.1	84.3	103	60.8	80.0	1.70 J	76.3	

TABLE 1-4: PART 375 NATIVE SOIL ANALYTICAL RESULTS  
19 NORTH STREET REMEDIAL INVESTIGATION  
19 NORTH STREET BUFFALO, NEW YORK

Field Sample ID				A1 5-6 ft	A1 6-7 ft	A1 7-7.5 ft	A2 9.5-11 ft	DUP A	A3 5-7 ft	DUP B	A3 14-15 ft (Native)	A4 9-10 ft	B1-5-6 ft
Sample Depth (FEET)				5 - 6	6-7	7-7.5	9.5 - 11	9.5 - 11	5 - 7	5 - 7	14 - 15	9 - 10	5 - 6
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential use	08/31/2016	08/31/2016	06/09/2017	08/31/2016	08/31/2016	08/31/2016	08/31/2016	08/31/2016	08/30/2016	09/01/2016
Volatile Organic Compounds													
Acetone	0.05	100	100	ND			ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	ND			ND	ND	ND	ND	ND	ND	ND
N-Propylbenzene	3.9	100	100	ND			ND	ND	ND	ND	ND	ND	ND
Sec-Butylbenzene	11	100	100	ND			ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8.4	47	52	ND			ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds													
Benzo(A)Anthracene	1	1	1	ND			ND	ND	ND	ND	ND	ND	ND
Benzo(A)Pyrene	1	1	1	ND			ND	ND	ND	ND	ND	ND	ND
Benzo(B)Fluoranthene	1	1	1	ND			ND	ND	ND	ND	ND	ND	ND
Benzo(G,H,I)Perylene	100	100	100	ND			ND	ND	ND	ND	ND	ND	ND
Benzo(K)Fluoranthene	0.8	1	3.9	ND			ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	ND			ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	ND			ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	ND			ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	ND			ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100	100	100	ND			ND	ND	ND	ND	ND	ND	ND
Pyrene	100	100	100	ND			ND	ND	ND	ND	ND	ND	ND
Pesticides													
P,P'-DDE	0.0033	1.8	8.9	ND			0.00275	J	ND	ND	ND	ND	ND
P,P'-DDT	0.0033	1.7	7.9	ND			ND	ND	ND	ND	ND	ND	ND
P,P'-DDD	0.0033	2.6	13	ND			ND	ND	ND	ND	ND	ND	ND
Aldrin	0.005	0.019	0.097	0.00248	JP		0.00275	JP	0.00290	JP	0.00216	J	ND
cis-Chlordane	0.094	0.91	4.2	ND			ND	ND	ND	ND	ND	ND	ND
trans-Chlordane		0.54		ND			ND	ND	ND	ND	ND	ND	ND
PCBs													
Total PCBs	0.1	1	1	ND			ND	ND	ND	ND	ND	ND	ND
Total Metals													
Arsenic	13	16	16	1.18			1.26	1.47	0.957	1.75	0.993	2.11	2.30
Barium	350	350	400	111			27.1	27.8	45.9	95.3	15.7	74.7	112
Beryllium	7.20	14	72	0.735			0.208	J	0.221	J	0.415	0.568	0.144
Cadmium	2.50	2.50	4.30	0.342			0.253	J	0.289		ND	0.413	0.220
Chromium, Hexavalent	1	22	110	ND								ND	ND
Chromium, Total	30	36	180	21.3			7.51	7.64	10.8	14.5	4.90	15.6	22.2
Copper	50	270	270	19.2			8.07	8.37	8.19	15.1	7.15	14.2	18.7
Cyanide	27	27	27	ND			ND	ND	ND	ND	0.295	J	ND
Lead	63	400	400	14.1			9.93	12.3	12.3	12.3	7.51	13.0	13.7
Manganese	1600	2000	2000	455			287	303	364	461	251	348	340
Mercury	0.18	0.81	0.81	0.0166			0.0105	0.0144	0.0123	0.0348	0.00639	J	0.0249
Nickel	30	140	310	22.5			5.84	6.07	9.03	16.3	4.75	17.7	24.2
Selenium	3.90	36	180	1.10			1.43	0.605	0.507	J	1.14	0.464	J
Silver	2	36	180	9.91	2.14	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	109	2200	10000	66.8			42.4	44.5	58.1	100	52.7	74.9	94.8

**Notes:** All units are mg/kg  
**ND** Not Detected  
**Blank space** Not Analyzed  
**J** Estimated value. Estimated between the quantatation limit and half the quantatation limit  
**D** Sample,  
**M** Matrix spike recoveries outside QC limits. Matric bias indicated.  
**P** Concentration differs by more than 40% between the primary and secondary analytical columns  
**L** Laboratory Control Sample recovery outside accepted QC Limits  
Only analytes detected in at least one sample are shown

TABLE 1-4: PART 375 NATIVE SOIL ANALYTICAL RESULTS  
19 NORTH STREET REMEDIAL INVESTIGATION  
19 NORTH STREET BUFFALO, NEW YORK

Field Sample ID				B1-15 ft	B2 5-6 ft (Native)	B3 6-7 ft	B4 10-11 ft	B4 11-11.5 ft	C1 8-9 ft	C1 9-10 ft	C2-13-14.5 ft	C3 9-10 ft	C4 7-8 ft
Sample Depth (FEET)				14 - 15	5 - 6	6 - 7	10 - 11	11-11.5	8 - 9	9 - 10	13 - 14.5	9 - 10	7 - 8
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential use	09/01/2016	08/30/2016	08/30/2016	08/30/2016	06/09/2017	08/31/2016	08/31/2016	09/01/2016	08/30/2016	08/30/2016
Volatile Organic Compounds													
Acetone	0.05	100	100	ND	ND	ND	ND		ND		0.0126 J	ND	ND
Methylene Chloride	0.05	51	100	ND	ND	ND	0.00779 J		ND		ND	0.00581 J	0.00696 J
N-Propylbenzene	3.9	100	100	ND	ND	ND	ND		ND		ND	ND	ND
Sec-Butylbenzene	11	100	100	ND	ND	ND	ND		ND		ND	ND	ND
1,3,5-Trimethylbenzene	8.4	47	52	ND	ND	ND	ND		ND		ND	ND	ND
Semi-Volatile Organic Compounds													
Benzo(A)Anthracene	1	1	1	ND	ND	ND	0.269 J		ND		ND	ND	ND
Benzo(A)Pyrene	1	1	1	ND	ND	ND	0.277 J		ND		ND	ND	ND
Benzo(B)Fluoranthene	1	1	1	ND	ND	ND	0.33 J		ND		ND	ND	ND
Benzo(G,H,I)Perylene	100	100	100	ND	ND	ND	0.211 J		ND		ND	ND	ND
Benzo(K)Fluoranthene	0.8	1	3.9	ND	ND	ND	0.249 J		ND		ND	ND	ND
Chrysene	1	1	3.9	ND	ND	ND	0.332 J		ND		ND	ND	ND
Fluoranthene	100	100	100	ND	ND	ND	0.683		ND		ND	ND	ND
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	ND	ND	ND	0.188 J		ND		ND	ND	ND
Naphthalene	12	100	100	ND	ND	ND	ND		ND		ND	ND	ND
Phenanthrene	100	100	100	ND	ND	ND	0.317 J		ND		ND	ND	ND
Pyrene	100	100	100	ND	ND	ND	0.543		ND		ND	ND	ND
Pesticides													
P,P'-DDE	0.0033	1.8	8.9	ND	ND	ND	0.0662	ND	ND		ND	ND	ND
P,P'-DDT	0.0033	1.7	7.9	ND	ND	ND	0.06	ND	ND		ND	ND	ND
P,P'-DDD	0.0033	2.6	13	ND	ND	ND	0.0263	ND	ND		ND	ND	ND
Aldrin	0.005	0.019	0.097	ND	ND	ND	ND		ND		ND	ND	ND
cis-Chlordane	0.094	0.91	4.2	ND	ND	ND	ND		ND		ND	ND	ND
trans-Chlordane		0.54		ND	ND	ND	ND		ND		ND	ND	ND
PCBs													
Total PCBs	0.1	1	1	ND	ND	ND	ND	ND	ND		ND	ND	ND
Total Metals													
Arsenic	13	16	16	0.668	1.57	0.560	1.60 DM		0.634		0.379 J	1.47	2.63
Barium	350	350	400	19.7	77.0	45.6	101 M		101		13.7	49.7	33.6
Beryllium	7.20	14	72	0.159 J	0.672	0.349	0.673 M		0.722		ND	0.382	0.319
Cadmium	2.50	2.50	4.30	0.231 J	0.346	0.175 J	0.280 JM		0.556		0.367 M	0.273 J	0.481
Chromium, Hexavalent	1	22	110				ND					ND	
Chromium, Total	30	36	180	5.22	16.4	10.9	18.7		22.3		4.24	11.4	8.62
Copper	50	270	270	6.95	14.5	4.21	14.0		28.7		7.90	10.5	8.93
Cyanide	27	27	27	ND	ND	ND	ND		ND		ND	ND	
Lead	63	400	400	7.58	10.8	12.5	19.8 DM		13.3		7.42	13.1	20.1
Manganese	1600	2000	2000	223	251	91.1	332 M		506		205 M	278	536
Mercury	0.18	0.81	0.81	ND	0.0258	0.0173	0.0526		0.0363		0.00442 J	0.0157	0.0430
Nickel	30	140	310	4.69	15.8	7.81	19.2 M		23.3		3.49	10.8	8.15
Selenium	3.90	36	180	1.09	ND	ND	ND UM		1.40		0.989 D	ND	1.77
Silver	2	36	180	ND	ND	ND	ND		0.461 J		ND	ND	0.790
Zinc	109	2200	10000	45.4	70.5	63.8	76.9		162	71.9	36.5	72.0	77.2



TABLE 1-4: PART 375 NATIVE SOIL ANALYTICAL RESULTS  
19 NORTH STREET REMEDIAL INVESTIGATION  
19 NORTH STREET BUFFALO, NEW YORK

Field Sample ID				D1-9.5-11.5 ft	D1-15-16 ft	D2 10-11 ft	D3 5.5-7.5 ft	D3 5.5-7.5 (Duplicate C)	D4-8-9 ft	D4-15 ft	E1 11-12 ft	E2-14-15 ft	E2-9-10 ft
Sample Depth (FEET)				9.5 - 11	15 - 16	10 - 11	5.5 - 7.5	5.5 - 7.5	8 - 9	14 - 15	11 - 12	14 - 15	9 - 10
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential use	09/01/2016	09/01/2016	08/30/2016	08/30/2016	08/30/2016	08/29/2016	08/29/2016	08/30/2016	09/01/2016	09/01/2016
Volatile Organic Compounds													
Acetone	0.05	100	100	ND	0.0207 J	ND	ND	ND	ND	ND	ND	0.0127 J	ND
Methylene Chloride	0.05	51	100	ND	ND	0.00650 J	0.00632 J	0.00611 J	ND	ND	0.00653 J	ND	ND
N-Propylbenzene	3.9	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sec-Butylbenzene	11	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8.4	47	52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds													
Benzo(A)Anthracene	1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(A)Pyrene	1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(B)Fluoranthene	1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(G,H,I)Perylene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(K)Fluoranthene	0.8	1	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pesticides													
P,P'-DDE	0.0033	1.8	8.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDT	0.0033	1.7	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDD	0.0033	2.6	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	0.005	0.019	0.097	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-Chlordane	0.094	0.91	4.2	ND	ND	ND	ND	ND	ND	ND	0.00366	ND	ND
trans-Chlordane		0.54		ND	ND	ND	ND	ND	ND	ND	0.00472 PL	ND	ND
PCBs													
Total PCBs	0.1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Metals													
Arsenic	13	16	16	0.916	0.933	ND	0.672	1.78	2.18	0.736	0.847	0.320 J	0.310 J
Barium	350	350	400	22.2	11.9	28.4	28.5	41.8	53.1	20.0	21.7	9.16	27.3
Beryllium	7.20	14	72	0.203 J	ND	0.210 J	0.271 J	0.374	0.440	0.224 J	0.179 J	0.127 J	0.231 J
Cadmium	2.50	2.50	4.30	0.222 JM	0.233 J	0.305	0.229 J	0.229 J	0.378	0.212 J	0.164 J	0.256	0.207 J
Chromium, Hexavalent	1	22	110	ND					ND			ND	
Chromium, Total	30	36	180	6.53	3.78	6.14	7.69	10.9	13.2	6.96	5.95	3.83	6.97
Copper	50	270	270	8.63	6.46	9.18	4.57	8.09	9.19	7.89	8.47	6.54	4.18
Cyanide	27	27	27	ND UM	0.393 J	ND	ND	ND	ND		ND	ND	0.289 J
Lead	63	400	400	8.54	6.27	9.29	12.8	10.6	9.39	9.83	16.4	6.21	6.02
Manganese	1600	2000	2000	260	198	425	169	252	222	178	223	172	159
Mercury	0.18	0.81	0.81	0.00554 J	ND	0.00759 J	0.0639	0.0418	0.0223	0.00482 J	0.00450 J	0.00651 J	0.0183
Nickel	30	140	310	5.71	3.48	5.65	5.60	9.92	12.8	5.39	5.13	3.12	5.80
Selenium	3.90	36	180	1.23 D	ND	ND	ND	ND	0.520 J	0.287 J	ND	0.380 J	0.537 J
Silver	2	36	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc					19.9	67.9	57.8	85.8	64.6	63.6	45.6	34.1	62.3

TABLE 1-4: PART 375 NATIVE SOIL ANALYTICAL RESULTS  
19 NORTH STREET REMEDIAL INVESTIGATION  
19 NORTH STREET BUFFALO, NEW YORK

Field Sample ID				E3-12-13 ft	E4-1-2 ft	F1-9-10 ft	F1-15 ft	F2-9-10 ft	F3-1.0-2.5 ft	F3-15 ft	F4-1-2.5 ft	A3 22-23 ft	A4-22-23 ft
Sample Depth (FEET)				12 - 13	1 - 2	9 - 10	15 - 16	9 - 10	1 - 2.5	14 - 15	1 - 2.5	22 - 23	22 - 23
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential use	08/29/2016	08/29/2016	09/01/2016	09/01/2016	09/01/2016	08/29/2016	08/29/2016	08/29/2016	08/31/2016	09/02/2016
Volatile Organic Compounds													
Acetone	0.05	100	100	ND	ND	0.0141 J	0.0155 J	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.05	51	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Propylbenzene	3.9	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.449
Sec-Butylbenzene	11	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.229
1,3,5-Trimethylbenzene	8.4	47	52	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.98
Semi-Volatile Organic Compounds													
Benzo(A)Anthracene	1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(A)Pyrene	1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(B)Fluoranthene	1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(G,H,I)Perylene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(K)Fluoranthene	0.8	1	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.207
Phenanthrene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pesticides													
P,P'-DDE	0.0033	1.8	8.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	
P,P'-DDT	0.0033	1.7	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	
P,P'-DDD	0.0033	2.6	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Aldrin	0.005	0.019	0.097	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-Chlordane	0.094	0.91	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-Chlordane		0.54		ND	ND	ND	ND	ND	ND	ND	ND	ND	
PCBs													
Total PCBs	0.1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Metals													
Arsenic	13	16	16	1.25	1.71	1.10	0.839	1.05	1.50	1.52	2.13		
Barium	350	350	400	31.2	31.7	15.9	25.3	29.5	18.6	16.6	28.4		
Beryllium	7.20	14	72	0.285 J	0.272	0.145 J	0.206 J	0.230 J	0.212 J	0.167 J	0.284		
Cadmium	2.50	2.50	4.30	0.377	0.307	0.228 J	0.276 J	0.176 J	0.351	0.405	0.390		
Chromium, Hexavalent	1	22	110			ND UM		ND					
Chromium, Total	30	36	180	8.39	7.63	4.81	6.84	6.59	6.31	5.92	7.99		
Copper	50	270	270	12.0	9.58	6.84	8.89	6.32	8.54	10.3	7.69		
Cyanide	27	27	27	ND	ND	ND	ND		ND	ND	ND		
Lead	63	400	400	11.4	19.7	8.40	7.31	9.31	10.2	6.45	13.1		
Manganese	1600	2000	2000	274	309	263	237	125	316	236	338		
Mercury	0.18	0.81	0.81	0.0119	0.133	0.00799 J	0.0137	0.0139	0.0163	0.00912	0.0446		
Nickel	30	140	310	8.11	6.58	3.95	6.26	6.24	6.84	5.95	6.64		
Selenium	3.90	36	180	1.37	0.527 J	0.409 J	1.12	0.754	0.359 J	0.852	0.902		
Silver	2	36	180	ND	ND	ND	ND	ND	ND	ND	ND		
Zinc	109	2200	10000	72.8	96.4	39.5	44.8	68.6	70.4	53.5	74.8		

TABLE 1-4: PART 375 NATIVE SOIL ANALYTICAL RESULTS  
19 NORTH STREET REMEDIAL INVESTIGATION  
19 NORTH STREET BUFFALO, NEW YORK

Field Sample ID	B3-A 22-23 ft			
Sample Depth (FEET)	22 - 23			
Date Sampled	Unrestricted Use	Residential Use	Restricted Residential use	08/31/2016
Volatile Organic Compounds				
Acetone	0.05	100	100	ND
Methylene Chloride	0.05	51	100	ND
N-Propylbenzene	3.9	100	100	2.08
Sec-Butylbenzene	11	100	100	1.74
1,3,5-Trimethylbenzene	8.4	47	52	7.36
Semi-Volatile Organic Compounds				
Benzo(A)Anthracene	1	1	1	ND
Benzo(A)Pyrene	1	1	1	ND
Benzo(B)Fluoranthene	1	1	1	ND
Benzo(G,H,I)Perylene	100	100	100	ND
Benzo(K)Fluoranthene	0.8	1	3.9	ND
Chrysene	1	1	3.9	ND
Fluoranthene	100	100	100	ND
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	0.5	ND
Naphthalene	12	100	100	ND
Phenanthrene	100	100	100	ND
Pyrene	100	100	100	ND
Pesticides				
P,P'-DDE	0.0033	1.8	8.9	
P,P'-DDT	0.0033	1.7	7.9	
P,P'-DDD	0.0033	2.6	13	
Aldrin	0.005	0.019	0.097	
cis-Chlordane	0.094	0.91	4.2	
trans-Chlordane		0.54		
PCBs				
Total PCBS	0.1	1	1	
Total Metals				
Arsenic	13	16	16	
Barium	350	350	400	
Beryllium	7.20	14	72	
Cadmium	2.50	2.50	4.30	
Chromium, Hexavalent	1	22	110	
Chromium, Total	30	36	180	
Copper	50	270	270	
Cyanide	27	27	27	
Lead	63	400	400	
Manganese	1600	2000	2000	
Mercury	0.18	0.81	0.81	
Nickel	30	140	310	
Selenium	3.90	36	180	
Silver	2	36	180	
Zinc	109	2200	10000	

TABLE 1-5 - GROUNDWATER SAMPLE RESULTS  
19 NORTH STREET REMEDIAL INVESTIGATION  
19 NORTH STREET, BUFFALO, NEW YORK

Field Sample ID Date Sampled	NY-AWQS (TOGS 1.1.1)	MW-1-C4-092216 09/22/2016	MW-1-C4-01252017 01/25/2017	MW-2-A3-092116 09/21/2016	MW-2-A3-01252017 01/25/2017	MW-3-D1-092116 09/21/2016	DUP-D-092116 09/21/2016	MW-3-D1-01252017 01/25/2017	MW-4-F2-092116 09/21/2016	MW-4-F2-01252017 01/25/2017	DUP-01252017 01/25/2017
Volatile Organic Compounds											
1,2,4-Trimethylbenzene	5	ND	ND	13.2 J	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	5	ND	ND	17.9 J	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	ND	ND	14.6 J	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	5	ND	ND	14.8 J	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds											
Naphthalene	10	ND	ND	- 0.100 J	ND	ND	ND	ND	ND	ND	ND
Pesticides											
4,4-DDD	0.3	0.007	ND	- ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.004	0.008	ND	- ND	ND	ND	ND	ND	ND	ND	ND
Endrin	0	0.009	ND	- ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone	5	0.008	ND	- ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	0.04	0.008	ND	- ND	ND	ND	ND	ND	ND	ND	ND
TAL Metals											
Antimony	3	ND	ND	- ND	ND	ND	ND	0.7 J	ND	ND	ND
Arsenic	25	ND	0.7	- 2.1	ND	ND	ND	ND	ND	0.7	0.5
Barium	1000	93.3 J	101.5	- 71.0	169.0	166.0	90.1	337.0	133.3 J	134.4	
Cadmium	5	ND	0.1 J	- ND	ND	ND	ND	ND	0.2 J	0.2	
Chromium, Total	50	ND	1.1	- 0.3 J	ND	ND	0.5 J	6.8 J	3.0	1.7	
Copper	200	ND	1.1	- ND	ND	ND	0.5 J	ND	2.0	1.7	
Cyanide	200	ND	ND	- ND	ND	ND	ND	ND	7.0	5.0	
Iron	300	415.0	289.0	- 5380.0	702.0	529.0	40.0 J	633.0	438.0	476.0	
Lead	25	ND	0.7 J	- 0.8 J	ND	ND	ND	ND	1.3	1.0	
Magnesium	35000	46600.0	46800.0	- 44700.0	36300.0	35200.0	20600.0	65000.0	28500.0	28200.0	
Manganese	300	36.0	14.8	- 1178.0	45.0	27.7	2.1	427.0	19.8	20.1	
Nickel	100	ND	0.7 J	- 1.4 J	ND	ND	ND	ND	1.3 J	1.4 J	
Selenium	10	ND	6.0	- 5.0	ND	ND	3.0 J	ND	6.0	8.0	
Sodium	20000	69100.0	48000.0	- 94800.0	285000.0	286000.0	122000.0	2060000.0	713000.0	746000.0	
Zinc	2000	ND	7.2 J	- 11.2	ND	ND	ND	ND	12.7	8.9 J	

Notes:

All units are ug/l or ppb.

ND - The compound was not detected

Qualifier J - Estimated value. Estimated between the quantation limit and half the quantation limit

" - " - analyte or group of analytes not tested for due to extremely limited well volume

## APPENDICES

APPENDIX A  
SOIL BORING LOGS

Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	MATERIAL DESCRIPTION		COMMENTS
				c - coarse m - medium f - fine	a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%	(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
				S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey		
1			0-24"	<u>dark brown, clay and gravel FILL, little churt,</u>	0.0 ppm	START 1439
			<u>concrete pieces</u>		30" Recovered	
2			24-30"	<u>red brown clayey SILT, tree root</u>	0.0 ppm	Top of native soil - 2 feet below grade
3						
4						
5						
6			0-56"	<u>red brown CLAY, high plasticity</u>	0.0 ppm	63" Recovered
			56-63"	<u>red brown, fine SILT</u>	0.0 ppm	
7						
8						
9						
10						
11			0-6"	<u>brown, wet SILT with some imbedded gravel</u>	0.0 ppm	58" recovered
			6-58"	<u>tannish brown, wet, fine SAND</u>	0.0 ppm	
12						
13						
14						
15						
16			0-24"	<u>tan, fine SAND, wet to saturated</u>	0.0 ppm	58" Recovered
			24-36"	<u>tan, fine SILT with some imbedded gravel</u>	0.0 ppm	
17			36-58"	<u>wet, fine SAND</u>	0.0 ppm	
18						
19						
20						
21			0-17"	<u>tannish brown SILT and CLAY</u>	0.0 ppm	58" recovered
			17-29"	<u>tan silty CLAY</u>	0.0 ppm	
22			29-42"	<u>tan SILT</u>	0.0 ppm	
			42-58"	<u>tannish brown CLAY, dense/hard</u>	0.0 ppm	
23						Sample: Time:
						A1-5-6ft 1505
24						A1-6-7ft 1515
25				end of boring at 25 feet		





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## BORING LOG

Boring No.

A2

Sheet 1 of:

1

Project No.:

P67.001.002

Project Name: 19 North Street Remedial Investigation

Location: 19 North Street Buffalo New York

Client: 23 North Street, LLC

Drilling Firm: NYEG

Driller: John (NYEG)

Groundwater

Depth

Date & Time

Drill Rig: geoprobe 7220

Surface Elev.:

Datum: GROUND SURFACE

Start Date:

8/31/16

Finish Date:

8/31/16

Inspector:

SH

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	COMMENTS
			c - coarse m - medium f - fine	a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%	(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1			0-6" <u>topsoil</u>	0.0 ppm	START 912
			6-29" <u>FILL - dark sand with brick, concrete, dark spot</u>	0.0 ppm	53" Recovered
2			29-53" <u>red brown, silty SAND, with trace clay, moist</u>		Top of native soil - 2 feet 5 inches below grade
3					
4					
5					
6			0-6" <u>red brown, silty SAND with clay, moist</u>		60" Recovered
			6-52" <u>red brown, silty CLAY, wet</u>		
			52-63" <u>red brown, silty SAND, wet</u>		
7					
8					
9					
10					
11			0-60" <u>light brown, silty SAND, wet</u>		60" recovered
12					
13					
14					
15					
16			<u>end of boring at 15 feet</u>		
17					
18					
19					
20					
21					Sample: Time:
					A2-1-2ft 912
22					A2-9.5-11ft 933
					DUP 1000
23					A2-11-12ft 935
					A2-12-13ft 950
24					A2-13-14ft 955
25					



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		Sheet 1 of: 1					
		Project No.: P67.001.002					
Project Name: 19 North Street Remedial Investigation						Surface Elev.:	
Location: 19 North Street Buffalo New York						Datum: GROUND SURFACE	
Client: 23 North Street, LLC						Start Date: 9/2/16	
Drilling Firm: NYEG				Driller: John (NYEG)		Finish Date: 9/2/16	
Groundwater		Depth	Date & Time	Drill Rig: geoprobe 7220		Inspector: SH	
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 <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		COMMENTS <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1				See A2 log		Doing A2 over from 15-25ft START 1112	
2							
3							
4							
5							
6				See A2 log			
7							
8							
9							
10							
11				See A2 log			
12							
13							
14							
15							
16				0-12" brown, fine SILT, wet trace sand, trace rock		No PID	59" Recovered
				12-20" brown, fine SAND, dry to moist			
				20-24" brown, coarse SAND			
17				24-43" brown, fine SAND, very hard/dense			
				43-59" brown, hard SAND and GRAVEL, trace silt			
18							
19							
20							
21				0-19" clayey SILT, trace gravel		0.4 ppm	48" Recovered
				19-27" brown, fine SAND, wet		0.5 ppm	
				27-40" brown, fine SAND, saturated to wet, trace silt		0.4 ppm	Sample: Time:
22				40-48" brown, fine SAND, wet, little gravel, trace silt		0.4 ppm	No Samples
23							
24							
25				end of boring at 25 feet			

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		Sheet 1 of: 1					
		Project No.: P67.001.002					
		Surface Elev.:					
Project Name: 19 North Street Remedial Investigation						Datum: GROUND SURFACE	
Location: 19 North Street Buffalo New York						Start Date: 8/31/16	
Client: 23 North Street, LLC						Finish Date: 8/31/16	
Drilling Firm: NYEG				Driller: John (NYEG)		Inspector: SH	
Groundwater		Depth	Date & Time	Drill Rig: geoprobe 7220		Rock Core:	
While Drilling:		21 feet		Casing:		Undist:	
Before Casing Removal:				Sampler:		Other: Well to 24 feet, screen 24 to 14 ft	
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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>			<b>COMMENTS</b> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>
1			0-12"	topsoil			START 930
			12-14"	black rock			30" Recovered
			14-17"	concrete fragments			
			17-22"	silty SAND with trace clay			
2			22-30"	FILL - brown, sand with black spots, brick pieces			
3							
4							
5							
6			0-18"	red brown, clayey SILT, native			60" Recovered
			18-40"	red brown CLAY			Top of native 6 feet below grade
			40-60"	red brown CLAY, grades to brown silty CLAY			
7							
8							
9							
10							
11			0-60"	tan, fine SAND, clean			60" Recovered
12							
13							
14							
15							
16				NO RECOVERY			
17							
18							
19							
20							
21			0-12"	slug 77 ppm			60" Recovered
			12-36"	medium grain SAND, dark staining, petroleum smell 35 ppm			
			36-60"	grey tan, mediun grain SAND 10 ppm			
22							Sample: Time:
				A3-5-7ft			1054
				DUP			1054
				A3-7-8ft			1100
23							A3-8-9ft 1103
							A3-9-10ft 1107
							A3-14-15ft 1112
							A3-22-23ft 1124
24							
25				end of boring at 25 feet			



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## BORING LOG

Boring No.

A4

Sheet 1 of:

1

Project No.:

P67.001.002

Surface Elev.:

Project Name: 19 North Street Remedial Investigation

Location: 19 North Street Buffalo New York

Client: 23 North Street, LLC

Drilling Firm: NYEG

Driller: John (NYEG)

Start Date:

8/31/16

Finish Date:

8/31/16

Groundwater

Depth

Date & Time

Drill Rig: geoprobe 7220

Inspector:

SH

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	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)
					S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey		
1			0-7"	<u>topsoil</u>		0.0 ppm	START 1115
			7-18"	<u>FILL - dark brown, sand with brick pieces</u>		0.0 ppm	24" Recovered
			18-24"	<u>light brown, medium grain SAND, dry</u>		0.0 ppm	
2							
3							Top of native 1 foot 6 inches below grade
4							
5							
			0-16"	<u>dark brown, SAND with dark spots, dry</u>		0.0 ppm	30" Recovered
6			16-30"	<u>red brown, silty CLAY, tough, little moist</u>		0.0 ppm	
7							
8							
9							
10							
			0-2"	<u>slug</u>		0.0 ppm	55" recovered
11			2-15"	<u>red brown, silty CLAY, trace sand with dark spot</u>		0.0 ppm	
			15-38"	<u>red brown CLAY, tough</u>		0.0 ppm	
12			38-55"	<u>red brown, silty SAND, moist</u>		0.0 ppm	
13							
14							
15							
16				<u>end of boring at 15 feet</u>			
17							
18							
19							
20							
21							<u>Sample:</u> Time:
							<u>A4-9-10ft</u> 1141
22							<u>A4-10-11ft</u> 1146
							<u>A4-11-12ft</u> 1150
23							<u>A4-12-13ft</u> 1154
24							
25							





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							<b>Sheet 1 of:</b> 1		
							<b>Project No.:</b> P67.001.002		
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Surface Elev.:</b>			
<b>Location:</b> 19 North Street Buffalo New York						<b>Datum:</b> GROUND SURFACE			
<b>Client:</b> 23 North Street, LLC						<b>Start Date:</b> 9/2/16			
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Finish Date:</b> 9/2/16			
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b> geoprobe 7220		<b>Inspector:</b> AD	
<b>While Drilling:</b>				<b>Casing:</b>		<b>Rock Core:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>			
<b>After Casing Removal:</b>				<b>Hammer:</b>					
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>			<b>COMMENTS</b> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)		
1				See A4 log			START 910		
2							70 degrees F and Sunny		
3									
4									
5									
6				See A4 log					
7									
8									
9									
10									
11				See A4 log					
12									
13									
14									
15									
16				0-12" slug			62" Recovered		
				12-31" brown, fine SAND, dry					
				31-43" grey, coarse SAND, moist			headspace 2.1 - 8.9 peak		
17				43-54" light brown, fine SAND, moist			2.3 peak		
				54-62" grey, medium to coarse SAND, moist			3.2 peak		
18									
19									
20									
				0-8" grey, medium to coarse SAND			4.3 ppm		
21				8-14" black grey, coarse SAND			1.4 ppm @ 18"		
				14-21" silty CALY with imbedded rock			62 ppm @ 23"		
22				21-32" wet to saturated GRAVEL and SAND			89 peak		
				32-48" brown, fine SAND, strong odor			882.4 peak		
23				48-62" brown, fine SAND			4.0 ppm		
24									
25				end of boring at 25 feet					

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							<b>Sheet 1 of:</b>		1			
							<b>Project No.:</b>		P67.001.002			
<b>Project Name:</b> 19 North Street Remedial Investigation							<b>Surface Elev.:</b>					
<b>Location:</b> 19 North Street Buffalo New York							<b>Datum:</b>		GROUND SURFACE			
<b>Client:</b> 23 North Street, LLC							<b>Start Date:</b>		9/1/16			
<b>Drilling Firm:</b> NYEG					<b>Driller:</b> John (NYEG)		<b>Finish Date:</b>		9/1/16			
<b>Groundwater</b>		<b>Depth</b>	<b>Date &amp; Time</b>	<b>Drill Rig:</b> geoprobe 7220		<b>Inspector:</b>		AD				
<b>While Drilling:</b>				<b>Casing:</b>		<b>Rock Core:</b>		<b>Undist:</b>				
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>						
<b>After Casing Removal:</b>				<b>Hammer:</b>								
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>				<small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small>		<b>COMMENTS</b> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>		
1				0-8" <u>silty clay topsoil and grass</u>				0.0 ppm		START 845		
				8-36" <u>clay, trace SILT with some trace rock, rock @34"</u>				0.1 ppm		70 degrees F and Sunny		
2				36-38" <u>red brown CLAY, moist</u>				0.1 ppm		37" Recovered		
3										Top of native 8 inches below grade		
4												
5												
6				0-18" <u>red brown CLAY, trace small &lt;0.5" rock</u>				0.1 ppm		62" Recovered		
				18-34" <u>brown, moist SILT</u>				0.0 ppm				
7				34-58" <u>red brown, CLAY, dense, moist</u>				0.0 ppm				
				58-62" <u>moist silt, some CLAY</u>				0.0 ppm				
8												
9												
10												
11				0-9" <u>brown, silty CLAY, moist</u>				0.0 ppm		62" recovered		
				9-62" <u>brown, fine SILT, moist</u>				0.0 ppm				
12												
13												
14												
15												
16				<u>end of boring at 15 feet</u>								
17												
18												
19												
20												
21										<b>Sample:</b> headdress		
22										<b>B1-5-6ft</b> 2.0		
										<b>B1-6-7ft</b> 1.3		
23										<b>B1-7-8ft</b> 2.3		
										<b>B1-8-9ft</b> 0.2		
24										<b>B1-15ft</b> 0.5		
25												


		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		Boring No. <b>B2</b>	
		Sheet 1 of: <b>1</b>					
		Project No.: <b>P67.001.002</b>					
Project Name: 19 North Street Remedial Investigation				Surface Elev.:		Datum: GROUND SURFACE	
Location: 19 North Street Buffalo New York				Start Date:		Finish Date:	
Client: 23 North Street, LLC				Driller: <b>John (NYEG)</b>		Inspector: <b>SH</b>	
Drilling Firm: <b>NYEG</b>		Drill Rig: <b>geoprobe 7220</b>		Rock Core:		Undist:	
Groundwater	Depth	Date & Time	Casing:	Sampler:	Other:	Hammer:	
While Drilling:		Before Casing Removal:		After Casing Removal:		(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	<b>MATERIAL DESCRIPTION</b> 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%			<b>COMMENTS</b> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1			0-4" <u>topsoil</u>			126 ppm	
			4-11" <u>dark brown, CLAY, clean till</u>			Concrete hit so moved 3 ft	
2			11-36" <u>FILL, dark sand with gravel and brick</u>			east	
3						38" Recovered	
4							
5							
6			0-7" <u>brown, SAND</u>			0.0 ppm	
			7-34" <u>silty SAND with some brown clay</u>			0.0 ppm	
			34-57" <u>brown CLAY</u>			0.0 ppm	
7							
8							
9							
10							
11			0-8" <u>red brown, silty CLAY</u>			0.0 ppm	
			8-17" <u>brown light, silty CLAY with sand</u>			0.0 ppm	
			17-60" <u>brown light, silty SAND</u>			0.0 ppm	
12							
13							
14							
15							
16			<u>end of boring at 15 feet</u>				
17							
18							
19							
20							
21						Sample: time:	
22						<u>B2 surface</u> 1408	
						<u>B2-4-5FT</u> 1415	
						<u>B2-5-6FT</u> 1437	
23						<u>B2-6-7FT</u> 1448	
						<u>B2-7-8FT</u> 1455	
24						<u>B2-8-9FT</u> 1456	
25							





		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		Boring No. <b>B3</b>	
		Sheet 1 of: 1					
		Project No.: P67.001.002					
Project Name: 19 North Street Remedial Investigation						Surface Elev.:	
Location: 19 North Street Buffalo New York						Datum: GROUND SURFACE	
Client: 23 North Street, LLC						Start Date: 8/31/16	
Drilling Firm: NYEG				Driller: John (NYEG)		Finish Date: 8/31/16	
Groundwater		Depth	Date & Time	Drill Rig: geoprobe 7220		Inspector: SH	
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 <small>c - coarse m - medium f - fine</small> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey		COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1			0-5" <u>topsoil</u>	0.1 ppm	12:40		
			5-13" <u>gravel, asphalt</u>	0.1 ppm	36" Recovered		
2			13-36" <u>dark sandy FILL, brick, concrete and gravel</u>	0.1 ppm			
3							
4							
5							
6			0-4" <u>dark sandy FILL, brick, concrete and gravel</u>	0.1 ppm	51" Recovered		
			4-6" <u>brown coarse sand, moist, containing dark spots</u>	0.1 ppm			
7			6-27" <u>light brown silty CLAY</u>	0.1 ppm			
			27-35" <u>hard red-brown CLAY</u>	0.1 ppm			
			35-43" <u>red brown silty CLAY</u>	0.1 ppm			
8			43-51" <u>hard red-brown CLAY</u>	0.1 ppm			
9							
10							
11			0-4" <u>slug</u>	31 ppm	46" recovered		
			4-46" <u>moist, red-brown, silty CLAY</u>	136 ppm			
12			<u>red-brown changes to dark brown with depth</u>				
			<u>material similar to A3</u>				
13							
14							
15							
16			<u>end of boring at 15 feet</u>				
17							
18							
19							
20							
21						Sample: time:	
22						<u>B3 UF 2-3ft</u> 1327	
						<u>B3 3-5 FT</u> 1330	
						<u>B3 6-7 FT</u> 1336	
23						<u>B3 7-8FT</u> 1352	
						<u>B3 8-9 FT</u> 1354	
24						<u>B3-13-15 FT</u> 1357	
25							

		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		Boring No. <b>B3 - A</b>	
		Sheet 1 of: <b>1</b>					
		Project No.: <b>P67.001.002</b>					
Project Name: 19 North Street Remedial Investigation						Surface Elev.:	
Location: 19 North Street Buffalo New York						Datum: GROUND SURFACE	
Client: 23 North Street, LLC						Start Date: 8/31/16	
Drilling Firm: NYEG				Driller: John (NYEG)		Finish Date: 8/31/16	
Groundwater		Depth		Date & Time		Drill Rig: geoprobe 7220	
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 <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		<small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small>	COMMENTS <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>
1			0-3"	<u>topsoil</u>		0.0 ppm	START 1342
			3-10"	<u>FILL - dark sand with clay concrete</u>		0.0 ppm	15" Recovered
			10-14"	<u>coal pieces</u>			
2			14-15"	<u>FILL - crushed concrete subbase</u>		0.4 ppm	
3							
4							
5							
			0-22"	<u>red brown, silty SAND with trace clay</u>		0.0 ppm	60" Recovered
6			22-37"	<u>red brown, silty CLAY, dense</u>		0.0 ppm	Top of native 6 feet below grade
			37-60"	<u>fine, sandy SILT, trace rounded gravel</u>		0.0 ppm	
7							
8							
9							
10							
			0-3"	<u>slug</u>		0.6 ppm	58" recovered
11			3-12"	<u>red brown, SILT</u>		0.0 ppm	
			12-58"	<u>tan, fine SAND, clean</u>		0.0 ppm	
12							
13							
14							
15							
			0-12"	<u>slug</u>			52" Recovered
16			12-18"	<u>tan, fine SAND</u>		0.0 ppm	
			18-40"	<u>clayey SILT with trace gravel, gray @19 ft</u>		0.0 ppm	
17			40-52"	<u>gray, fine SAND, slight petroleum smell</u>		112 ppm	
18							
19							
20							
			0-10"	<u>slug</u>			53" Recovered
21			10-42"	<u>gray SAND, trace gravel, petroleum odor smells</u>		1179 ppm - 135.1	headspace
			42-53"	<u>light brown, fine to medium SAND, trace gravel, water saturated</u>			Sample: Time:
22				<u>at 22-23 ft</u>			<b>B3-A-22-23ft</b> 1426
23	S-1						
24							
25				<u>end of boring at 25 feet</u>			



		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		<b>Boring No.</b>		<b>B4</b>	
		<b>Sheet 1 of:</b>				<b>1</b>			
		<b>Project No.:</b>				<b>P67.001.002</b>			
		<b>Surface Elev.:</b>							
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Datum:</b> GROUND SURFACE			
<b>Location:</b> 19 North Street Buffalo New York						<b>Start Date:</b> 8/30/16			
<b>Client:</b> 23 North Street, LLC						<b>Finish Date:</b> 8/30/16			
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Inspector:</b> SH			
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b> geoprobe 7220		<b>Rock Core:</b>	
<b>While Drilling:</b>		26 ft		<b>Casing:</b>		<b>Other:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>					
<b>After Casing Removal:</b>				<b>Hammer:</b>					
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>			<small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small>		<b>COMMENTS</b> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>
1				1-8"	<u>topsoil</u>			0.0 ppm	START 1048
2				8-12"	<u>FILL - dark sand with pieces of wood, trace glass, brick, and concrete</u>			0.0 ppm	36" Recovered
3				12-36"	<u>FILL - dark brown, medium grain silty sand, dry</u>			0.0 ppm	
4									
5									
6				0-12"	<u>FILL - dark brown, sand with rock chunk, brick and gravel, moist</u>			0.0 ppm	23" Recovered
7				12-23"	<u>brown, silty CLAY</u>			0.0 ppm	Top of native 7 feet below grade
8									
9									
10									
11				0-12"	<u>dark brown, silty CLAY, moist</u>			0.0 ppm	45" Recovered
12				12-18"	<u>dark brown, silty CLAY</u>			0.0 ppm	
13				18-45"	<u>red brown, CLAY, hard, moist</u>			0.0 ppm	
14									
15									
16				0-8"	<u>red brown, CLAY</u>			0.0 ppm	58" Recovered
17				8-58"	<u>light brown, silty SAND</u>			0.0 ppm	
18									
19									
20									
21				<u>end of boring at 20 feet</u>					<b>Sample:</b> <u>B4-9-10FT</u> <u>B4-10-11</u> <u>MSMSD</u> <u>B4-12-14.5</u> <u>B4-14.5-15.5</u> <u>B4-15.5-16.5</u>
22									
23									
24									
25									

			<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		<b>Boring No.</b>		<b>C1</b>			
							<b>Sheet 1 of:</b>		1			
							<b>Project No.:</b>		P67.001.002			
<b>Project Name:</b> 19 North Street Remedial Investigation							<b>Surface Elev.:</b>					
<b>Location:</b> 19 North Street Buffalo New York							<b>Datum:</b>		GROUND SURFACE			
<b>Client:</b> 23 North Street, LLC							<b>Start Date:</b>		8/31/16			
<b>Drilling Firm:</b> NYEG					<b>Driller:</b> John (NYEG)		<b>Finish Date:</b>		8/31/16			
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b> geoprobe 7220		<b>Inspector:</b>		SH		
<b>While Drilling:</b>					<b>Casing:</b>		<b>Rock Core:</b>		<b>Undist:</b>			
<b>Before Casing Removal:</b>					<b>Sampler:</b>		<b>Other:</b>					
<b>After Casing Removal:</b>					<b>Hammer:</b>							
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>				<small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small>		<b>COMMENTS</b> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>		
1				0-12" <u>topsoil</u>				0.0 ppm		START 817		
				12-24" <u>FILL - dark sand with brick and concrete</u>				0.0 ppm		Refusal at 6 ft, moved		
2				24-41" <u>FILL - red brown sand with dark spots, brick</u>						east 3.7 ft		
3										After concrete, tube went down easily, potential void		
4										in surface		
5										Refusal at 6 ft, moved 3 ft south		
6				0-29" <u>FILL with brick concrete, dark sand</u>						41" Recovered		
7				29-38" <u>light brown, fine SAND, dry</u>						60" Recovered		
8				38-60" <u>red brown, silty SAND</u>						Top of native 8 feet 5 inches below grade		
9												
10												
11				0-18" <u>fine SAND, coarse to fine grain</u>						50" Recovered		
12				18-50" <u>light brown, fine SAND, wet</u>								
13												
14												
15												
16				<u>end of boring at 15 feet</u>								
17												
18												
19												
20												
21										<b>Sample:</b> Time:		
22										<b>C1 Surface</b> 823		
23										<b>C1-3-4ft</b> 900		
										<b>C1-3-4ft Hex</b> 911		
										<b>C1-8-9ft</b> 900		
										<b>C1-9-10ft</b> 901		
										<b>C1-10-11ft</b> 905		
										<b>C1-11-12ft</b> 908		
25												

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		<b>Sheet 1 of:</b> 1					
		<b>Project No.:</b> P67.001.002					
		<b>Surface Elev.:</b>					
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Datum:</b> GROUND SURFACE	
<b>Location:</b> 19 North Street Buffalo New York						<b>Start Date:</b> 9/1/16	
<b>Client:</b> 23 North Street, LLC						<b>Finish Date:</b> 9/1/16	
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Inspector:</b> AD	
<b>Groundwater</b>		<b>Depth</b>	<b>Date &amp; Time</b>	<b>Drill Rig:</b> geoprobe 7220		<b>Rock Core:</b>	
<b>While Drilling:</b>		<b>Casing:</b>		<b>Other:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>		<b>Sampler:</b>		<b>Hammer:</b>			
<b>After Casing Removal:</b>							
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		<small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small>	<b>COMMENTS</b> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-10" <u>topsoil and grass</u>	0.1 ppm	START 915	
				10-51" <u>FILL - clay and trace silt, rock, coarse sand</u>	0.0 ppm	52" Recovered	
2				51-52" <u>FILL - stained material, silt, brick, and coal</u>	0.0 ppm		
3							
4							
5							
6				0-5" <u>beds of light brown fine SAND and dark brown silty CLAY</u>	0.1 ppm	62" Recovered	
				5-22" <u>grey, rock, coarse SAND</u>	0.0 ppm		
				22-45" <u>brown CLAY, dense</u>	0.0 ppm		
7				45-62" <u>light brown and red brown, SILT</u>	0.0 ppm		
8							
9							
10							
11				0-5" <u>brown, CLAY, dense</u>	0.1 ppm	57" Recovered	
				5-38" <u>grey, crushed stone and concrete with SILT, moist</u>		Possible building foundation	
				38-57" <u>brown, fine SAND</u>	0.1 ppm		
12							
13							
14							
15							
16				0-5" <u>slug</u>	0.0 ppm	62" Recovered	
				5-13" <u>light brown, SILT, moist</u>	0.1 ppm		
				13-38" <u>light brown, SAND, saturated</u>	0.1 ppm		
17				38-62" <u>light brown, SAND with rounded stones, moist</u>	0.1 ppm		
18							
19							
20							
21				0-18" <u>brown, SILT, saturated</u>	0.1 ppm	62" Recovered	
				18-39" <u>SILT, brown, saturated</u>	0.0 ppm		
				39-62" <u>brown, CLAY, dense</u>	0.0 ppm		
22						<b>Sample:</b> headspace <b>C2-WC</b> 2.0 <b>(comp from 3-12)</b>	
23						<b>C2-13-14.5ft</b> 1.7	
						<b>(+MS/MSD)</b>	
24						<b>C2-14.5-15.5ft</b> 1.4	
						<b>C2-15.5-16.5ft</b> 1.7	
25				<u>end of boring at 25 feet</u>		<b>C2-16.5-17.5ft</b> 1.5	





C&S Engineers, Inc.  
141 Elm Street  
Buffalo, New York 14203  
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## BORING LOG

Boring No.

C3

Sheet 1 of:

1

Project No.:

P67.001.002

Surface Elev.:

Datum:

GROUND SURFACE

Start Date:

Finish Date:

Inspector:

Project Name: 19 North Street Remedial Investigation

Location: 19 North Street Buffalo New York

Client: 23 North Street, LLC

Drilling Firm: NYEG

Driller: John (NYEG)

Groundwater

Depth

Date & Time

Drill Rig:

geoprobe 7220

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			COMMENTS (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
				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%	
1				0-6" <u>topsoil</u>		0.0 ppm	START 1220
				6-14" <u>FILL - gravel subbase, brick concrete</u>		0.1 ppm	29" Recovered
				14-29" <u>FILL - dark coarse sand with black spots, moist</u>		0.0 ppm	
2							
3							
4							
5							
				0-6" <u>FILL - brown coarse sand with concrete pieces</u>		0.0 ppm	45" Recovered
6				6-7" <u>gravel</u>		0.0 ppm	
				7-12" <u>FILL - dark coarse sand with some clay, glass, concrete, and dark spots</u>		0.0 ppm	Top of native 7 feet below grade
				12-15" <u>red brown, sandy CLAY</u>		0.0 ppm	
8				15-26" <u>red brown, CLAY, dense</u>		0.0 ppm	
				26-28" <u>red brown, silty SAND</u>		0.0 ppm	
9				28-33" <u>red brown, CLAY, tough</u>		0.0 ppm	
				33-40" <u>red brown, silty SAND, wet</u>		0.0 ppm	
10				40-45" <u>red brown, CLAY</u>		0.0 ppm	
				0-6" <u>slug</u>		0.0 ppm	50" Recovered
11				6-15" <u>red brown, CLAY</u>		0.0 ppm	
				15-21" <u>silty CLAY with sand, moist</u>		0.0 ppm	
12				21-50" <u>light brown, medium grain SAND, moist</u>		0.0 ppm	
13							
14							
15							
16				<u>end of boring at 15 feet</u>			
17							
18							
19							
20							
21							
22							Sample: C3-9-10FT
							C3-10.5-11.5
23							C3-12.5-13.5
							C3-14-15
24							
25							




		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		Boring No. <b>C3-A</b>	
		Sheet 1 of: 1					
		Project No.: P67.001.002					
		Surface Elev.:					
Project Name: 19 North Street Remedial Investigation						Datum: GROUND SURFACE	
Location: 19 North Street Buffalo New York						Start Date:	
Client: 23 North Street, LLC						Finish Date:	
Drilling Firm: NYEG				Driller: John (NYEG)		Inspector:	
Groundwater		Depth	Date & Time	Drill Rig: geoprobe 7220		Rock Core:	
While Drilling:				Casing:		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 <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		COMMENTS <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1				See C3 log			
2							
3							
4							
5							
6				See C3 log			
7							
8							
9							
10							
11				See C3 log			
12							
13							
14							
15							
16				0-60"	brown, fine SAND, trace silt, wet	peak 0.4 ppm	62" Recovered
				60-62"	brown, fine SAND, some silt	peak 0.4 ppm	
17				(Water Saturated 32-59")			
18							
19							
20							
21				0-12"	light brown, clayey SAND, wet	peak 0.4 ppm	62" Recovered
				12-24"	clayey SAND		
				24-30"	clayey SAND with rock	peak 0.4 ppm	Sample: Time:
22				30-40"	red brown, medium SAND		No Samples
				40-55"	coarse SAND, some to little clay	peak 0.4 ppm	
23				55-62"	brown, CLAY, hard	peak 0.4 ppm	No odors
24							
25				end of boring at 25 feet			


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		Sheet 1 of: 1					
		Project No.: P67.001.002					
		Surface Elev.:					
Project Name: 19 North Street Remedial Investigation						Datum: GROUND SURFACE	
Location: 19 North Street Buffalo New York						Start Date: 9/2/16	
Client: 23 North Street, LLC						Finish Date: 9/2/16	
Drilling Firm: NYEG				Driller: John (NYEG)		Inspector:	
Groundwater		Depth	Date & Time	Drill Rig: geoprobe 7220		Rock Core:	
While Drilling:		22 feet	8/30 @ 845am	Casing:		Undist:	
Before Casing Removal:		Sampler:		Other: well bottom -24 ft, sand to 12 ft. benonite -			
After Casing Removal:		Hammer:		10 ft to surface			
(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 <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		COMMENTS <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1						START 945	
2				See C4 log			
3							
4							
5							
6							
7				See C4 log			
8							
9							
10							
11							
12				See C4 log			
13							
14							
15							
16				0-22"	brown, fine SILT, moist, trace rock	1.1 ppm	
17				22-28"	brown grey, GRAVEL and SAND, wet	2.0 ppm	
18				28-32"	brown CLAY		
19				32-62"	brown and red brown SAND, coarse to medium grain	0.4 ppm	
20							
21				0-12"	brown, GRAVEL and fine SAND, wet, very slight odor	0.4 ppm	
22				12-16"	brown, fine SAND, saturated	0.1 ppm	
23				16-36"	brown, medium to fine SAND, wet	0.1 ppm	Sample: Time:
24				36-40"	brown, coarse SAND, wet	0.3 ppm	No Samples
25				40-60"	brown, fine SAND and SILT, moist	0.3 ppm	
				60-62"	brown, varve CLAY	0.4 ppm	
				end of boring at 25 feet			




 <b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com			<h2 style="text-align: center;">BORING LOG</h2>			Boring No. <b>D1</b>	
						Sheet 1 of: <b>1</b>	
						Project No.: <b>P67.001.002</b>	
Project Name: <b>19 North Street Remedial Investigation</b>					Surface Elev.:		
Location: <b>19 North Street Buffalo New York</b>					Datum: <b>GROUND SURFACE</b>		
Client: <b>23 North Street, LLC</b>					Start Date:		
Drilling Firm: <b>NYEG</b>			Driller: <b>John (NYEG)</b>		Finish Date:		
Groundwater		Depth	Date & Time	Drill Rig: <b>geoprobe 7220</b>		Inspector:	
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 <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		COMMENTS <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1				0-5" <u>topsoil and grass</u>		START 1030	
				5-19" <u>FILL- CLAY, brown, moist, imbedded rock piece</u>		20" Recovered	
2				19-20" <u>FILL - SILT, brown, moist</u>			
3							
4							
5							
6				0-19" <u>FILL - clay with rock, brick, woody debris, root</u>		56" Recovered	
				19-26" <u>red silt and brown grey CLAY</u>		Top of native soil 7 feet 7 inches	
				26-39" <u>red yellow brown, SILT, saturated and wet</u>		below grade	
7				39-52" <u>red brown, CLAY, dense</u>			
				52-56" <u>brown SILT</u>			
8							
9							
10							
				0-7" <u>brown SILT with rock, wet</u>		62" Recovered	
11				7-60" <u>light brown, fine SAND, trace rock, moist</u>			
				60-62" <u>brown grey, SAND and rock, dry</u>			
12							
13							
14							
15							
16				0-1" <u>slug</u>		62" Recovered	
				1-9" <u>brown, medium grain SAND and GRAVEL</u>			
				9-14" <u>red brown CLAY</u>			
17				14-15" <u>multicolor, coarse SAND</u>			
				15-21" <u>brown, fine SAND</u>			
18				21-45" <u>brown, fine to medium SAND and rock, moist</u>			
				45-62" <u>brown, fine SAND, moist to wet</u>			
19							
20							
				0-11" <u>brown and red, coarse to medium grain SAND, wet</u>		62" Recovered	
21				11-62" <u>varve CLAY</u>		headspace Sample: Time:	
						2.2 <u>D1-9.5-11.5ft</u> 1117	
22						Hex + MS/MSD	
						2.0 <u>D1-11.5-12.5ft</u> 1121	
23						1.9 <u>D1-12.5-13.5ft</u> 1123	
						2.2 <u>D1-13.5-14.5ft</u> 1125	
24						0.8 <u>D1-15-16ft</u> 1126	
						MW	
25				<u>end of boring at 25 feet</u>			




		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<b>BORING LOG</b>		<b>Boring No.</b>		<b>D2</b>	
						<b>Sheet 1 of:</b>		1	
						<b>Project No.:</b>		P67.001.002	
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Surface Elev.:</b>		GROUND SURFACE	
<b>Location:</b> 19 North Street Buffalo New York						<b>Datum:</b>		GROUND SURFACE	
<b>Client:</b> 23 North Street, LLC						<b>Start Date:</b>			
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Finish Date:</b>			
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b> geoprobe 7220		<b>Inspector:</b>	
<b>While Drilling:</b>				<b>Casing:</b>		<b>Rock Core:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>			
<b>After Casing Removal:</b>				<b>Hammer:</b>					
(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)									
<b>Depth (ft)</b>	<b>Sample No.</b>	<b>Symbol</b>	<b>Blows on Sampler per 6"</b>	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey			<small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small>		<b>COMMENTS</b> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1				0-24"	FILL - dark brown, soil, some rocks			0.1 ppm	START 1410
				24-34"	FILL - dark brown clay			0.1 ppm	36" Recovered
				34-36"	FILL - gravel and concrete			0.1 ppm	
2									
3									
4									
5									
				0-10"	FILL - concrete and gravel			0.0 ppm	45" Recovered
6				10-23"	brown, medium grain SAND with clay			0.1 ppm	Top of native soil 5 feet 10 inches
				23-45"	light brown, medium grain SAND			0.1 ppm	below grade
7									
8									
9									
10									
				0-9"	slug, brown, silty sand, dry			0.0 ppm	57" Recovered
11				9-12"	slug, gravel and concrete			0.0 ppm	
					red brown, medium grain, silty SAND			0.0 ppm	
12				12-57"	light brown, medium grain SAND with some silt			0.0 ppm	
13									
14									
15									
16					end of boring at 15 feet				
17									
18									
19									
20									
21									
22									Sample: Time:
									D2 SURFACE
23									D2-0-2 FT
									D2-10-11FT
									D2-11-12FT
24									D2-12-13FT
									D2-13-14FT
25									


		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<b>BORING LOG</b>		<b>Boring No.</b>		<b>D3</b>	
						<b>Sheet 1 of:</b>		<b>1</b>	
						<b>Project No.:</b>		<b>P67.001.002</b>	
						<b>Surface Elev.:</b>			
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Datum:</b> GROUND SURFACE			
<b>Location:</b> 19 North Street Buffalo New York						<b>Start Date:</b>			
<b>Client:</b> 23 North Street, LLC						<b>Finish Date:</b>			
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Inspector:</b>			
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b> geoprobe 7220			
<b>While Drilling:</b>				<b>Casing:</b>		<b>Rock Core:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>			
<b>After Casing Removal:</b>				<b>Hammer:</b>					
(N -- No. of blows to drive sampler 12" w/140 lb. hammer falling 30" ASTM D-1586, Standard Penetration Test)									
<b>Depth (ft)</b>	<b>Sample No.</b>	<b>Symbol</b>	<b>Blows on Sampler per 6"</b>	<b>MATERIAL DESCRIPTION</b> 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%		<b>COMMENTS</b> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)
1			0-4"	topsoil			0.0 ppm		START 1200
			4-9"	FILL - gravel subbase			0.0 ppm		17" Recovered
			9-17"	FILL - gravel, brick, concrete chunks			0.0 ppm		
2									
3									
4									
5									
			0-6"	FILL - brick, concrete, and gravel			0.0 ppm		39" Recovered
6			6-22"	lighter brown, medium grain silty SAND, wet			0.0 ppm		Top of native 5 feet 6 inches
			22-27"	red brown, silty CLAY, dense			0.0 ppm		below grade
7			27-39"	lighter brown, medium grain SAND, wet			0.0 ppm		
8									
9									
10									
			0-58"	light brown, medium grained SAND, wet			0.0 ppm		58" Recovered
11				(wettest 0-1 ft)			0.0 ppm		
12									
13									
14									
15									
16				end of boring at 15 feet					
17									
18									
19									
20									
21									
22									Sample: D3-5.5-7.5 Time:
23									DUP
									D3-7.5-9.5
									D3-10.5-11.5
24									
25									


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		<b>Sheet 1 of:</b>				1			
		<b>Project No.:</b>				P67.001.002			
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Surface Elev.:</b>			
<b>Location:</b> 19 North Street Buffalo New York						<b>Datum:</b>		GROUND SURFACE	
<b>Client:</b> 23 North Street, LLC						<b>Start Date:</b>		8/29/16	
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Finish Date:</b>		8/29/16	
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b> geoprobe 7220		<b>Inspector:</b>	
<b>While Drilling:</b>				<b>Casing:</b>		<b>Rock Core:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>			
<b>After Casing Removal:</b>				<b>Hammer:</b>					
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> S - Sand, \$ - Silt, G - Gravel, C - Clay, clay - clayey			<b>COMMENTS</b> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)		
1			0-12"	<u>asphalt, gravel subbase</u>			0.3 ppm	START 1451	
			12-29"	<u>FILL - dark, medium grained sand with spots of dark trace silt</u>			0.1 ppm	29" Recovered	
2									
3									
4									
5									
6			0-9"	<u>FILL - medium grain sand, dry</u>				34" Recovered	
			9-11"	<u>gravel FILL</u>				Top of native 5 feet 9 inches	
7			11-24"	<u>brown, silty SAND, dry</u>				below grade	
			24-29"	<u>brown, SAND with some clay, moist</u>					
			29-34"	<u>red brown, CLAY, moist</u>					
8									
9									
10									
11			1-12"	<u>brown, silty SAND, medium grained, moist</u>			0.0 ppm	49" Recovered	
			12-49"	<u>red brown, sandy SILT, moist</u>			0.0 ppm		
12									
13									
14									
15									
16				<u>end of boring at 15 feet</u>					
17									
18									
19									
20									
21									
22								<b>Sample:</b>	
								Time:	
23								<u>D4-8-9ft</u>	
								<u>D4-Hex-8-9ft</u>	
								<u>D4-9-10ft</u>	
								<u>D4-10-11ft</u>	
								<u>D4-15ft</u>	
25									




		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		<b>Boring No.</b> <b>E1</b>	
		<b>Sheet 1 of:</b> 1					
		<b>Project No.:</b> P67.001.002					
		<b>Surface Elev.:</b>					
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Datum:</b> GROUND SURFACE	
<b>Location:</b> 19 North Street Buffalo New York						<b>Start Date:</b> 8/30/16	
<b>Client:</b> 23 North Street, LLC						<b>Finish Date:</b> 8/30/16	
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Inspector:</b>	
<b>Groundwater</b>		<b>Depth</b>	<b>Date &amp; Time</b>	<b>Drill Rig:</b> geoprobe 7220		<b>Rock Core:</b>	
<b>While Drilling:</b>				<b>Casing:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>	
<b>After Casing Removal:</b>				<b>Hammer:</b>			
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, clay - clayey</small>		<b>COMMENTS</b> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>	
1				0-18" <u>Topsoil - light brown soil, sandy</u>		START 1435	
				18-19" <u>FILL - rock pieces and gravel</u>		29" Recovered	
				19-29" <u>FILL - mix of sand silt and clay, brown, moist, some imbedded rock pieces</u>			
2							
3							
4							
5							
6				0-10" <u>slug, gravel and rock</u>		48" Recovered	
				10-26" <u>dark brown, medium grained SAND</u>		Top of native soil 5 feet below gra	
				26-48" <u>light brown, medium grained SAND with silt</u>			
7							
8							
9							
10							
11				0-7" <u>slug, gravel, rocks, and concrete</u>		46" Recovered	
				7-46" <u>light brown, silty SAND</u>			
12							
13							
14							
15							
16				0-8" <u>light brown, silty SAND with trace clay</u>		48" Recovered	
				8-18" <u>light colored, coarse SAND with rock</u>			
				15-48" <u>silty SAND, coarse, wet</u>			
17							
18							
19							
20							
21				<u>end of boring at 20 feet</u>			
22						<b>Sample:</b> Time:	
23						<u>E1 SURFACE</u>	
						<u>E1-1-2.5FT</u>	
						<u>E1-11-12 FT</u>	
						<u>E1-12-13 FT</u>	
						<u>E1-13-14FT</u>	
						<u>E1-14-15FT</u>	
25							



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		<b>Sheet 1 of:</b> 1					
		<b>Project No.:</b> P67.001.002					
		<b>Surface Elev.:</b>					
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Datum:</b> GROUND SURFACE	
<b>Location:</b> 19 North Street Buffalo New York						<b>Start Date:</b> 9/1/16	
<b>Client:</b> 23 North Street, LLC						<b>Finish Date:</b> 9/1/16	
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Inspector:</b> AD	
<b>Groundwater</b>		<b>Depth</b>	<b>Date &amp; Time</b>	<b>Drill Rig:</b> geoprobe 7220		<b>Rock Core:</b>	
<b>While Drilling:</b>				<b>Casing:</b>		<b>Undist:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>	
<b>After Casing Removal:</b>				<b>Hammer:</b>			
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		<small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small>	<b>COMMENTS</b> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>
1			0-62"	<b>FILL - dark brown clay with rock and trace tree pieces</b>		0.1 ppm	START 1345
2				<b>with dark clay near them</b>			80 degrees F and Sunny
3							62" Recovered
4							
5							
6			0-8"	<b>FILL - light brown, clay with rock</b>		0.1 ppm	50" Recovered
7			8-16"	<b>FILL - gravel, crushed stone, trace brick, some coarse sand</b>		0.1 ppm	
8			16-29"	<b>brown, fine silty SAND</b>		0.1 ppm	
9			29-34"	<b>dark brown, silty SAND</b>		0.1 ppm	
10			34-50"	<b>light brown, fine SAND, moist</b>		0.1 ppm	
11			0-12"	<b>light brown, silty SAND</b>		0 ppm	
12			12-50"	<b>light brown, medium grain SAND with some silt</b>		0 ppm	50" recovered
13							
14							
15							
16				<b>end of boring at 15 feet</b>			
17							
18							
19							
20							
21						headspace	<b>Sample:</b> Time:
22						0.5	<b>E2-5-6.5ft</b> 1412
23						1.1	<b>E2-9-10ft</b> 1416
24						1.4	<b>E2-10-11ft</b> 1418
25						0.8	<b>E2-11-12ft</b> 1419
						1.0	<b>E2-12-13ft</b> 1423
						0.8	<b>E2-14-15ft (+Hex)</b> 1425

		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		<b>Boring No.</b> <b>E3</b>	
		<b>Sheet 1 of:</b> 1					
		<b>Project No.:</b> P67.001.002					
<b>Project Name:</b> 19 North Street Remedial Investigation						<b>Surface Elev.:</b>	
<b>Location:</b> 19 North Street Buffalo New York						<b>Datum:</b> GROUND SURFACE	
<b>Client:</b> 23 North Street, LLC						<b>Start Date:</b> 8/29/16	
<b>Drilling Firm:</b> NYEG				<b>Driller:</b> John (NYEG)		<b>Finish Date:</b> 8/29/16	
<b>Groundwater</b>		<b>Depth</b>	<b>Date &amp; Time</b>	<b>Drill Rig:</b> geoprobe 7220		<b>Inspector:</b> SH	
<b>While Drilling:</b>				<b>Casing:</b> 5 ft liner		<b>Rock Core:</b>	
<b>Before Casing Removal:</b>				<b>Sampler:</b>		<b>Other:</b>	
<b>After Casing Removal:</b>				<b>Hammer:</b>			
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		<b>COMMENTS</b> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1				0-10"	asphalt and gravel subbase	0.1 ppm	START 1320
				10-28"	URBAN FILL, brick and concrete	0.1 ppm	30" Recovered
				28-30"	yellow, SAND, dry material	0.1 ppm	
2							
3							
4							
5							
				1-13"	brick, concrete	0.1 ppm	28" Recovered
6				13-28"	brown, fine silty sand, little moist	0.0 ppm	
7							
8							
9							
10							
				0-12"	brick and concrete		56" Recovered
11				12-18"	brown, silty CLAY		
				18-22"	brick pieces		possible building foundation
12				22-42"	red brown, silty SAND, trace clay		
				42-56"	brown, fine SAND, dry		
13							
14							
15							
				0-16"	slug		57" Recovered
16				16-57"	brown, medium grained SAND, wet		
17							
18							
19							
20							
21				end of boring at 20 feet			
22							<b>Sample:</b> E3-12-13ft
23							Time: E3-13-14ft
24							E3-14-15ft
25							E3-15-16ft

		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		Boring No. <b>E4</b>	
		Sheet 1 of: <b>1</b>					
		Project No.: <b>P67.001.002</b>					
		Surface Elev.:					
Project Name: 19 North Street Remedial Investigation						Datum: GROUND SURFACE	
Location: 19 North Street Buffalo New York						Start Date: 8/29/16	
Client: 23 North Street, LLC						Finish Date: 8/29/16	
Drilling Firm: NYEG				Driller: John (NYEG)		Inspector:	
Groundwater		Depth	Date & Time	Drill Rig: geoprobe 7220		Undist:	
While Drilling:		Casing: 5 ft liner		Rock Core:		Other:	
Before Casing Removal:		Sampler:		Hammer:		Other:	
After Casing Removal:		Hammer:		Other:		Other:	
(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 <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>		COMMENTS <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)	
1				0-11"	<u>asphalt and gravel</u>	0.2 ppm	START 1412
				11-16"	<u>red brown, silty SAND, dry</u>	0.1 ppm	30" Recovered
				16-30"	<u>brown, sandy SILT</u>	0.1 ppm	
2							Top of native soil 11 inches below grade
3							
4							
5							
6				0-4"	<u>slug</u>	0.1 ppm	42" Recovered
				4-11"	<u>brown, medium grained, SAND, dry</u>	0.1 ppm	
				11-21"	<u>dark brown, silty SAND, moist</u>	0.1 ppm	
7				21-36"	<u>lighter brown, silty SAND</u>	0.1 ppm	
				36-42"	<u>red brown, CLAY, moist</u>	0.1 ppm	
8							
9							
10							
				0-10"	<u>slug</u>	0.3 ppm	32" Recovered
11				10-28"	<u>red brown, sandy SILT, moist</u>	0.1 ppm	
				28-32"	<u>red brown, CLAY, moist</u>	0.0 ppm	
12							
13							
14							
15							
16				<u>end of boring at 15 feet</u>			
17							
18							
19							
20							
21							
22							Sample: Time:
							<u>E4-1-2ft</u>
							<u>E4-2-3ft</u>
23							<u>E4-5.5-6.5ft</u>
							<u>E4-6.5-7.5ft</u>
24							
25							





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## BORING LOG

Boring No.

F1

Sheet 1 of:

1

Project No.:

P67.001.002

Project Name: 19 North Street Remedial Investigation

Location: 19 North Street Buffalo New York

Client: 23 North Street, LLC

Drilling Firm: NYEG

Driller: John (NYEG)

Surface Elev.:

Datum: GROUND SURFACE

Start Date:

Finish Date:

Groundwater

Depth

Date & Time

Drill Rig: geoprobe 7220

Inspector:

While Drilling:

Casing: 5 ft liner

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			0-10"	topsoil and grass	0.1 ppm	START 1430
			10-54"	FILL - medium grain sand, brown, with rock and trace brick, moist	0.0 ppm	80 degrees F
2						54" Recovered
3						
4						
5						
6			0-16"	FILL - medium sand, brown with rock pieces and trace brick pieces	0.1 ppm	62" Recovered
			16-45"	dark brown, fine SAND and SILT, dry	0.0 ppm	Top of native soil 6 feet 4 inches
7			45-52"	red brown, CLAY, dense	0.0 ppm	below grade
			52-62"	brown, SILT, dry to moist	0.1 ppm	
8						
9						
10						
11			0-1"	slug	0.0 ppm	62" Recovered
			1-62"	red brown, fine SILT	0.0 ppm	
12						
13						
14						
15						
16				end of boring at 15 feet		
17						
18						
19						
20						
21						
22						Sample: headspace
						F1-3-5ft (+Hex) 0.3
						F1-9-10ft (+Hex) 1.5
23						F1-10-11ft 1.5
						F1-11-12ft 1.4
24						F1-12-13ft 0.4
						F1-15ft 0.4
25						



		<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com		<h1 style="text-align: center;">BORING LOG</h1>		Boring No.		<b>F2</b>	
		Sheet 1 of:				1			
		Project No.:				P67.001.002			
Project Name: 19 North Street Remedial Investigation						Surface Elev.:			
Location: 19 North Street Buffalo New York						Datum:		GROUND SURFACE	
Client: 23 North Street, LLC						Start Date:		9/1/16	
Drilling Firm: NYEG				Driller: John (NYEG)		Finish Date:		9/1/16	
Groundwater		Depth	Date & Time	Drill Rig: geoprobe 7220		Inspector:			
While Drilling:				Casing: 5 ft liner		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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>			<b>COMMENTS</b> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>		
1			0-5"	<u>topsoil</u>			0.0 ppm START 1500		
			5-28"	<u>FILL - brown, medium sand with rock pieces</u>			0.1 ppm 28" Recovered		
2									
3									
4									
5									
6			0-5"	<u>red brown, fine SAND and SILT</u>			0.1 ppm 62" Recovered		
			5-62"	<u>brown, fine to medium grained SAND, wet to saturated coarse, wet sand @ 62"</u>			0.1 ppm		
7									
8									
9									
10									
11			0-16"	<u>brown, medium sand with rock pieces</u>			0.1 ppm 45" Recovered		
			16-29"	<u>dense, hard CLAY</u>			0.1 ppm		
			29-45"	<u>red brown, fine SAND and SILT</u>			0.1 ppm		
12									
13									
14									
15									
16			0-5"	<u>red brown, silty SAND, trace clay</u>			0.1 ppm 40" Recovered		
			5-40"	<u>red brown, silty SAND, moist</u>			0.0 ppm		
17									
18									
19									
20									
21			0-24"	<u>brown, coarse SAND, wet</u>			0.0 ppm 62" Recovered		
			24-62"	<u>hard, dense CLAY</u>			0.1 ppm		
22							Sample: headdresspace		
							F2-4-6ft 0.7		
							F2-9-10ft(+ Hex) 0.8		
23							F2-10-11ft 0.8		
							F2-11-12ft 1.6		
24							F2-12-13ft 0.8		
25				end of boring at 25 feet					

			<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 www.cscos.com			<h2 style="text-align: center;">BORING LOG</h2>			<b>Boring No.</b>		<b>F3</b>					
									<b>Sheet 1 of:</b>		1					
									<b>Project No.:</b>		P67.001.002					
<b>Project Name:</b>			19 North Street Remedial Investigation						<b>Surface Elev.:</b>							
<b>Location:</b>			19 North Street Buffalo New York						<b>Datum:</b>		GROUND SURFACE					
<b>Client:</b>			23 North Street, LLC						<b>Start Date:</b>		8/29/16					
<b>Drilling Firm:</b>			NYEG			<b>Driller:</b>			John (NYEG)			<b>Finish Date:</b>		8/29/16		
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b>			geoprobe 7220			<b>Inspector:</b>		NW		
<b>While Drilling:</b>						<b>Casing:</b>			5 ft liner		<b>Rock Core:</b>				<b>Undist:</b>	
<b>Before Casing Removal:</b>						<b>Sampler:</b>					<b>Other:</b>					
<b>After Casing Removal:</b>						<b>Hammer:</b>										
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey						<b>COMMENTS</b> (e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)						
1			0"-4"	blacktop						0.1 ppm	START 1240					
			4"-8"	crushed stone							33" Recovered					
2			8"-60"	red brown, very fine SAND, silt, and a little clay, damp							Top of native soil 8 inches below grade					
3																
4																
5																
			5'-7"	red brown, CLAY, some silt, very fine sand, damp						0.1 ppm	37" Recovered					
6			7'-10'	red brown, very fine SAND and SILT, little clay, damp						0.5 ppm						
7																
8																
9																
10																
			10'-16'	red brown, very fine SAND and SILT, little clay, damp						0.1 ppm	34" Recovered					
11																
12																
13																
14																
15																
			15'-16'	medium brown, fine SAND, some silt, moist						0.1 ppm						
16																
17				end of boring at 16 feet												
18																
19																
20																
21																
22											<b>Sample:</b> Time:					
											F3-0.5-1FT					
											F3-1-2.5 FT					
23											F3-3.5-4.5FT					
											F3-5.5-6.5 FT					
24											F3-15FT					
25																

			<b>C&amp;S Engineers, Inc.</b> 141 Elm Street Buffalo, New York 14203 Phone: 716-847-1630 Fax: 716-847-1454 <a href="http://www.cscos.com">www.cscos.com</a>			<h2 style="text-align: center;">BORING LOG</h2>			<b>Boring No.</b>		<b>F4</b>			
									<b>Sheet 1 of:</b>		1			
									<b>Project No.:</b>		P67.001.002			
<b>Project Name:</b> 19 North Street Remedial Investigation								<b>Surface Elev.:</b>						
<b>Location:</b> 19 North Street Buffalo New York								<b>Datum:</b>		GROUND SURFACE				
<b>Client:</b> 23 North Street, LLC								<b>Start Date:</b>		8/29/16				
<b>Drilling Firm:</b> NYEG						<b>Driller:</b> John (NYEG)		<b>Finish Date:</b>		8/29/16				
<b>Groundwater</b>		<b>Depth</b>		<b>Date &amp; Time</b>		<b>Drill Rig:</b> geoprobe 7220		<b>Inspector:</b>		NW				
<b>While Drilling:</b>						<b>Casing:</b> 5 ft liner		<b>Rock Core:</b>		<b>Undist:</b>				
<b>Before Casing Removal:</b>						<b>Sampler:</b>		<b>Other:</b>						
<b>After Casing Removal:</b>						<b>Hammer:</b>								
(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"	<b>MATERIAL DESCRIPTION</b> <small>c - coarse m - medium f - fine</small> <small>S - Sand, \$ - Silt, G - Gravel, C - Clay, cly - clayey</small>				<b>COMMENTS</b> <small>a - and - 35-50% s - some - 20-35% l - little - 10-20% t - trace - 0-10%</small> <small>(e.g., N-value, recovery, relative moisture, core run, RQD, % recovered)</small>						
1			4"	<b>blacktop</b>				START 1210						
			4.5" - 8.5"	<b>crushed stone</b>				0.3 ppm						
			8.5"-28"	<b>red brown, very fine SAND and SILT, little clay, damp</b>				1.1 ppm						
2								Top of native soil 8.5 inches below grade						
3														
4														
5														
6			18"	<b>red brown, very fine SAND and SILT, moist to wet</b>				34" Recovered						
			18"-24"	<b>red brown, CLAY, moist</b>										
			24-34"	<b>red brown, very fine SAND and SILT, trace clay</b>										
7														
8														
9														
10														
11			0"-47"	<b>red brown, very fine SAND and SILT, trace clay, moist to saturated</b>				47" Recovered						
12														
13														
14														
15														
16				<b>end of boring at 15 feet</b>										
17														
18														
19														
20														
21														
22								<b>Sample:</b> Time:						
								<b>F4-0.5-1FT</b>						
								<b>F4-1-2.5</b>						
23								<b>F4-3.5-4.5</b>						
								<b>F4-5.5-7.0</b>						
24														
25														





**C&S Engineers, Inc.**  
499 Col. Eileen Collins Blvd.  
Syracuse, New York 13212  
Phone: 315-455-2000  
Fax: 315-455-9667  
www.cscos.com

## BORING LOG GENERAL INFORMATION & KEY

### Casing, Sampling and Other Equipment

H.S.A: Hollow Stem Auger (record I.D.)

S.S.A: Solid Stem Auger (record O.D.)

Steel: Hollow Steel Flush Joint Casing (recorded I.D.)

Open: Open Hole / No Casing (record I.D.)

S.S.: Split Spoon (record I.D.)

Hammer: Auto - Automatic, Manual - Manual (rope & cat-head)

Undist: Tube - Shelby, Oste - Osteberg (record I.D. & length)

### Rock Cores

Standard I.D.

Wire Line I.D.

EW / EX 1-13/32"

-- --

AW / AX 1-25/32"

AQ 1-1/8"

BW / BX 2-7/32"

BQ 1-1/2"

NW / NX 2-27/32"

NQ 1-31/32"

HW / HX 2-25/32"

HQ 2-5/8"

### Symbol Legend & Abbreviations



Split Spoon  
Sample



Rock Core



Undisturbed  
Sample

#### Abbreviations

W.O.R. - Weight of Rods  
W.O.H. - Weight of Rods & Hammer  
N - Standard Penetration Test N-value  
N.W.E. - No Water Encountered  
do - ditto (same as above)  
Rec - Recovery  
RQD - Rock Quality Designation  
PP - Pocket Penetrometer  
Tor - Torvane

#### Color

br - brown  
rd - red  
gr - gray  
grn - green  
blk - black  
wht - white

### Description of Soil Density

Relative Soil Density determined while advancing the soil boring by using ASTM Method D-1586, *Standard Penetration Test N-Value*. The N-Value is calculated by adding the hammer blow counts of the 2nd and 3rd sampling intervals together for driving a 2" O.D. sampler with a 140 lb. hammer falling 30" --OR-- by obtaining Pocket Penetrometer or Torvane Readings.

Course Grained Soils		Fine Grained Soils					
Greater than half the material larger than No. 200 Sieve (sand and gravel)		N-Value	Undrained Shear Strength ( $q_u$ )				Relative Density
N-Value	Relative Density		psi	psf	tsf or kg/cm <sup>2</sup>	kN/m <sup>2</sup>	
< 2		< 2	< 2.5	< 375	< 0.2	< 20	Very Soft
< 4	Very Loose	2 to 4	2.5 - 5	375 - 750	0.20 - 0.40	20 - 40	Soft
4 to 10	Loose	5 to 8	5 - 10	750 - 1,500	0.40 - 0.75	40 - 75	Firm -or- Medium Stiff
11 to 30	Medium Dense	9 to 15	10 - 20	1,500 - 3,000	0.75 - 1.50	75 - 150	Stiff
31 to 50	Dense	16 to 30	20 - 40	3,000 - 6,000	1.50 - 3.00	150 - 300	Very Stiff
> 50	Very Dense	> 30	> 40	> 6,000	> 3	> 3,000	Hard

### Description of Soil Type

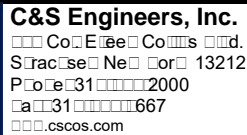
Material	Grain Size	Material	Grain Size	Material	Grain Size	Material	Grain Size
Boulder	> 8"	Gravel		Sand		Silt & Clay < #200	
Cobble	8" - 3"	Course	3" - 1-1/2"	Course	#4 - #10	Note: # indicates U.S. Standard Sieve with size shown.	
		Medium	1-1/2" - 3/4"	Medium	#10 - #40		
		Fine	3/4" - #4	Fine	#40 - #200		

### Bed Rock Classification Terms & Field Test / Field Observation

Term	Field Test / Field Observation	Rock Mass Classification based on RQD	
Hardness		RQD	Rock Mass Quality
Soft	Can be Scratched by Fingernail	< 25%	very poor
Medium Hard	Easily Scratched by Pen Knife or Nail	25% - 50%	poor
Hard	Difficultly Scratched by Pen Knife or Nail	50% - 75%	fair
Very Hard	Cannot be Scratched by Pen Knife or Nail	75% - 90%	good
Weathering		90% - 100%	excellent
Very Weathered	Based on observations (e.g., amount of disintegration, iron staining, core recovery, clay seams, amount of material within joints, etc.)	$RQD = \frac{\Sigma \text{ of pieces } \geq 4''}{\text{total length of run}}$	
Weathered			
Sound			
Bedding (Natural Breaks in Rock Layers)		ASTM Method D-6032, <i>Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Cores</i>	
Laminated	< 1 inch		
Thinly Bedded	1 inch to 4 inches		
Bedded	4 inches to 12 inches		
Thickly Bedded	12 inches to 36 inches		
Massive	> 36 inches		



**APPENDIX B**  
**GROUNDWATER MONITORING WELL CONSTRUCTION AND SAMPLING**  
**LOGS**



## AD

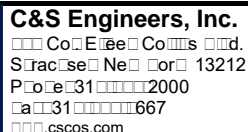
**Drilling Firm:**

**Casing:**

prode descrio o osera o e oca o me o d o co s r c o o  
de o pme o me o d a d a o oer o rma o o

**Near W. Property line**

**24.0'** Bottom of Bore Hole



## AD

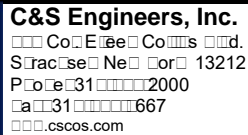
**Drilling Firm:**

**Casing:**

provide description of observation method or source of development and other information

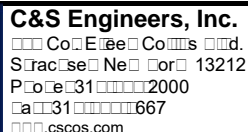
Near Road

**24.0'** Bottom of Bore Hole



**24.0'** Bottom of Bore Hole





## AD

**Drilling Firm:**

**Casing:**

prode descripo o osera o e oca o me o o co s r c o  
de e o pme me o d a d a o o r e r o r m a o

Near northern property line, well is inside area of nuisance characteristics in soil.

**24.0'** Bottom of Bore Hole



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.)

1 1/4" = 0.08    2" = 0.17    3" = 0.38  
4" = 0.66    6" = 1.5    8" = 2.6

Client Name:

Site Name:

Project No.:

Field Staff:

27 NORTH ST  
19 NORTH ST  
PLOT  
Cody Martin

### WELL DATA

Date		7/20/10 9/22/10							
Well Number		MW1-C4							
Diameter (inches)		2							
Total Sounded Depth (feet)		24							
Static Water Level (feet)		20.4 20.35							
H <sub>2</sub> O Column (feet)		3.6							
Pump Intake (feet)									
Well Volume (gallons)		0.936							
Amount to Evacuate (gallons)		2.8							
Amount Evacuated (gallons)		3							

### FIELD READINGS

Date	Stabilization	9/22/10							
Time	Criteria	8:34 8:40 8:45							
pH (Std. Units)	+/-0.1	10.56 10.16 10.08							
Conductivity (mS/cm)	3%	1.85 1.63 1.57							
Turbidity (NTU)	10%	587 577 176							
D.O. (mg/L)	10%	9.15 7.80 7.21							
Temperature (°C) (°F)	3%	16.22 14.66 14.53							
ORP <sup>3</sup> (mV)	+/-10 mv	-64 -63 -61							
Appearance		ST ST ST							
Free Product (Yes/No)									
Odor									
Comments		0.5 gal 1 gal							

C = Clear T = Turbid ST = Semi Turbid VT = Very Turbid

Metals Sampled  
Oct 4/10 ntur



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## Well Sampling Field Data Sheet

### Well Casing Unit Volume

(gal/l.f.)

1 1/4" = 0.08    2" = 0.17    3" = 0.38  
4" = 0.66    6" = 1.5    8" = 2.6

Client Name:

Site Name:

Project No.:

Field Staff:

23 NORTH ST.

19 NORTH ST

P67

Cody Martin

### WELL DATA

Date	9/20/10								
Well Number	MW3-AB								
Diameter (inches)	2								
Total Sounded Depth (feet)	20.8								
Static Water Level (feet)	20.25								
H <sub>2</sub> O Column (feet)	0.55								
Pump Intake (feet)									
Well Volume (gallons)	0.143								
Amount to Evacuate (gallons)	0.5								
Amount Evacuated (gallons)	Dry								

★ no flow, no water in well after development.  
just enough to bail for VOCs

### FIELD READINGS

Date	Stabilization								
Time	Criteria								
pH (Std. Units)	+/-0.1								
Conductivity (mS/cm)	3%								
Turbidity (NTU)	10%								
D.O. (mg/L)	10%								
Temperature (°C) (°F)	3%								
ORP <sup>3</sup> (mV)	+/-10 mv								
Appearance									
Free Product (Yes/No)									
Odor									
Comments									

C = Clear    T = Turbid    ST = Semi Turbid    VT = Very Turbid



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## Well Sampling Field Data Sheet

### Well Casing Unit Volume

(gal/l.f.)

1 1/4" = 0.08    2" = 0.17    3" = 0.38  
4" = 0.66    6" = 1.5    8" = 2.6

Client Name:

Site Name:

Project No.:

Field Staff:

23 North St  
19 North St  
POT  
Cody Martin

### WELL DATA

Date	9/20/16	9/21/16						
Well Number	MW3-TL							
Diameter (inches)	2							
Total Sounded Depth (feet)	23.3							
Static Water Level (feet)	16.8	16.7						
H <sub>2</sub> O Column (feet)	16.5							
Pump Intake (feet)								
Well Volume (gallons)	1.69							
Amount to Evacuate (gallons)	5							
Amount Evacuated (gallons)	5							

### FIELD READINGS

Date	9/21/16							
Time	14:22	14:26	14:31	14:33	14:46			
pH (Std. Units)	10.16	9.52	9.33	9.27	9.11			
Conductivity (mS/cm)	2.16	2.21	2.46	2.52	2.59			
Turbidity (NTU)	560	477	315	205	123			
D.O. (mg/L)	4.06	2.89	2.12	1.92	1.68			
Temperature (°C) (°F)	17.07	15.75	15.50	15.47	15.34			
ORP <sup>3</sup> (mV)	-119	-102	-103	-102	-98			
Appearance	ST	ST	ST	ST	ST			
Free Product (Yes/No)								
Odor								
Comments	1gal 1.5gal 2gal 3							

C = Clear    T = Turbid    ST = Semi Turbid    VT = Very Turbid

Sampled metals  
at 500 ntu





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## Well Sampling Field Data Sheet

### Well Casing Unit Volume

(gal/l.f.)

1 1/4" = 0.08    2" = 0.17    3" = 0.38  
4" = 0.66    6" = 1.5    8" = 2.6

Client Name:

Site Name:

Project No.:

Field Staff:

23 NORTH ST

19 NORTH ST

PLOT

Cody Martin

### WELL DATA

Date	9/20/16	9/21/16						
Well Number	MNS4 F2							
Diameter (inches)	2							
Total Sounded Depth (feet)	22.45							
Static Water Level (feet)	116.4	116.4						
H <sub>2</sub> O Column (feet)	6.04							
Pump Intake (feet)								
Well Volume (gallons)	1.573							
Amount to Evacuate (gallons)	4.719							
Amount Evacuated (gallons)	5							

### FIELD READINGS

Date	9/21/16							
Time	13:16	13:21	13:25	13:29				
pH (Std. Units)	+/-0.1	12.05	11.71	11.51	11.38			
Conductivity (mS/cm)	3%	9.35	9.78	9.98	9.99			
Turbidity (NTU)	10%	1000	969	725	1000			
D.O. (mg/L)	10%	2.94	3.73	3.43	2.97			
Temperature (°C) (°F)	3%	15.67	15.36	15.27	15.26			
ORP <sup>3</sup> (mV)	+/-10 mv	-204	-194	-186	-182			
Appearance		ST	T	T	T			
Free Product (Yes/No)								
Odor								
Comments	1gal 2gal 2.5							

C = Clear    T = Turbid    ST = Semi Turbid    VT = Very Turbid

Metals sampled  
at 92 ntu

# Alpha Analytical - Groundwater Monitoring

## Field Data Sheet

Client: C & S

Sample ID: MW301

Field Technician(s): Zack Robison

Sample Matrix: Groundwater

Serial\_No: 02011716:57

( ) Grab ( ) Composite

Sampling Method: Low Flow Dedicated: Y/N

Multi-phased/Layered: QED ( ) Yes (X) No If yes: ( ) Light ( ) Heavy

### Sampling Data (Field Measurements):

Time	Temp(°C)	pH (St Units)	Cond. (Umhos/cm)	Turb. (NTU)	Other. (ORP) mV	Other. (DO) mg/L
1340	13.2	7.03	1.42	4.52	141.0	2.35
1345	13.2	7.04	1.42	4.95	144.0	2.49
1350	13.2	7.04	1.42	4.97	146.8	2.43

### Field Equipment

Check: Calibrated & Cleaned

### Weather Conditions and Well Observations:

Weather @ time of sampling: Overcast 36°F

Sample Characteristics: Clear

### Comments and General Observations:

Depth to water level = 15.0 ft  
Depth to well bottom = 22.0 ft  
(well in good condition) Standing water in between well & casing  
\* MS/MSD Taken 1 ft (bailed out)

**Field Tech Certification:** I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols.

Date: 11/25/17

Technician: Zack Robison Company: AAL

# Alpha Analytical - Groundwater Monitoring

## Field Data Sheet

Client: C & S

Sample ID: MW2A3

Field Technician(s): Zack Robison

Sample Matrix: Groundwater

( ) Grab ( ) Composite Serial\_No: 02011716:57

Sampling Method: Low Flow Dedicated: Y/N

Multi-phased/Layered: QED ( ) Yes (x) No If yes: ( ) Light ( ) Heavy

### Sampling Data (Field Measurements):

Time	Temp(°C)	pH (St Units)	Cond. (Umhos/cm)	Turb. (NTU)	Other. (ORP)mv	Other. (DO)mg/L
1200	13.3	6.87	1.75	22.1	-1.7	4.28
1205	13.3	6.87	1.75	19.9	-3.6	4.14
1210	13.2	6.87	1.75	18.8	-4.7	4.10

### Field Equipment

Check: Calibrated & cleaned

### Weather Conditions and Well Observations:

Weather @ time of sampling: Overcast 36°F

Sample Characteristics: Slightly cloudy (white)

### Comments and General Observations:

Depth to Water Level = 19ft  
Depth to Well Bottom = 20.65  
(Well in Good condition) Missing Bolts for well cover

**Field Tech Certification:** I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols.

Date: 1/25/17

Technician: Zack Robison Company: AAL



# Alpha Analytical - Groundwater Monitoring

## Field Data Sheet

Client: C & S

Sample ID: MW1C4

Field Technician(s): Zack Robinson

Sample Matrix: Groundwater

Serial\_No: 02011716:57

( ) Grab ( ) Composite

Sampling Method: Low Flow Dedicated: Y/N

Multi-phased/Layered: QED ( ) Yes (✓) No If yes: ( ) Light ( ) Heavy

### Sampling Data (Field Measurements):

Time	Temp(°C)	pH (St Units)	Cond. (Umhos/cm)	Turb. (NTU)	Other. (ORP)mv	Other. (DO)mg/L
1010	13.6	6.94	1.44	15.4	374.1	1.41
1015	13.5	6.93	1.43	16.3	316.2	1.32
1020	13.5	6.93	1.43	15.8	317.5	1.27

### Field Equipment

Check: Calibrated & cleaned

### Weather Conditions and Well Observations:

Weather @ time of sampling: Overcast 36°F

Sample Characteristics: Clear

### Comments and General Observations:

Depth to Water Level = 19.5 ft  
Depth to Well Bottom = 23.75 ft  
(Well in Good Condition)

**Field Tech Certification:** I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols.

Date: 11/25/17

Technician: [Signature] Company: FAV



# Alpha Analytical - Groundwater Monitoring

## Field Data Sheet

Client: CAS Sample ID: MW4F2  
Field Technician(s): Zack Robison Sample Matrix: Groundwater  
Serial No: 02011716:57  
( ) Grab ( ) Composite  
Sampling Method: Low Flow Dedicated: Y/N  
QED  
Multi-phased/Layered: ( ) Yes ( ) No If yes: ( ) Light ( ) Heavy

### Sampling Data (Field Measurements):

Time	Temp(°C)	pH (St Units)	Cond. (Umhos/cm)	Turb. (NTU)	Other. ( ORP) mv	Other. ( DO ) mg/L
1530	13.0	7.20	4.05	38.2	263.0	4.89
1535	13.0	7.20	4.04	36.9	263.9	4.87
1540	13.0	7.20	4.03	37.8	265.7	4.88

### Field Equipment

Check: Calibrated & 36°F (cleaned)

### Weather Conditions and Well Observations:

Weather @ time of sampling: Overcast 36°F

Sample Characteristics: Slightly cloudy (white)

### Comments and General Observations:

Depth to water level = 15.3  
Depth to bottom of well = 20.9  
(condition of well good) \* Blind Dup Taken

**Field Tech Certification:** I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols.

Date: 1/25/17 Technician: Zack Robison Company: AAL

**APPENDIX C**  
**DATA USABILITY SUMMARY REPORTs**

# Data Validation Services

120 Cobble Creek Road P.O. Box 208  
North Creek, NY 12853

Phone 518-251-4429  
harry@frontiernet.net

April 1, 2017

Alayna DeMarchi  
C&S Companies  
141 Elm St # 100  
Buffalo, NY 14203

RE: 19 North Street Site Analytical Data Validation  
Data Usability Summary Report (DUSR)  
Paradigm SDG Nos. 163749, 163786, 163810, 163934, 1640905, and 164131/138  
Alpha Analytical SDG No. L1702517

Dear Ms. De Marchi:

Review has been completed for the analytical data packages noted above, generated by Paradigm Environmental Services and Alpha Analytical Laboratories and that pertain to samples collected between 08/29/16 and 01/25/17 at the 19 North Street site. Thirty five soil samples and four field duplicates were processed for TCL and 6 NYCRR Part 375 volatiles, TCL semivolatiles, TCL pesticides, Aroclor PCBs, Part 375 metals, and total cyanide; ten of those samples were also processed for hexavalent chromium. Seven aqueous samples and two field duplicates were processed for TCL and 6 NYCRR Part 375 volatiles, TCL semivolatiles, TCL pesticides, Aroclor PCBs, TAL metals, and total cyanide; five of those samples and the field duplicates were also processed for hexavalent chromium. One aqueous sample was processed for TCL and Part 375 volatiles. One soil sample was processed for TCL pesticides, one soil for silver, and one soil for zinc. Hexavalent chromium analyses and some of the pesticide analyses are subcontracted to Alpha Analytical. Data pertaining to TCLP analyses did not undergo validation review. Analytical methodologies are those of the USEPA SW846.

The data packages submitted by the laboratory contain full deliverables for validation, and this DUSR is generated from review of the summary form and raw data documentation. The data have been reviewed for application of validation qualifiers, using guidance from the USEPA validation guidance documents. The following items were reviewed:

- \* Laboratory Narrative Discussion
- \* Custody Documentation
- \* Holding Times
- \* Surrogate and Internal Standard Recoveries
- \* Matrix Spike Recoveries/Duplicate Correlations
- \* Field Duplicate Correlations
- \* Preparation/Calibration/Trip Blanks
- \* Laboratory Control Samples (LCSs)
- \* Instrumental Tunes

- \* Calibration Standards
- \* Instrument IDLs
- \* Sample Result Verification

The data review includes evaluation of the specific items noted in The NYS DER-10 Appendix B section 2.0 (c). The items listed above that show deficiencies are discussed within the text of this narrative. The laboratory QC forms illustrating the excursions can be found within the laboratory data packages.

**In summary**, analyses were conducted in compliance with the required analytical protocols. Most sample results are usable either as reported or with minor qualification/edit. The following concerns are noted:

- 1,4-Dioxane is rejected in all samples due to methodology limitations
- Results for pesticides in one sample are rejected due to an apparent matrix effect
- The metals' evaluation for the soil matrix effect on analyte recovery is incomplete. There may be an unstated bias to detected element concentrations.
- The evaluation of the reliability of metals' reporting limits is incomplete

Data completeness, accuracy, precision, representativeness, sensitivity, and the analytical method comparability are acceptable.

The sample identification summaries are attached to this text. Also included with the report are validation qualifier definitions and laboratory EQulS results files that are annotated to reflect the qualifications recommended within this report.

The following text discusses quality issues of concern.

#### **Chain-of-Custody/Sample Receipt**

The Paradigm custody forms do not include fields to denote preservation. The preparation/analysis logs for volatile, metals, and total cyanide processing do not include the pHs of the samples. The login form states that the pHs were acceptable, presumably for the metals and cyanide fractions (volatiles must be checked at sample analysis). Volatile samples were processed within the holding time for unpreserved samples. No qualification is made.

The Paradigm custody forms do not include a field for the final relinquish entries, so are incomplete in that regard.

The year was not entered onto the collection dates or any relinquish/receipt entries except the final receipt entries on the custody forms for samples reported in SDG 163749, 163786, and 163810.

Scratchouts should have been dated and initialed.

#### **Blind Duplicate Evaluations**

The blind field duplicates were collected at locations D3 5.5-7.5 ft, A2-9.5-11.5 ft, A3 5-7 ft, and D3 5.5-7.5 FT, MW-3-D1-092116, and MW-4-F2-01252107. The correlations are within validation guidelines, with the following exceptions, results for which are qualified as estimated in the indicated parent sample and its duplicate:



- arsenic, barium, copper, nickel, and zinc in D3 5.5-7.5 ft and A3 5-7 ft
- chromium in MW-4-F2-01252017

### **Volatile Analyses by EPA 8260C**

The laboratory provided single containers for soil collection. The NYSDEC Sampling Guidelines and Protocols Manual requires that a separate container be collected for the volatile fraction. A portion of the sample volume was not apportioned to a separate container for volatile processing at the laboratory. The ten samples and two field duplicates reported in SDG 163810 were processed after the total cyanide analysis, and the results for the volatile analytes in those samples have therefore been qualified as estimated in value.

F4-0.5-1 ft exhibited low recoveries for a surrogate standard and an internal standard. Results for that sample are therefore qualified as estimated, with a low bias. Similarly, the results for C4 5-7 ft are qualified as estimated due to low surrogate recovery.

The detection of n-butylbenzene in B3-A 22-23 ft is qualified as tentative in identification and estimated in value due to mass spectral quality.

Matrix spike/duplicate evaluations of MW-4-F2-092116, B4 9-10 ft, B4 10-11 ft, and MW-3-D1-01252017 show acceptable recoveries and correlations, with the following exceptions, results for which are qualified as estimated in the indicated parent sample:

<u>Parent Sample</u>	<u>Analyte</u>	<u>Outlying % Recoveries</u>
B4 9-10 ft	1,2-dichlorobenzene	50.7,45.9
	1,3-dichlorobenzene	52.3, 48.2
	1,4-dichlorobenzene	49.5,45.2
	chlorobenzene	74.8,70.7
	ethylbenzene	81.5,79.1
B4 10-11 ft	1,2-dichlorobenzene	69.4, 63.9
	1,3-dichlorobenzene	68.4, 63.0
	1,4-dichlorobenzene	65.1, 59.9

Only a portion of the analytes was evaluated in the matrix spikes and LCSs. The protocol requires that all target analytes be evaluated.

Due to very low response factors inherent in the methodology, the results for 1,4-dioxane in the samples are rejected and not usable. Other calibration standards showed acceptable responses, with the following exceptions, results for which are qualified as estimated in the indicated associated samples:

- acetone and bromoform (22&D to 44%D) in samples C1 Surface, C1 3-4 ft, C1 8-9 ft, A2 UF 1-2 ft, A2 9.5-11 FT, DUP A, A3 5-7 ft, DUP B, A3 14-15 ft (native), and A1 5-6 ft
- acetone (47%D) in samples A3 22-23 ft and B3-A 22-23 ft
- bromomethane (21%D) in all samples reported in SDG 4131-01
- bromomethane and bromoform (21%D and 55%D) in the Trip Blank

### **TCL Semivolatiles by EPA 8270D (Full Scan and SIM)**

Due to low surrogate standard recoveries, the results for F4-1.0-2.5 ft, E1 11-12 ft, A3 5-7 ft, A1 5-6 ft, and A3 14-15 ft (native) have been qualified as estimated in value, with a low bias. Similarly, the phenolic analytes in F3-1.0-2.5 ft have been qualified as estimated due to low acidic surrogate recoveries in that sample.

Internal standard recoveries are compliant with analytical protocol requirements. Blanks show no contamination. Calibration standard responses are within validation guidelines.

Matrix spike/duplicate evaluations of MW-4-F2-092116, F4-0.5-1 ft, B4 9-10 ft, B4 10-11 ft, A2-9.5-11 ft, and MW-3-D1-01252017 show acceptable recoveries and correlations, with the following exceptions, results for which are qualified as estimated in the indicated parent samples:

<u>Parent Sample</u>	<u>Analyte</u>	<u>Outlying % Recoveries</u>	<u>Outlying %RPD</u>
B4 9-10 ft	1,2,4-trichlorobenzene	22.6,27.0	
	1,4-dichlorobenzene	14.9,19.2	25.3
B4 10-11 ft	1,2,4-trichlorobenzene	20.7,24.3	
	1,4-dichlorobenzene	15.2,14.4	
	2-chlorophenol	31.0	39.5
	4-chloro-3-methylphenol	40.3	45.2
	acenaphthene	36.0	47.5
	n-nitro-di-n-propylamine	30.5	40.0
	phenol	32.9	52.4
A2 9.5-11 ft	1,2,4-trichlorobenzene	32.8,33.0	
	1,4-dichlorobenzene	28.0, 26.5	
	2-chlorophenol	40.6,39.2	
	phenol	42.8,41.4	

Only eleven of the analytes were evaluated in the matrix spikes and LCSs. The protocol requires that all target analytes be evaluated.

### **TCL Pesticide and Aroclor PCBs by EPA 8081B and 8082A**

Due to surrogate recovery below 10%, the results for the pesticides in D4-15 ft and Aroclors in D3 5.5-7.5 ft, are rejected and not usable. It is noted that the field duplicate of D3 5.5-7.5 ft did not show that same failure, and the results for that duplicate are usable as reported, and may be representative of that location.

Dual column quantitative correlations were elevated for many of the pesticide detections. These are indicative of matrix interferences that can cause false positives or elevated quantitative values. Those analytes showing elevated correlations have been qualified as either estimated in value, tentative in identification, or edited to non-detection, depending on the degree of variance.

The laboratory utilizes a non-compliant low recovery acceptance range limit of only 10% for all of the pesticide surrogate standards and the LCS and MS target analytes, and for the PCB surrogate standards. The laboratory should be using in-house limits generated according to protocol requirements (or 70% to 130% while determining those limits). Although the protocols allow low recoveries, section 9.6.11 of governing method 8000B requires that they be reasonable. LCSs have no matrix to cause a

low recovery effect, and a processing effect is suspected as the cause of the large statistical variance. It is also noted that the duplicate correlation limits are very high (greater than 100%RPD for pesticides and 69% for Aroclors). This is much greater than typical matrix effects, and reflects large inconsistencies in processing.

The Aroclor 1016/1260 matrix spikes of MW-4-F2-092116, B4 9-10 ft, B4 10-11 ft, and MW-3-D1-01252017, and pesticide matrix spikes of MW-3-D1-01252017 show recoveries and duplicate correlations that are within validation guidelines/laboratory limits. The Aroclor LCS and matrix spikes are processed with mixtures 1016 and 1260, but reported as combined results/recoveries.

The matrix spikes of B4 10-11 FT show recoveries below 10% for 4,4'-DDE and 4,4'-DDT, and low recoveries for endosulfan sulfate (20% and 22%). The results for those analytes in the parent have been qualified as estimated in value.

One of the pesticide matrix spikes of MW-4-F2-092116 shows acceptable recoveries, and one shows elevated recoveries for all analytes. The duplicate correlations are therefore highly elevated at approximately 90%RPD. The same variance is evident in the surrogate recoveries of those spikes. An extract specific anomaly is suspected.

Holding times were met, and blanks show no contamination. Calibration standards are compliant.

The dual column quantitative QC summary form for sample F4-0.5-1.0 lists an incorrect sample ID.

#### **TAL Metals Analyses by EPA 6010C, 6020A, 7470B, and 7471A**

The analytical protocol requires that serial dilution evaluations be performed in order to determine if matrix interferences inhibit analyte recovery and produce a bias to reported results. Although the laboratory processed those dilutions, evaluations were not performed on the data, and the laboratory declined to provide the required QC summary forms when requested. Therefore, qualification of the data for this parameter has not been performed. The raw data are available and the appropriate form generation and qualification can be performed at a later date. The qualifications would apply to the detected analyte concentrations in the parent sample undergoing the evaluation. A low bias is typically indicated for outlying correlations.

The low level reporting limit standards required of the protocol were processed, but the required summary form showing the recoveries was not provided, even upon request. The raw data show detected concentrations, but the theoretical values are not known. Notations on the worksheet that indicate outliers (qualitatively) were reviewed during this validation procedure. Based on those notations, the results for selenium in the aqueous samples collected 09/21/16 have been qualified as estimated in value. Those evaluation summary forms can be provided by the laboratory at a later date.

The detection of antimony in MW-3-D1-012517 is considered external contamination and is edited to non-detection, due to presence in the associated method blank.

Matrix spike/laboratory duplicate evaluations were performed on Part 375 or TAL metals on MW-4-F2-092116, D4-15 ft, B4 9-10 ft, B4 10-11 ft, MW-3-D1-01252017, and C1 Surface, and for silver on A1 6-7 ft. The parent samples listed below show recoveries and/or correlations that are outside the validation guidelines, the results for which have been qualified as estimated in value in the indicated parent samples:

<u>Parent Sample</u>	<u>Element</u>	<u>Outlying % Recoveries</u>	<u>Outlying %RPD</u>
MW-4-F2-092116	thallium	34	96
	potassium	163	
	mercury	40	
B4 10-11 ft	arsenic	73.0	
	barium	74.3	
	beryllium	71.7	
	lead	72.7	
	nickel	72.1	
	selenium	73.6	
C1 Surface	cadmium	73.7	
	lead	71.7	
	nickel	71.8	

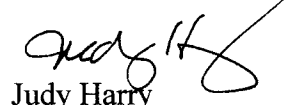
#### **Total Cyanide and Hexavalent Chromium Analyses**

Review was conducted for method compliance, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure. All associated with validation samples were found acceptable unless noted specifically within this text.

The matrix spike/duplicate evaluations were performed for hexavalent chromium in MW1-C4-092216, MW-4-F2-092116, D4-8-9FT, C4 5-7FT, MW-3-D1-01252017, and C1(3-4”), and for total cyanide on B4 9-10 ft, MW-3-D1-01282017, and B4 10-11 ft. They show acceptable accuracy and precision.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,



Judy Harry

Att: Validation Qualified Definitions  
Sample Identifications  
Qualified Client EDDs



## VALIDATION DATA QUALIFIER DEFINITIONS

<b>U</b>	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
<b>J</b>	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
<b>J-</b>	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
<b>J+</b>	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.
<b>UJ</b>	The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
<b>NJ</b>	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
<b>R</b>	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.
<b>EMPC</b>	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

## **CLIENT and LABORATORY SAMPLE IDs**

[illegible]





[illegible]

[illegible]





Project Name: Not Specified

Project Number: Not Specified

Lab Number: L1629861

Report Date: 09/28/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1629861-01	E1 SURFACE	SOIL	Not Specified	08/30/16 15:02	09/21/16
L1629861-02	E1 1-2.5 FT	SOIL	Not Specified	08/30/16 15:15	09/21/16
L1629861-03	E1 11-12 FT	SOIL	Not Specified	08/30/16 16:05	09/21/16
L1629861-04	A4 9-10 FT	SOIL	Not Specified	08/30/16 11:41	09/21/16
L1629861-05	B2 SURFACE	SOIL	Not Specified	08/30/16 14:08	09/21/16
L1629861-06	B2 4-5 FT - FILL	SOIL	Not Specified	08/30/16 14:15	09/21/16
L1629861-07	B2 5-6 FT (NATIVE)	SOIL	Not Specified	08/30/16 14:37	09/21/16
L1629861-08	B3 UF 2-3 FT	SOIL	Not Specified	08/30/16 13:37	09/21/16
L1629861-09	B3 3-5 FT	SOIL	Not Specified	08/30/16 13:30	09/21/16
L1629861-10	B3 6-7 FT	SOIL	Not Specified	08/30/16 13:36	09/21/16
L1629861-11	B4 9-10 FT	SOIL	Not Specified	08/30/16 11:13	09/21/16
L1629861-12	B4 10-11 FT	SOIL	Not Specified	08/30/16 11:21	09/21/16
L1629861-13	C3 9-10 FT	SOIL	Not Specified	08/30/16 12:42	09/21/16
L1629861-14	D2 SURFACE	SOIL	Not Specified	08/30/16 14:27	09/21/16
L1629861-15	D2 0-2 FT	SOIL	Not Specified	08/30/16 14:55	09/21/16
L1629861-16	D2 10-11 FT	SOIL	Not Specified	08/30/16 15:24	09/21/16
L1629861-17	D3 5.5-7.5 FT	SOIL	Not Specified	08/30/16 12:15	09/21/16
L1629861-18	D3 5.5-7.5 FT DUPLICATE	SOIL	Not Specified	08/30/16 12:15	09/21/16
L1629861-19	C4 5-7 FT	SOIL	Not Specified	08/30/16 08:07	09/21/16
L1629861-20	C4 7-8 FT	SOIL	Not Specified	08/30/16 08:10	09/21/16



**Project Name:** NORTH STREET-GROUNDWATER SAMP.  
**Project Number:** Not Specified

**Lab Number:** L1702517  
**Report Date:** 02/22/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1702517-01	MW-1-C4-01252017	WATER	BUFFALO, NY	01/25/17 10:25	01/25/17
L1702517-02	MW-2-A3-01252017	WATER	BUFFALO, NY	01/25/17 12:15	01/25/17
L1702517-03	MW-3-D1-01252017	WATER	BUFFALO, NY	01/25/17 13:55	01/25/17
L1702517-04	MW-4-F2-01252017	WATER	BUFFALO, NY	01/25/17 15:45	01/25/17
L1702517-05	BLIND DUP-01252017	WATER	BUFFALO, NY	01/25/17 00:00	01/25/17
L1702517-06	TRIP BLANK	WATER	BUFFALO, NY	01/25/17 00:00	01/25/17

# **DATA USABILITY SUMMARY REPORT (DUSR)**

**19 North Street  
Buffalo, NY  
NYSDEC BCP # C 916303**

**SDG: 3832-01**

**16 Soil Samples**

**Prepared for:**

**C&S Companies  
141 Elm Street, Suite 100  
Buffalo, NY 14203**

**May 2017**



**Environmental Data Usability 10028 Deer Park Dr. Dansville, NY 14437 585.991.9156**

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**REVIEWER'S NARRATIVE**  
**SDG 3832-01**

The data associated with this Sample Delivery Group (SDG) 3832-01, analyzed by Paradigm Environmental Services, Inc. Rochester, NY 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: 5/10/17  
Michael K. Perry  
Chemist



## 1.0 SUMMARY

**SITE:** 19 North Street  
Buffalo, NY

**SAMPLING DATE:** August 30 - September 2, 2016

**SAMPLE TYPE:** 16 soil samples

**LABORATORY:** Paradigm Environmental Services, Inc.  
Rochester, NY

**SDG No.:** 3832-01

## 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**

The data package consists of analytical results for sixteen soil samples collected on August 30 - September 2, 2016. These samples were analyzed for some or all of the Part 375 volatile organic compounds, semi-volatile organic compounds, pesticides, polychlorinated biphenyls (PCBs), TAL metals, TCN, herbicides, and hexavalent chromium. In addition, one sample was analyzed for the full waste characterization.

All laboratory analyses were performed by Paradigm Environmental Services, Inc., Rochester, NY and analyzed as SDG 3832-01. The herbicides, hexavalent chromium, cyanide reactivity and sulfide reactivity analyses were performed by ALPHA Analytical, Westborough, MA and analyzed as SDG L1627717. 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 account to determine data quality.

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.

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.

TABLE 4-2

**QUALITY CONTROL CRITERIA USED FOR VALIDATING  
LABORATORY ANALYTICAL DATA**

<b>VOCs</b>	<b>SVOCs</b>	<b>Pesticides/PCBs</b>	<b>Metals</b>	<b>Gen Chemistry</b>	<b>Method TO-15</b>
Completeness of Pkg Sample Condition Holding Time System Monitoring Compounds Lab Control Sample Matrix Spikes Blanks Instrument Tuning Internal Standards Initial Calibration Continuing Calibration Lab Qualifiers Field Duplicate	Completeness of Pkg Sample Condition Holding Time Surrogate Recoveries Lab Control Sample Matrix Spikes Blanks Instrument Tuning Internal Standards Initial Calibration Continuing Calibration Lab Qualifiers Field Duplicate	Completeness of Pkg Sample Condition Holding Time Surrogate Recoveries Matrix Spikes Blanks Instrument Calibration & Verification Analyte ID Lab Qualifiers Field Duplicate	Completeness of Pkg Sample Condition Holding Time Initial/Continuing Calibration CRDL Standards Blanks Interference Check Sample Spike Recoveries Lab Duplicate Lab Control Sample ICP Serial Dilutions Lab Qualifiers Field Duplicate	Completeness of Pkg Sample Condition Holding Times Calibration Lab Control Samples Blanks Spike Recoveries Lab Duplicates	Completeness of Pkg Sample Condition Holding Time Canister Certification Lab Control Sample Instrument Tuning Blanks Initial Calibration & System Performance Daily Calibration Field Duplicate



## 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  $\pm$  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 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 6-9. The tables list the samples where QC criteria were found to exceed acceptable limits and the actions taken to qualify the associated analytical results.

## **7.0 TOTAL USABLE DATA**

For SDG 3832-01, sixteen samples were analyzed and results were reported for 2667 analytes. Fifteen results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99%) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

NOTES: (1) The data package for SDG 3832-01 contained no laboratory QC data for the serial dilutions of metals (Form VIII). The laboratory director was contacted regarding the deficiency. He stated that no serial dilutions were analyzed with this data package. Therefore, no evaluation of the serial dilution results were performed by this data reviewer and no data were qualified as a result.

(2) 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**      **VOCs**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
All samples	1,4-Dioxane	R - Reject	Initial Calibration RRF < 0.005 (0.004)	All results are unusable
All samples	4-Methyl-2-pentanone Acetone	UJ non-detect J detects	CCV > 20%	Results are estimated

**Table 6-2**      **SVOCs**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
C2-13-14.5 ft	All Analytes	UJ non-detect J detects	Surrogate recoveries for: S1, S2, S3, and S4 < QC limit	Results may be biased low
All samples	Atrazine	UJ non-detects	3 point ICAL	All samples non-detect
A4-22-23 ft	Indeno(1,2,3-cd)pyrene	UJ non-detect J detects	CCV > 20%	Results are estimated

**Table 6-3**      **Pesticides**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
none		none		

**Table 6-4        PCBs**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
All samples	All analytes	none	Closing CCV > 25 %	Samples re-analyzed to confirm data.

**Table 6-5        TAL Metals**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
All samples	All	none	No CRDL Std	No evaluation can be made
All samples	Cadmium Manganese	UJ non-detect J detects	MS % < 75 %	Results may be biased low
All samples	Selenium	J Detects	RPD > 35 %	Detected results are estimated
All samples	Copper	J detects 10X MB	Detected in method blank (1.26 mg/Mg)	Detected results <12.6 mg/Kg are estimated

**Table 6-6        TCN**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
All samples	TCN	J Detects	LCS Rec. > 115%	Results are estimated
All samples	TCN	UJ non-detect J detects	MS % < 80 %	Results are estimated



**Table 6-7          Herbicides**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
none		none		

**Table 6-8          Hexavalent Chromium**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
All samples	CR+6	J detects	RPD > 25 %	No data affected

**Table 6-9          Misc. Waste Characterization Analyses**

<b>SAMPLES AFFECTED</b>	<b>ANALYTES</b>	<b>ACTION</b>	<b>QC VIOLATION</b>	<b>COMMENTS</b>
none		none		

## 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)

## ***Appendix A***

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### ***Validated Analytical Results***

LAB PROJECT NARRATIVE: 163832-3845-3892

PROJECT NAME: 19 North St.

SDG: 3832-01

CLIENT: C & S Companies

Thirty-three soil samples were collected by the client on 09/01 and 09/02/2016 and received at the Paradigm laboratory on 09/02 and 09/06/2016. Most of the samples were put on hold per the client (see the Chains of Custody for specifics). Fifteen of the samples were submitted for analysis. Additionally, a sample from a previous submission was taken off hold per the client on 09/08/2016 and added to this submission number as 163892. Container and holding times were acceptable at time of receipt; the samples were received at 4-6° Centigrade and were on ice. The samples were submitted with the Chains-of-Custody requesting the Part 375 and TCLP lists for VOCs, SVOCs, PCBs and Pesticides, Hexavalent Chromium, and Herbicides, Total Cyanide, Reactivity, Ignitability, Corrosivity as pH, and Metals. All analyses were performed using EPA SW-846 Methods and the associated holding times.

The items noted in this case narrative address compliance with the referenced methods, NYSDOH ELAP rules, and any project specific data quality requirements. These may be different from the usability criteria referenced in any "Functional Guidelines" or other data review standards used by data validators.

## **GENERAL NOTES**

### **ALL ANALYSES**

The initial and continuing calibration reports are only evaluated for compounds that are on the sample summary report.

Regarding results on QC summary forms versus included raw data, due to calculations made at the instrument where many significant figures may be used, there may be slight discrepancies between the summary report result and that recorded on the raw data. This does not affect data usability.

### **VOLATILES AND SEMIVOLATILES**

Regarding initial calibrations, it should be noted that the Quantitation Report concentrations supplied for the initial calibration reflect the calibration prior to updating. The response factors and areas are correct.

Regarding Quantitation Reports, it should be noted that the "#" symbol that appears on some of the Quantitation Reports is a software artifact and should be disregarded.

### **VOLATILES**

Soil samples were not sampled per EPA method 5035A compliance rules. Thus, an extra note has been added to all VOC reports.

Holding times were met for all samples.



The surrogate recoveries for the samples and QC samples were within QC limits.

Site specific QC was requested and analyzed on samples C2-13-14.5 ft and D1-9.5-11.5 ft. All Matrix Spikes and Matrix Spike Duplicates were within QC limits, except 1,2-, 1,3-, and 1,4-Dichlorobenzenes on the second mentioned sample. They have been flagged with an "M" on the sample report and an "\*" on the QC Summary Table accordingly. Matrix interference is suspected with all outliers. The Laboratory Control Samples recovered within acceptance limits.

The method blanks were free from contamination within the reportable ranges.

The instrument tunes passed all criteria.

The internal standards areas and retention times were within acceptance limits for the samples and the associated QC.

All data for the initial calibration was within acceptance limits. Compounds flagged with an "\*" on the summary table have been calibrated using a non-average Response Factor calibration curve. The supporting curves are located after the initial calibration table.

All continuing calibration data was within acceptance limits, except 4-Methyl-2-pentanone was out low in CCV 9/7. For the low outlier, an additional 1ppb standard was analyzed and included to show adequate sensitivity in order to report Non-Detects for this compound. All samples associated with this outlier were Non-Detect for these compounds.

## **SEMI-VOLATILES**

Holding times were met for all samples.

Between one and four surrogate recoveries were outside limits low for sample C2-13-14.5 ft and the MS and MSD for A4-22-23 ft.(see the QC Summary Table for specifics). Outliers have been flagged with an "\*" on the QC Summary Report and the sample report accordingly. Matrix Interference is suspected.

Site specific QC was requested and analyzed on samples C2-13-14.5 ft and D1-9.5-11.5 ft and also on sample A4-22-23 ft. Numerous Matrix Spikes and Matrix Spike Duplicates were outside QC limits and have been flagged with an "M" on the sample reports and an "\*" on the QC Summary Tables accordingly (see these reports for specifics). Matrix interference is suspected with all outliers. The Laboratory Control Samples recovered within acceptance limits.

The method blanks were free from contamination within the reportable ranges.

The instrument tunes passed all criteria.

The internal standards areas and retention times were within acceptance ranges.

All data for the initial calibrations was within acceptance limits. Compounds flagged with an "\*" on the summary table have been calibrated using a non-average Response Factor calibration curve. The supporting curves are located after the initial calibration table.

All continuing calibration data was within acceptance limits, except and Atrazine was out low in CCVs 09/08 PM, 09/09AM, and 09/12. Additionally, Hexachlorocyclopentadiene was out low in CCV 09/09AM. These low outliers were assessed for adequate sensitivity at the reporting limit by a 10ppm standard. This is usable for determination of "Non-Detects" only. As the associated samples were Non-Detect for these compounds, the results were deemed usable and no further action was required.

## **PESTICIDES AND PCBS**

Holding times were met for all samples.

The surrogate recoveries for the samples and the associated QC were within acceptable limits.

Site specific QC was requested and analyzed on samples C2-13-14.5 ft and D1-9.5-11.5 ft. All Matrix Spike and Matrix Spike Duplicate Samples and the Laboratory Control Samples recovered within acceptance limits for all compounds.

For Pesticides, for sample B1-5-6 ft, the extract required a Copper clean-up to address possible Sulfur interferences. An additional method blank has been reported for this reason. The method blanks were free from contamination within the reportable ranges.

The internal standards areas and retention times were within acceptance ranges for the Pesticides.

All data for the initial calibrations were within acceptance limits. The internal acceptance criteria for the initial calibrations was 0.990 or better for each peak.

All continuing calibration data was within acceptable QC limits, except the closing CCV for PCBs for the 9/14 run failed low and the CCVs for the 9/12 run failed high. Regarding the low CCV, it was re-run and showed improvement verifying Matrix Interference. As the samples associated with this CCV were QC samples and were compliant, the run was determined to be usable and no further action was required. Regarding the high CCVs, only samples that were Non-Detect for all requested analytes were reported from this run.

For all Pesticide hits, a Form 10 including Percent Difference has been included. Column confirmations above 40% difference have been flagged with a "P" on the sample reports and an "\*" on the Form 10 indicating matrix interference. The reported result is always the lower of the two results.

## **METALS**

ICP-AES interelement and background corrections were applied. Raw data was not generated before application of background corrections.

Holding times were met for all samples.

Site specific QC was requested and analyzed on samples C2-13-14.5 ft and D1-9.5-11.5 ft for all requested metals and, additionally, analyzed on samples C2-WC and C4-7-8 ft for Mercury only. Any of the requested metals that were outside QC limits for the Matrix Spike Recoveries and/or the Sample Duplicate Percent Differences and have been flagged with an "M" and /or "D" on the results page and a "\*" on the QC summary report. As there were outliers, Post Digest Spikes were analyzed accordingly. The raw data for these QC samples has been supplied on the attached ICP analytical worksheets, labeled as "PS". There are no data qualifiers or QC forms associated with the post digest spikes. Matrix interference is suspected with these outliers. The Laboratory Control Samples recovered within acceptable limits. All LCS % differences were within acceptance limits.

The method blanks were free from contamination within the reportable ranges, except Blk 09/03 soil had a Copper result of 1.36 mg/Kg. Any of the associated samples with a Copper result of less than ten times this value have been flagged with a "B" accordingly.

All data for the initial calibrations was within acceptance limits.

All continuing calibrations data was within acceptance limits, except Zinc for run ID 090716c was out slightly high. It has been flagged with a "\*" on the QC Summary Table accordingly. Only QC samples were reported from the run.

### **INORGANICS-Total Cyanide, Flashpoint, pH, Percent Moisture**

Holding times were met for all samples.

Site specific QC was requested and analyzed on samples C2-13-14.5 ft and D1-9.5-11.5 ft and, also, on sample C4-7-8ft. The Spike Recovery for D1-9.5-11.5ft was out high and the Spike Recovery for C4-7-8ft was out low. Outliers have been flagged with an "M" on the samples reports and an "\*" on the QC Summary Tables accordingly. Matrix Interference is suspected. All RPDs were within QC limits. The Laboratory Control Samples recovered within acceptable limits.

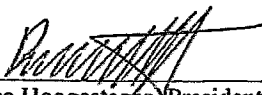
All Initial and Continuing Blanks and the Method Blank were free from contamination within acceptance limits.

All Initial and Continuing calibrations were within acceptance limits.

### **SUB-CONTRACTED ANALYSES**

Herbicides by method 8151B, Hexavalent Chromium by EPA method 7196, and Reactivity by method 7.3 were subcontracted to Alpha Analytical of Westborough, MA. Their report is provided in its entirety as a separate entity after the Paradigm Environmental Services, Inc. report. A separate case narrative addressing the above parameters is included with their report.

(signed)

  
Bruce Hoogesteger-President

(date) 12/2/2016





# CHAIN OF CUSTODY

Relog 163892  
5 of 6

PROJECT REFERENCE <b>12 North Street</b>		REPORT TO:		INVOICE TO:		LAB PROJECT ID <b>163786</b>		
		CLIENT:	Same		ADDRESS:		Quotation #:	
ADDRESS:		CITY:	STATE:	ZIP:	CITY:	STATE:	ZIP:	
PHONE:		ATTN:		PHONE:		Email:		
Matrix Codes:		AQ - Aqueous Liquid    WA - Water    DW - Drinking Water    SO - Soil    SD - Solid    WP - Wipe    OL - Oil NQ - Non-Aqueous Liquid    WG - Groundwater    WW - Wastewater    SL - Sludge    PT - Paint    CK - Caulk    AR - Air						
REQUESTED ANALYSIS								
DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX	CONTAINER OR NUMBER	REMARKS	PARADIGM LAB SAMPLE NUMBER
8/20	334		X	D2 13-14 ft	SO		HOLD	relog 8/9/16
	1215		X	D3 8.5-7.5 ft				17
	1215		X	D3 8.5-7.5 DUPLICATE				18
	1215		X	D3 7.5-9.5 ft			HOLD	
	1220			D3 9.5-10.5 ft			HOLD	
				D3 10.5-11.5 ft			HOLD	
	801			C4 5-7 ft				19
	810			C4 7-8 ft			HOLD	01
	820			C4 8-9 ft			HOLD	
	820			C4 9-10 ft			HOLD	

Turnaround Time	Report Supplements	
Availability contingent upon lab approval; additional fees may apply.		
Standard 5 day <input checked="" type="checkbox"/>	None Required <input type="checkbox"/>	None Required <input type="checkbox"/>
10 day <input type="checkbox"/>	Batch QC <input type="checkbox"/>	Basic EDD <input type="checkbox"/>
Rush 3 day <input type="checkbox"/>	Category A <input type="checkbox"/>	NYSDEC EDD <input type="checkbox"/>
Rush 2 day <input type="checkbox"/>	Category B <input checked="" type="checkbox"/>	
Rush 1 day <input type="checkbox"/>		
Other <input type="checkbox"/> please indicate date needed:	Other <input checked="" type="checkbox"/> please indicate package needed:	Other EDD <input type="checkbox"/> please indicate EDD needed:

per visual 8/31/16

Sampled By: *[Signature]* Date/Time: 8/30 5:00p

Received By: *[Signature]* Date/Time: 8/30 5:00p

Received By: *[Signature]* Date/Time: 8/30 5:00pm

Received @ Lab By: *[Signature]* Date/Time: 8/31/16 14:54

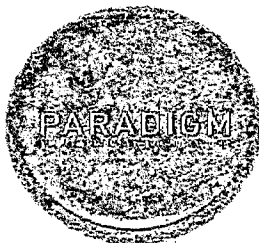
Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions





1 of 2

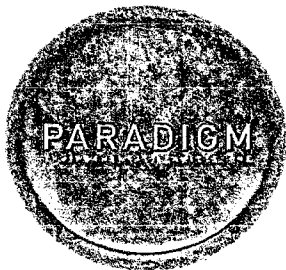
[illegible]

Turnaround Time		Report Supplements	
Availability contingent upon lab approval; additional fees may apply.			
Standard 5 day	<input checked="" type="checkbox"/>	None Required	<input type="checkbox"/>
10 day	<input type="checkbox"/>	Batch QC	<input type="checkbox"/>
Rush 3 day	<input type="checkbox"/>	Category A	<input type="checkbox"/>
Rush 2 day	<input type="checkbox"/>	Category B	<input checked="" type="checkbox"/>
Rush 1 day	<input type="checkbox"/>		
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>
please indicate date needed.		please indicate package needed.	

Sampled By Chris Doherty Date/Time 9/2/16 1302 Total Cost: \_\_\_\_\_  
 Relinquished By Anna S. Doherty Date/Time 9/2/16  
 Received By [Signature] Date/Time 9/3/16 14:00 P.I.F. \_\_\_\_\_  
 Received @ Lab By [Signature] Date/Time 9/6/16 11:51  
 6' Ciced 9/6/16 11:20  
 By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

No Custody Seal, sent via Greyhound See additional page for sample conditions.  
Bus of 9/6/16

1 of 5

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:	
CLIENT: <u>CSC ENGINEERS INC</u>	CLIENT: <u>Same</u>	LAB PROJECT ID: <u>163832</u>	
ADDRESS: <u>141 Elm Street Suite 100</u>	ADDRESS:	Quotation #:	
CITY: <u>Buffalo</u> STATE: <u>NY</u> ZIP: <u>14203</u>	CITY: STATE: ZIP:	Email: <u>drinker@cscos.com</u>	
PHONE: <u>716-847-1630</u>	PHONE:		
ATTN: <u>Don Riker</u>	ATTN:		

PROJECT REFERENCE		Matrix Codes:										REQUESTED ANALYSIS		REMARKS		PARADIGM LAB SAMPLE NUMBER	
<u>19 North Street</u>		AQ - Aqueous Liquid	WA - Water	DW - Drinking Water	SO - Soil	SD - Solid	WP - Wipe	OL - Oil	NQ - Non-Aqueous Liquid	WG - Groundwater	WW - Wastewater	SL - Sludge	PT - Paint	CK - Caulk	AR - Air		
DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX	COUNTAINERS	VOL	ENV	PA	PCB	PCB	PCB	PCB	PCB	PCB	PCB	PCB
<u>9/1/16</u>	<u>910</u>		X	<u>B1-5-6ft</u>	<u>2</u>	<u>SO</u>	X	X	X	X	X	X	X	X	X	X	X
	<u>915</u>		X	<u>B1-6-7ft</u>	<u>1</u>		X	X	X	X	X	X	X	X	X	X	X
	<u>920</u>		X	<u>B1-7-8ft</u>	<u>1</u>		X	X	X	X	X	X	X	X	X	X	X
	<u>922</u>		X	<u>B1-8-9ft</u>	<u>1</u>		X	X	X	X	X	X	X	X	X	X	X
	<u>925</u>		X	<u>B1-15ft</u>	<u>1</u>		X	X	X	X	X	X	X	X	X	X	X
	<u>1015</u>	X		<u>C2-WC</u>	<u>2</u>												
	<u>1010</u>		X	<u>C2-13-14.5</u>	<u>2</u>		X	X	X	X	X	X	X	X	X	X	X
	<u>1022</u>		X	<u>C2-14.5-15.5</u>	<u>1</u>		X	X	X	X	X	X	X	X	X	X	X
	<u>1025</u>		X	<u>C2-15.5-16.5</u>	<u>1</u>		X	X	X	X	X	X	X	X	X	X	X
<u>✓</u>	<u>1028</u>		X	<u>C2-16.5-17.5</u>	<u>1</u>	<u>✓</u>	X	X	X	X	X	X	X	X	X	X	X

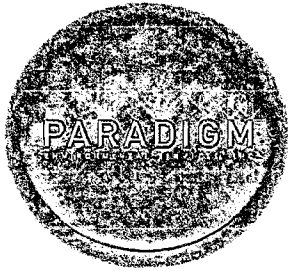
Turnaround Time		Report Supplements	
Availability contingent upon lab approval; additional fees may apply.			
Standard 5 day <input checked="" type="checkbox"/>	None Required <input type="checkbox"/>	None Required <input type="checkbox"/>	None Required <input type="checkbox"/>
10 day <input type="checkbox"/>	Batch QC <input type="checkbox"/>	Basic EDD <input type="checkbox"/>	Basic EDD <input type="checkbox"/>
Rush 3 day <input type="checkbox"/>	Category A <input type="checkbox"/>	NYSDEC EDD <input checked="" type="checkbox"/>	NYSDEC EDD <input checked="" type="checkbox"/>
Rush 2 day <input type="checkbox"/>	Category B <input checked="" type="checkbox"/>	Other EDD <input checked="" type="checkbox"/>	Other EDD <input checked="" type="checkbox"/>
Rush 1 day <input type="checkbox"/>	Other <input type="checkbox"/>	Other EDD <input type="checkbox"/>	Other EDD <input type="checkbox"/>
Other <input type="checkbox"/>	Other <input type="checkbox"/>	Other EDD <input type="checkbox"/>	Other EDD <input type="checkbox"/>
please indicate date needed:	please indicate package needed:	please indicate EDD needed:	please indicate EDD needed:

Hex Cr, Reactivity, TCLP Herbicides sent directly to Sub lab. 9/2/16

Sampled By: <u>Cham...</u>	Date/Time: <u>9/1/16 16:00</u>	Total Cost: <input type="text"/>
Relinquished By: <u>...</u>	Date/Time: <u>9/1/16 16:00</u>	P.I.F. <input type="text"/>
Received By: <u>...</u>	Date/Time: <u>9/2/16 13:30</u>	
Received @ Lab By: <u>...</u>	Date/Time: <u>9/2/16 10:42</u>	

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).  
Custody Seal intact, signed, dated. 9/2/16  
See additional page for sample conditions

2 of 5

CHAIN OF CUSTODY

88

REPORT TO:		INVOICE TO:	
CLIENT:	Same	LAB PROJECT ID	
ADDRESS:		163832	
CITY:	STATE: ZIP:	CITY:	STATE: ZIP:
PHONE:	Same	Quotation #:	
ATTN:		Email: dnker@cscos.com	

PROJECT REFERENCE  
North Street

Matrix Codes:  
 AQ - Aqueous Liquid    WA - Water    DW - Drinking Water    SO - Soil    SD - Solid    WP - Wipe    OL - Oil  
 NQ - Non-Aqueous Liquid    WG - Groundwater    WW - Wastewater    SL - Sludge    PT - Paint    CK - Caulk    AR - Air

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX	CONTAINER	TESTS	REMARKS	PARADIGM LAB SAMPLE NUMBER
9/1/16	1117		X	D1-9.5-11.5ft	GO	4	VOC SVOC TCM Meas TOC SS Hex Cr	Part 375	
	1121		X	D1-11.5-12.5ft		1	XX XX XX XX	MS/MSD	05
	1123		X	D1-12.5-13.5ft		1	XX XX XX XX	HOLD	
	1125		X	D1-13.5-14.5ft		1	XX XX XX XX	HOLD	
	1126		X	D1-15-16ft		1	XX XX XX XX	HOLD	06
	1412		X	E2-5-6.5ft		1	XX XX XX XX		07
	1416		X	E2-9-10ft		1	XX XX XX XX		08
	1418		X	E2-10-11		1	XX XX XX XX	HOLD	
	1419		X	E2-11-12		1	XX XX XX XX	HOLD	
	1423		X	E2-12-13		1	XX XX XX XX	HOLD	

Turnaround Time	Report Supplements
Availability contingent upon lab approval; additional fees may apply.	
Standard 5 day <input checked="" type="checkbox"/>	None Required <input type="checkbox"/>
10 day <input type="checkbox"/>	Batch QC <input type="checkbox"/>
Rush 3 day <input type="checkbox"/>	Category A <input type="checkbox"/>
Rush 2 day <input type="checkbox"/>	Category B <input checked="" type="checkbox"/>
Rush 1 day <input type="checkbox"/>	Other <input type="checkbox"/>
Other <input type="checkbox"/>	Other <input type="checkbox"/>
please indicate date needed:	please indicate package needed:

LOCUS EIM

Sampled By: Charm Demarini Date/Time: 9/1/16 16:00 Total Cost:

Relinquished By: [Signature] Date/Time: 9/1/16 16:00

Received By: [Signature] Date/Time: 9/2/16 13:30 P.I.F.

Received @ Lab By: [Signature] Date/Time: 9/2/16 13:30

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

3 of 5

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		LAB PROJECT ID
CLIENT: Same	CLIENT: Same		163832	
ADDRESS:	ADDRESS:		Quotation #:	
CITY:	STATE:	ZIP:	CITY:	STATE:
PHONE:	PHONE:		Email: <u>clriker@cscos.com</u>	
ATTN:		ATTN:		
PROJECT REFERENCE <u>North Street</u>		Matrix Codes:		
AQ - Aqueous Liquid		WA - Water	DW - Drinking Water	SO - Soil
NQ - Non-Aqueous Liquid		WG - Groundwater	WW - Wastewater	SL - Sludge
			SD - Solid	WP - Wipe
			PT - Paint	CK - Caulk
			OL - Oil	AR - Air

DATE COLLECTED		TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX	CONTAINERS	VOCS	SVOCs	PAHs	PCBs	Pestic	CN	HexChl	REMARKS	PARADIGM LAB SAMPLE NUMBER
9/1/16		1425		X	E2-14-15ft	SO	2							X	Part 315	09
		1444		X	F1-3-5ft		2							X		10
		1446		X	F1-9-10ft		2							X		11
		1447		X	F1-10-11ft		1								HOLD	
		1450		X	F1-11-12ft		1								HOLD	
		1451		X	F1-12-13ft		1								HOLD	
		1453		X	F1-15ft		1									12
		1514		X	F2-4-10ft		1									13
		1515		X	F2-9-10ft		2							X		14
		1517		X	F2-10-11ft		1								HOLD	

Turnaround Time	Report Supplements	
Availability contingent upon lab approval; additional fees may apply.		
Standard 5 day <input checked="" type="checkbox"/>	None Required <input type="checkbox"/>	None Required <input type="checkbox"/>
10 day <input type="checkbox"/>	Batch QC <input type="checkbox"/>	Basic EDD <input type="checkbox"/>
Rush 3 day <input type="checkbox"/>	Category A <input type="checkbox"/>	NYSDEC EDD <input checked="" type="checkbox"/>
Rush 2 day <input type="checkbox"/>	Category B <input checked="" type="checkbox"/>	
Rush 1 day <input type="checkbox"/>		
Other <input type="checkbox"/>	Other <input type="checkbox"/>	Other EDD <input checked="" type="checkbox"/>
please indicate date needed: _____	please indicate package needed: _____	please indicate EDD needed: _____

Sampled By: <u>Charm DeMoh</u>	Date/Time: <u>9/1/16 16:00</u>	Total Cost: <input type="text"/>
Relinquished By: <u>[Signature]</u>	Date/Time: <u>9/1/16 16:00</u>	
Received By: <u>[Signature]</u>	Date/Time: <u>9/2/16 13:30</u>	P.I.F. <input type="text"/>
Received @ Lab By: <u>[Signature]</u>	Date/Time: _____	

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.



## 10

Turnaround Time		Report Supplements	
Availability contingent upon lab approval; additional fees may apply.			
Standard 5 day	<input checked="" type="checkbox"/>	None Required	<input type="checkbox"/>
10 day	<input type="checkbox"/>	Batch QC	<input type="checkbox"/>
Rush 3 day	<input type="checkbox"/>	Category A	<input type="checkbox"/>
Rush 2 day	<input type="checkbox"/>	Category B	<input checked="" type="checkbox"/>
Rush 1 day	<input type="checkbox"/>		
Other	<input type="checkbox"/>	Other	<input type="checkbox"/>
please indicate date needed:		please indicate package needed:	
_____		_____	

Sampled By	Date/Time	Total Cost:
<i>[Signature]</i>	9/1/16 16:00	
Relinquished By	Date/Time	
<i>[Signature]</i>	9/1/16 16:00	
Received By	Date/Time	P.I.F.
<i>[Signature]</i>	9/2/16 13:30	
Received @ Lab By	Date/Time	

**By signing this form, client agrees to Paradigm Terms and Conditions (reverse).**

See additional page for sample conditions





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: B1-5-6 ft

Lab Sample ID: 163832-01

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.48	ug/Kg		9/7/2016 17:33
1,1,2,2-Tetrachloroethane	< 4.48	ug/Kg		9/7/2016 17:33
1,1,2-Trichloroethane	< 4.48	ug/Kg		9/7/2016 17:33
1,1-Dichloroethane	< 4.48	ug/Kg		9/7/2016 17:33
1,1-Dichloroethene	< 4.48	ug/Kg		9/7/2016 17:33
1,2,3-Trichlorobenzene	< 11.2	ug/Kg		9/7/2016 17:33
1,2,4-Trichlorobenzene	< 11.2	ug/Kg		9/7/2016 17:33
1,2,4-Trimethylbenzene	< 4.48	ug/Kg		9/7/2016 17:33
1,2-Dibromo-3-Chloropropane	< 22.4	ug/Kg		9/7/2016 17:33
1,2-Dibromoethane	< 4.48	ug/Kg		9/7/2016 17:33
1,2-Dichlorobenzene	< 4.48	ug/Kg		9/7/2016 17:33
1,2-Dichloroethane	< 4.48	ug/Kg		9/7/2016 17:33
1,2-Dichloropropane	< 4.48	ug/Kg		9/7/2016 17:33
1,3,5-Trimethylbenzene	< 4.48	ug/Kg		9/7/2016 17:33
1,3-Dichlorobenzene	< 4.48	ug/Kg		9/7/2016 17:33
1,4-Dichlorobenzene	< 4.48	ug/Kg		9/7/2016 17:33
1,4-dioxane	< 4.48 <i>R</i>	ug/Kg		9/7/2016 17:33
2-Butanone	< 22.4	ug/Kg		9/7/2016 17:33
2-Hexanone	< 11.2	ug/Kg		9/7/2016 17:33
4-Methyl-2-pentanone	< 11.2 <i>UJ</i>	ug/Kg		9/7/2016 17:33
Acetone	< 22.4 <i>UJ</i>	ug/Kg		9/7/2016 17:33
Benzene	< 4.48	ug/Kg		9/7/2016 17:33
Bromochloromethane	< 11.2	ug/Kg		9/7/2016 17:33
Bromodichloromethane	< 4.48	ug/Kg		9/7/2016 17:33
Bromoform	< 11.2	ug/Kg		9/7/2016 17:33
Bromomethane	< 4.48	ug/Kg		9/7/2016 17:33
Carbon disulfide	< 4.48	ug/Kg		9/7/2016 17:33

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016

*MFP 5/6/17*



# PARADIGM

ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

<b>Sample Identifier:</b>	B1-5-6 ft		
<b>Lab Sample ID:</b>	163832-01	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
Carbon Tetrachloride	< 4.48	ug/Kg	9/7/2016 17:33
Chlorobenzene	< 4.48	ug/Kg	9/7/2016 17:33
Chloroethane	< 4.48	ug/Kg	9/7/2016 17:33
Chloroform	< 4.48	ug/Kg	9/7/2016 17:33
Chloromethane	< 4.48	ug/Kg	9/7/2016 17:33
cis-1,2-Dichloroethene	< 4.48	ug/Kg	9/7/2016 17:33
cis-1,3-Dichloropropene	< 4.48	ug/Kg	9/7/2016 17:33
Cyclohexane	< 22.4	ug/Kg	9/7/2016 17:33
Dibromochloromethane	< 4.48	ug/Kg	9/7/2016 17:33
Dichlorodifluoromethane	< 4.48	ug/Kg	9/7/2016 17:33
Ethylbenzene	< 4.48	ug/Kg	9/7/2016 17:33
Freon 113	< 4.48	ug/Kg	9/7/2016 17:33
Isopropylbenzene	< 4.48	ug/Kg	9/7/2016 17:33
m,p-Xylene	< 4.48	ug/Kg	9/7/2016 17:33
Methyl acetate	< 4.48	ug/Kg	9/7/2016 17:33
Methyl tert-butyl Ether	< 4.48	ug/Kg	9/7/2016 17:33
Methylcyclohexane	< 4.48	ug/Kg	9/7/2016 17:33
Methylene chloride	< 11.2	ug/Kg	9/7/2016 17:33
Naphthalene	< 11.2	ug/Kg	9/7/2016 17:33
n-Butylbenzene	< 4.48	ug/Kg	9/7/2016 17:33
n-Propylbenzene	< 4.48	ug/Kg	9/7/2016 17:33
o-Xylene	< 4.48	ug/Kg	9/7/2016 17:33
p-Isopropyltoluene	< 4.48	ug/Kg	9/7/2016 17:33
sec-Butylbenzene	< 4.48	ug/Kg	9/7/2016 17:33
Styrene	< 11.2	ug/Kg	9/7/2016 17:33
tert-Butylbenzene	< 4.48	ug/Kg	9/7/2016 17:33
Tetrachloroethene	< 4.48	ug/Kg	9/7/2016 17:33
Toluene	< 4.48	ug/Kg	9/7/2016 17:33
trans-1,2-Dichloroethene	< 4.48	ug/Kg	9/7/2016 17:33
trans-1,3-Dichloropropene	< 4.48	ug/Kg	9/7/2016 17:33

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



# PARADIGM

ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: B1-5-6 ft

Lab Sample ID: 163832-01

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Trichloroethene	< 4.48	ug/Kg	9/7/2016 17:33
Trichlorofluoromethane	< 4.48	ug/Kg	9/7/2016 17:33
Vinyl chloride	< 4.48	ug/Kg	9/7/2016 17:33

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	104	81.3 - 124		9/7/2016 17:33
4-Bromofluorobenzene	95.3	80 - 117		9/7/2016 17:33
Pentafluorobenzene	97.8	88.3 - 111		9/7/2016 17:33
Toluene-D8	101	78 - 123		9/7/2016 17:33

Method Reference(s): EPA 8260C

EPA 5035

Data File: x35144.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: B1-15 ft

Lab Sample ID: 163832-02

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.53	ug/Kg		9/7/2016 17:57
1,1,2,2-Tetrachloroethane	< 4.53	ug/Kg		9/7/2016 17:57
1,1,2-Trichloroethane	< 4.53	ug/Kg		9/7/2016 17:57
1,1-Dichloroethane	< 4.53	ug/Kg		9/7/2016 17:57
1,1-Dichloroethene	< 4.53	ug/Kg		9/7/2016 17:57
1,2,3-Trichlorobenzene	< 11.3	ug/Kg		9/7/2016 17:57
1,2,4-Trichlorobenzene	< 11.3	ug/Kg		9/7/2016 17:57
1,2,4-Trimethylbenzene	< 4.53	ug/Kg		9/7/2016 17:57
1,2-Dibromo-3-Chloropropane	< 22.6	ug/Kg		9/7/2016 17:57
1,2-Dibromoethane	< 4.53	ug/Kg		9/7/2016 17:57
1,2-Dichlorobenzene	< 4.53	ug/Kg		9/7/2016 17:57
1,2-Dichloroethane	< 4.53	ug/Kg		9/7/2016 17:57
1,2-Dichloropropane	< 4.53	ug/Kg		9/7/2016 17:57
1,3,5-Trimethylbenzene	< 4.53	ug/Kg		9/7/2016 17:57
1,3-Dichlorobenzene	< 4.53	ug/Kg		9/7/2016 17:57
1,4-Dichlorobenzene	< 4.53	ug/Kg		9/7/2016 17:57
1,4-dioxane	< 4.53 <sup>R</sup>	ug/Kg		9/7/2016 17:57
2-Butanone	< 22.6	ug/Kg		9/7/2016 17:57
2-Hexanone	< 11.3	ug/Kg		9/7/2016 17:57
4-Methyl-2-pentanone	< 11.3 <sup>US</sup>	ug/Kg		9/7/2016 17:57
Acetone	< 22.6 <sup>US</sup>	ug/Kg		9/7/2016 17:57
Benzene	< 4.53	ug/Kg		9/7/2016 17:57
Bromochloromethane	< 11.3	ug/Kg		9/7/2016 17:57
Bromodichloromethane	< 4.53	ug/Kg		9/7/2016 17:57
Bromoform	< 11.3	ug/Kg		9/7/2016 17:57
Bromomethane	< 4.53	ug/Kg		9/7/2016 17:57
Carbon disulfide	< 4.53	ug/Kg		9/7/2016 17:57

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Report Prepared Tuesday, September 13, 2016

mfp 5/7/17



# PARADIGM

ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: B1-15 ft

Lab Sample ID: 163832-02

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Carbon Tetrachloride	< 4.53	ug/Kg	9/7/2016 17:57
Chlorobenzene	< 4.53	ug/Kg	9/7/2016 17:57
Chloroethane	< 4.53	ug/Kg	9/7/2016 17:57
Chloroform	< 4.53	ug/Kg	9/7/2016 17:57
Chloromethane	< 4.53	ug/Kg	9/7/2016 17:57
cis-1,2-Dichloroethene	< 4.53	ug/Kg	9/7/2016 17:57
cis-1,3-Dichloropropene	< 4.53	ug/Kg	9/7/2016 17:57
Cyclohexane	< 22.6	ug/Kg	9/7/2016 17:57
Dibromochloromethane	< 4.53	ug/Kg	9/7/2016 17:57
Dichlorodifluoromethane	< 4.53	ug/Kg	9/7/2016 17:57
Ethylbenzene	< 4.53	ug/Kg	9/7/2016 17:57
Freon 113	< 4.53	ug/Kg	9/7/2016 17:57
Isopropylbenzene	< 4.53	ug/Kg	9/7/2016 17:57
m,p-Xylene	< 4.53	ug/Kg	9/7/2016 17:57
Methyl acetate	< 4.53	ug/Kg	9/7/2016 17:57
Methyl tert-butyl Ether	< 4.53	ug/Kg	9/7/2016 17:57
Methylcyclohexane	< 4.53	ug/Kg	9/7/2016 17:57
Methylene chloride	< 11.3	ug/Kg	9/7/2016 17:57
Naphthalene	< 11.3	ug/Kg	9/7/2016 17:57
n-Butylbenzene	< 4.53	ug/Kg	9/7/2016 17:57
n-Propylbenzene	< 4.53	ug/Kg	9/7/2016 17:57
o-Xylene	< 4.53	ug/Kg	9/7/2016 17:57
p-Isopropyltoluene	< 4.53	ug/Kg	9/7/2016 17:57
sec-Butylbenzene	< 4.53	ug/Kg	9/7/2016 17:57
Styrene	< 11.3	ug/Kg	9/7/2016 17:57
tert-Butylbenzene	< 4.53	ug/Kg	9/7/2016 17:57
Tetrachloroethene	< 4.53	ug/Kg	9/7/2016 17:57
Toluene	< 4.53	ug/Kg	9/7/2016 17:57
trans-1,2-Dichloroethene	< 4.53	ug/Kg	9/7/2016 17:57
trans-1,3-Dichloropropene	< 4.53	ug/Kg	9/7/2016 17:57

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** B1-15 ft

**Lab Sample ID:** 163832-02

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Trichloroethene	< 4.53	ug/Kg	9/7/2016 17:57
Trichlorofluoromethane	< 4.53	ug/Kg	9/7/2016 17:57
Vinyl chloride	< 4.53	ug/Kg	9/7/2016 17:57

<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>
1,2-Dichloroethane-d4	107	81.3 - 124		9/7/2016 17:57
4-Bromofluorobenzene	96.4	80 - 117		9/7/2016 17:57
Pentafluorobenzene	96.2	88.3 - 111		9/7/2016 17:57
Toluene-D8	98.4	78 - 123		9/7/2016 17:57

**Method Reference(s):** EPA 8260C  
EPA 5035

**Data File:** x35145.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-WC

**Lab Sample ID:** 163832-03A

**Date Sampled:** 9/1/2016

**Matrix:** TCLP Extract

**Date Received:** 9/2/2016

**TCLP Volatile Organics**

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
1,1-Dichloroethene	< 20.0	ug/L	700		9/7/2016 16:21
1,2-Dichloroethane	< 20.0	ug/L	500		9/7/2016 16:21
2-Butanone	< 100	ug/L	200000		9/7/2016 16:21
Benzene	< 20.0	ug/L	500		9/7/2016 16:21
Carbon Tetrachloride	< 20.0	ug/L	500		9/7/2016 16:21
Chlorobenzene	< 20.0	ug/L	100000		9/7/2016 16:21
Chloroform	< 20.0	ug/L	6000		9/7/2016 16:21
Tetrachloroethene	< 20.0	ug/L	700		9/7/2016 16:21
Trichloroethene	< 20.0	ug/L	500		9/7/2016 16:21
Vinyl chloride	< 20.0	ug/L	200		9/7/2016 16:21

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	99.9	86 - 116		9/7/2016 16:21
4-Bromofluorobenzene	95.2	82.2 - 113		9/7/2016 16:21
Pentafluorobenzene	99.2	90.9 - 110		9/7/2016 16:21
Toluene-D8	102	90.8 - 109		9/7/2016 16:21

**Method Reference(s):** EPA 8260C

EPA 1311 / 5030C

**Data File:** x35141.D

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: C2-13-14.5 ft

Lab Sample ID: 163832-04

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.61	ug/Kg		9/8/2016 15:45
1,1,2,2-Tetrachloroethane	< 3.61	ug/Kg		9/8/2016 15:45
1,1,2-Trichloroethane	< 3.61	ug/Kg		9/8/2016 15:45
1,1-Dichloroethane	< 3.61	ug/Kg		9/8/2016 15:45
1,1-Dichloroethene	< 3.61	ug/Kg		9/8/2016 15:45
1,2,3-Trichlorobenzene	< 9.01	ug/Kg		9/8/2016 15:45
1,2,4-Trichlorobenzene	< 9.01	ug/Kg		9/8/2016 15:45
1,2,4-Trimethylbenzene	< 3.61	ug/Kg		9/8/2016 15:45
1,2-Dibromo-3-Chloropropane	< 18.0	ug/Kg		9/8/2016 15:45
1,2-Dibromoethane	< 3.61	ug/Kg		9/8/2016 15:45
1,2-Dichlorobenzene	< 3.61	ug/Kg		9/8/2016 15:45
1,2-Dichloroethane	< 3.61	ug/Kg		9/8/2016 15:45
1,2-Dichloropropane	< 3.61	ug/Kg		9/8/2016 15:45
1,3,5-Trimethylbenzene	< 3.61	ug/Kg		9/8/2016 15:45
1,3-Dichlorobenzene	< 3.61	ug/Kg		9/8/2016 15:45
1,4-Dichlorobenzene	< 3.61	ug/Kg		9/8/2016 15:45
1,4-dioxane	< 3.61 R	ug/Kg		9/8/2016 15:45
2-Butanone	< 18.0	ug/Kg		9/8/2016 15:45
2-Hexanone	< 9.01	ug/Kg		9/8/2016 15:45
4-Methyl-2-pentanone	< 9.01 JS	ug/Kg		9/8/2016 15:45
Acetone	12.6 J	ug/Kg	J	9/8/2016 15:45
Benzene	< 3.61	ug/Kg		9/8/2016 15:45
Bromochloromethane	< 9.01	ug/Kg		9/8/2016 15:45
Bromodichloromethane	< 3.61	ug/Kg		9/8/2016 15:45
Bromoform	< 9.01	ug/Kg		9/8/2016 15:45
Bromomethane	< 3.61	ug/Kg		9/8/2016 15:45
Carbon disulfide	< 3.61	ug/Kg		9/8/2016 15:45

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Report Prepared Tuesday, September 13, 2016

MRP 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	C2-13-14.5 ft		
Lab Sample ID:	163832-04	Date Sampled:	9/1/2016
Matrix:	Soil	Date Received:	9/2/2016
Carbon Tetrachloride	< 3.61	ug/Kg	9/8/2016 15:45
Chlorobenzene	< 3.61	ug/Kg	9/8/2016 15:45
Chloroethane	< 3.61	ug/Kg	9/8/2016 15:45
Chloroform	< 3.61	ug/Kg	9/8/2016 15:45
Chloromethane	< 3.61	ug/Kg	9/8/2016 15:45
cis-1,2-Dichloroethene	< 3.61	ug/Kg	9/8/2016 15:45
cis-1,3-Dichloropropene	< 3.61	ug/Kg	9/8/2016 15:45
Cyclohexane	< 18.0	ug/Kg	9/8/2016 15:45
Dibromochloromethane	< 3.61	ug/Kg	9/8/2016 15:45
Dichlorodifluoromethane	< 3.61	ug/Kg	9/8/2016 15:45
Ethylbenzene	< 3.61	ug/Kg	9/8/2016 15:45
Freon 113	< 3.61	ug/Kg	9/8/2016 15:45
Isopropylbenzene	< 3.61	ug/Kg	9/8/2016 15:45
m,p-Xylene	< 3.61	ug/Kg	9/8/2016 15:45
Methyl acetate	< 3.61	ug/Kg	9/8/2016 15:45
Methyl tert-butyl Ether	< 3.61	ug/Kg	9/8/2016 15:45
Methylcyclohexane	< 3.61	ug/Kg	9/8/2016 15:45
Methylene chloride	< 9.01	ug/Kg	9/8/2016 15:45
Naphthalene	< 9.01	ug/Kg	9/8/2016 15:45
n-Butylbenzene	< 3.61	ug/Kg	9/8/2016 15:45
n-Propylbenzene	< 3.61	ug/Kg	9/8/2016 15:45
o-Xylene	< 3.61	ug/Kg	9/8/2016 15:45
p-Isopropyltoluene	< 3.61	ug/Kg	9/8/2016 15:45
sec-Butylbenzene	< 3.61	ug/Kg	9/8/2016 15:45
Styrene	< 9.01	ug/Kg	9/8/2016 15:45
tert-Butylbenzene	< 3.61	ug/Kg	9/8/2016 15:45
Tetrachloroethene	< 3.61	ug/Kg	9/8/2016 15:45
Toluene	< 3.61	ug/Kg	9/8/2016 15:45
trans-1,2-Dichloroethene	< 3.61	ug/Kg	9/8/2016 15:45
trans-1,3-Dichloropropene	< 3.61	ug/Kg	9/8/2016 15:45

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-13-14.5 ft

**Lab Sample ID:** 163832-04

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Trichloroethene	< 3.61	ug/Kg	9/8/2016 15:45
Trichlorofluoromethane	< 3.61	ug/Kg	9/8/2016 15:45
Vinyl chloride	< 3.61	ug/Kg	9/8/2016 15:45

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	107	81.3 - 124		9/8/2016 15:45
4-Bromofluorobenzene	94.3	80 - 117		9/8/2016 15:45
Pentafluorobenzene	98.2	88.3 - 111		9/8/2016 15:45
Toluene-D8	97.8	78 - 123		9/8/2016 15:45

**Method Reference(s):** EPA 8260C

EPA 5035

**Data File:** x35180.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: D1-9.5-11.5 ft

Lab Sample ID: 163832-05

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.90	ug/Kg		9/7/2016 18:21
1,1,2,2-Tetrachloroethane	< 3.90	ug/Kg		9/7/2016 18:21
1,1,2-Trichloroethane	< 3.90	ug/Kg		9/7/2016 18:21
1,1-Dichloroethane	< 3.90	ug/Kg		9/7/2016 18:21
1,1-Dichloroethene	< 3.90	ug/Kg		9/7/2016 18:21
1,2,3-Trichlorobenzene	< 9.75	ug/Kg		9/7/2016 18:21
1,2,4-Trichlorobenzene	< 9.75	ug/Kg		9/7/2016 18:21
1,2,4-Trimethylbenzene	< 3.90	ug/Kg		9/7/2016 18:21
1,2-Dibromo-3-Chloropropane	< 19.5	ug/Kg		9/7/2016 18:21
1,2-Dibromoethane	< 3.90	ug/Kg		9/7/2016 18:21
1,2-Dichlorobenzene	< 3.90	ug/Kg	M	9/7/2016 18:21
1,2-Dichloroethane	< 3.90	ug/Kg		9/7/2016 18:21
1,2-Dichloropropane	< 3.90	ug/Kg		9/7/2016 18:21
1,3,5-Trimethylbenzene	< 3.90	ug/Kg		9/7/2016 18:21
1,3-Dichlorobenzene	< 3.90	ug/Kg	M	9/7/2016 18:21
1,4-Dichlorobenzene	< 3.90	ug/Kg	M	9/7/2016 18:21
1,4-dioxane	< 3.90 <i>R</i>	ug/Kg		9/7/2016 18:21
2-Butanone	< 19.5	ug/Kg		9/7/2016 18:21
2-Hexanone	< 9.75	ug/Kg		9/7/2016 18:21
4-Methyl-2-pentanone	< 9.75 <i>US</i>	ug/Kg		9/7/2016 18:21
Acetone	< 19.5 <i>US</i>	ug/Kg		9/7/2016 18:21
Benzene	< 3.90	ug/Kg		9/7/2016 18:21
Bromochloromethane	< 9.75	ug/Kg		9/7/2016 18:21
Bromodichloromethane	< 3.90	ug/Kg		9/7/2016 18:21
Bromoform	< 9.75	ug/Kg		9/7/2016 18:21
Bromomethane	< 3.90	ug/Kg		9/7/2016 18:21
Carbon disulfide	< 3.90	ug/Kg		9/7/2016 18:21

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Report Prepared Tuesday, September 13, 2016

*MFP 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-9.5-11.5 ft

**Lab Sample ID:** 163832-05

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Carbon Tetrachloride	< 3.90	ug/Kg	9/7/2016 18:21
Chlorobenzene	< 3.90	ug/Kg	9/7/2016 18:21
Chloroethane	< 3.90	ug/Kg	9/7/2016 18:21
Chloroform	< 3.90	ug/Kg	9/7/2016 18:21
Chloromethane	< 3.90	ug/Kg	9/7/2016 18:21
cis-1,2-Dichloroethene	< 3.90	ug/Kg	9/7/2016 18:21
cis-1,3-Dichloropropene	< 3.90	ug/Kg	9/7/2016 18:21
Cyclohexane	< 19.5	ug/Kg	9/7/2016 18:21
Dibromochloromethane	< 3.90	ug/Kg	9/7/2016 18:21
Dichlorodifluoromethane	< 3.90	ug/Kg	9/7/2016 18:21
Ethylbenzene	< 3.90	ug/Kg	9/7/2016 18:21
Freon 113	< 3.90	ug/Kg	9/7/2016 18:21
Isopropylbenzene	< 3.90	ug/Kg	9/7/2016 18:21
m,p-Xylene	< 3.90	ug/Kg	9/7/2016 18:21
Methyl acetate	< 3.90	ug/Kg	9/7/2016 18:21
Methyl tert-butyl Ether	< 3.90	ug/Kg	9/7/2016 18:21
Methylcyclohexane	< 3.90	ug/Kg	9/7/2016 18:21
Methylene chloride	< 9.75	ug/Kg	9/7/2016 18:21
Naphthalene	< 9.75	ug/Kg	9/7/2016 18:21
n-Butylbenzene	< 3.90	ug/Kg	9/7/2016 18:21
n-Propylbenzene	< 3.90	ug/Kg	9/7/2016 18:21
o-Xylene	< 3.90	ug/Kg	9/7/2016 18:21
p-Isopropyltoluene	< 3.90	ug/Kg	9/7/2016 18:21
sec-Butylbenzene	< 3.90	ug/Kg	9/7/2016 18:21
Styrene	< 9.75	ug/Kg	9/7/2016 18:21
tert-Butylbenzene	< 3.90	ug/Kg	9/7/2016 18:21
Tetrachloroethene	< 3.90	ug/Kg	9/7/2016 18:21
Toluene	< 3.90	ug/Kg	9/7/2016 18:21
trans-1,2-Dichloroethene	< 3.90	ug/Kg	9/7/2016 18:21
trans-1,3-Dichloropropene	< 3.90	ug/Kg	9/7/2016 18:21

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: D1-9.5-11.5 ft

Lab Sample ID: 163832-05

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Trichloroethene	< 3.90	ug/Kg	9/7/2016 18:21
Trichlorofluoromethane	< 3.90	ug/Kg	9/7/2016 18:21
Vinyl chloride	< 3.90	ug/Kg	9/7/2016 18:21

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	107	81.3 - 124		9/7/2016 18:21
4-Bromofluorobenzene	93.4	80 - 117		9/7/2016 18:21
Pentafluorobenzene	94.9	88.3 - 111		9/7/2016 18:21
Toluene-D8	99.0	78 - 123		9/7/2016 18:21

Method Reference(s): EPA 8260C

EPA 5035

Data File: x35146.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: D1-15-16 ft

Lab Sample ID: 163832-06

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.16	ug/Kg		9/7/2016 18:45
1,1,2,2-Tetrachloroethane	< 4.16	ug/Kg		9/7/2016 18:45
1,1,2-Trichloroethane	< 4.16	ug/Kg		9/7/2016 18:45
1,1-Dichloroethane	< 4.16	ug/Kg		9/7/2016 18:45
1,1-Dichloroethene	< 4.16	ug/Kg		9/7/2016 18:45
1,2,3-Trichlorobenzene	< 10.4	ug/Kg		9/7/2016 18:45
1,2,4-Trichlorobenzene	< 10.4	ug/Kg		9/7/2016 18:45
1,2,4-Trimethylbenzene	< 4.16	ug/Kg		9/7/2016 18:45
1,2-Dibromo-3-Chloropropane	< 20.8	ug/Kg		9/7/2016 18:45
1,2-Dibromoethane	< 4.16	ug/Kg		9/7/2016 18:45
1,2-Dichlorobenzene	< 4.16	ug/Kg		9/7/2016 18:45
1,2-Dichloroethane	< 4.16	ug/Kg		9/7/2016 18:45
1,2-Dichloropropane	< 4.16	ug/Kg		9/7/2016 18:45
1,3,5-Trimethylbenzene	< 4.16	ug/Kg		9/7/2016 18:45
1,3-Dichlorobenzene	< 4.16	ug/Kg		9/7/2016 18:45
1,4-Dichlorobenzene	< 4.16	ug/Kg		9/7/2016 18:45
1,4-dioxane	< 4.16 <i>R</i>	ug/Kg		9/7/2016 18:45
2-Butanone	< 20.8	ug/Kg		9/7/2016 18:45
2-Hexanone	< 10.4	ug/Kg		9/7/2016 18:45
4-Methyl-2-pentanone	< 10.4 <i>JS</i>	ug/Kg		9/7/2016 18:45
Acetone	20.7 <i>J</i>	ug/Kg	J	9/7/2016 18:45
Benzene	< 4.16	ug/Kg		9/7/2016 18:45
Bromochloromethane	< 10.4	ug/Kg		9/7/2016 18:45
Bromodichloromethane	< 4.16	ug/Kg		9/7/2016 18:45
Bromoform	< 10.4	ug/Kg		9/7/2016 18:45
Bromomethane	< 4.16	ug/Kg		9/7/2016 18:45
Carbon disulfide	< 4.16	ug/Kg		9/7/2016 18:45

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Report Prepared Tuesday, September 13, 2016

*mep 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	D1-15-16 ft		
Lab Sample ID:	163832-06	Date Sampled:	9/1/2016
Matrix:	Soil	Date Received:	9/2/2016
Carbon Tetrachloride	< 4.16	ug/Kg	9/7/2016 18:45
Chlorobenzene	< 4.16	ug/Kg	9/7/2016 18:45
Chloroethane	< 4.16	ug/Kg	9/7/2016 18:45
Chloroform	< 4.16	ug/Kg	9/7/2016 18:45
Chloromethane	< 4.16	ug/Kg	9/7/2016 18:45
cis-1,2-Dichloroethene	< 4.16	ug/Kg	9/7/2016 18:45
cis-1,3-Dichloropropene	< 4.16	ug/Kg	9/7/2016 18:45
Cyclohexane	< 20.8	ug/Kg	9/7/2016 18:45
Dibromochloromethane	< 4.16	ug/Kg	9/7/2016 18:45
Dichlorodifluoromethane	< 4.16	ug/Kg	9/7/2016 18:45
Ethylbenzene	< 4.16	ug/Kg	9/7/2016 18:45
Freon 113	< 4.16	ug/Kg	9/7/2016 18:45
Isopropylbenzene	< 4.16	ug/Kg	9/7/2016 18:45
m,p-Xylene	< 4.16	ug/Kg	9/7/2016 18:45
Methyl acetate	< 4.16	ug/Kg	9/7/2016 18:45
Methyl tert-butyl Ether	< 4.16	ug/Kg	9/7/2016 18:45
Methylcyclohexane	< 4.16	ug/Kg	9/7/2016 18:45
Methylene chloride	< 10.4	ug/Kg	9/7/2016 18:45
Naphthalene	< 10.4	ug/Kg	9/7/2016 18:45
n-Butylbenzene	< 4.16	ug/Kg	9/7/2016 18:45
n-Propylbenzene	< 4.16	ug/Kg	9/7/2016 18:45
o-Xylene	< 4.16	ug/Kg	9/7/2016 18:45
p-Isopropyltoluene	< 4.16	ug/Kg	9/7/2016 18:45
sec-Butylbenzene	< 4.16	ug/Kg	9/7/2016 18:45
Styrene	< 10.4	ug/Kg	9/7/2016 18:45
tert-Butylbenzene	< 4.16	ug/Kg	9/7/2016 18:45
Tetrachloroethene	< 4.16	ug/Kg	9/7/2016 18:45
Toluene	< 4.16	ug/Kg	9/7/2016 18:45
trans-1,2-Dichloroethene	< 4.16	ug/Kg	9/7/2016 18:45
trans-1,3-Dichloropropene	< 4.16	ug/Kg	9/7/2016 18:45

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-15-16 ft

**Lab Sample ID:** 163832-06

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Trichloroethene	< 4.16	ug/Kg	9/7/2016 18:45
Trichlorofluoromethane	< 4.16	ug/Kg	9/7/2016 18:45
Vinyl chloride	< 4.16	ug/Kg	9/7/2016 18:45

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	108	81.3 - 124		9/7/2016 18:45
4-Bromofluorobenzene	94.5	80 - 117		9/7/2016 18:45
Pentafluorobenzene	97.5	88.3 - 111		9/7/2016 18:45
Toluene-D8	99.4	78 - 123		9/7/2016 18:45

**Method Reference(s):** EPA 8260C

EPA 5035

**Data File:** x35147.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-5-6.5 ft

Lab Sample ID: 163832-07

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.24	ug/Kg		9/7/2016 19:09
1,1,2,2-Tetrachloroethane	< 4.24	ug/Kg		9/7/2016 19:09
1,1,2-Trichloroethane	< 4.24	ug/Kg		9/7/2016 19:09
1,1-Dichloroethane	< 4.24	ug/Kg		9/7/2016 19:09
1,1-Dichloroethene	< 4.24	ug/Kg		9/7/2016 19:09
1,2,3-Trichlorobenzene	< 10.6	ug/Kg		9/7/2016 19:09
1,2,4-Trichlorobenzene	< 10.6	ug/Kg		9/7/2016 19:09
1,2,4-Trimethylbenzene	< 4.24	ug/Kg		9/7/2016 19:09
1,2-Dibromo-3-Chloropropane	< 21.2	ug/Kg		9/7/2016 19:09
1,2-Dibromoethane	< 4.24	ug/Kg		9/7/2016 19:09
1,2-Dichlorobenzene	< 4.24	ug/Kg		9/7/2016 19:09
1,2-Dichloroethane	< 4.24	ug/Kg		9/7/2016 19:09
1,2-Dichloropropane	< 4.24	ug/Kg		9/7/2016 19:09
1,3,5-Trimethylbenzene	< 4.24	ug/Kg		9/7/2016 19:09
1,3-Dichlorobenzene	< 4.24	ug/Kg		9/7/2016 19:09
1,4-Dichlorobenzene	< 4.24	ug/Kg		9/7/2016 19:09
1,4-dioxane	< 4.24 <i>R</i>	ug/Kg		9/7/2016 19:09
2-Butanone	< 21.2	ug/Kg		9/7/2016 19:09
2-Hexanone	< 10.6	ug/Kg		9/7/2016 19:09
4-Methyl-2-pentanone	< 10.6 <i>MS</i>	ug/Kg		9/7/2016 19:09
Acetone	< 21.2 <i>MS</i>	ug/Kg		9/7/2016 19:09
Benzene	< 4.24	ug/Kg		9/7/2016 19:09
Bromochloromethane	< 10.6	ug/Kg		9/7/2016 19:09
Bromodichloromethane	< 4.24	ug/Kg		9/7/2016 19:09
Bromoform	< 10.6	ug/Kg		9/7/2016 19:09
Bromomethane	< 4.24	ug/Kg		9/7/2016 19:09
Carbon disulfide	< 4.24	ug/Kg		9/7/2016 19:09

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Report Prepared Tuesday, September 13, 2016

*msd 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-5-6.5 ft

Lab Sample ID: 163832-07

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Carbon Tetrachloride	< 4.24	ug/Kg	9/7/2016 19:09
Chlorobenzene	< 4.24	ug/Kg	9/7/2016 19:09
Chloroethane	< 4.24	ug/Kg	9/7/2016 19:09
Chloroform	< 4.24	ug/Kg	9/7/2016 19:09
Chloromethane	< 4.24	ug/Kg	9/7/2016 19:09
cis-1,2-Dichloroethene	< 4.24	ug/Kg	9/7/2016 19:09
cis-1,3-Dichloropropene	< 4.24	ug/Kg	9/7/2016 19:09
Cyclohexane	< 21.2	ug/Kg	9/7/2016 19:09
Dibromochloromethane	< 4.24	ug/Kg	9/7/2016 19:09
Dichlorodifluoromethane	< 4.24	ug/Kg	9/7/2016 19:09
Ethylbenzene	< 4.24	ug/Kg	9/7/2016 19:09
Freon 113	< 4.24	ug/Kg	9/7/2016 19:09
Isopropylbenzene	< 4.24	ug/Kg	9/7/2016 19:09
m,p-Xylene	< 4.24	ug/Kg	9/7/2016 19:09
Methyl acetate	< 4.24	ug/Kg	9/7/2016 19:09
Methyl tert-butyl Ether	< 4.24	ug/Kg	9/7/2016 19:09
Methylcyclohexane	< 4.24	ug/Kg	9/7/2016 19:09
Methylene chloride	< 10.6	ug/Kg	9/7/2016 19:09
Naphthalene	< 10.6	ug/Kg	9/7/2016 19:09
n-Butylbenzene	< 4.24	ug/Kg	9/7/2016 19:09
n-Propylbenzene	< 4.24	ug/Kg	9/7/2016 19:09
o-Xylene	< 4.24	ug/Kg	9/7/2016 19:09
p-Isopropyltoluene	< 4.24	ug/Kg	9/7/2016 19:09
sec-Butylbenzene	< 4.24	ug/Kg	9/7/2016 19:09
Styrene	< 10.6	ug/Kg	9/7/2016 19:09
tert-Butylbenzene	< 4.24	ug/Kg	9/7/2016 19:09
Tetrachloroethene	< 4.24	ug/Kg	9/7/2016 19:09
Toluene	< 4.24	ug/Kg	9/7/2016 19:09
trans-1,2-Dichloroethene	< 4.24	ug/Kg	9/7/2016 19:09
trans-1,3-Dichloropropene	< 4.24	ug/Kg	9/7/2016 19:09

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	E2-5-6.5 ft				
<b>Lab Sample ID:</b>	163832-07		<b>Date Sampled:</b>	9/1/2016	
<b>Matrix:</b>	Soil		<b>Date Received:</b>	9/2/2016	
Trichloroethene	< 4.24	ug/Kg		9/7/2016	19:09
Trichlorofluoromethane	< 4.24	ug/Kg		9/7/2016	19:09
Vinyl chloride	< 4.24	ug/Kg		9/7/2016	19:09
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>	
1,2-Dichloroethane-d4	112	81.3 - 124		9/7/2016	19:09
4-Bromofluorobenzene	85.9	80 - 117		9/7/2016	19:09
Pentafluorobenzene	95.3	88.3 - 111		9/7/2016	19:09
Toluene-D8	98.5	78 - 123		9/7/2016	19:09

**Method Reference(s):** EPA 8260C  
EPA 5035

**Data File:** x35148.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-9-10 ft

Lab Sample ID: 163832-08

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.42	ug/Kg		9/7/2016 19:33
1,1,2,2-Tetrachloroethane	< 3.42	ug/Kg		9/7/2016 19:33
1,1,2-Trichloroethane	< 3.42	ug/Kg		9/7/2016 19:33
1,1-Dichloroethane	< 3.42	ug/Kg		9/7/2016 19:33
1,1-Dichloroethene	< 3.42	ug/Kg		9/7/2016 19:33
1,2,3-Trichlorobenzene	< 8.55	ug/Kg		9/7/2016 19:33
1,2,4-Trichlorobenzene	< 8.55	ug/Kg		9/7/2016 19:33
1,2,4-Trimethylbenzene	< 3.42	ug/Kg		9/7/2016 19:33
1,2-Dibromo-3-Chloropropane	< 17.1	ug/Kg		9/7/2016 19:33
1,2-Dibromoethane	< 3.42	ug/Kg		9/7/2016 19:33
1,2-Dichlorobenzene	< 3.42	ug/Kg		9/7/2016 19:33
1,2-Dichloroethane	< 3.42	ug/Kg		9/7/2016 19:33
1,2-Dichloropropane	< 3.42	ug/Kg		9/7/2016 19:33
1,3,5-Trimethylbenzene	< 3.42	ug/Kg		9/7/2016 19:33
1,3-Dichlorobenzene	< 3.42	ug/Kg		9/7/2016 19:33
1,4-Dichlorobenzene	< 3.42	ug/Kg		9/7/2016 19:33
1,4-dioxane	< 3.42 <i>R</i>	ug/Kg		9/7/2016 19:33
2-Butanone	< 17.1	ug/Kg		9/7/2016 19:33
2-Hexanone	< 8.55	ug/Kg		9/7/2016 19:33
4-Methyl-2-pentanone	< 8.55 <i>u5</i>	ug/Kg		9/7/2016 19:33
Acetone	< 17.1 <i>u5</i>	ug/Kg		9/7/2016 19:33
Benzene	< 3.42	ug/Kg		9/7/2016 19:33
Bromochloromethane	< 8.55	ug/Kg		9/7/2016 19:33
Bromodichloromethane	< 3.42	ug/Kg		9/7/2016 19:33
Bromoform	< 8.55	ug/Kg		9/7/2016 19:33
Bromomethane	< 3.42	ug/Kg		9/7/2016 19:33
Carbon disulfide	< 3.42	ug/Kg		9/7/2016 19:33

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Report Prepared Tuesday, September 13, 2016

*mkp 5/6/17*





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

<b>Sample Identifier:</b>	E2-9-10 ft		
<b>Lab Sample ID:</b>	163832-08	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
Carbon Tetrachloride	< 3.42	ug/Kg	9/7/2016 19:33
Chlorobenzene	< 3.42	ug/Kg	9/7/2016 19:33
Chloroethane	< 3.42	ug/Kg	9/7/2016 19:33
Chloroform	< 3.42	ug/Kg	9/7/2016 19:33
Chloromethane	< 3.42	ug/Kg	9/7/2016 19:33
cis-1,2-Dichloroethene	< 3.42	ug/Kg	9/7/2016 19:33
cis-1,3-Dichloropropene	< 3.42	ug/Kg	9/7/2016 19:33
Cyclohexane	< 17.1	ug/Kg	9/7/2016 19:33
Dibromochloromethane	< 3.42	ug/Kg	9/7/2016 19:33
Dichlorodifluoromethane	< 3.42	ug/Kg	9/7/2016 19:33
Ethylbenzene	< 3.42	ug/Kg	9/7/2016 19:33
Freon 113	< 3.42	ug/Kg	9/7/2016 19:33
Isopropylbenzene	< 3.42	ug/Kg	9/7/2016 19:33
m,p-Xylene	< 3.42	ug/Kg	9/7/2016 19:33
Methyl acetate	< 3.42	ug/Kg	9/7/2016 19:33
Methyl tert-butyl Ether	< 3.42	ug/Kg	9/7/2016 19:33
Methylcyclohexane	< 3.42	ug/Kg	9/7/2016 19:33
Methylene chloride	< 8.55	ug/Kg	9/7/2016 19:33
Naphthalene	< 8.55	ug/Kg	9/7/2016 19:33
n-Butylbenzene	< 3.42	ug/Kg	9/7/2016 19:33
n-Propylbenzene	< 3.42	ug/Kg	9/7/2016 19:33
o-Xylene	< 3.42	ug/Kg	9/7/2016 19:33
p-Isopropyltoluene	< 3.42	ug/Kg	9/7/2016 19:33
sec-Butylbenzene	< 3.42	ug/Kg	9/7/2016 19:33
Styrene	< 8.55	ug/Kg	9/7/2016 19:33
tert-Butylbenzene	< 3.42	ug/Kg	9/7/2016 19:33
Tetrachloroethene	< 3.42	ug/Kg	9/7/2016 19:33
Toluene	< 3.42	ug/Kg	9/7/2016 19:33
trans-1,2-Dichloroethene	< 3.42	ug/Kg	9/7/2016 19:33
trans-1,3-Dichloropropene	< 3.42	ug/Kg	9/7/2016 19:33

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b> E2-9-10 ft		<b>Date Sampled:</b> 9/1/2016	
<b>Lab Sample ID:</b> 163832-08		<b>Date Received:</b> 9/2/2016	
<b>Matrix:</b> Soil			
Trichloroethene	< 3.42	ug/Kg	9/7/2016 19:33
Trichlorofluoromethane	< 3.42	ug/Kg	9/7/2016 19:33
Vinyl chloride	< 3.42	ug/Kg	9/7/2016 19:33
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>
1,2-Dichloroethane-d4	109	81.3 - 124	9/7/2016 19:33
4-Bromofluorobenzene	93.5	80 - 117	9/7/2016 19:33
Pentafluorobenzene	97.4	88.3 - 111	9/7/2016 19:33
Toluene-D8	101	78 - 123	9/7/2016 19:33

**Method Reference(s):** EPA 8260C  
EPA 5035

**Data File:** x35149.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-14-15 ft

Lab Sample ID: 163832-09

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.39	ug/Kg		9/7/2016 19:57
1,1,2,2-Tetrachloroethane	< 3.39	ug/Kg		9/7/2016 19:57
1,1,2-Trichloroethane	< 3.39	ug/Kg		9/7/2016 19:57
1,1-Dichloroethane	< 3.39	ug/Kg		9/7/2016 19:57
1,1-Dichloroethene	< 3.39	ug/Kg		9/7/2016 19:57
1,2,3-Trichlorobenzene	< 8.48	ug/Kg		9/7/2016 19:57
1,2,4-Trichlorobenzene	< 8.48	ug/Kg		9/7/2016 19:57
1,2,4-Trimethylbenzene	< 3.39	ug/Kg		9/7/2016 19:57
1,2-Dibromo-3-Chloropropane	< 17.0	ug/Kg		9/7/2016 19:57
1,2-Dibromoethane	< 3.39	ug/Kg		9/7/2016 19:57
1,2-Dichlorobenzene	< 3.39	ug/Kg		9/7/2016 19:57
1,2-Dichloroethane	< 3.39	ug/Kg		9/7/2016 19:57
1,2-Dichloropropane	< 3.39	ug/Kg		9/7/2016 19:57
1,3,5-Trimethylbenzene	< 3.39	ug/Kg		9/7/2016 19:57
1,3-Dichlorobenzene	< 3.39	ug/Kg		9/7/2016 19:57
1,4-Dichlorobenzene	< 3.39	ug/Kg		9/7/2016 19:57
1,4-dioxane	< 3.39 <i>R</i>	ug/Kg		9/7/2016 19:57
2-Butanone	< 17.0	ug/Kg		9/7/2016 19:57
2-Hexanone	< 8.48	ug/Kg		9/7/2016 19:57
4-Methyl-2-pentanone	< 8.48 <i>us</i>	ug/Kg		9/7/2016 19:57
Acetone	12.7 <i>5</i>	ug/Kg	J	9/7/2016 19:57
Benzene	< 3.39	ug/Kg		9/7/2016 19:57
Bromochloromethane	< 8.48	ug/Kg		9/7/2016 19:57
Bromodichloromethane	< 3.39	ug/Kg		9/7/2016 19:57
Bromoform	< 8.48	ug/Kg		9/7/2016 19:57
Bromomethane	< 3.39	ug/Kg		9/7/2016 19:57
Carbon disulfide	< 3.39	ug/Kg		9/7/2016 19:57

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Report Prepared Tuesday, September 13, 2016

*WMP 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-14-15 ft

Lab Sample ID: 163832-09

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Carbon Tetrachloride	< 3.39	ug/Kg	9/7/2016 19:57
Chlorobenzene	< 3.39	ug/Kg	9/7/2016 19:57
Chloroethane	< 3.39	ug/Kg	9/7/2016 19:57
Chloroform	< 3.39	ug/Kg	9/7/2016 19:57
Chloromethane	< 3.39	ug/Kg	9/7/2016 19:57
cis-1,2-Dichloroethene	< 3.39	ug/Kg	9/7/2016 19:57
cis-1,3-Dichloropropene	< 3.39	ug/Kg	9/7/2016 19:57
Cyclohexane	< 17.0	ug/Kg	9/7/2016 19:57
Dibromochloromethane	< 3.39	ug/Kg	9/7/2016 19:57
Dichlorodifluoromethane	< 3.39	ug/Kg	9/7/2016 19:57
Ethylbenzene	< 3.39	ug/Kg	9/7/2016 19:57
Freon 113	< 3.39	ug/Kg	9/7/2016 19:57
Isopropylbenzene	< 3.39	ug/Kg	9/7/2016 19:57
m,p-Xylene	< 3.39	ug/Kg	9/7/2016 19:57
Methyl acetate	< 3.39	ug/Kg	9/7/2016 19:57
Methyl tert-butyl Ether	< 3.39	ug/Kg	9/7/2016 19:57
Methylcyclohexane	< 3.39	ug/Kg	9/7/2016 19:57
Methylene chloride	< 8.48	ug/Kg	9/7/2016 19:57
Naphthalene	< 8.48	ug/Kg	9/7/2016 19:57
n-Butylbenzene	< 3.39	ug/Kg	9/7/2016 19:57
n-Propylbenzene	< 3.39	ug/Kg	9/7/2016 19:57
o-Xylene	< 3.39	ug/Kg	9/7/2016 19:57
p-Isopropyltoluene	< 3.39	ug/Kg	9/7/2016 19:57
sec-Butylbenzene	< 3.39	ug/Kg	9/7/2016 19:57
Styrene	< 8.48	ug/Kg	9/7/2016 19:57
tert-Butylbenzene	< 3.39	ug/Kg	9/7/2016 19:57
Tetrachloroethene	< 3.39	ug/Kg	9/7/2016 19:57
Toluene	< 3.39	ug/Kg	9/7/2016 19:57
trans-1,2-Dichloroethene	< 3.39	ug/Kg	9/7/2016 19:57
trans-1,3-Dichloropropene	< 3.39	ug/Kg	9/7/2016 19:57

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** E2-14-15 ft

**Lab Sample ID:** 163832-09

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Trichloroethene	< 3.39	ug/Kg	9/7/2016 19:57
Trichlorofluoromethane	< 3.39	ug/Kg	9/7/2016 19:57
Vinyl chloride	< 3.39	ug/Kg	9/7/2016 19:57

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
1,2-Dichloroethane-d4	110	81.3 - 124		9/7/2016 19:57
4-Bromofluorobenzene	91.3	80 - 117		9/7/2016 19:57
Pentafluorobenzene	94.1	88.3 - 111		9/7/2016 19:57
Toluene-D8	98.0	78 - 123		9/7/2016 19:57

**Method Reference(s):** EPA 8260C

EPA 5035

**Data File:** x35150.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-3-5 ft

Lab Sample ID: 163832-10

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.33	ug/Kg		9/7/2016 20:21
1,1,2,2-Tetrachloroethane	< 3.33	ug/Kg		9/7/2016 20:21
1,1,2-Trichloroethane	< 3.33	ug/Kg		9/7/2016 20:21
1,1-Dichloroethane	< 3.33	ug/Kg		9/7/2016 20:21
1,1-Dichloroethene	< 3.33	ug/Kg		9/7/2016 20:21
1,2,3-Trichlorobenzene	< 8.31	ug/Kg		9/7/2016 20:21
1,2,4-Trichlorobenzene	< 8.31	ug/Kg		9/7/2016 20:21
1,2,4-Trimethylbenzene	< 3.33	ug/Kg		9/7/2016 20:21
1,2-Dibromo-3-Chloropropane	< 16.6	ug/Kg		9/7/2016 20:21
1,2-Dibromoethane	< 3.33	ug/Kg		9/7/2016 20:21
1,2-Dichlorobenzene	< 3.33	ug/Kg		9/7/2016 20:21
1,2-Dichloroethane	< 3.33	ug/Kg		9/7/2016 20:21
1,2-Dichloropropane	< 3.33	ug/Kg		9/7/2016 20:21
1,3,5-Trimethylbenzene	< 3.33	ug/Kg		9/7/2016 20:21
1,3-Dichlorobenzene	< 3.33	ug/Kg		9/7/2016 20:21
1,4-Dichlorobenzene	< 3.33	ug/Kg		9/7/2016 20:21
1,4-dioxane	< 3.33 <i>R</i>	ug/Kg		9/7/2016 20:21
2-Butanone	< 16.6	ug/Kg		9/7/2016 20:21
2-Hexanone	< 8.31	ug/Kg		9/7/2016 20:21
4-Methyl-2-pentanone	< 8.31 <i>uJ</i>	ug/Kg		9/7/2016 20:21
Acetone	< 16.6 <i>uJ</i>	ug/Kg		9/7/2016 20:21
Benzene	< 3.33	ug/Kg		9/7/2016 20:21
Bromochloromethane	< 8.31	ug/Kg		9/7/2016 20:21
Bromodichloromethane	< 3.33	ug/Kg		9/7/2016 20:21
Bromoform	< 8.31	ug/Kg		9/7/2016 20:21
Bromomethane	< 3.33	ug/Kg		9/7/2016 20:21
Carbon disulfide	< 3.33	ug/Kg		9/7/2016 20:21

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Report Prepared Tuesday, September 13, 2016

*MEP 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F1-3-5 ft

**Lab Sample ID:** 163832-10

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Carbon Tetrachloride	< 3.33	ug/Kg	9/7/2016 20:21
Chlorobenzene	< 3.33	ug/Kg	9/7/2016 20:21
Chloroethane	< 3.33	ug/Kg	9/7/2016 20:21
Chloroform	< 3.33	ug/Kg	9/7/2016 20:21
Chloromethane	< 3.33	ug/Kg	9/7/2016 20:21
cis-1,2-Dichloroethene	< 3.33	ug/Kg	9/7/2016 20:21
cis-1,3-Dichloropropene	< 3.33	ug/Kg	9/7/2016 20:21
Cyclohexane	< 16.6	ug/Kg	9/7/2016 20:21
Dibromochloromethane	< 3.33	ug/Kg	9/7/2016 20:21
Dichlorodifluoromethane	< 3.33	ug/Kg	9/7/2016 20:21
Ethylbenzene	< 3.33	ug/Kg	9/7/2016 20:21
Freon 113	< 3.33	ug/Kg	9/7/2016 20:21
Isopropylbenzene	< 3.33	ug/Kg	9/7/2016 20:21
m,p-Xylene	< 3.33	ug/Kg	9/7/2016 20:21
Methyl acetate	< 3.33	ug/Kg	9/7/2016 20:21
Methyl tert-butyl Ether	< 3.33	ug/Kg	9/7/2016 20:21
Methylcyclohexane	< 3.33	ug/Kg	9/7/2016 20:21
Methylene chloride	< 8.31	ug/Kg	9/7/2016 20:21
Naphthalene	< 8.31	ug/Kg	9/7/2016 20:21
n-Butylbenzene	< 3.33	ug/Kg	9/7/2016 20:21
n-Propylbenzene	< 3.33	ug/Kg	9/7/2016 20:21
o-Xylene	< 3.33	ug/Kg	9/7/2016 20:21
p-Isopropyltoluene	< 3.33	ug/Kg	9/7/2016 20:21
sec-Butylbenzene	< 3.33	ug/Kg	9/7/2016 20:21
Styrene	< 8.31	ug/Kg	9/7/2016 20:21
tert-Butylbenzene	< 3.33	ug/Kg	9/7/2016 20:21
Tetrachloroethene	< 3.33	ug/Kg	9/7/2016 20:21
Toluene	< 3.33	ug/Kg	9/7/2016 20:21
trans-1,2-Dichloroethene	< 3.33	ug/Kg	9/7/2016 20:21
trans-1,3-Dichloropropene	< 3.33	ug/Kg	9/7/2016 20:21

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F1-3-5 ft

**Lab Sample ID:** 163832-10

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Trichloroethene	< 3.33	ug/Kg	9/7/2016 20:21
Trichlorofluoromethane	< 3.33	ug/Kg	9/7/2016 20:21
Vinyl chloride	< 3.33	ug/Kg	9/7/2016 20:21

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	111	81.3 - 124		9/7/2016 20:21
4-Bromofluorobenzene	87.3	80 - 117		9/7/2016 20:21
Pentafluorobenzene	95.6	88.3 - 111		9/7/2016 20:21
Toluene-D8	98.2	78 - 123		9/7/2016 20:21

**Method Reference(s):** EPA 8260C

EPA 5035

**Data File:** x35151.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-9-10 ft

Lab Sample ID: 163832-11

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.92	ug/Kg		9/7/2016 20:45
1,1,2,2-Tetrachloroethane	< 3.92	ug/Kg		9/7/2016 20:45
1,1,2-Trichloroethane	< 3.92	ug/Kg		9/7/2016 20:45
1,1-Dichloroethane	< 3.92	ug/Kg		9/7/2016 20:45
1,1-Dichloroethene	< 3.92	ug/Kg		9/7/2016 20:45
1,2,3-Trichlorobenzene	< 9.81	ug/Kg		9/7/2016 20:45
1,2,4-Trichlorobenzene	< 9.81	ug/Kg		9/7/2016 20:45
1,2,4-Trimethylbenzene	< 3.92	ug/Kg		9/7/2016 20:45
1,2-Dibromo-3-Chloropropane	< 19.6	ug/Kg		9/7/2016 20:45
1,2-Dibromoethane	< 3.92	ug/Kg		9/7/2016 20:45
1,2-Dichlorobenzene	< 3.92	ug/Kg		9/7/2016 20:45
1,2-Dichloroethane	< 3.92	ug/Kg		9/7/2016 20:45
1,2-Dichloropropane	< 3.92	ug/Kg		9/7/2016 20:45
1,3,5-Trimethylbenzene	< 3.92	ug/Kg		9/7/2016 20:45
1,3-Dichlorobenzene	< 3.92	ug/Kg		9/7/2016 20:45
1,4-Dichlorobenzene	< 3.92	ug/Kg		9/7/2016 20:45
1,4-dioxane	< 3.92 <i>R</i>	ug/Kg		9/7/2016 20:45
2-Butanone	< 19.6	ug/Kg		9/7/2016 20:45
2-Hexanone	< 9.81	ug/Kg		9/7/2016 20:45
4-Methyl-2-pentanone	< 9.81 <i>u3</i>	ug/Kg		9/7/2016 20:45
Acetone	14.1 <i>J</i>	ug/Kg	J	9/7/2016 20:45
Benzene	< 3.92	ug/Kg		9/7/2016 20:45
Bromochloromethane	< 9.81	ug/Kg		9/7/2016 20:45
Bromodichloromethane	< 3.92	ug/Kg		9/7/2016 20:45
Bromoform	< 9.81	ug/Kg		9/7/2016 20:45
Bromomethane	< 3.92	ug/Kg		9/7/2016 20:45
Carbon disulfide	< 3.92	ug/Kg		9/7/2016 20:45

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Report Prepared Tuesday, September 13, 2016

*mkp 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	F1-9-10 ft		
<b>Lab Sample ID:</b>	163832-11	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
Carbon Tetrachloride	< 3.92	ug/Kg	9/7/2016 20:45
Chlorobenzene	< 3.92	ug/Kg	9/7/2016 20:45
Chloroethane	< 3.92	ug/Kg	9/7/2016 20:45
Chloroform	< 3.92	ug/Kg	9/7/2016 20:45
Chloromethane	< 3.92	ug/Kg	9/7/2016 20:45
cis-1,2-Dichloroethene	< 3.92	ug/Kg	9/7/2016 20:45
cis-1,3-Dichloropropene	< 3.92	ug/Kg	9/7/2016 20:45
Cyclohexane	< 19.6	ug/Kg	9/7/2016 20:45
Dibromochloromethane	< 3.92	ug/Kg	9/7/2016 20:45
Dichlorodifluoromethane	< 3.92	ug/Kg	9/7/2016 20:45
Ethylbenzene	< 3.92	ug/Kg	9/7/2016 20:45
Freon 113	< 3.92	ug/Kg	9/7/2016 20:45
Isopropylbenzene	< 3.92	ug/Kg	9/7/2016 20:45
m,p-Xylene	< 3.92	ug/Kg	9/7/2016 20:45
Methyl acetate	< 3.92	ug/Kg	9/7/2016 20:45
Methyl tert-butyl Ether	< 3.92	ug/Kg	9/7/2016 20:45
Methylcyclohexane	< 3.92	ug/Kg	9/7/2016 20:45
Methylene chloride	< 9.81	ug/Kg	9/7/2016 20:45
Naphthalene	< 9.81	ug/Kg	9/7/2016 20:45
n-Butylbenzene	< 3.92	ug/Kg	9/7/2016 20:45
n-Propylbenzene	< 3.92	ug/Kg	9/7/2016 20:45
o-Xylene	< 3.92	ug/Kg	9/7/2016 20:45
p-Isopropyltoluene	< 3.92	ug/Kg	9/7/2016 20:45
sec-Butylbenzene	< 3.92	ug/Kg	9/7/2016 20:45
Styrene	< 9.81	ug/Kg	9/7/2016 20:45
tert-Butylbenzene	< 3.92	ug/Kg	9/7/2016 20:45
Tetrachloroethene	< 3.92	ug/Kg	9/7/2016 20:45
Toluene	< 3.92	ug/Kg	9/7/2016 20:45
trans-1,2-Dichloroethene	< 3.92	ug/Kg	9/7/2016 20:45
trans-1,3-Dichloropropene	< 3.92	ug/Kg	9/7/2016 20:45

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F1-9-10 ft

**Lab Sample ID:** 163832-11

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Trichloroethene	< 3.92	ug/Kg	9/7/2016 20:45
Trichlorofluoromethane	< 3.92	ug/Kg	9/7/2016 20:45
Vinyl chloride	< 3.92	ug/Kg	9/7/2016 20:45

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	109	81.3 - 124		9/7/2016 20:45
4-Bromofluorobenzene	92.4	80 - 117		9/7/2016 20:45
Pentafluorobenzene	93.5	88.3 - 111		9/7/2016 20:45
Toluene-D8	97.9	78 - 123		9/7/2016 20:45

**Method Reference(s):** EPA 8260C

EPA 5035

**Data File:** x35152.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.68	ug/Kg		9/7/2016 21:09
1,1,2,2-Tetrachloroethane	< 3.68	ug/Kg		9/7/2016 21:09
1,1,2-Trichloroethane	< 3.68	ug/Kg		9/7/2016 21:09
1,1-Dichloroethane	< 3.68	ug/Kg		9/7/2016 21:09
1,1-Dichloroethene	< 3.68	ug/Kg		9/7/2016 21:09
1,2,3-Trichlorobenzene	< 9.21	ug/Kg		9/7/2016 21:09
1,2,4-Trichlorobenzene	< 9.21	ug/Kg		9/7/2016 21:09
1,2,4-Trimethylbenzene	< 3.68	ug/Kg		9/7/2016 21:09
1,2-Dibromo-3-Chloropropane	< 18.4	ug/Kg		9/7/2016 21:09
1,2-Dibromoethane	< 3.68	ug/Kg		9/7/2016 21:09
1,2-Dichlorobenzene	< 3.68	ug/Kg		9/7/2016 21:09
1,2-Dichloroethane	< 3.68	ug/Kg		9/7/2016 21:09
1,2-Dichloropropane	< 3.68	ug/Kg		9/7/2016 21:09
1,3,5-Trimethylbenzene	< 3.68	ug/Kg		9/7/2016 21:09
1,3-Dichlorobenzene	< 3.68	ug/Kg		9/7/2016 21:09
1,4-Dichlorobenzene	< 3.68	ug/Kg		9/7/2016 21:09
1,4-dioxane	< 3.68 <i>R</i>	ug/Kg		9/7/2016 21:09
2-Butanone	< 18.4	ug/Kg		9/7/2016 21:09
2-Hexanone	< 9.21	ug/Kg		9/7/2016 21:09
4-Methyl-2-pentanone	< 9.21 <i>US</i>	ug/Kg		9/7/2016 21:09
Acetone	15.5 <i>J</i>	ug/Kg	<i>J</i>	9/7/2016 21:09
Benzene	< 3.68	ug/Kg		9/7/2016 21:09
Bromochloromethane	< 9.21	ug/Kg		9/7/2016 21:09
Bromodichloromethane	< 3.68	ug/Kg		9/7/2016 21:09
Bromoform	< 9.21	ug/Kg		9/7/2016 21:09
Bromomethane	< 3.68	ug/Kg		9/7/2016 21:09
Carbon disulfide	< 3.68	ug/Kg		9/7/2016 21:09

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Report Prepared Tuesday, September 13, 2016

*mrf 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Carbon Tetrachloride	< 3.68	ug/Kg	9/7/2016 21:09
Chlorobenzene	< 3.68	ug/Kg	9/7/2016 21:09
Chloroethane	< 3.68	ug/Kg	9/7/2016 21:09
Chloroform	< 3.68	ug/Kg	9/7/2016 21:09
Chloromethane	< 3.68	ug/Kg	9/7/2016 21:09
cis-1,2-Dichloroethene	< 3.68	ug/Kg	9/7/2016 21:09
cis-1,3-Dichloropropene	< 3.68	ug/Kg	9/7/2016 21:09
Cyclohexane	< 18.4	ug/Kg	9/7/2016 21:09
Dibromochloromethane	< 3.68	ug/Kg	9/7/2016 21:09
Dichlorodifluoromethane	< 3.68	ug/Kg	9/7/2016 21:09
Ethylbenzene	< 3.68	ug/Kg	9/7/2016 21:09
Freon 113	< 3.68	ug/Kg	9/7/2016 21:09
Isopropylbenzene	< 3.68	ug/Kg	9/7/2016 21:09
m,p-Xylene	< 3.68	ug/Kg	9/7/2016 21:09
Methyl acetate	< 3.68	ug/Kg	9/7/2016 21:09
Methyl tert-butyl Ether	< 3.68	ug/Kg	9/7/2016 21:09
Methylcyclohexane	< 3.68	ug/Kg	9/7/2016 21:09
Methylene chloride	< 9.21	ug/Kg	9/7/2016 21:09
Naphthalene	< 9.21	ug/Kg	9/7/2016 21:09
n-Butylbenzene	< 3.68	ug/Kg	9/7/2016 21:09
n-Propylbenzene	< 3.68	ug/Kg	9/7/2016 21:09
o-Xylene	< 3.68	ug/Kg	9/7/2016 21:09
p-Isopropyltoluene	< 3.68	ug/Kg	9/7/2016 21:09
sec-Butylbenzene	< 3.68	ug/Kg	9/7/2016 21:09
Styrene	< 9.21	ug/Kg	9/7/2016 21:09
tert-Butylbenzene	< 3.68	ug/Kg	9/7/2016 21:09
Tetrachloroethene	< 3.68	ug/Kg	9/7/2016 21:09
Toluene	< 3.68	ug/Kg	9/7/2016 21:09
trans-1,2-Dichloroethene	< 3.68	ug/Kg	9/7/2016 21:09
trans-1,3-Dichloropropene	< 3.68	ug/Kg	9/7/2016 21:09

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Trichloroethene	< 3.68	ug/Kg		9/7/2016 21:09
Trichlorofluoromethane	< 3.68	ug/Kg		9/7/2016 21:09
Vinyl chloride	< 3.68	ug/Kg		9/7/2016 21:09
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>
1,2-Dichloroethane-d4	111	81.3 - 124		9/7/2016 21:09
4-Bromofluorobenzene	91.5	80 - 117		9/7/2016 21:09
Pentafluorobenzene	94.0	88.3 - 111		9/7/2016 21:09
Toluene-D8	98.1	78 - 123		9/7/2016 21:09

Method Reference(s): EPA 8260C

EPA 5035

Data File: x35153.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F2-4-6 ft

Lab Sample ID: 163832-13

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 3.40	ug/Kg		9/7/2016 21:33
1,1,2,2-Tetrachloroethane	< 3.40	ug/Kg		9/7/2016 21:33
1,1,2-Trichloroethane	< 3.40	ug/Kg		9/7/2016 21:33
1,1-Dichloroethane	< 3.40	ug/Kg		9/7/2016 21:33
1,1-Dichloroethene	< 3.40	ug/Kg		9/7/2016 21:33
1,2,3-Trichlorobenzene	< 8.51	ug/Kg		9/7/2016 21:33
1,2,4-Trichlorobenzene	< 8.51	ug/Kg		9/7/2016 21:33
1,2,4-Trimethylbenzene	< 3.40	ug/Kg		9/7/2016 21:33
1,2-Dibromo-3-Chloropropane	< 17.0	ug/Kg		9/7/2016 21:33
1,2-Dibromoethane	< 3.40	ug/Kg		9/7/2016 21:33
1,2-Dichlorobenzene	< 3.40	ug/Kg		9/7/2016 21:33
1,2-Dichloroethane	< 3.40	ug/Kg		9/7/2016 21:33
1,2-Dichloropropane	< 3.40	ug/Kg		9/7/2016 21:33
1,3,5-Trimethylbenzene	< 3.40	ug/Kg		9/7/2016 21:33
1,3-Dichlorobenzene	< 3.40	ug/Kg		9/7/2016 21:33
1,4-Dichlorobenzene	< 3.40	ug/Kg		9/7/2016 21:33
1,4-dioxane	< 3.40 <i>R</i>	ug/Kg		9/7/2016 21:33
2-Butanone	< 17.0	ug/Kg		9/7/2016 21:33
2-Hexanone	< 8.51	ug/Kg		9/7/2016 21:33
4-Methyl-2-pentanone	< 8.51 <i>UJ</i>	ug/Kg		9/7/2016 21:33
Acetone	< 17.0 <i>UJ</i>	ug/Kg		9/7/2016 21:33
Benzene	< 3.40	ug/Kg		9/7/2016 21:33
Bromochloromethane	< 8.51	ug/Kg		9/7/2016 21:33
Bromodichloromethane	< 3.40	ug/Kg		9/7/2016 21:33
Bromoform	< 8.51	ug/Kg		9/7/2016 21:33
Bromomethane	< 3.40	ug/Kg		9/7/2016 21:33
Carbon disulfide	< 3.40	ug/Kg		9/7/2016 21:33

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Report Prepared Tuesday, September 13, 2016

*mkp 5/6/17*





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	F2-4-6 ft		
<b>Lab Sample ID:</b>	163832-13	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
Carbon Tetrachloride	< 3.40	ug/Kg	9/7/2016 21:33
Chlorobenzene	< 3.40	ug/Kg	9/7/2016 21:33
Chloroethane	< 3.40	ug/Kg	9/7/2016 21:33
Chloroform	< 3.40	ug/Kg	9/7/2016 21:33
Chloromethane	< 3.40	ug/Kg	9/7/2016 21:33
cis-1,2-Dichloroethene	< 3.40	ug/Kg	9/7/2016 21:33
cis-1,3-Dichloropropene	< 3.40	ug/Kg	9/7/2016 21:33
Cyclohexane	< 17.0	ug/Kg	9/7/2016 21:33
Dibromochloromethane	< 3.40	ug/Kg	9/7/2016 21:33
Dichlorodifluoromethane	< 3.40	ug/Kg	9/7/2016 21:33
Ethylbenzene	< 3.40	ug/Kg	9/7/2016 21:33
Freon 113	< 3.40	ug/Kg	9/7/2016 21:33
Isopropylbenzene	< 3.40	ug/Kg	9/7/2016 21:33
m,p-Xylene	< 3.40	ug/Kg	9/7/2016 21:33
Methyl acetate	< 3.40	ug/Kg	9/7/2016 21:33
Methyl tert-butyl Ether	< 3.40	ug/Kg	9/7/2016 21:33
Methylcyclohexane	< 3.40	ug/Kg	9/7/2016 21:33
Methylene chloride	< 8.51	ug/Kg	9/7/2016 21:33
Naphthalene	< 8.51	ug/Kg	9/7/2016 21:33
n-Butylbenzene	< 3.40	ug/Kg	9/7/2016 21:33
n-Propylbenzene	< 3.40	ug/Kg	9/7/2016 21:33
o-Xylene	< 3.40	ug/Kg	9/7/2016 21:33
p-Isopropyltoluene	< 3.40	ug/Kg	9/7/2016 21:33
sec-Butylbenzene	< 3.40	ug/Kg	9/7/2016 21:33
Styrene	< 8.51	ug/Kg	9/7/2016 21:33
tert-Butylbenzene	< 3.40	ug/Kg	9/7/2016 21:33
Tetrachloroethene	< 3.40	ug/Kg	9/7/2016 21:33
Toluene	< 3.40	ug/Kg	9/7/2016 21:33
trans-1,2-Dichloroethene	< 3.40	ug/Kg	9/7/2016 21:33
trans-1,3-Dichloropropene	< 3.40	ug/Kg	9/7/2016 21:33

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F2-4-6 ft

**Lab Sample ID:** 163832-13

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Trichloroethene	< 3.40	ug/Kg	9/7/2016 21:33
Trichlorofluoromethane	< 3.40	ug/Kg	9/7/2016 21:33
Vinyl chloride	< 3.40	ug/Kg	9/7/2016 21:33

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	112	81.3 - 124		9/7/2016 21:33
4-Bromofluorobenzene	91.7	80 - 117		9/7/2016 21:33
Pentafluorobenzene	93.6	88.3 - 111		9/7/2016 21:33
Toluene-D8	99.6	78 - 123		9/7/2016 21:33

**Method Reference(s):** EPA 8260C

EPA 5035

**Data File:** x35154.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F2-9-10 ft

Lab Sample ID: 163832-14

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.12	ug/Kg		9/7/2016 21:57
1,1,2,2-Tetrachloroethane	< 4.12	ug/Kg		9/7/2016 21:57
1,1,2-Trichloroethane	< 4.12	ug/Kg		9/7/2016 21:57
1,1-Dichloroethane	< 4.12	ug/Kg		9/7/2016 21:57
1,1-Dichloroethene	< 4.12	ug/Kg		9/7/2016 21:57
1,2,3-Trichlorobenzene	< 10.3	ug/Kg		9/7/2016 21:57
1,2,4-Trichlorobenzene	< 10.3	ug/Kg		9/7/2016 21:57
1,2,4-Trimethylbenzene	< 4.12	ug/Kg		9/7/2016 21:57
1,2-Dibromo-3-Chloropropane	< 20.6	ug/Kg		9/7/2016 21:57
1,2-Dibromoethane	< 4.12	ug/Kg		9/7/2016 21:57
1,2-Dichlorobenzene	< 4.12	ug/Kg		9/7/2016 21:57
1,2-Dichloroethane	< 4.12	ug/Kg		9/7/2016 21:57
1,2-Dichloropropane	< 4.12	ug/Kg		9/7/2016 21:57
1,3,5-Trimethylbenzene	< 4.12	ug/Kg		9/7/2016 21:57
1,3-Dichlorobenzene	< 4.12	ug/Kg		9/7/2016 21:57
1,4-Dichlorobenzene	< 4.12	ug/Kg		9/7/2016 21:57
1,4-dioxane	< 4.12 <i>R</i>	ug/Kg		9/7/2016 21:57
2-Butanone	< 20.6	ug/Kg		9/7/2016 21:57
2-Hexanone	< 10.3	ug/Kg		9/7/2016 21:57
4-Methyl-2-pentanone	< 10.3 <i>UJ</i>	ug/Kg		9/7/2016 21:57
Acetone	< 20.6 <i>UJ</i>	ug/Kg		9/7/2016 21:57
Benzene	< 4.12	ug/Kg		9/7/2016 21:57
Bromochloromethane	< 10.3	ug/Kg		9/7/2016 21:57
Bromodichloromethane	< 4.12	ug/Kg		9/7/2016 21:57
Bromoform	< 10.3	ug/Kg		9/7/2016 21:57
Bromomethane	< 4.12	ug/Kg		9/7/2016 21:57
Carbon disulfide	< 4.12	ug/Kg		9/7/2016 21:57

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Report Prepared Tuesday, September 13, 2016

*MAP 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	F2-9-10 ft		
<b>Lab Sample ID:</b>	163832-14	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
Carbon Tetrachloride	< 4.12	ug/Kg	9/7/2016 21:57
Chlorobenzene	< 4.12	ug/Kg	9/7/2016 21:57
Chloroethane	< 4.12	ug/Kg	9/7/2016 21:57
Chloroform	< 4.12	ug/Kg	9/7/2016 21:57
Chloromethane	< 4.12	ug/Kg	9/7/2016 21:57
cis-1,2-Dichloroethene	< 4.12	ug/Kg	9/7/2016 21:57
cis-1,3-Dichloropropene	< 4.12	ug/Kg	9/7/2016 21:57
Cyclohexane	< 20.6	ug/Kg	9/7/2016 21:57
Dibromochloromethane	< 4.12	ug/Kg	9/7/2016 21:57
Dichlorodifluoromethane	< 4.12	ug/Kg	9/7/2016 21:57
Ethylbenzene	< 4.12	ug/Kg	9/7/2016 21:57
Freon 113	< 4.12	ug/Kg	9/7/2016 21:57
Isopropylbenzene	< 4.12	ug/Kg	9/7/2016 21:57
m,p-Xylene	< 4.12	ug/Kg	9/7/2016 21:57
Methyl acetate	< 4.12	ug/Kg	9/7/2016 21:57
Methyl tert-butyl Ether	< 4.12	ug/Kg	9/7/2016 21:57
Methylcyclohexane	< 4.12	ug/Kg	9/7/2016 21:57
Methylene chloride	< 10.3	ug/Kg	9/7/2016 21:57
Naphthalene	< 10.3	ug/Kg	9/7/2016 21:57
n-Butylbenzene	< 4.12	ug/Kg	9/7/2016 21:57
n-Propylbenzene	< 4.12	ug/Kg	9/7/2016 21:57
o-Xylene	< 4.12	ug/Kg	9/7/2016 21:57
p-Isopropyltoluene	< 4.12	ug/Kg	9/7/2016 21:57
sec-Butylbenzene	< 4.12	ug/Kg	9/7/2016 21:57
Styrene	< 10.3	ug/Kg	9/7/2016 21:57
tert-Butylbenzene	< 4.12	ug/Kg	9/7/2016 21:57
Tetrachloroethene	< 4.12	ug/Kg	9/7/2016 21:57
Toluene	< 4.12	ug/Kg	9/7/2016 21:57
trans-1,2-Dichloroethene	< 4.12	ug/Kg	9/7/2016 21:57
trans-1,3-Dichloropropene	< 4.12	ug/Kg	9/7/2016 21:57

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F2-9-10 ft

Lab Sample ID: 163832-14

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Trichloroethene	< 4.12	ug/Kg	9/7/2016 21:57
Trichlorofluoromethane	< 4.12	ug/Kg	9/7/2016 21:57
Vinyl chloride	< 4.12	ug/Kg	9/7/2016 21:57

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	111	81.3 - 124		9/7/2016 21:57
4-Bromofluorobenzene	91.1	80 - 117		9/7/2016 21:57
Pentafluorobenzene	94.1	88.3 - 111		9/7/2016 21:57
Toluene-D8	99.3	78 - 123		9/7/2016 21:57

Method Reference(s): EPA 8260C

EPA 5035

Data File: x35155.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163845

Client: C&S Companies

Project Reference: North Street

Sample Identifier: A4-22-23 ft

Lab Sample ID: 163845-01

Date Sampled: 9/2/2016

Matrix: Soil

Date Received: 9/6/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 137	ug/Kg		9/9/2016 18:05
1,1,2,2-Tetrachloroethane	< 137	ug/Kg		9/9/2016 18:05
1,1,2-Trichloroethane	< 137	ug/Kg		9/9/2016 18:05
1,1-Dichloroethane	< 137	ug/Kg		9/9/2016 18:05
1,1-Dichloroethene	< 137	ug/Kg		9/9/2016 18:05
1,2,3-Trichlorobenzene	< 342	ug/Kg		9/9/2016 18:05
1,2,4-Trichlorobenzene	< 342	ug/Kg		9/9/2016 18:05
1,2,4-Trimethylbenzene	3550	ug/Kg		9/9/2016 18:05
1,2-Dibromo-3-Chloropropane	< 685	ug/Kg		9/9/2016 18:05
1,2-Dibromoethane	< 137	ug/Kg		9/9/2016 18:05
1,2-Dichlorobenzene	< 137	ug/Kg		9/9/2016 18:05
1,2-Dichloroethane	< 137	ug/Kg		9/9/2016 18:05
1,2-Dichloropropane	< 137	ug/Kg		9/9/2016 18:05
1,3,5-Trimethylbenzene	1980	ug/Kg		9/9/2016 18:05
1,3-Dichlorobenzene	< 137	ug/Kg		9/9/2016 18:05
1,4-Dichlorobenzene	< 137	ug/Kg		9/9/2016 18:05
1,4-dioxane	< 1370 R	ug/Kg		9/9/2016 18:05
2-Butanone	< 685	ug/Kg		9/9/2016 18:05
2-Hexanone	< 342	ug/Kg		9/9/2016 18:05
4-Methyl-2-pentanone	< 342 JS	ug/Kg		9/9/2016 18:05
Acetone	< 685 JS	ug/Kg		9/9/2016 18:05
Benzene	< 137	ug/Kg		9/9/2016 18:05
Bromochloromethane	< 342	ug/Kg		9/9/2016 18:05
Bromodichloromethane	< 137	ug/Kg		9/9/2016 18:05
Bromoform	< 342	ug/Kg		9/9/2016 18:05
Bromomethane	< 137	ug/Kg		9/9/2016 18:05
Carbon disulfide	< 137	ug/Kg		9/9/2016 18:05

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Report Prepared Tuesday, September 13, 2016

MPD 5/6/17





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163845

**Client:** C&S Companies

**Project Reference:** North Street

**Sample Identifier:** A4-22-23 ft

**Lab Sample ID:** 163845-01

**Date Sampled:** 9/2/2016

**Matrix:** Soil

**Date Received:** 9/6/2016

Carbon Tetrachloride	< 137	ug/Kg	9/9/2016 18:05
Chlorobenzene	< 137	ug/Kg	9/9/2016 18:05
Chloroethane	< 137	ug/Kg	9/9/2016 18:05
Chloroform	< 137	ug/Kg	9/9/2016 18:05
Chloromethane	< 137	ug/Kg	9/9/2016 18:05
cis-1,2-Dichloroethene	< 137	ug/Kg	9/9/2016 18:05
cis-1,3-Dichloropropene	< 137	ug/Kg	9/9/2016 18:05
Cyclohexane	< 685	ug/Kg	9/9/2016 18:05
Dibromochloromethane	< 137	ug/Kg	9/9/2016 18:05
Dichlorodifluoromethane	< 137	ug/Kg	9/9/2016 18:05
Ethylbenzene	< 137	ug/Kg	9/9/2016 18:05
Freon 113	< 137	ug/Kg	9/9/2016 18:05
Isopropylbenzene	291	ug/Kg	9/9/2016 18:05
m,p-Xylene	385	ug/Kg	9/9/2016 18:05
Methyl acetate	< 137	ug/Kg	9/9/2016 18:05
Methyl tert-butyl Ether	< 137	ug/Kg	9/9/2016 18:05
Methylcyclohexane	9850	ug/Kg	9/9/2016 18:05
Methylene chloride	< 342	ug/Kg	9/9/2016 18:05
Naphthalene	207	ug/Kg	9/9/2016 18:05
n-Butylbenzene	423	ug/Kg	9/9/2016 18:05
n-Propylbenzene	449	ug/Kg	9/9/2016 18:05
o-Xylene	98.3	ug/Kg	9/9/2016 18:05
p-Isopropyltoluene	264	ug/Kg	9/9/2016 18:05
sec-Butylbenzene	229	ug/Kg	9/9/2016 18:05
Styrene	< 342	ug/Kg	9/9/2016 18:05
tert-Butylbenzene	< 137	ug/Kg	9/9/2016 18:05
Tetrachloroethene	< 137	ug/Kg	9/9/2016 18:05
Toluene	< 137	ug/Kg	9/9/2016 18:05
trans-1,2-Dichloroethene	< 137	ug/Kg	9/9/2016 18:05
trans-1,3-Dichloropropene	< 137	ug/Kg	9/9/2016 18:05

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163845

Client: C&S Companies

Project Reference: North Street

Sample Identifier: A4-22-23 ft

Lab Sample ID: 163845-01

Date Sampled: 9/2/2016

Matrix: Soil

Date Received: 9/6/2016

Trichloroethene	< 137	ug/Kg	9/9/2016 18:05
Trichlorofluoromethane	< 137	ug/Kg	9/9/2016 18:05
Vinyl chloride	< 137	ug/Kg	9/9/2016 18:05

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	110	81.3 - 124		9/9/2016 18:05
4-Bromofluorobenzene	104	80 - 117		9/9/2016 18:05
Pentafluorobenzene	104	88.3 - 111		9/9/2016 18:05
Toluene-D8	106	78 - 123		9/9/2016 18:05

Method Reference(s): EPA 8260C

EPA 5035

Data File: x35241.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163892

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: C4 7-8 ft

Lab Sample ID: 163892-01

Date Sampled: 8/30/2016

Matrix: Soil

Date Received: 9/8/2016

**Volatile Organics**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 4.47	ug/Kg		9/9/2016 15:20
1,1,2,2-Tetrachloroethane	< 4.47	ug/Kg		9/9/2016 15:20
1,1,2-Trichloroethane	< 4.47	ug/Kg		9/9/2016 15:20
1,1-Dichloroethane	< 4.47	ug/Kg		9/9/2016 15:20
1,1-Dichloroethene	< 4.47	ug/Kg		9/9/2016 15:20
1,2,3-Trichlorobenzene	< 11.2	ug/Kg		9/9/2016 15:20
1,2,4-Trichlorobenzene	< 11.2	ug/Kg		9/9/2016 15:20
1,2,4-Trimethylbenzene	< 4.47	ug/Kg		9/9/2016 15:20
1,2-Dibromo-3-Chloropropane	< 22.4	ug/Kg		9/9/2016 15:20
1,2-Dibromoethane	< 4.47	ug/Kg		9/9/2016 15:20
1,2-Dichlorobenzene	< 4.47	ug/Kg		9/9/2016 15:20
1,2-Dichloroethane	< 4.47	ug/Kg		9/9/2016 15:20
1,2-Dichloropropane	< 4.47	ug/Kg		9/9/2016 15:20
1,3,5-Trimethylbenzene	< 4.47	ug/Kg		9/9/2016 15:20
1,3-Dichlorobenzene	< 4.47	ug/Kg		9/9/2016 15:20
1,4-Dichlorobenzene	< 4.47	ug/Kg		9/9/2016 15:20
1,4-dioxane	< 4.47 <i>R</i>	ug/Kg		9/9/2016 15:20
2-Butanone	< 22.4	ug/Kg		9/9/2016 15:20
2-Hexanone	< 11.2	ug/Kg		9/9/2016 15:20
4-Methyl-2-pentanone	< 11.2 <i>JS</i>	ug/Kg		9/9/2016 15:20
Acetone	< 22.4 <i>JS</i>	ug/Kg		9/9/2016 15:20
Benzene	< 4.47	ug/Kg		9/9/2016 15:20
Bromochloromethane	< 11.2	ug/Kg		9/9/2016 15:20
Bromodichloromethane	< 4.47	ug/Kg		9/9/2016 15:20
Bromoform	< 11.2	ug/Kg		9/9/2016 15:20
Bromomethane	< 4.47	ug/Kg		9/9/2016 15:20
Carbon disulfide	< 4.47	ug/Kg		9/9/2016 15:20

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Report Prepared Thursday, September 15, 2016

*WMP 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163892

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	C4 7-8 ft		
Lab Sample ID:	163892-01	Date Sampled:	8/30/2016
Matrix:	Soil	Date Received:	9/8/2016
Carbon Tetrachloride	< 4.47	ug/Kg	9/9/2016 15:20
Chlorobenzene	< 4.47	ug/Kg	9/9/2016 15:20
Chloroethane	< 4.47	ug/Kg	9/9/2016 15:20
Chloroform	< 4.47	ug/Kg	9/9/2016 15:20
Chloromethane	< 4.47	ug/Kg	9/9/2016 15:20
cis-1,2-Dichloroethene	< 4.47	ug/Kg	9/9/2016 15:20
cis-1,3-Dichloropropene	< 4.47	ug/Kg	9/9/2016 15:20
Cyclohexane	< 22.4	ug/Kg	9/9/2016 15:20
Dibromochloromethane	< 4.47	ug/Kg	9/9/2016 15:20
Dichlorodifluoromethane	< 4.47	ug/Kg	9/9/2016 15:20
Ethylbenzene	< 4.47	ug/Kg	9/9/2016 15:20
Freon 113	< 4.47	ug/Kg	9/9/2016 15:20
Isopropylbenzene	< 4.47	ug/Kg	9/9/2016 15:20
m,p-Xylene	< 4.47	ug/Kg	9/9/2016 15:20
Methyl acetate	< 4.47	ug/Kg	9/9/2016 15:20
Methyl tert-butyl Ether	< 4.47	ug/Kg	9/9/2016 15:20
Methylcyclohexane	< 4.47	ug/Kg	9/9/2016 15:20
Methylene chloride	6.96	ug/Kg	9/9/2016 15:20
Naphthalene	< 11.2	ug/Kg	9/9/2016 15:20
n-Butylbenzene	< 4.47	ug/Kg	9/9/2016 15:20
n-Propylbenzene	< 4.47	ug/Kg	9/9/2016 15:20
o-Xylene	< 4.47	ug/Kg	9/9/2016 15:20
p-Isopropyltoluene	< 4.47	ug/Kg	9/9/2016 15:20
sec-Butylbenzene	< 4.47	ug/Kg	9/9/2016 15:20
Styrene	< 11.2	ug/Kg	9/9/2016 15:20
tert-Butylbenzene	< 4.47	ug/Kg	9/9/2016 15:20
Tetrachloroethene	< 4.47	ug/Kg	9/9/2016 15:20
Toluene	< 4.47	ug/Kg	9/9/2016 15:20
trans-1,2-Dichloroethene	< 4.47	ug/Kg	9/9/2016 15:20
trans-1,3-Dichloropropene	< 4.47	ug/Kg	9/9/2016 15:20

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Report Prepared Thursday, September 15, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163892

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C4 7-8 ft

**Lab Sample ID:** 163892-01

**Date Sampled:** 8/30/2016

**Matrix:** Soil

**Date Received:** 9/8/2016

Trichloroethene	< 4.47	ug/Kg	9/9/2016 15:20
Trichlorofluoromethane	< 4.47	ug/Kg	9/9/2016 15:20
Vinyl chloride	< 4.47	ug/Kg	9/9/2016 15:20

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	109	81.3 - 124		9/9/2016 15:20
4-Bromofluorobenzene	88.8	80 - 117		9/9/2016 15:20
Pentafluorobenzene	96.1	88.3 - 111		9/9/2016 15:20
Toluene-D8	96.5	78 - 123		9/9/2016 15:20

**Method Reference(s):** EPA 8260C

EPA 5035

**Data File:** x35234.D

*This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.*

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Report Prepared Thursday, September 15, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: B1-5-6 ft

Lab Sample ID: 163832-01

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 344	ug/Kg		9/8/2016 19:29
1,2,4,5-Tetrachlorobenzene	< 344	ug/Kg		9/8/2016 19:29
1,2,4-Trichlorobenzene	< 344	ug/Kg		9/8/2016 19:29
1,2-Dichlorobenzene	< 344	ug/Kg		9/8/2016 19:29
1,3-Dichlorobenzene	< 344	ug/Kg		9/8/2016 19:29
1,4-Dichlorobenzene	< 344	ug/Kg		9/8/2016 19:29
2,2-Oxybis (1-chloropropane)	< 344	ug/Kg		9/8/2016 19:29
2,3,4,6-Tetrachlorophenol	< 344	ug/Kg		9/8/2016 19:29
2,4,5-Trichlorophenol	< 689	ug/Kg		9/8/2016 19:29
2,4,6-Trichlorophenol	< 344	ug/Kg		9/8/2016 19:29
2,4-Dichlorophenol	< 344	ug/Kg		9/8/2016 19:29
2,4-Dimethylphenol	< 344	ug/Kg		9/8/2016 19:29
2,4-Dinitrophenol	< 689	ug/Kg		9/8/2016 19:29
2,4-Dinitrotoluene	< 344	ug/Kg		9/8/2016 19:29
2,6-Dinitrotoluene	< 344	ug/Kg		9/8/2016 19:29
2-Chloronaphthalene	< 344	ug/Kg		9/8/2016 19:29
2-Chlorophenol	< 344	ug/Kg		9/8/2016 19:29
2-Methylnaphthalene	< 344	ug/Kg		9/8/2016 19:29
2-Methylphenol	< 344	ug/Kg		9/8/2016 19:29
2-Nitroaniline	< 689	ug/Kg		9/8/2016 19:29
2-Nitrophenol	< 344	ug/Kg		9/8/2016 19:29
3&4-Methylphenol	< 344	ug/Kg		9/8/2016 19:29
3,3'-Dichlorobenzidine	< 344	ug/Kg		9/8/2016 19:29
3-Nitroaniline	< 689	ug/Kg		9/8/2016 19:29
4,6-Dinitro-2-methylphenol	< 689	ug/Kg		9/8/2016 19:29
4-Bromophenyl phenyl ether	< 344	ug/Kg		9/8/2016 19:29
4-Chloro-3-methylphenol	< 344	ug/Kg		9/8/2016 19:29

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** B1-5-6 ft

**Lab Sample ID:** 163832-01

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

4-Chloroaniline	< 344	ug/Kg	9/8/2016 19:29
4-Chlorophenyl phenyl ether	< 344	ug/Kg	9/8/2016 19:29
4-Nitroaniline	< 689	ug/Kg	9/8/2016 19:29
4-Nitrophenol	< 689	ug/Kg	9/8/2016 19:29
Acenaphthene	< 344	ug/Kg	9/8/2016 19:29
Acenaphthylene	< 344	ug/Kg	9/8/2016 19:29
Acetophenone	< 344	ug/Kg	9/8/2016 19:29
Anthracene	< 344	ug/Kg	9/8/2016 19:29
Atrazine	< 344 <sup>MS</sup>	ug/Kg	9/8/2016 19:29
Benzaldehyde	< 344	ug/Kg	9/8/2016 19:29
Benzo (a) anthracene	< 344	ug/Kg	9/8/2016 19:29
Benzo (a) pyrene	< 344	ug/Kg	9/8/2016 19:29
Benzo (b) fluoranthene	< 344	ug/Kg	9/8/2016 19:29
Benzo (g,h,i) perylene	< 344	ug/Kg	9/8/2016 19:29
Benzo (k) fluoranthene	< 344	ug/Kg	9/8/2016 19:29
Bis (2-chloroethoxy) methane	< 344	ug/Kg	9/8/2016 19:29
Bis (2-chloroethyl) ether	< 344	ug/Kg	9/8/2016 19:29
Bis (2-ethylhexyl) phthalate	< 344	ug/Kg	9/8/2016 19:29
Butylbenzylphthalate	< 344	ug/Kg	9/8/2016 19:29
Caprolactam	< 344	ug/Kg	9/8/2016 19:29
Carbazole	< 344	ug/Kg	9/8/2016 19:29
Chrysene	< 344	ug/Kg	9/8/2016 19:29
Dibenz (a,h) anthracene	< 344	ug/Kg	9/8/2016 19:29
Dibenzofuran	< 344	ug/Kg	9/8/2016 19:29
Diethyl phthalate	< 344	ug/Kg	9/8/2016 19:29
Dimethyl phthalate	< 689	ug/Kg	9/8/2016 19:29
Di-n-butyl phthalate	< 344	ug/Kg	9/8/2016 19:29
Di-n-octylphthalate	< 344	ug/Kg	9/8/2016 19:29
Fluoranthene	< 344	ug/Kg	9/8/2016 19:29
Fluorene	< 344	ug/Kg	9/8/2016 19:29

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Report Prepared Tuesday, September 13, 2016

mxp 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: B1-5-6 ft

Lab Sample ID: 163832-01

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Hexachlorobenzene	< 344	ug/Kg	9/8/2016 19:29
Hexachlorobutadiene	< 344	ug/Kg	9/8/2016 19:29
Hexachlorocyclopentadiene	< 344	ug/Kg	9/8/2016 19:29
Hexachloroethane	< 344	ug/Kg	9/8/2016 19:29
Indeno (1,2,3-cd) pyrene	< 344	ug/Kg	9/8/2016 19:29
Isophorone	< 344	ug/Kg	9/8/2016 19:29
Naphthalene	< 344	ug/Kg	9/8/2016 19:29
Nitrobenzene	< 344	ug/Kg	9/8/2016 19:29
N-Nitroso-di-n-propylamine	< 344	ug/Kg	9/8/2016 19:29
N-Nitrosodiphenylamine	< 344	ug/Kg	9/8/2016 19:29
Pentachlorophenol	< 689	ug/Kg	9/8/2016 19:29
Phenanthrene	< 344	ug/Kg	9/8/2016 19:29
Phenol	< 344	ug/Kg	9/8/2016 19:29
Pyrene	< 344	ug/Kg	9/8/2016 19:29

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	73.9	34.1 - 104		9/8/2016 19:29
2-Fluorobiphenyl	54.0	36.4 - 95.1		9/8/2016 19:29
2-Fluorophenol	47.1	35 - 84.1		9/8/2016 19:29
Nitrobenzene-d5	47.3	36.3 - 82.2		9/8/2016 19:29
Phenol-d5	54.7	38.5 - 88.8		9/8/2016 19:29
Terphenyl-d14	80.6	54.9 - 114		9/8/2016 19:29

Method Reference(s): EPA 8270D  
EPA 3550C  
Preparation Date: 9/8/2016  
Data File: B13944.D

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: B1-15 ft

Lab Sample ID: 163832-02

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Semi-Volatile Organics (Acid/Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 327	ug/Kg		9/8/2016 19:58
1,2,4,5-Tetrachlorobenzene	< 327	ug/Kg		9/8/2016 19:58
1,2,4-Trichlorobenzene	< 327	ug/Kg		9/8/2016 19:58
1,2-Dichlorobenzene	< 327	ug/Kg		9/8/2016 19:58
1,3-Dichlorobenzene	< 327	ug/Kg		9/8/2016 19:58
1,4-Dichlorobenzene	< 327	ug/Kg		9/8/2016 19:58
2,2-Oxybis (1-chloropropane)	< 327	ug/Kg		9/8/2016 19:58
2,3,4,6-Tetrachlorophenol	< 327	ug/Kg		9/8/2016 19:58
2,4,5-Trichlorophenol	< 655	ug/Kg		9/8/2016 19:58
2,4,6-Trichlorophenol	< 327	ug/Kg		9/8/2016 19:58
2,4-Dichlorophenol	< 327	ug/Kg		9/8/2016 19:58
2,4-Dimethylphenol	< 327	ug/Kg		9/8/2016 19:58
2,4-Dinitrophenol	< 655	ug/Kg		9/8/2016 19:58
2,4-Dinitrotoluene	< 327	ug/Kg		9/8/2016 19:58
2,6-Dinitrotoluene	< 327	ug/Kg		9/8/2016 19:58
2-Chloronaphthalene	< 327	ug/Kg		9/8/2016 19:58
2-Chlorophenol	< 327	ug/Kg		9/8/2016 19:58
2-Methylnapthalene	< 327	ug/Kg		9/8/2016 19:58
2-Methylphenol	< 327	ug/Kg		9/8/2016 19:58
2-Nitroaniline	< 655	ug/Kg		9/8/2016 19:58
2-Nitrophenol	< 327	ug/Kg		9/8/2016 19:58
3&4-Methylphenol	< 327	ug/Kg		9/8/2016 19:58
3,3'-Dichlorobenzidine	< 327	ug/Kg		9/8/2016 19:58
3-Nitroaniline	< 655	ug/Kg		9/8/2016 19:58
4,6-Dinitro-2-methylphenol	< 655	ug/Kg		9/8/2016 19:58
4-Bromophenyl phenyl ether	< 327	ug/Kg		9/8/2016 19:58
4-Chloro-3-methylphenol	< 327	ug/Kg		9/8/2016 19:58

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: B1-15 ft

Lab Sample ID: 163832-02

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

4-Chloroaniline	< 327	ug/Kg	9/8/2016 19:58
4-Chlorophenyl phenyl ether	< 327	ug/Kg	9/8/2016 19:58
4-Nitroaniline	< 655	ug/Kg	9/8/2016 19:58
4-Nitrophenol	< 655	ug/Kg	9/8/2016 19:58
Acenaphthene	< 327	ug/Kg	9/8/2016 19:58
Acenaphthylene	< 327	ug/Kg	9/8/2016 19:58
Acetophenone	< 327	ug/Kg	9/8/2016 19:58
Anthracene	< 327	ug/Kg	9/8/2016 19:58
Atrazine	< 327 MS	ug/Kg	9/8/2016 19:58
Benzaldehyde	< 327	ug/Kg	9/8/2016 19:58
Benzo (a) anthracene	< 327	ug/Kg	9/8/2016 19:58
Benzo (a) pyrene	< 327	ug/Kg	9/8/2016 19:58
Benzo (b) fluoranthene	< 327	ug/Kg	9/8/2016 19:58
Benzo (g,h,i) perylene	< 327	ug/Kg	9/8/2016 19:58
Benzo (k) fluoranthene	< 327	ug/Kg	9/8/2016 19:58
Bis (2-chloroethoxy) methane	< 327	ug/Kg	9/8/2016 19:58
Bis (2-chloroethyl) ether	< 327	ug/Kg	9/8/2016 19:58
Bis (2-ethylhexyl) phthalate	< 327	ug/Kg	9/8/2016 19:58
Butylbenzylphthalate	< 327	ug/Kg	9/8/2016 19:58
Caprolactam	< 327	ug/Kg	9/8/2016 19:58
Carbazole	< 327	ug/Kg	9/8/2016 19:58
Chrysene	< 327	ug/Kg	9/8/2016 19:58
Dibenz (a,h) anthracene	< 327	ug/Kg	9/8/2016 19:58
Dibenzofuran	< 327	ug/Kg	9/8/2016 19:58
Diethyl phthalate	< 327	ug/Kg	9/8/2016 19:58
Dimethyl phthalate	< 655	ug/Kg	9/8/2016 19:58
Di-n-butyl phthalate	< 327	ug/Kg	9/8/2016 19:58
Di-n-octylphthalate	< 327	ug/Kg	9/8/2016 19:58
Fluoranthene	< 327	ug/Kg	9/8/2016 19:58
Fluorene	< 327	ug/Kg	9/8/2016 19:58

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Report Prepared Tuesday, September 13, 2016

MEP 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** B1-15 ft

**Lab Sample ID:** 163832-02

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Hexachlorobenzene	< 327	ug/Kg	9/8/2016 19:58
Hexachlorobutadiene	< 327	ug/Kg	9/8/2016 19:58
Hexachlorocyclopentadiene	< 327	ug/Kg	9/8/2016 19:58
Hexachloroethane	< 327	ug/Kg	9/8/2016 19:58
Indeno (1,2,3-cd) pyrene	< 327	ug/Kg	9/8/2016 19:58
Isophorone	< 327	ug/Kg	9/8/2016 19:58
Naphthalene	< 327	ug/Kg	9/8/2016 19:58
Nitrobenzene	< 327	ug/Kg	9/8/2016 19:58
N-Nitroso-di-n-propylamine	< 327	ug/Kg	9/8/2016 19:58
N-Nitrosodiphenylamine	< 327	ug/Kg	9/8/2016 19:58
Pentachlorophenol	< 655	ug/Kg	9/8/2016 19:58
Phenanthrene	< 327	ug/Kg	9/8/2016 19:58
Phenol	< 327	ug/Kg	9/8/2016 19:58
Pyrene	< 327	ug/Kg	9/8/2016 19:58

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	64.0	34.1 - 104		9/8/2016 19:58
2-Fluorobiphenyl	60.9	36.4 - 95.1		9/8/2016 19:58
2-Fluorophenol	50.6	35 - 84.1		9/8/2016 19:58
Nitrobenzene-d5	51.4	36.3 - 82.2		9/8/2016 19:58
Phenol-d5	55.0	38.5 - 88.8		9/8/2016 19:58
Terphenyl-d14	82.3	54.9 - 114		9/8/2016 19:58

**Method Reference(s):** EPA 8270D

EPA 3550C

**Preparation Date:** 9/8/2016

**Data File:** B13945.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-WC

**Lab Sample ID:** 163832-03A

**Date Sampled:** 9/1/2016

**Matrix:** TCLP Extract

**Date Received:** 9/2/2016

**TCLP Semi-Volatile Organics**

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
1,4-Dichlorobenzene	< 40.0	ug/L	7500		9/8/2016 06:44
2,4,5-Trichlorophenol	< 80.0	ug/L	400000		9/8/2016 06:44
2,4,6-Trichlorophenol	< 40.0	ug/L	2000		9/8/2016 06:44
2,4-Dinitrotoluene	< 40.0	ug/L	130		9/8/2016 06:44
Cresols (as m,p,o-Cresol)	< 80.0	ug/L	200000		9/8/2016 06:44
Hexachlorobenzene	< 40.0	ug/L	130		9/8/2016 06:44
Hexachlorobutadiene	< 40.0	ug/L	500		9/8/2016 06:44
Hexachloroethane	< 40.0	ug/L	3000		9/8/2016 06:44
Nitrobenzene	< 40.0	ug/L	2000		9/8/2016 06:44
Pentachlorophenol	< 80.0	ug/L	100000		9/8/2016 06:44
Pyridine	< 40.0	ug/L	5000		9/8/2016 06:44

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	93.7	42.2 - 115		9/8/2016 06:44
2-Fluorobiphenyl	95.1	41.5 - 97.8		9/8/2016 06:44
2-Fluorophenol	69.4	13.4 - 95.4		9/8/2016 06:44
Nitrobenzene-d5	83.9	48 - 97.5		9/8/2016 06:44
Phenol-d5	66.8	10 - 95.4		9/8/2016 06:44
Terphenyl-d14	99.1	55.2 - 109		9/8/2016 06:44

**Method Reference(s):** EPA 8270D  
EPA 1311 / 3510C  
**Preparation Date:** 9/6/2016  
**Data File:** B13923.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: C2-13-14.5 ft

Lab Sample ID: 163832-04

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Semi-Volatile Organics (Acid/Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 323 <i>us</i>	ug/Kg		9/9/2016 11:31
1,2,4,5-Tetrachlorobenzene	< 323	ug/Kg		9/9/2016 11:31
1,2,4-Trichlorobenzene	< 323	ug/Kg	M	9/9/2016 11:31
1,2-Dichlorobenzene	< 323	ug/Kg		9/9/2016 11:31
1,3-Dichlorobenzene	< 323	ug/Kg		9/9/2016 11:31
1,4-Dichlorobenzene	< 323	ug/Kg	M	9/9/2016 11:31
2,2-Oxybis (1-chloropropane)	< 323	ug/Kg		9/9/2016 11:31
2,3,4,6-Tetrachlorophenol	< 323	ug/Kg		9/9/2016 11:31
2,4,5-Trichlorophenol	< 646	ug/Kg		9/9/2016 11:31
2,4,6-Trichlorophenol	< 323	ug/Kg	M	9/9/2016 11:31
2,4-Dichlorophenol	< 323	ug/Kg	M	9/9/2016 11:31
2,4-Dimethylphenol	< 323	ug/Kg		9/9/2016 11:31
2,4-Dinitrophenol	< 646	ug/Kg		9/9/2016 11:31
2,4-Dinitrotoluene	< 323	ug/Kg		9/9/2016 11:31
2,6-Dinitrotoluene	< 323	ug/Kg		9/9/2016 11:31
2-Chloronaphthalene	< 323	ug/Kg		9/9/2016 11:31
2-Chlorophenol	< 323	ug/Kg	M	9/9/2016 11:31
2-Methylnapthalene	< 323	ug/Kg		9/9/2016 11:31
2-Methylphenol	< 323	ug/Kg		9/9/2016 11:31
2-Nitroaniline	< 646	ug/Kg		9/9/2016 11:31
2-Nitrophenol	< 323	ug/Kg	M	9/9/2016 11:31
3&4-Methylphenol	< 323	ug/Kg		9/9/2016 11:31
3,3'-Dichlorobenzidine	< 323	ug/Kg		9/9/2016 11:31
3-Nitroaniline	< 646	ug/Kg		9/9/2016 11:31
4,6-Dinitro-2-methylphenol	< 646	ug/Kg		9/9/2016 11:31
4-Bromophenyl phenyl ether	< 323	ug/Kg		9/9/2016 11:31
4-Chloro-3-methylphenol	< 323 <i>✓</i>	ug/Kg	M	9/9/2016 11:31

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Report Prepared Tuesday, September 13, 2016

*mwp 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: C2-13-14.5 ft

Lab Sample ID: 163832-04

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

4-Chloroaniline	< 323	ug/Kg	9/9/2016 11:31
4-Chlorophenyl phenyl ether	< 323	ug/Kg	9/9/2016 11:31
4-Nitroaniline	< 646	ug/Kg	9/9/2016 11:31
4-Nitrophenol	< 646	ug/Kg	9/9/2016 11:31
Acenaphthene	< 323	ug/Kg	9/9/2016 11:31
Acenaphthylene	< 323	ug/Kg	9/9/2016 11:31
Acetophenone	< 323	ug/Kg	9/9/2016 11:31
Anthracene	< 323	ug/Kg	9/9/2016 11:31
Atrazine	< 323	ug/Kg	9/9/2016 11:31
Benzaldehyde	< 323	ug/Kg	9/9/2016 11:31
Benzo (a) anthracene	< 323	ug/Kg	9/9/2016 11:31
Benzo (a) pyrene	< 323	ug/Kg	9/9/2016 11:31
Benzo (b) fluoranthene	< 323	ug/Kg	9/9/2016 11:31
Benzo (g,h,i) perylene	< 323	ug/Kg	9/9/2016 11:31
Benzo (k) fluoranthene	< 323	ug/Kg	9/9/2016 11:31
Bis (2-chloroethoxy) methane	< 323	ug/Kg	9/9/2016 11:31
Bis (2-chloroethyl) ether	< 323	ug/Kg	9/9/2016 11:31
Bis (2-ethylhexyl) phthalate	< 323	ug/Kg	9/9/2016 11:31
Butylbenzylphthalate	< 323	ug/Kg	9/9/2016 11:31
Caprolactam	< 323	ug/Kg	9/9/2016 11:31
Carbazole	< 323	ug/Kg	9/9/2016 11:31
Chrysene	< 323	ug/Kg	9/9/2016 11:31
Dibenz (a,h) anthracene	< 323	ug/Kg	9/9/2016 11:31
Dibenzofuran	< 323	ug/Kg	9/9/2016 11:31
Diethyl phthalate	< 323	ug/Kg	9/9/2016 11:31
Dimethyl phthalate	< 646	ug/Kg	9/9/2016 11:31
Di-n-butyl phthalate	< 323	ug/Kg	9/9/2016 11:31
Di-n-octylphthalate	< 323	ug/Kg	9/9/2016 11:31
Fluoranthene	< 323	ug/Kg	9/9/2016 11:31
Fluorene	< 323	ug/Kg	9/9/2016 11:31

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Report Prepared Tuesday, September 13, 2016

WXP 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: C2-13-14.5 ft

Lab Sample ID: 163832-04

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Hexachlorobenzene	< 323	ug/Kg		9/9/2016 11:31
Hexachlorobutadiene	< 323	ug/Kg		9/9/2016 11:31
Hexachlorocyclopentadiene	< 323	ug/Kg		9/9/2016 11:31
Hexachloroethane	< 323	ug/Kg		9/9/2016 11:31
Indeno (1,2,3-cd) pyrene	< 323	ug/Kg		9/9/2016 11:31
Isophorone	< 323	ug/Kg		9/9/2016 11:31
Naphthalene	< 323	ug/Kg		9/9/2016 11:31
Nitrobenzene	< 323	ug/Kg		9/9/2016 11:31
N-Nitroso-di-n-propylamine	< 323	ug/Kg	M	9/9/2016 11:31
N-Nitrosodiphenylamine	< 323	ug/Kg		9/9/2016 11:31
Pentachlorophenol	< 646	ug/Kg		9/9/2016 11:31
Phenanthrene	< 323	ug/Kg		9/9/2016 11:31
Phenol	< 323	ug/Kg	M	9/9/2016 11:31
Pyrene	< 323	ug/Kg		9/9/2016 11:31

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	39.4	34.1 - 104		9/9/2016 11:31
2-Fluorobiphenyl	33.5	36.4 - 95.1	*	9/9/2016 11:31
2-Fluorophenol	27.6	35 - 84.1	*	9/9/2016 11:31
Nitrobenzene-d5	28.8	36.3 - 82.2	*	9/9/2016 11:31
Phenol-d5	28.4	38.5 - 88.8	*	9/9/2016 11:31
Terphenyl-d14	58.4	54.9 - 114		9/9/2016 11:31

Method Reference(s): EPA 8270D

EPA 3550C

Preparation Date:

9/8/2016

Data File:

B13977.D

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Report Prepared Tuesday, September 13, 2016

WKP 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-9.5-11.5 ft

**Lab Sample ID:** 163832-05

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 334	ug/Kg		9/8/2016 21:55
1,2,4,5-Tetrachlorobenzene	< 334	ug/Kg		9/8/2016 21:55
1,2,4-Trichlorobenzene	< 334	ug/Kg	M	9/8/2016 21:55
1,2-Dichlorobenzene	< 334	ug/Kg		9/8/2016 21:55
1,3-Dichlorobenzene	< 334	ug/Kg		9/8/2016 21:55
1,4-Dichlorobenzene	< 334	ug/Kg	M	9/8/2016 21:55
2,2-Oxybis (1-chloropropane)	< 334	ug/Kg		9/8/2016 21:55
2,3,4,6-Tetrachlorophenol	< 334	ug/Kg		9/8/2016 21:55
2,4,5-Trichlorophenol	< 668	ug/Kg		9/8/2016 21:55
2,4,6-Trichlorophenol	< 334	ug/Kg		9/8/2016 21:55
2,4-Dichlorophenol	< 334	ug/Kg		9/8/2016 21:55
2,4-Dimethylphenol	< 334	ug/Kg		9/8/2016 21:55
2,4-Dinitrophenol	< 668	ug/Kg		9/8/2016 21:55
2,4-Dinitrotoluene	< 334	ug/Kg		9/8/2016 21:55
2,6-Dinitrotoluene	< 334	ug/Kg		9/8/2016 21:55
2-Chloronaphthalene	< 334	ug/Kg		9/8/2016 21:55
2-Chlorophenol	< 334	ug/Kg		9/8/2016 21:55
2-Methylnaphthalene	< 334	ug/Kg		9/8/2016 21:55
2-Methylphenol	< 334	ug/Kg		9/8/2016 21:55
2-Nitroaniline	< 668	ug/Kg		9/8/2016 21:55
2-Nitrophenol	< 334	ug/Kg		9/8/2016 21:55
3&4-Methylphenol	< 334	ug/Kg		9/8/2016 21:55
3,3'-Dichlorobenzidine	< 334	ug/Kg		9/8/2016 21:55
3-Nitroaniline	< 668	ug/Kg		9/8/2016 21:55
4,6-Dinitro-2-methylphenol	< 668	ug/Kg		9/8/2016 21:55
4-Bromophenyl phenyl ether	< 334	ug/Kg		9/8/2016 21:55
4-Chloro-3-methylphenol	< 334	ug/Kg		9/8/2016 21:55

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	D1-9.5-11.5 ft		
Lab Sample ID:	163832-05	Date Sampled:	9/1/2016
Matrix:	Soil	Date Received:	9/2/2016
4-Chloroaniline	< 334	ug/Kg	9/8/2016 21:55
4-Chlorophenyl phenyl ether	< 334	ug/Kg	9/8/2016 21:55
4-Nitroaniline	< 668	ug/Kg	9/8/2016 21:55
4-Nitrophenol	< 668	ug/Kg	9/8/2016 21:55
Acenaphthene	< 334	ug/Kg	9/8/2016 21:55
Acenaphthylene	< 334	ug/Kg	9/8/2016 21:55
Acetophenone	< 334	ug/Kg	9/8/2016 21:55
Anthracene	< 334	ug/Kg	9/8/2016 21:55
Atrazine	< 334 <i>WJ</i>	ug/Kg	9/8/2016 21:55
Benzaldehyde	< 334	ug/Kg	9/8/2016 21:55
Benzo (a) anthracene	< 334	ug/Kg	9/8/2016 21:55
Benzo (a) pyrene	< 334	ug/Kg	9/8/2016 21:55
Benzo (b) fluoranthene	< 334	ug/Kg	9/8/2016 21:55
Benzo (g,h,i) perylene	< 334	ug/Kg	9/8/2016 21:55
Benzo (k) fluoranthene	< 334	ug/Kg	9/8/2016 21:55
Bis (2-chloroethoxy) methane	< 334	ug/Kg	9/8/2016 21:55
Bis (2-chloroethyl) ether	< 334	ug/Kg	9/8/2016 21:55
Bis (2-ethylhexyl) phthalate	< 334	ug/Kg	9/8/2016 21:55
Butylbenzylphthalate	< 334	ug/Kg	9/8/2016 21:55
Caprolactam	< 334	ug/Kg	9/8/2016 21:55
Carbazole	< 334	ug/Kg	9/8/2016 21:55
Chrysene	< 334	ug/Kg	9/8/2016 21:55
Dibenz (a,h) anthracene	< 334	ug/Kg	9/8/2016 21:55
Dibenzofuran	< 334	ug/Kg	9/8/2016 21:55
Diethyl phthalate	< 334	ug/Kg	9/8/2016 21:55
Dimethyl phthalate	< 668	ug/Kg	9/8/2016 21:55
Di-n-butyl phthalate	< 334	ug/Kg	9/8/2016 21:55
Di-n-octylphthalate	< 334	ug/Kg	9/8/2016 21:55
Fluoranthene	< 334	ug/Kg	9/8/2016 21:55
Fluorene	< 334	ug/Kg	9/8/2016 21:55

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Report Prepared Tuesday, September 13, 2016

*WJP 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	D1-9.5-11.5 ft			
<b>Lab Sample ID:</b>	163832-05		<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil		<b>Date Received:</b>	9/2/2016
Hexachlorobenzene	< 334	ug/Kg	9/8/2016	21:55
Hexachlorobutadiene	< 334	ug/Kg	9/8/2016	21:55
Hexachlorocyclopentadiene	< 334	ug/Kg	9/8/2016	21:55
Hexachloroethane	< 334	ug/Kg	9/8/2016	21:55
Indeno (1,2,3-cd) pyrene	< 334	ug/Kg	9/8/2016	21:55
Isophorone	< 334	ug/Kg	9/8/2016	21:55
Naphthalene	< 334	ug/Kg	9/8/2016	21:55
Nitrobenzene	< 334	ug/Kg	9/8/2016	21:55
N-Nitroso-di-n-propylamine	< 334	ug/Kg	9/8/2016	21:55
N-Nitrosodiphenylamine	< 334	ug/Kg	9/8/2016	21:55
Pentachlorophenol	< 668	ug/Kg	9/8/2016	21:55
Phenanthrene	< 334	ug/Kg	9/8/2016	21:55
Phenol	< 334	ug/Kg	9/8/2016	21:55
Pyrene	< 334	ug/Kg	9/8/2016	21:55
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>
2,4,6-Tribromophenol	48.3	34.1 - 104		9/8/2016 21:55
2-Fluorobiphenyl	47.6	36.4 - 95.1		9/8/2016 21:55
2-Fluorophenol	40.7	35 - 84.1		9/8/2016 21:55
Nitrobenzene-d5	42.1	36.3 - 82.2		9/8/2016 21:55
Phenol-d5	43.2	38.5 - 88.8		9/8/2016 21:55
Terphenyl-d14	69.7	54.9 - 114		9/8/2016 21:55

**Method Reference(s):** EPA 8270D  
EPA 3550C  
**Preparation Date:** 9/8/2016  
**Data File:** B13949.D

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: D1-15-16 ft

Lab Sample ID: 163832-06

Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 317	ug/Kg		9/8/2016 23:23
1,2,4,5-Tetrachlorobenzene	< 317	ug/Kg		9/8/2016 23:23
1,2,4-Trichlorobenzene	< 317	ug/Kg		9/8/2016 23:23
1,2-Dichlorobenzene	< 317	ug/Kg		9/8/2016 23:23
1,3-Dichlorobenzene	< 317	ug/Kg		9/8/2016 23:23
1,4-Dichlorobenzene	< 317	ug/Kg		9/8/2016 23:23
2,2-Oxybis (1-chloropropane)	< 317	ug/Kg		9/8/2016 23:23
2,3,4,6-Tetrachlorophenol	< 317	ug/Kg		9/8/2016 23:23
2,4,5-Trichlorophenol	< 635	ug/Kg		9/8/2016 23:23
2,4,6-Trichlorophenol	< 317	ug/Kg		9/8/2016 23:23
2,4-Dichlorophenol	< 317	ug/Kg		9/8/2016 23:23
2,4-Dimethylphenol	< 317	ug/Kg		9/8/2016 23:23
2,4-Dinitrophenol	< 635	ug/Kg		9/8/2016 23:23
2,4-Dinitrotoluene	< 317	ug/Kg		9/8/2016 23:23
2,6-Dinitrotoluene	< 317	ug/Kg		9/8/2016 23:23
2-Chloronaphthalene	< 317	ug/Kg		9/8/2016 23:23
2-Chlorophenol	< 317	ug/Kg		9/8/2016 23:23
2-Methylnapthalene	< 317	ug/Kg		9/8/2016 23:23
2-Methylphenol	< 317	ug/Kg		9/8/2016 23:23
2-Nitroaniline	< 635	ug/Kg		9/8/2016 23:23
2-Nitrophenol	< 317	ug/Kg		9/8/2016 23:23
3&4-Methylphenol	< 317	ug/Kg		9/8/2016 23:23
3,3'-Dichlorobenzidine	< 317	ug/Kg		9/8/2016 23:23
3-Nitroaniline	< 635	ug/Kg		9/8/2016 23:23
4,6-Dinitro-2-methylphenol	< 635	ug/Kg		9/8/2016 23:23
4-Bromophenyl phenyl ether	< 317	ug/Kg		9/8/2016 23:23
4-Chloro-3-methylphenol	< 317	ug/Kg		9/8/2016 23:23

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-15-16 ft

**Lab Sample ID:** 163832-06

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

4-Chloroaniline	< 317	ug/Kg	9/8/2016 23:23
4-Chlorophenyl phenyl ether	< 317	ug/Kg	9/8/2016 23:23
4-Nitroaniline	< 635	ug/Kg	9/8/2016 23:23
4-Nitrophenol	< 635	ug/Kg	9/8/2016 23:23
Acenaphthene	< 317	ug/Kg	9/8/2016 23:23
Acenaphthylene	< 317	ug/Kg	9/8/2016 23:23
Acetophenone	< 317	ug/Kg	9/8/2016 23:23
Anthracene	< 317	ug/Kg	9/8/2016 23:23
Atrazine	< 317 <i>✓J</i>	ug/Kg	9/8/2016 23:23
Benzaldehyde	< 317	ug/Kg	9/8/2016 23:23
Benzo (a) anthracene	< 317	ug/Kg	9/8/2016 23:23
Benzo (a) pyrene	< 317	ug/Kg	9/8/2016 23:23
Benzo (b) fluoranthene	< 317	ug/Kg	9/8/2016 23:23
Benzo (g,h,i) perylene	< 317	ug/Kg	9/8/2016 23:23
Benzo (k) fluoranthene	< 317	ug/Kg	9/8/2016 23:23
Bis (2-chloroethoxy) methane	< 317	ug/Kg	9/8/2016 23:23
Bis (2-chloroethyl) ether	< 317	ug/Kg	9/8/2016 23:23
Bis (2-ethylhexyl) phthalate	< 317	ug/Kg	9/8/2016 23:23
Butylbenzylphthalate	< 317	ug/Kg	9/8/2016 23:23
Caprolactam	< 317	ug/Kg	9/8/2016 23:23
Carbazole	< 317	ug/Kg	9/8/2016 23:23
Chrysene	< 317	ug/Kg	9/8/2016 23:23
Dibenz (a,h) anthracene	< 317	ug/Kg	9/8/2016 23:23
Dibenzofuran	< 317	ug/Kg	9/8/2016 23:23
Diethyl phthalate	< 317	ug/Kg	9/8/2016 23:23
Dimethyl phthalate	< 635	ug/Kg	9/8/2016 23:23
Di-n-butyl phthalate	< 317	ug/Kg	9/8/2016 23:23
Di-n-octylphthalate	< 317	ug/Kg	9/8/2016 23:23
Fluoranthene	< 317	ug/Kg	9/8/2016 23:23
Fluorene	< 317	ug/Kg	9/8/2016 23:23

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Report Prepared Tuesday, September 13, 2016

*mfp 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-15-16 ft

**Lab Sample ID:** 163832-06

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Hexachlorobenzene	< 317	ug/Kg	9/8/2016 23:23
Hexachlorobutadiene	< 317	ug/Kg	9/8/2016 23:23
Hexachlorocyclopentadiene	< 317	ug/Kg	9/8/2016 23:23
Hexachloroethane	< 317	ug/Kg	9/8/2016 23:23
Indeno (1,2,3-cd) pyrene	< 317	ug/Kg	9/8/2016 23:23
Isophorone	< 317	ug/Kg	9/8/2016 23:23
Naphthalene	< 317	ug/Kg	9/8/2016 23:23
Nitrobenzene	< 317	ug/Kg	9/8/2016 23:23
N-Nitroso-di-n-propylamine	< 317	ug/Kg	9/8/2016 23:23
N-Nitrosodiphenylamine	< 317	ug/Kg	9/8/2016 23:23
Pentachlorophenol	< 635	ug/Kg	9/8/2016 23:23
Phenanthrene	< 317	ug/Kg	9/8/2016 23:23
Phenol	< 317	ug/Kg	9/8/2016 23:23
Pyrene	< 317	ug/Kg	9/8/2016 23:23

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	58.3	34.1 - 104		9/8/2016 23:23
2-Fluorobiphenyl	55.0	36.4 - 95.1		9/8/2016 23:23
2-Fluorophenol	47.9	35 - 84.1		9/8/2016 23:23
Nitrobenzene-d5	48.2	36.3 - 82.2		9/8/2016 23:23
Phenol-d5	51.9	38.5 - 88.8		9/8/2016 23:23
Terphenyl-d14	85.6	54.9 - 114		9/8/2016 23:23

**Method Reference(s):** EPA 8270D

EPA 3550C

**Preparation Date:** 9/8/2016

**Data File:** B13952.D

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-5-6.5 ft

Lab Sample ID: 163832-07

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 324	ug/Kg		9/9/2016 06:11
1,2,4,5-Tetrachlorobenzene	< 324	ug/Kg		9/9/2016 06:11
1,2,4-Trichlorobenzene	< 324	ug/Kg		9/9/2016 06:11
1,2-Dichlorobenzene	< 324	ug/Kg		9/9/2016 06:11
1,3-Dichlorobenzene	< 324	ug/Kg		9/9/2016 06:11
1,4-Dichlorobenzene	< 324	ug/Kg		9/9/2016 06:11
2,2-Oxybis (1-chloropropane)	< 324	ug/Kg		9/9/2016 06:11
2,3,4,6-Tetrachlorophenol	< 324	ug/Kg		9/9/2016 06:11
2,4,5-Trichlorophenol	< 649	ug/Kg		9/9/2016 06:11
2,4,6-Trichlorophenol	< 324	ug/Kg		9/9/2016 06:11
2,4-Dichlorophenol	< 324	ug/Kg		9/9/2016 06:11
2,4-Dimethylphenol	< 324	ug/Kg		9/9/2016 06:11
2,4-Dinitrophenol	< 649	ug/Kg		9/9/2016 06:11
2,4-Dinitrotoluene	< 324	ug/Kg		9/9/2016 06:11
2,6-Dinitrotoluene	< 324	ug/Kg		9/9/2016 06:11
2-Chloronaphthalene	< 324	ug/Kg		9/9/2016 06:11
2-Chlorophenol	< 324	ug/Kg		9/9/2016 06:11
2-Methylnaphthalene	< 324	ug/Kg		9/9/2016 06:11
2-Methylphenol	< 324	ug/Kg		9/9/2016 06:11
2-Nitroaniline	< 649	ug/Kg		9/9/2016 06:11
2-Nitrophenol	< 324	ug/Kg		9/9/2016 06:11
3&4-Methylphenol	< 324	ug/Kg		9/9/2016 06:11
3,3'-Dichlorobenzidine	< 324	ug/Kg		9/9/2016 06:11
3-Nitroaniline	< 649	ug/Kg		9/9/2016 06:11
4,6-Dinitro-2-methylphenol	< 649	ug/Kg		9/9/2016 06:11
4-Bromophenyl phenyl ether	< 324	ug/Kg		9/9/2016 06:11
4-Chloro-3-methylphenol	< 324	ug/Kg		9/9/2016 06:11

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	E2-5-6.5 ft			
Lab Sample ID:	163832-07		Date Sampled:	9/1/2016
Matrix:	Soil		Date Received:	9/2/2016
4-Chloroaniline	< 324	ug/Kg		9/9/2016 06:11
4-Chlorophenyl phenyl ether	< 324	ug/Kg		9/9/2016 06:11
4-Nitroaniline	< 649	ug/Kg		9/9/2016 06:11
4-Nitrophenol	< 649	ug/Kg		9/9/2016 06:11
Acenaphthene	< 324	ug/Kg		9/9/2016 06:11
Acenaphthylene	< 324	ug/Kg		9/9/2016 06:11
Acetophenone	< 324	ug/Kg		9/9/2016 06:11
Anthracene	< 324	ug/Kg		9/9/2016 06:11
Atrazine	< 324 <i>us</i>	ug/Kg		9/9/2016 06:11
Benzaldehyde	< 324	ug/Kg		9/9/2016 06:11
Benzo (a) anthracene	307	ug/Kg	]	9/9/2016 06:11
Benzo (a) pyrene	264	ug/Kg	]	9/9/2016 06:11
Benzo (b) fluoranthene	271	ug/Kg	]	9/9/2016 06:11
Benzo (g,h,i) perylene	167	ug/Kg	]	9/9/2016 06:11
Benzo (k) fluoranthene	220	ug/Kg	]	9/9/2016 06:11
Bis (2-chloroethoxy) methane	< 324	ug/Kg		9/9/2016 06:11
Bis (2-chloroethyl) ether	< 324	ug/Kg		9/9/2016 06:11
Bis (2-ethylhexyl) phthalate	< 324	ug/Kg		9/9/2016 06:11
Butylbenzylphthalate	< 324	ug/Kg		9/9/2016 06:11
Caprolactam	< 324	ug/Kg		9/9/2016 06:11
Carbazole	< 324	ug/Kg		9/9/2016 06:11
Chrysene	344	ug/Kg		9/9/2016 06:11
Dibenz (a,h) anthracene	< 324	ug/Kg		9/9/2016 06:11
Dibenzofuran	< 324	ug/Kg		9/9/2016 06:11
Diethyl phthalate	< 324	ug/Kg		9/9/2016 06:11
Dimethyl phthalate	< 649	ug/Kg		9/9/2016 06:11
Di-n-butyl phthalate	< 324	ug/Kg		9/9/2016 06:11
Di-n-octylphthalate	< 324	ug/Kg		9/9/2016 06:11
Fluoranthene	684	ug/Kg		9/9/2016 06:11
Fluorene	< 324	ug/Kg		9/9/2016 06:11

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Report Prepared Tuesday, September 13, 2016

*mfp 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	E2-5-6.5 ft			
Lab Sample ID:	163832-07		Date Sampled:	9/1/2016
Matrix:	Soil		Date Received:	9/2/2016
Hexachlorobenzene	< 324	ug/Kg		9/9/2016 06:11
Hexachlorobutadiene	< 324	ug/Kg		9/9/2016 06:11
Hexachlorocyclopentadiene	< 324	ug/Kg		9/9/2016 06:11
Hexachloroethane	< 324	ug/Kg		9/9/2016 06:11
Indeno (1,2,3-cd) pyrene	< 324	ug/Kg		9/9/2016 06:11
Isophorone	< 324	ug/Kg		9/9/2016 06:11
Naphthalene	< 324	ug/Kg		9/9/2016 06:11
Nitrobenzene	< 324	ug/Kg		9/9/2016 06:11
N-Nitroso-di-n-propylamine	< 324	ug/Kg		9/9/2016 06:11
N-Nitrosodiphenylamine	< 324	ug/Kg		9/9/2016 06:11
Pentachlorophenol	< 649	ug/Kg		9/9/2016 06:11
Phenanthrene	495	ug/Kg		9/9/2016 06:11
Phenol	< 324	ug/Kg		9/9/2016 06:11
Pyrene	586	ug/Kg		9/9/2016 06:11
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>
2,4,6-Tribromophenol	84.1	34.1 - 104		9/9/2016 06:11
2-Fluorobiphenyl	67.8	36.4 - 95.1		9/9/2016 06:11
2-Fluorophenol	51.3	35 - 84.1		9/9/2016 06:11
Nitrobenzene-d5	53.8	36.3 - 82.2		9/9/2016 06:11
Phenol-d5	56.2	38.5 - 88.8		9/9/2016 06:11
Terphenyl-d14	85.4	54.9 - 114		9/9/2016 06:11

Method Reference(s): EPA 8270D  
EPA 3550C  
Preparation Date: 9/8/2016  
Data File: B13966.D

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: E2-9-10 ft

Lab Sample ID: 163832-08

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

***Semi-Volatile Organics (Acid/Base Neutrals)***

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 338	ug/Kg		9/9/2016 06:40
1,2,4,5-Tetrachlorobenzene	< 338	ug/Kg		9/9/2016 06:40
1,2,4-Trichlorobenzene	< 338	ug/Kg		9/9/2016 06:40
1,2-Dichlorobenzene	< 338	ug/Kg		9/9/2016 06:40
1,3-Dichlorobenzene	< 338	ug/Kg		9/9/2016 06:40
1,4-Dichlorobenzene	< 338	ug/Kg		9/9/2016 06:40
2,2-Oxybis (1-chloropropane)	< 338	ug/Kg		9/9/2016 06:40
2,3,4,6-Tetrachlorophenol	< 338	ug/Kg		9/9/2016 06:40
2,4,5-Trichlorophenol	< 676	ug/Kg		9/9/2016 06:40
2,4,6-Trichlorophenol	< 338	ug/Kg		9/9/2016 06:40
2,4-Dichlorophenol	< 338	ug/Kg		9/9/2016 06:40
2,4-Dimethylphenol	< 338	ug/Kg		9/9/2016 06:40
2,4-Dinitrophenol	< 676	ug/Kg		9/9/2016 06:40
2,4-Dinitrotoluene	< 338	ug/Kg		9/9/2016 06:40
2,6-Dinitrotoluene	< 338	ug/Kg		9/9/2016 06:40
2-Chloronaphthalene	< 338	ug/Kg		9/9/2016 06:40
2-Chlorophenol	< 338	ug/Kg		9/9/2016 06:40
2-Methylnapthalene	< 338	ug/Kg		9/9/2016 06:40
2-Methylphenol	< 338	ug/Kg		9/9/2016 06:40
2-Nitroaniline	< 676	ug/Kg		9/9/2016 06:40
2-Nitrophenol	< 338	ug/Kg		9/9/2016 06:40
3&4-Methylphenol	< 338	ug/Kg		9/9/2016 06:40
3,3'-Dichlorobenzidine	< 338	ug/Kg		9/9/2016 06:40
3-Nitroaniline	< 676	ug/Kg		9/9/2016 06:40
4,6-Dinitro-2-methylphenol	< 676	ug/Kg		9/9/2016 06:40
4-Bromophenyl phenyl ether	< 338	ug/Kg		9/9/2016 06:40
4-Chloro-3-methylphenol	< 338	ug/Kg		9/9/2016 06:40

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-9-10 ft

Lab Sample ID: 163832-08

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

4-Chloroaniline	< 338	ug/Kg	9/9/2016 06:40
4-Chlorophenyl phenyl ether	< 338	ug/Kg	9/9/2016 06:40
4-Nitroaniline	< 676	ug/Kg	9/9/2016 06:40
4-Nitrophenol	< 676	ug/Kg	9/9/2016 06:40
Acenaphthene	< 338	ug/Kg	9/9/2016 06:40
Acenaphthylene	< 338	ug/Kg	9/9/2016 06:40
Acetophenone	< 338	ug/Kg	9/9/2016 06:40
Anthracene	< 338	ug/Kg	9/9/2016 06:40
Atrazine	< 338 <i>WJ</i>	ug/Kg	9/9/2016 06:40
Benzaldehyde	< 338	ug/Kg	9/9/2016 06:40
Benzo (a) anthracene	< 338	ug/Kg	9/9/2016 06:40
Benzo (a) pyrene	< 338	ug/Kg	9/9/2016 06:40
Benzo (b) fluoranthene	< 338	ug/Kg	9/9/2016 06:40
Benzo (g,h,i) perylene	< 338	ug/Kg	9/9/2016 06:40
Benzo (k) fluoranthene	< 338	ug/Kg	9/9/2016 06:40
Bis (2-chloroethoxy) methane	< 338	ug/Kg	9/9/2016 06:40
Bis (2-chloroethyl) ether	< 338	ug/Kg	9/9/2016 06:40
Bis (2-ethylhexyl) phthalate	< 338	ug/Kg	9/9/2016 06:40
Butylbenzylphthalate	< 338	ug/Kg	9/9/2016 06:40
Caprolactam	< 338	ug/Kg	9/9/2016 06:40
Carbazole	< 338	ug/Kg	9/9/2016 06:40
Chrysene	< 338	ug/Kg	9/9/2016 06:40
Dibenz (a,h) anthracene	< 338	ug/Kg	9/9/2016 06:40
Dibenzofuran	< 338	ug/Kg	9/9/2016 06:40
Diethyl phthalate	< 338	ug/Kg	9/9/2016 06:40
Dimethyl phthalate	< 676	ug/Kg	9/9/2016 06:40
Di-n-butyl phthalate	< 338	ug/Kg	9/9/2016 06:40
Di-n-octylphthalate	< 338	ug/Kg	9/9/2016 06:40
Fluoranthene	< 338	ug/Kg	9/9/2016 06:40
Fluorene	< 338	ug/Kg	9/9/2016 06:40

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Report Prepared Tuesday, September 13, 2016

*WJP 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** E2-9-10 ft

**Lab Sample ID:** 163832-08

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Hexachlorobenzene	< 338	ug/Kg	9/9/2016 06:40
Hexachlorobutadiene	< 338	ug/Kg	9/9/2016 06:40
Hexachlorocyclopentadiene	< 338	ug/Kg	9/9/2016 06:40
Hexachloroethane	< 338	ug/Kg	9/9/2016 06:40
Indeno (1,2,3-cd) pyrene	< 338	ug/Kg	9/9/2016 06:40
Isophorone	< 338	ug/Kg	9/9/2016 06:40
Naphthalene	< 338	ug/Kg	9/9/2016 06:40
Nitrobenzene	< 338	ug/Kg	9/9/2016 06:40
N-Nitroso-di-n-propylamine	< 338	ug/Kg	9/9/2016 06:40
N-Nitrosodiphenylamine	< 338	ug/Kg	9/9/2016 06:40
Pentachlorophenol	< 676	ug/Kg	9/9/2016 06:40
Phenanthrene	< 338	ug/Kg	9/9/2016 06:40
Phenol	< 338	ug/Kg	9/9/2016 06:40
Pyrene	< 338	ug/Kg	9/9/2016 06:40

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	58.3	34.1 - 104		9/9/2016 06:40
2-Fluorobiphenyl	52.7	36.4 - 95.1		9/9/2016 06:40
2-Fluorophenol	48.4	35 - 84.1		9/9/2016 06:40
Nitrobenzene-d5	48.8	36.3 - 82.2		9/9/2016 06:40
Phenol-d5	53.1	38.5 - 88.8		9/9/2016 06:40
Terphenyl-d14	86.2	54.9 - 114		9/9/2016 06:40

**Method Reference(s):** EPA 8270D  
EPA 3550C  
**Preparation Date:** 9/8/2016  
**Data File:** B13967.D

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: E2-14-15 ft

Lab Sample ID: 163832-09

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 302	ug/Kg		9/9/2016 07:09
1,2,4,5-Tetrachlorobenzene	< 302	ug/Kg		9/9/2016 07:09
1,2,4-Trichlorobenzene	< 302	ug/Kg		9/9/2016 07:09
1,2-Dichlorobenzene	< 302	ug/Kg		9/9/2016 07:09
1,3-Dichlorobenzene	< 302	ug/Kg		9/9/2016 07:09
1,4-Dichlorobenzene	< 302	ug/Kg		9/9/2016 07:09
2,2-Oxybis (1-chloropropane)	< 302	ug/Kg		9/9/2016 07:09
2,3,4,6-Tetrachlorophenol	< 302	ug/Kg		9/9/2016 07:09
2,4,5-Trichlorophenol	< 604	ug/Kg		9/9/2016 07:09
2,4,6-Trichlorophenol	< 302	ug/Kg		9/9/2016 07:09
2,4-Dichlorophenol	< 302	ug/Kg		9/9/2016 07:09
2,4-Dimethylphenol	< 302	ug/Kg		9/9/2016 07:09
2,4-Dinitrophenol	< 604	ug/Kg		9/9/2016 07:09
2,4-Dinitrotoluene	< 302	ug/Kg		9/9/2016 07:09
2,6-Dinitrotoluene	< 302	ug/Kg		9/9/2016 07:09
2-Chloronaphthalene	< 302	ug/Kg		9/9/2016 07:09
2-Chlorophenol	< 302	ug/Kg		9/9/2016 07:09
2-Methylnaphthalene	< 302	ug/Kg		9/9/2016 07:09
2-Methylphenol	< 302	ug/Kg		9/9/2016 07:09
2-Nitroaniline	< 604	ug/Kg		9/9/2016 07:09
2-Nitrophenol	< 302	ug/Kg		9/9/2016 07:09
3&4-Methylphenol	< 302	ug/Kg		9/9/2016 07:09
3,3'-Dichlorobenzidine	< 302	ug/Kg		9/9/2016 07:09
3-Nitroaniline	< 604	ug/Kg		9/9/2016 07:09
4,6-Dinitro-2-methylphenol	< 604	ug/Kg		9/9/2016 07:09
4-Bromophenyl phenyl ether	< 302	ug/Kg		9/9/2016 07:09
4-Chloro-3-methylphenol	< 302	ug/Kg		9/9/2016 07:09

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	E2-14-15 ft		
Lab Sample ID:	163832-09	Date Sampled:	9/1/2016
Matrix:	Soil	Date Received:	9/2/2016
4-Chloroaniline	< 302	ug/Kg	9/9/2016 07:09
4-Chlorophenyl phenyl ether	< 302	ug/Kg	9/9/2016 07:09
4-Nitroaniline	< 604	ug/Kg	9/9/2016 07:09
4-Nitrophenol	< 604	ug/Kg	9/9/2016 07:09
Acenaphthene	< 302	ug/Kg	9/9/2016 07:09
Acenaphthylene	< 302	ug/Kg	9/9/2016 07:09
Acetophenone	< 302	ug/Kg	9/9/2016 07:09
Anthracene	< 302	ug/Kg	9/9/2016 07:09
Atrazine	< 302 <i>MS</i>	ug/Kg	9/9/2016 07:09
Benzaldehyde	< 302	ug/Kg	9/9/2016 07:09
Benzo (a) anthracene	< 302	ug/Kg	9/9/2016 07:09
Benzo (a) pyrene	< 302	ug/Kg	9/9/2016 07:09
Benzo (b) fluoranthene	< 302	ug/Kg	9/9/2016 07:09
Benzo (g,h,i) perylene	< 302	ug/Kg	9/9/2016 07:09
Benzo (k) fluoranthene	< 302	ug/Kg	9/9/2016 07:09
Bis (2-chloroethoxy) methane	< 302	ug/Kg	9/9/2016 07:09
Bis (2-chloroethyl) ether	< 302	ug/Kg	9/9/2016 07:09
Bis (2-ethylhexyl) phthalate	< 302	ug/Kg	9/9/2016 07:09
Butylbenzylphthalate	< 302	ug/Kg	9/9/2016 07:09
Caprolactam	< 302	ug/Kg	9/9/2016 07:09
Carbazole	< 302	ug/Kg	9/9/2016 07:09
Chrysene	< 302	ug/Kg	9/9/2016 07:09
Dibenz (a,h) anthracene	< 302	ug/Kg	9/9/2016 07:09
Dibenzofuran	< 302	ug/Kg	9/9/2016 07:09
Diethyl phthalate	< 302	ug/Kg	9/9/2016 07:09
Dimethyl phthalate	< 604	ug/Kg	9/9/2016 07:09
Di-n-butyl phthalate	< 302	ug/Kg	9/9/2016 07:09
Di-n-octylphthalate	< 302	ug/Kg	9/9/2016 07:09
Fluoranthene	< 302	ug/Kg	9/9/2016 07:09
Fluorene	< 302	ug/Kg	9/9/2016 07:09

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Report Prepared Tuesday, September 13, 2016

*MS 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** E2-14-15 ft

**Lab Sample ID:** 163832-09

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Hexachlorobenzene	< 302	ug/Kg	9/9/2016 07:09
Hexachlorobutadiene	< 302	ug/Kg	9/9/2016 07:09
Hexachlorocyclopentadiene	< 302	ug/Kg	9/9/2016 07:09
Hexachloroethane	< 302	ug/Kg	9/9/2016 07:09
Indeno (1,2,3-cd) pyrene	< 302	ug/Kg	9/9/2016 07:09
Isophorone	< 302	ug/Kg	9/9/2016 07:09
Naphthalene	< 302	ug/Kg	9/9/2016 07:09
Nitrobenzene	< 302	ug/Kg	9/9/2016 07:09
N-Nitroso-di-n-propylamine	< 302	ug/Kg	9/9/2016 07:09
N-Nitrosodiphenylamine	< 302	ug/Kg	9/9/2016 07:09
Pentachlorophenol	< 604	ug/Kg	9/9/2016 07:09
Phenanthrene	< 302	ug/Kg	9/9/2016 07:09
Phenol	< 302	ug/Kg	9/9/2016 07:09
Pyrene	< 302	ug/Kg	9/9/2016 07:09

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	51.4	34.1 - 104		9/9/2016 07:09
2-Fluorobiphenyl	59.6	36.4 - 95.1		9/9/2016 07:09
2-Fluorophenol	47.1	35 - 84.1		9/9/2016 07:09
Nitrobenzene-d5	52.1	36.3 - 82.2		9/9/2016 07:09
Phenol-d5	52.9	38.5 - 88.8		9/9/2016 07:09
Terphenyl-d14	84.4	54.9 - 114		9/9/2016 07:09

**Method Reference(s):** EPA 8270D

EPA 3550C

**Preparation Date:** 9/8/2016

**Data File:** B13968.D

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-3-5 ft

Lab Sample ID: 163832-10

Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

Semi-Volatile Organics (Acid/Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 302	ug/Kg		9/9/2016 07:38
1,2,4,5-Tetrachlorobenzene	< 302	ug/Kg		9/9/2016 07:38
1,2,4-Trichlorobenzene	< 302	ug/Kg		9/9/2016 07:38
1,2-Dichlorobenzene	< 302	ug/Kg		9/9/2016 07:38
1,3-Dichlorobenzene	< 302	ug/Kg		9/9/2016 07:38
1,4-Dichlorobenzene	< 302	ug/Kg		9/9/2016 07:38
2,2-Oxybis (1-chloropropane)	< 302	ug/Kg		9/9/2016 07:38
2,3,4,6-Tetrachlorophenol	< 302	ug/Kg		9/9/2016 07:38
2,4,5-Trichlorophenol	< 603	ug/Kg		9/9/2016 07:38
2,4,6-Trichlorophenol	< 302	ug/Kg		9/9/2016 07:38
2,4-Dichlorophenol	< 302	ug/Kg		9/9/2016 07:38
2,4-Dimethylphenol	< 302	ug/Kg		9/9/2016 07:38
2,4-Dinitrophenol	< 603	ug/Kg		9/9/2016 07:38
2,4-Dinitrotoluene	< 302	ug/Kg		9/9/2016 07:38
2,6-Dinitrotoluene	< 302	ug/Kg		9/9/2016 07:38
2-Chloronaphthalene	< 302	ug/Kg		9/9/2016 07:38
2-Chlorophenol	< 302	ug/Kg		9/9/2016 07:38
2-Methylnapthalene	< 302	ug/Kg		9/9/2016 07:38
2-Methylphenol	< 302	ug/Kg		9/9/2016 07:38
2-Nitroaniline	< 603	ug/Kg		9/9/2016 07:38
2-Nitrophenol	< 302	ug/Kg		9/9/2016 07:38
3&4-Methylphenol	< 302	ug/Kg		9/9/2016 07:38
3,3'-Dichlorobenzidine	< 302	ug/Kg		9/9/2016 07:38
3-Nitroaniline	< 603	ug/Kg		9/9/2016 07:38
4,6-Dinitro-2-methylphenol	< 603	ug/Kg		9/9/2016 07:38
4-Bromophenyl phenyl ether	< 302	ug/Kg		9/9/2016 07:38
4-Chloro-3-methylphenol	< 302	ug/Kg		9/9/2016 07:38

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

<b>Sample Identifier:</b>	F1-3-5 ft		
<b>Lab Sample ID:</b>	163832-10	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
4-Chloroaniline	< 302	ug/Kg	9/9/2016 07:38
4-Chlorophenyl phenyl ether	< 302	ug/Kg	9/9/2016 07:38
4-Nitroaniline	< 603	ug/Kg	9/9/2016 07:38
4-Nitrophenol	< 603	ug/Kg	9/9/2016 07:38
Acenaphthene	< 302	ug/Kg	9/9/2016 07:38
Acenaphthylene	< 302	ug/Kg	9/9/2016 07:38
Acetophenone	< 302	ug/Kg	9/9/2016 07:38
Anthracene	< 302	ug/Kg	9/9/2016 07:38
Atrazine	< 302 <i>us</i>	ug/Kg	9/9/2016 07:38
Benzaldehyde	< 302	ug/Kg	9/9/2016 07:38
Benzo (a) anthracene	155	ug/Kg	J 9/9/2016 07:38
Benzo (a) pyrene	< 302	ug/Kg	9/9/2016 07:38
Benzo (b) fluoranthene	< 302	ug/Kg	9/9/2016 07:38
Benzo (g,h,i) perylene	< 302	ug/Kg	9/9/2016 07:38
Benzo (k) fluoranthene	< 302	ug/Kg	9/9/2016 07:38
Bis (2-chloroethoxy) methane	< 302	ug/Kg	9/9/2016 07:38
Bis (2-chloroethyl) ether	< 302	ug/Kg	9/9/2016 07:38
Bis (2-ethylhexyl) phthalate	< 302	ug/Kg	9/9/2016 07:38
Butylbenzylphthalate	< 302	ug/Kg	9/9/2016 07:38
Caprolactam	< 302	ug/Kg	9/9/2016 07:38
Carbazole	< 302	ug/Kg	9/9/2016 07:38
Chrysene	< 302	ug/Kg	9/9/2016 07:38
Dibenz (a,h) anthracene	< 302	ug/Kg	9/9/2016 07:38
Dibenzofuran	< 302	ug/Kg	9/9/2016 07:38
Diethyl phthalate	< 302	ug/Kg	9/9/2016 07:38
Dimethyl phthalate	< 603	ug/Kg	9/9/2016 07:38
Di-n-butyl phthalate	< 302	ug/Kg	9/9/2016 07:38
Di-n-octylphthalate	< 302	ug/Kg	9/9/2016 07:38
Fluoranthene	281	ug/Kg	J 9/9/2016 07:38
Fluorene	< 302	ug/Kg	9/9/2016 07:38

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Report Prepared Tuesday, September 13, 2016

*11/15/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-3-5 ft

Lab Sample ID: 163832-10

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Hexachlorobenzene	< 302	ug/Kg		9/9/2016 07:38
Hexachlorobutadiene	< 302	ug/Kg		9/9/2016 07:38
Hexachlorocyclopentadiene	< 302	ug/Kg		9/9/2016 07:38
Hexachloroethane	< 302	ug/Kg		9/9/2016 07:38
Indeno (1,2,3-cd) pyrene	< 302	ug/Kg		9/9/2016 07:38
Isophorone	< 302	ug/Kg		9/9/2016 07:38
Naphthalene	< 302	ug/Kg		9/9/2016 07:38
Nitrobenzene	< 302	ug/Kg		9/9/2016 07:38
N-Nitroso-di-n-propylamine	< 302	ug/Kg		9/9/2016 07:38
N-Nitrosodiphenylamine	< 302	ug/Kg		9/9/2016 07:38
Pentachlorophenol	< 603	ug/Kg		9/9/2016 07:38
Phenanthrene	265	ug/Kg	J	9/9/2016 07:38
Phenol	< 302	ug/Kg		9/9/2016 07:38
Pyrene	259	ug/Kg	J	9/9/2016 07:38
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>
2,4,6-Tribromophenol	69.9	34.1 - 104		9/9/2016 07:38
2-Fluorobiphenyl	50.9	36.4 - 95.1		9/9/2016 07:38
2-Fluorophenol	40.4	35 - 84.1		9/9/2016 07:38
Nitrobenzene-d5	43.5	36.3 - 82.2		9/9/2016 07:38
Phenol-d5	44.1	38.5 - 88.8		9/9/2016 07:38
Terphenyl-d14	78.3	54.9 - 114		9/9/2016 07:38

Method Reference(s): EPA 8270D  
EPA 3550C  
Preparation Date: 9/8/2016  
Data File: B13969.D

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-9-10 ft

Lab Sample ID: 163832-11

Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 320	ug/Kg		9/9/2016 08:07
1,2,4,5-Tetrachlorobenzene	< 320	ug/Kg		9/9/2016 08:07
1,2,4-Trichlorobenzene	< 320	ug/Kg		9/9/2016 08:07
1,2-Dichlorobenzene	< 320	ug/Kg		9/9/2016 08:07
1,3-Dichlorobenzene	< 320	ug/Kg		9/9/2016 08:07
1,4-Dichlorobenzene	< 320	ug/Kg		9/9/2016 08:07
2,2-Oxybis (1-chloropropane)	< 320	ug/Kg		9/9/2016 08:07
2,3,4,6-Tetrachlorophenol	< 320	ug/Kg		9/9/2016 08:07
2,4,5-Trichlorophenol	< 639	ug/Kg		9/9/2016 08:07
2,4,6-Trichlorophenol	< 320	ug/Kg		9/9/2016 08:07
2,4-Dichlorophenol	< 320	ug/Kg		9/9/2016 08:07
2,4-Dimethylphenol	< 320	ug/Kg		9/9/2016 08:07
2,4-Dinitrophenol	< 639	ug/Kg		9/9/2016 08:07
2,4-Dinitrotoluene	< 320	ug/Kg		9/9/2016 08:07
2,6-Dinitrotoluene	< 320	ug/Kg		9/9/2016 08:07
2-Chloronaphthalene	< 320	ug/Kg		9/9/2016 08:07
2-Chlorophenol	< 320	ug/Kg		9/9/2016 08:07
2-Methylnaphthalene	< 320	ug/Kg		9/9/2016 08:07
2-Methylphenol	< 320	ug/Kg		9/9/2016 08:07
2-Nitroaniline	< 639	ug/Kg		9/9/2016 08:07
2-Nitrophenol	< 320	ug/Kg		9/9/2016 08:07
3&4-Methylphenol	< 320	ug/Kg		9/9/2016 08:07
3,3'-Dichlorobenzidine	< 320	ug/Kg		9/9/2016 08:07
3-Nitroaniline	< 639	ug/Kg		9/9/2016 08:07
4,6-Dinitro-2-methylphenol	< 639	ug/Kg		9/9/2016 08:07
4-Bromophenyl phenyl ether	< 320	ug/Kg		9/9/2016 08:07
4-Chloro-3-methylphenol	< 320	ug/Kg		9/9/2016 08:07

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	F1-9-10 ft		
<b>Lab Sample ID:</b>	163832-11	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
4-Chloroaniline	< 320	ug/Kg	9/9/2016 08:07
4-Chlorophenyl phenyl ether	< 320	ug/Kg	9/9/2016 08:07
4-Nitroaniline	< 639	ug/Kg	9/9/2016 08:07
4-Nitrophenol	< 639	ug/Kg	9/9/2016 08:07
Acenaphthene	< 320	ug/Kg	9/9/2016 08:07
Acenaphthylene	< 320	ug/Kg	9/9/2016 08:07
Acetophenone	< 320	ug/Kg	9/9/2016 08:07
Anthracene	< 320	ug/Kg	9/9/2016 08:07
Atrazine	< 320	ug/Kg	9/9/2016 08:07
Benzaldehyde	< 320	ug/Kg	9/9/2016 08:07
Benzo (a) anthracene	< 320	ug/Kg	9/9/2016 08:07
Benzo (a) pyrene	< 320	ug/Kg	9/9/2016 08:07
Benzo (b) fluoranthene	< 320	ug/Kg	9/9/2016 08:07
Benzo (g,h,i) perylene	< 320	ug/Kg	9/9/2016 08:07
Benzo (k) fluoranthene	< 320	ug/Kg	9/9/2016 08:07
Bis (2-chloroethoxy) methane	< 320	ug/Kg	9/9/2016 08:07
Bis (2-chloroethyl) ether	< 320	ug/Kg	9/9/2016 08:07
Bis (2-ethylhexyl) phthalate	< 320	ug/Kg	9/9/2016 08:07
Butylbenzylphthalate	< 320	ug/Kg	9/9/2016 08:07
Caprolactam	< 320	ug/Kg	9/9/2016 08:07
Carbazole	< 320	ug/Kg	9/9/2016 08:07
Chrysene	< 320	ug/Kg	9/9/2016 08:07
Dibenz (a,h) anthracene	< 320	ug/Kg	9/9/2016 08:07
Dibenzofuran	< 320	ug/Kg	9/9/2016 08:07
Diethyl phthalate	< 320	ug/Kg	9/9/2016 08:07
Dimethyl phthalate	< 639	ug/Kg	9/9/2016 08:07
Di-n-butyl phthalate	< 320	ug/Kg	9/9/2016 08:07
Di-n-octylphthalate	< 320	ug/Kg	9/9/2016 08:07
Fluoranthene	< 320	ug/Kg	9/9/2016 08:07
Fluorene	< 320	ug/Kg	9/9/2016 08:07

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Report Prepared Tuesday, September 13, 2016

MP 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	F1-9-10 ft				
<b>Lab Sample ID:</b>	163832-11			<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil			<b>Date Received:</b>	9/2/2016
Hexachlorobenzene	< 320	ug/Kg		9/9/2016	08:07
Hexachlorobutadiene	< 320	ug/Kg		9/9/2016	08:07
Hexachlorocyclopentadiene	< 320	ug/Kg		9/9/2016	08:07
Hexachloroethane	< 320	ug/Kg		9/9/2016	08:07
Indeno (1,2,3-cd) pyrene	< 320	ug/Kg		9/9/2016	08:07
Isophorone	< 320	ug/Kg		9/9/2016	08:07
Naphthalene	< 320	ug/Kg		9/9/2016	08:07
Nitrobenzene	< 320	ug/Kg		9/9/2016	08:07
N-Nitroso-di-n-propylamine	< 320	ug/Kg		9/9/2016	08:07
N-Nitrosodiphenylamine	< 320	ug/Kg		9/9/2016	08:07
Pentachlorophenol	< 639	ug/Kg		9/9/2016	08:07
Phenanthrene	< 320	ug/Kg		9/9/2016	08:07
Phenol	< 320	ug/Kg		9/9/2016	08:07
Pyrene	< 320	ug/Kg		9/9/2016	08:07
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>	
2,4,6-Tribromophenol	65.6	34.1 - 104		9/9/2016	08:07
2-Fluorobiphenyl	50.8	36.4 - 95.1		9/9/2016	08:07
2-Fluorophenol	45.3	35 - 84.1		9/9/2016	08:07
Nitrobenzene-d5	46.1	36.3 - 82.2		9/9/2016	08:07
Phenol-d5	48.2	38.5 - 88.8		9/9/2016	08:07
Terphenyl-d14	88.6	54.9 - 114		9/9/2016	08:07
<b>Method Reference(s):</b>	EPA 8270D				
	EPA 3550C				
<b>Preparation Date:</b>	9/8/2016				
<b>Data File:</b>	B13970.D				

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 316	ug/Kg		9/9/2016 08:37
1,2,4,5-Tetrachlorobenzene	< 316	ug/Kg		9/9/2016 08:37
1,2,4-Trichlorobenzene	< 316	ug/Kg		9/9/2016 08:37
1,2-Dichlorobenzene	< 316	ug/Kg		9/9/2016 08:37
1,3-Dichlorobenzene	< 316	ug/Kg		9/9/2016 08:37
1,4-Dichlorobenzene	< 316	ug/Kg		9/9/2016 08:37
2,2-Oxybis (1-chloropropane)	< 316	ug/Kg		9/9/2016 08:37
2,3,4,6-Tetrachlorophenol	< 316	ug/Kg		9/9/2016 08:37
2,4,5-Trichlorophenol	< 632	ug/Kg		9/9/2016 08:37
2,4,6-Trichlorophenol	< 316	ug/Kg		9/9/2016 08:37
2,4-Dichlorophenol	< 316	ug/Kg		9/9/2016 08:37
2,4-Dimethylphenol	< 316	ug/Kg		9/9/2016 08:37
2,4-Dinitrophenol	< 632	ug/Kg		9/9/2016 08:37
2,4-Dinitrotoluene	< 316	ug/Kg		9/9/2016 08:37
2,6-Dinitrotoluene	< 316	ug/Kg		9/9/2016 08:37
2-Chloronaphthalene	< 316	ug/Kg		9/9/2016 08:37
2-Chlorophenol	< 316	ug/Kg		9/9/2016 08:37
2-Methylnaphthalene	< 316	ug/Kg		9/9/2016 08:37
2-Methylphenol	< 316	ug/Kg		9/9/2016 08:37
2-Nitroaniline	< 632	ug/Kg		9/9/2016 08:37
2-Nitrophenol	< 316	ug/Kg		9/9/2016 08:37
3&4-Methylphenol	< 316	ug/Kg		9/9/2016 08:37
3,3'-Dichlorobenzidine	< 316	ug/Kg		9/9/2016 08:37
3-Nitroaniline	< 632	ug/Kg		9/9/2016 08:37
4,6-Dinitro-2-methylphenol	< 632	ug/Kg		9/9/2016 08:37
4-Bromophenyl phenyl ether	< 316	ug/Kg		9/9/2016 08:37
4-Chloro-3-methylphenol	< 316	ug/Kg		9/9/2016 08:37

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	F1-15 ft		
Lab Sample ID:	163832-12	Date Sampled:	9/1/2016
Matrix:	Soil	Date Received:	9/2/2016
4-Chloroaniline	< 316	ug/Kg	9/9/2016 08:37
4-Chlorophenyl phenyl ether	< 316	ug/Kg	9/9/2016 08:37
4-Nitroaniline	< 632	ug/Kg	9/9/2016 08:37
4-Nitrophenol	< 632	ug/Kg	9/9/2016 08:37
Acenaphthene	< 316	ug/Kg	9/9/2016 08:37
Acenaphthylene	< 316	ug/Kg	9/9/2016 08:37
Acetophenone	< 316	ug/Kg	9/9/2016 08:37
Anthracene	< 316	ug/Kg	9/9/2016 08:37
Atrazine	< 316 <i>MS</i>	ug/Kg	9/9/2016 08:37
Benzaldehyde	< 316	ug/Kg	9/9/2016 08:37
Benzo (a) anthracene	< 316	ug/Kg	9/9/2016 08:37
Benzo (a) pyrene	< 316	ug/Kg	9/9/2016 08:37
Benzo (b) fluoranthene	< 316	ug/Kg	9/9/2016 08:37
Benzo (g,h,i) perylene	< 316	ug/Kg	9/9/2016 08:37
Benzo (k) fluoranthene	< 316	ug/Kg	9/9/2016 08:37
Bis (2-chloroethoxy) methane	< 316	ug/Kg	9/9/2016 08:37
Bis (2-chloroethyl) ether	< 316	ug/Kg	9/9/2016 08:37
Bis (2-ethylhexyl) phthalate	< 316	ug/Kg	9/9/2016 08:37
Butylbenzylphthalate	< 316	ug/Kg	9/9/2016 08:37
Caprolactam	< 316	ug/Kg	9/9/2016 08:37
Carbazole	< 316	ug/Kg	9/9/2016 08:37
Chrysene	< 316	ug/Kg	9/9/2016 08:37
Dibenz (a,h) anthracene	< 316	ug/Kg	9/9/2016 08:37
Dibenzofuran	< 316	ug/Kg	9/9/2016 08:37
Diethyl phthalate	< 316	ug/Kg	9/9/2016 08:37
Dimethyl phthalate	< 632	ug/Kg	9/9/2016 08:37
Di-n-butyl phthalate	< 316	ug/Kg	9/9/2016 08:37
Di-n-octylphthalate	< 316	ug/Kg	9/9/2016 08:37
Fluoranthene	< 316	ug/Kg	9/9/2016 08:37
Fluorene	< 316	ug/Kg	9/9/2016 08:37

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Report Prepared Tuesday, September 13, 2016

*MS 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Hexachlorobenzene	< 316	ug/Kg	9/9/2016 08:37
Hexachlorobutadiene	< 316	ug/Kg	9/9/2016 08:37
Hexachlorocyclopentadiene	< 316	ug/Kg	9/9/2016 08:37
Hexachloroethane	< 316	ug/Kg	9/9/2016 08:37
Indeno (1,2,3-cd) pyrene	< 316	ug/Kg	9/9/2016 08:37
Isophorone	< 316	ug/Kg	9/9/2016 08:37
Naphthalene	< 316	ug/Kg	9/9/2016 08:37
Nitrobenzene	< 316	ug/Kg	9/9/2016 08:37
N-Nitroso-di-n-propylamine	< 316	ug/Kg	9/9/2016 08:37
N-Nitrosodiphenylamine	< 316	ug/Kg	9/9/2016 08:37
Pentachlorophenol	< 632	ug/Kg	9/9/2016 08:37
Phenanthrene	< 316	ug/Kg	9/9/2016 08:37
Phenol	< 316	ug/Kg	9/9/2016 08:37
Pyrene	< 316	ug/Kg	9/9/2016 08:37

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	50.4	34.1 - 104		9/9/2016 08:37
2-Fluorobiphenyl	40.5	36.4 - 95.1		9/9/2016 08:37
2-Fluorophenol	37.4	35 - 84.1		9/9/2016 08:37
Nitrobenzene-d5	36.6	36.3 - 82.2		9/9/2016 08:37
Phenol-d5	40.7	38.5 - 88.8		9/9/2016 08:37
Terphenyl-d14	80.6	54.9 - 114		9/9/2016 08:37

Method Reference(s): EPA 8270D

EPA 3550C

Preparation Date: 9/8/2016

Data File: B13971.D

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F2-4-6 ft

Lab Sample ID: 163832-13

Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 300	ug/Kg		9/9/2016 09:06
1,2,4,5-Tetrachlorobenzene	< 300	ug/Kg		9/9/2016 09:06
1,2,4-Trichlorobenzene	< 300	ug/Kg		9/9/2016 09:06
1,2-Dichlorobenzene	< 300	ug/Kg		9/9/2016 09:06
1,3-Dichlorobenzene	< 300	ug/Kg		9/9/2016 09:06
1,4-Dichlorobenzene	< 300	ug/Kg		9/9/2016 09:06
2,2-Oxybis (1-chloropropane)	< 300	ug/Kg		9/9/2016 09:06
2,3,4,6-Tetrachlorophenol	< 300	ug/Kg		9/9/2016 09:06
2,4,5-Trichlorophenol	< 599	ug/Kg		9/9/2016 09:06
2,4,6-Trichlorophenol	< 300	ug/Kg		9/9/2016 09:06
2,4-Dichlorophenol	< 300	ug/Kg		9/9/2016 09:06
2,4-Dimethylphenol	< 300	ug/Kg		9/9/2016 09:06
2,4-Dinitrophenol	< 599	ug/Kg		9/9/2016 09:06
2,4-Dinitrotoluene	< 300	ug/Kg		9/9/2016 09:06
2,6-Dinitrotoluene	< 300	ug/Kg		9/9/2016 09:06
2-Chloronaphthalene	< 300	ug/Kg		9/9/2016 09:06
2-Chlorophenol	< 300	ug/Kg		9/9/2016 09:06
2-Methylnaphthalene	< 300	ug/Kg		9/9/2016 09:06
2-Methylphenol	< 300	ug/Kg		9/9/2016 09:06
2-Nitroaniline	< 599	ug/Kg		9/9/2016 09:06
2-Nitrophenol	< 300	ug/Kg		9/9/2016 09:06
3&4-Methylphenol	< 300	ug/Kg		9/9/2016 09:06
3,3'-Dichlorobenzidine	< 300	ug/Kg		9/9/2016 09:06
3-Nitroaniline	< 599	ug/Kg		9/9/2016 09:06
4,6-Dinitro-2-methylphenol	< 599	ug/Kg		9/9/2016 09:06
4-Bromophenyl phenyl ether	< 300	ug/Kg		9/9/2016 09:06
4-Chloro-3-methylphenol	< 300	ug/Kg		9/9/2016 09:06

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	F2-4-6 ft		
Lab Sample ID:	163832-13	Date Sampled:	9/1/2016
Matrix:	Soil	Date Received:	9/2/2016
4-Chloroaniline	< 300	ug/Kg	9/9/2016 09:06
4-Chlorophenyl phenyl ether	< 300	ug/Kg	9/9/2016 09:06
4-Nitroaniline	< 599	ug/Kg	9/9/2016 09:06
4-Nitrophenol	< 599	ug/Kg	9/9/2016 09:06
Acenaphthene	< 300	ug/Kg	9/9/2016 09:06
Acenaphthylene	< 300	ug/Kg	9/9/2016 09:06
Acetophenone	< 300	ug/Kg	9/9/2016 09:06
Anthracene	< 300	ug/Kg	9/9/2016 09:06
Atrazine	< 300	ug/Kg	9/9/2016 09:06
Benzaldehyde	< 300	ug/Kg	9/9/2016 09:06
Benzo (a) anthracene	< 300	ug/Kg	9/9/2016 09:06
Benzo (a) pyrene	< 300	ug/Kg	9/9/2016 09:06
Benzo (b) fluoranthene	< 300	ug/Kg	9/9/2016 09:06
Benzo (g,h,i) perylene	< 300	ug/Kg	9/9/2016 09:06
Benzo (k) fluoranthene	< 300	ug/Kg	9/9/2016 09:06
Bis (2-chloroethoxy) methane	< 300	ug/Kg	9/9/2016 09:06
Bis (2-chloroethyl) ether	< 300	ug/Kg	9/9/2016 09:06
Bis (2-ethylhexyl) phthalate	< 300	ug/Kg	9/9/2016 09:06
Butylbenzylphthalate	< 300	ug/Kg	9/9/2016 09:06
Caprolactam	< 300	ug/Kg	9/9/2016 09:06
Carbazole	< 300	ug/Kg	9/9/2016 09:06
Chrysene	< 300	ug/Kg	9/9/2016 09:06
Dibenz (a,h) anthracene	< 300	ug/Kg	9/9/2016 09:06
Dibenzofuran	< 300	ug/Kg	9/9/2016 09:06
Diethyl phthalate	< 300	ug/Kg	9/9/2016 09:06
Dimethyl phthalate	< 599	ug/Kg	9/9/2016 09:06
Di-n-butyl phthalate	< 300	ug/Kg	9/9/2016 09:06
Di-n-octylphthalate	< 300	ug/Kg	9/9/2016 09:06
Fluoranthene	< 300	ug/Kg	9/9/2016 09:06
Fluorene	< 300	ug/Kg	9/9/2016 09:06

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Report Prepared Tuesday, September 13, 2016

mkp 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F2-4-6 ft

**Lab Sample ID:** 163832-13

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

Hexachlorobenzene	< 300	ug/Kg	9/9/2016 09:06
Hexachlorobutadiene	< 300	ug/Kg	9/9/2016 09:06
Hexachlorocyclopentadiene	< 300	ug/Kg	9/9/2016 09:06
Hexachloroethane	< 300	ug/Kg	9/9/2016 09:06
Indeno (1,2,3-cd) pyrene	< 300	ug/Kg	9/9/2016 09:06
Isophorone	< 300	ug/Kg	9/9/2016 09:06
Naphthalene	< 300	ug/Kg	9/9/2016 09:06
Nitrobenzene	< 300	ug/Kg	9/9/2016 09:06
N-Nitroso-di-n-propylamine	< 300	ug/Kg	9/9/2016 09:06
N-Nitrosodiphenylamine	< 300	ug/Kg	9/9/2016 09:06
Pentachlorophenol	< 599	ug/Kg	9/9/2016 09:06
Phenanthrene	< 300	ug/Kg	9/9/2016 09:06
Phenol	< 300	ug/Kg	9/9/2016 09:06
Pyrene	< 300	ug/Kg	9/9/2016 09:06

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
2,4,6-Tribromophenol	67.5	34.1 - 104		9/9/2016 09:06
2-Fluorobiphenyl	48.1	36.4 - 95.1		9/9/2016 09:06
2-Fluorophenol	43.3	35 - 84.1		9/9/2016 09:06
Nitrobenzene-d5	44.2	36.3 - 82.2		9/9/2016 09:06
Phenol-d5	46.8	38.5 - 88.8		9/9/2016 09:06
Terphenyl-d14	91.4	54.9 - 114		9/9/2016 09:06

**Method Reference(s):** EPA 8270D

EPA 3550C

**Preparation Date:** 9/8/2016

**Data File:** B13972.D

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F2-9-10 ft

Lab Sample ID: 163832-14

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 313	ug/Kg		9/9/2016 09:35
1,2,4,5-Tetrachlorobenzene	< 313	ug/Kg		9/9/2016 09:35
1,2,4-Trichlorobenzene	< 313	ug/Kg		9/9/2016 09:35
1,2-Dichlorobenzene	< 313	ug/Kg		9/9/2016 09:35
1,3-Dichlorobenzene	< 313	ug/Kg		9/9/2016 09:35
1,4-Dichlorobenzene	< 313	ug/Kg		9/9/2016 09:35
2,2-Oxybis (1-chloropropane)	< 313	ug/Kg		9/9/2016 09:35
2,3,4,6-Tetrachlorophenol	< 313	ug/Kg		9/9/2016 09:35
2,4,5-Trichlorophenol	< 625	ug/Kg		9/9/2016 09:35
2,4,6-Trichlorophenol	< 313	ug/Kg		9/9/2016 09:35
2,4-Dichlorophenol	< 313	ug/Kg		9/9/2016 09:35
2,4-Dimethylphenol	< 313	ug/Kg		9/9/2016 09:35
2,4-Dinitrophenol	< 625	ug/Kg		9/9/2016 09:35
2,4-Dinitrotoluene	< 313	ug/Kg		9/9/2016 09:35
2,6-Dinitrotoluene	< 313	ug/Kg		9/9/2016 09:35
2-Chloronaphthalene	< 313	ug/Kg		9/9/2016 09:35
2-Chlorophenol	< 313	ug/Kg		9/9/2016 09:35
2-Methylnaphthalene	< 313	ug/Kg		9/9/2016 09:35
2-Methylphenol	< 313	ug/Kg		9/9/2016 09:35
2-Nitroaniline	< 625	ug/Kg		9/9/2016 09:35
2-Nitrophenol	< 313	ug/Kg		9/9/2016 09:35
3&4-Methylphenol	< 313	ug/Kg		9/9/2016 09:35
3,3'-Dichlorobenzidine	< 313	ug/Kg		9/9/2016 09:35
3-Nitroaniline	< 625	ug/Kg		9/9/2016 09:35
4,6-Dinitro-2-methylphenol	< 625	ug/Kg		9/9/2016 09:35
4-Bromophenyl phenyl ether	< 313	ug/Kg		9/9/2016 09:35
4-Chloro-3-methylphenol	< 313	ug/Kg		9/9/2016 09:35

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

<b>Sample Identifier:</b>	F2-9-10 ft		
<b>Lab Sample ID:</b>	163832-14	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016
4-Chloroaniline	< 313	ug/Kg	9/9/2016 09:35
4-Chlorophenyl phenyl ether	< 313	ug/Kg	9/9/2016 09:35
4-Nitroaniline	< 625	ug/Kg	9/9/2016 09:35
4-Nitrophenol	< 625	ug/Kg	9/9/2016 09:35
Acenaphthene	< 313	ug/Kg	9/9/2016 09:35
Acenaphthylene	< 313	ug/Kg	9/9/2016 09:35
Acetophenone	< 313	ug/Kg	9/9/2016 09:35
Anthracene	< 313	ug/Kg	9/9/2016 09:35
Atrazine	< 313 ✓	ug/Kg	9/9/2016 09:35
Benzaldehyde	< 313	ug/Kg	9/9/2016 09:35
Benzo (a) anthracene	< 313	ug/Kg	9/9/2016 09:35
Benzo (a) pyrene	< 313	ug/Kg	9/9/2016 09:35
Benzo (b) fluoranthene	< 313	ug/Kg	9/9/2016 09:35
Benzo (g,h,i) perylene	< 313	ug/Kg	9/9/2016 09:35
Benzo (k) fluoranthene	< 313	ug/Kg	9/9/2016 09:35
Bis (2-chloroethoxy) methane	< 313	ug/Kg	9/9/2016 09:35
Bis (2-chloroethyl) ether	< 313	ug/Kg	9/9/2016 09:35
Bis (2-ethylhexyl) phthalate	< 313	ug/Kg	9/9/2016 09:35
Butylbenzylphthalate	< 313	ug/Kg	9/9/2016 09:35
Caprolactam	< 313	ug/Kg	9/9/2016 09:35
Carbazole	< 313	ug/Kg	9/9/2016 09:35
Chrysene	< 313	ug/Kg	9/9/2016 09:35
Dibenz (a,h) anthracene	< 313	ug/Kg	9/9/2016 09:35
Dibenzofuran	< 313	ug/Kg	9/9/2016 09:35
Diethyl phthalate	< 313	ug/Kg	9/9/2016 09:35
Dimethyl phthalate	< 625	ug/Kg	9/9/2016 09:35
Di-n-butyl phthalate	< 313	ug/Kg	9/9/2016 09:35
Di-n-octylphthalate	< 313	ug/Kg	9/9/2016 09:35
Fluoranthene	< 313	ug/Kg	9/9/2016 09:35
Fluorene	< 313	ug/Kg	9/9/2016 09:35

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Report Prepared Tuesday, September 13, 2016

mkrp 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	F2-9-10 ft				
<b>Lab Sample ID:</b>	163832-14			<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil			<b>Date Received:</b>	9/2/2016
Hexachlorobenzene	< 313	ug/Kg			9/9/2016 09:35
Hexachlorobutadiene	< 313	ug/Kg			9/9/2016 09:35
Hexachlorocyclopentadiene	< 313	ug/Kg			9/9/2016 09:35
Hexachloroethane	< 313	ug/Kg			9/9/2016 09:35
Indeno (1,2,3-cd) pyrene	< 313	ug/Kg			9/9/2016 09:35
Isophorone	< 313	ug/Kg			9/9/2016 09:35
Naphthalene	< 313	ug/Kg			9/9/2016 09:35
Nitrobenzene	< 313	ug/Kg			9/9/2016 09:35
N-Nitroso-di-n-propylamine	< 313	ug/Kg			9/9/2016 09:35
N-Nitrosodiphenylamine	< 313	ug/Kg			9/9/2016 09:35
Pentachlorophenol	< 625	ug/Kg			9/9/2016 09:35
Phenanthrene	< 313	ug/Kg			9/9/2016 09:35
Phenol	< 313	ug/Kg			9/9/2016 09:35
Pyrene	< 313	ug/Kg			9/9/2016 09:35
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>	
2,4,6-Tribromophenol	45.1	34.1 - 104		9/9/2016	09:35
2-Fluorobiphenyl	39.9	36.4 - 95.1		9/9/2016	09:35
2-Fluorophenol	42.9	35 - 84.1		9/9/2016	09:35
Nitrobenzene-d5	39.9	36.3 - 82.2		9/9/2016	09:35
Phenol-d5	47.3	38.5 - 88.8		9/9/2016	09:35
Terphenyl-d14	72.5	54.9 - 114		9/9/2016	09:35
<b>Method Reference(s):</b>	EPA 8270D				
	EPA 3550C				
<b>Preparation Date:</b>	9/8/2016				
<b>Data File:</b>	B13973.D				

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163845

**Client:** C&S Companies

**Project Reference:** North Street

**Sample Identifier:** A4-22-23 ft

**Lab Sample ID:** 163845-01

**Matrix:** Soil

**Date Sampled:** 9/2/2016

**Date Received:** 9/6/2016

***Semi-Volatile Organics (Acid/Base Neutrals)***

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 327	ug/Kg		9/10/2016 02:03
1,2,4,5-Tetrachlorobenzene	< 327	ug/Kg		9/10/2016 02:03
1,2,4-Trichlorobenzene	< 327	ug/Kg	M	9/10/2016 02:03
1,2-Dichlorobenzene	< 327	ug/Kg		9/10/2016 02:03
1,3-Dichlorobenzene	< 327	ug/Kg		9/10/2016 02:03
1,4-Dichlorobenzene	< 327	ug/Kg	M	9/10/2016 02:03
2,2-Oxybis (1-chloropropane)	< 327	ug/Kg		9/10/2016 02:03
2,3,4,6-Tetrachlorophenol	< 327	ug/Kg		9/10/2016 02:03
2,4,5-Trichlorophenol	< 655	ug/Kg		9/10/2016 02:03
2,4,6-Trichlorophenol	< 327	ug/Kg		9/10/2016 02:03
2,4-Dichlorophenol	< 327	ug/Kg	M	9/10/2016 02:03
2,4-Dimethylphenol	< 327	ug/Kg		9/10/2016 02:03
2,4-Dinitrophenol	< 655	ug/Kg		9/10/2016 02:03
2,4-Dinitrotoluene	< 327	ug/Kg		9/10/2016 02:03
2,6-Dinitrotoluene	< 327	ug/Kg		9/10/2016 02:03
2-Chloronaphthalene	< 327	ug/Kg		9/10/2016 02:03
2-Chlorophenol	< 327	ug/Kg	M	9/10/2016 02:03
2-Methylnapthalene	< 327	ug/Kg		9/10/2016 02:03
2-Methylphenol	< 327	ug/Kg		9/10/2016 02:03
2-Nitroaniline	< 655	ug/Kg		9/10/2016 02:03
2-Nitrophenol	< 327	ug/Kg	M	9/10/2016 02:03
3&4-Methylphenol	< 327	ug/Kg		9/10/2016 02:03
3,3'-Dichlorobenzidine	< 327	ug/Kg		9/10/2016 02:03
3-Nitroaniline	< 655	ug/Kg		9/10/2016 02:03
4,6-Dinitro-2-methylphenol	< 655	ug/Kg		9/10/2016 02:03
4-Bromophenyl phenyl ether	< 327	ug/Kg		9/10/2016 02:03
4-Chloro-3-methylphenol	< 327	ug/Kg		9/10/2016 02:03

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163845

Client: C&S Companies

Project Reference: North Street

Sample Identifier: A4-22-23 ft

Lab Sample ID: 163845-01

Date Sampled: 9/2/2016

Matrix: Soil

Date Received: 9/6/2016

4-Chloroaniline	< 327	ug/Kg	9/10/2016 02:03
4-Chlorophenyl phenyl ether	< 327	ug/Kg	9/10/2016 02:03
4-Nitroaniline	< 655	ug/Kg	9/10/2016 02:03
4-Nitrophenol	< 655	ug/Kg	9/10/2016 02:03
Acenaphthene	< 327	ug/Kg	9/10/2016 02:03
Acenaphthylene	< 327	ug/Kg	9/10/2016 02:03
Acetophenone	< 327	ug/Kg	9/10/2016 02:03
Anthracene	< 327	ug/Kg	9/10/2016 02:03
Atrazine	< 327 <i>WJ</i>	ug/Kg	9/10/2016 02:03
Benzaldehyde	< 327	ug/Kg	9/10/2016 02:03
Benzo (a) anthracene	< 327	ug/Kg	9/10/2016 02:03
Benzo (a) pyrene	< 327	ug/Kg	9/10/2016 02:03
Benzo (b) fluoranthene	< 327	ug/Kg	9/10/2016 02:03
Benzo (g,h,i) perylene	< 327	ug/Kg	9/10/2016 02:03
Benzo (k) fluoranthene	< 327	ug/Kg	9/10/2016 02:03
Bis (2-chloroethoxy) methane	< 327	ug/Kg	9/10/2016 02:03
Bis (2-chloroethyl) ether	< 327	ug/Kg	9/10/2016 02:03
Bis (2-ethylhexyl) phthalate	< 327	ug/Kg	9/10/2016 02:03
Butylbenzylphthalate	< 327	ug/Kg	9/10/2016 02:03
Caprolactam	< 327	ug/Kg	9/10/2016 02:03
Carbazole	< 327	ug/Kg	9/10/2016 02:03
Chrysene	< 327	ug/Kg	9/10/2016 02:03
Dibenz (a,h) anthracene	< 327	ug/Kg	9/10/2016 02:03
Dibenzofuran	< 327	ug/Kg	9/10/2016 02:03
Diethyl phthalate	< 327	ug/Kg	9/10/2016 02:03
Dimethyl phthalate	< 655	ug/Kg	9/10/2016 02:03
Di-n-butyl phthalate	< 327	ug/Kg	9/10/2016 02:03
Di-n-octylphthalate	< 327	ug/Kg	9/10/2016 02:03
Fluoranthene	< 327	ug/Kg	9/10/2016 02:03
Fluorene	< 327	ug/Kg	9/10/2016 02:03

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Report Prepared Tuesday, September 13, 2016

*mmp 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163845

**Client:** C&S Companies

**Project Reference:** North Street

<b>Sample Identifier:</b>	A4-22-23 ft			
<b>Lab Sample ID:</b>	163845-01		<b>Date Sampled:</b>	9/2/2016
<b>Matrix:</b>	Soil		<b>Date Received:</b>	9/6/2016
Hexachlorobenzene	< 327	ug/Kg		9/10/2016 02:03
Hexachlorobutadiene	< 327	ug/Kg		9/10/2016 02:03
Hexachlorocyclopentadiene	< 327	ug/Kg		9/10/2016 02:03
Hexachloroethane	< 327	ug/Kg		9/10/2016 02:03
Indeno (1,2,3-cd) pyrene	< 327 <i>MS</i>	ug/Kg		9/10/2016 02:03
Isophorone	< 327	ug/Kg		9/10/2016 02:03
Naphthalene	< 327	ug/Kg		9/10/2016 02:03
Nitrobenzene	< 327	ug/Kg		9/10/2016 02:03
N-Nitroso-di-n-propylamine	< 327	ug/Kg		9/10/2016 02:03
N-Nitrosodiphenylamine	< 327	ug/Kg		9/10/2016 02:03
Pentachlorophenol	< 655	ug/Kg		9/10/2016 02:03
Phenanthrene	< 327	ug/Kg		9/10/2016 02:03
Phenol	< 327	ug/Kg	M	9/10/2016 02:03
Pyrene	< 327	ug/Kg		9/10/2016 02:03
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>
2,4,6-Tribromophenol	66.6	34.1 - 104		9/10/2016 02:03
2-Fluorobiphenyl	43.8	36.4 - 95.1		9/10/2016 02:03
2-Fluorophenol	37.9	35 - 84.1		9/10/2016 02:03
Nitrobenzene-d5	36.5	36.3 - 82.2		9/10/2016 02:03
Phenol-d5	39.9	38.5 - 88.8		9/10/2016 02:03
Terphenyl-d14	83.3	54.9 - 114		9/10/2016 02:03

**Method Reference(s):** EPA 8270D  
EPA 3550C  
**Preparation Date:** 9/9/2016  
**Data File:** B14003.D

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Report Prepared Tuesday, September 13, 2016

*mkp 5/6/17*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163892

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: C4 7-8 ft

Lab Sample ID: 163892-01

Date Sampled: 8/30/2016

Matrix: Soil

Date Received: 9/8/2016

**Semi-Volatile Organics (Acid/Base Neutrals)**

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 326	ug/Kg		9/12/2016 15:06
1,2,4,5-Tetrachlorobenzene	< 326	ug/Kg		9/12/2016 15:06
1,2,4-Trichlorobenzene	< 326	ug/Kg		9/12/2016 15:06
1,2-Dichlorobenzene	< 326	ug/Kg		9/12/2016 15:06
1,3-Dichlorobenzene	< 326	ug/Kg		9/12/2016 15:06
1,4-Dichlorobenzene	< 326	ug/Kg		9/12/2016 15:06
2,2-Oxybis (1-chloropropane)	< 326	ug/Kg		9/12/2016 15:06
2,3,4,6-Tetrachlorophenol	< 326	ug/Kg		9/12/2016 15:06
2,4,5-Trichlorophenol	< 651	ug/Kg		9/12/2016 15:06
2,4,6-Trichlorophenol	< 326	ug/Kg		9/12/2016 15:06
2,4-Dichlorophenol	< 326	ug/Kg		9/12/2016 15:06
2,4-Dimethylphenol	< 326	ug/Kg		9/12/2016 15:06
2,4-Dinitrophenol	< 651	ug/Kg		9/12/2016 15:06
2,4-Dinitrotoluene	< 326	ug/Kg		9/12/2016 15:06
2,6-Dinitrotoluene	< 326	ug/Kg		9/12/2016 15:06
2-Chloronaphthalene	< 326	ug/Kg		9/12/2016 15:06
2-Chlorophenol	< 326	ug/Kg		9/12/2016 15:06
2-Methylnaphthalene	< 326	ug/Kg		9/12/2016 15:06
2-Methylphenol	< 326	ug/Kg		9/12/2016 15:06
2-Nitroaniline	< 651	ug/Kg		9/12/2016 15:06
2-Nitrophenol	< 326	ug/Kg		9/12/2016 15:06
3&4-Methylphenol	< 326	ug/Kg		9/12/2016 15:06
3,3'-Dichlorobenzidine	< 326	ug/Kg		9/12/2016 15:06
3-Nitroaniline	< 651	ug/Kg		9/12/2016 15:06
4,6-Dinitro-2-methylphenol	< 651	ug/Kg		9/12/2016 15:06
4-Bromophenyl phenyl ether	< 326	ug/Kg		9/12/2016 15:06
4-Chloro-3-methylphenol	< 326	ug/Kg		9/12/2016 15:06

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Report Prepared Thursday, September 15, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163892

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier:	C4 7-8 ft		
Lab Sample ID:	163892-01	Date Sampled:	8/30/2016
Matrix:	Soil	Date Received:	9/8/2016
4-Chloroaniline	< 326	ug/Kg	9/12/2016 15:06
4-Chlorophenyl phenyl ether	< 326	ug/Kg	9/12/2016 15:06
4-Nitroaniline	< 651	ug/Kg	9/12/2016 15:06
4-Nitrophenol	< 651	ug/Kg	9/12/2016 15:06
Acenaphthene	< 326	ug/Kg	9/12/2016 15:06
Acenaphthylene	< 326	ug/Kg	9/12/2016 15:06
Acetophenone	< 326	ug/Kg	9/12/2016 15:06
Anthracene	< 326	ug/Kg	9/12/2016 15:06
Atrazine	< 326	ug/Kg	9/12/2016 15:06
Benzaldehyde	< 326	ug/Kg	9/12/2016 15:06
Benzo (a) anthracene	< 326	ug/Kg	9/12/2016 15:06
Benzo (a) pyrene	< 326	ug/Kg	9/12/2016 15:06
Benzo (b) fluoranthene	< 326	ug/Kg	9/12/2016 15:06
Benzo (g,h,i) perylene	< 326	ug/Kg	9/12/2016 15:06
Benzo (k) fluoranthene	< 326	ug/Kg	9/12/2016 15:06
Bis (2-chloroethoxy) methane	< 326	ug/Kg	9/12/2016 15:06
Bis (2-chloroethyl) ether	< 326	ug/Kg	9/12/2016 15:06
Bis (2-ethylhexyl) phthalate	< 326	ug/Kg	9/12/2016 15:06
Butylbenzylphthalate	< 326	ug/Kg	9/12/2016 15:06
Caprolactam	< 326	ug/Kg	9/12/2016 15:06
Carbazole	< 326	ug/Kg	9/12/2016 15:06
Chrysene	< 326	ug/Kg	9/12/2016 15:06
Dibenz (a,h) anthracene	< 326	ug/Kg	9/12/2016 15:06
Dibenzofuran	< 326	ug/Kg	9/12/2016 15:06
Diethyl phthalate	< 326	ug/Kg	9/12/2016 15:06
Dimethyl phthalate	< 651	ug/Kg	9/12/2016 15:06
Di-n-butyl phthalate	< 326	ug/Kg	9/12/2016 15:06
Di-n-octylphthalate	< 326	ug/Kg	9/12/2016 15:06
Fluoranthene	< 326	ug/Kg	9/12/2016 15:06
Fluorene	< 326	ug/Kg	9/12/2016 15:06

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Report Prepared Thursday, September 15, 2016

MAP 5/6/17





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163892**

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	C4 7-8 ft				
<b>Lab Sample ID:</b>	163892-01			<b>Date Sampled:</b>	8/30/2016
<b>Matrix:</b>	Soil			<b>Date Received:</b>	9/8/2016
Hexachlorobenzene	< 326	ug/Kg		9/12/2016	15:06
Hexachlorobutadiene	< 326	ug/Kg		9/12/2016	15:06
Hexachlorocyclopentadiene	< 326	ug/Kg		9/12/2016	15:06
Hexachloroethane	< 326	ug/Kg		9/12/2016	15:06
Indeno (1,2,3-cd) pyrene	< 326	ug/Kg		9/12/2016	15:06
Isophorone	< 326	ug/Kg		9/12/2016	15:06
Naphthalene	< 326	ug/Kg		9/12/2016	15:06
Nitrobenzene	< 326	ug/Kg		9/12/2016	15:06
N-Nitroso-di-n-propylamine	< 326	ug/Kg		9/12/2016	15:06
N-Nitrosodiphenylamine	< 326	ug/Kg		9/12/2016	15:06
Pentachlorophenol	< 651	ug/Kg		9/12/2016	15:06
Phenanthrene	< 326	ug/Kg		9/12/2016	15:06
Phenol	< 326	ug/Kg		9/12/2016	15:06
Pyrene	< 326	ug/Kg		9/12/2016	15:06
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>	
2,4,6-Tribromophenol	67.1	34.1 - 104		9/12/2016	15:06
2-Fluorobiphenyl	47.3	36.4 - 95.1		9/12/2016	15:06
2-Fluorophenol	41.4	35 - 84.1		9/12/2016	15:06
Nitrobenzene-d5	39.1	36.3 - 82.2		9/12/2016	15:06
Phenol-d5	43.7	38.5 - 88.8		9/12/2016	15:06
Terphenyl-d14	92.8	54.9 - 114		9/12/2016	15:06

**Method Reference(s):** EPA 8270D  
EPA 3550C  
**Preparation Date:** 9/9/2016  
**Data File:** B14028.D

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Report Prepared Thursday, September 15, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** B1-5-6 ft

**Lab Sample ID:** 163832-01

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.37	ug/Kg		9/9/2016 17:46
4,4-DDE	< 3.37	ug/Kg		9/9/2016 17:46
4,4-DDT	< 3.37	ug/Kg		9/9/2016 17:46
Aldrin	< 3.37	ug/Kg		9/9/2016 17:46
alpha-BHC	< 3.37	ug/Kg		9/9/2016 17:46
beta-BHC	< 3.37	ug/Kg		9/9/2016 17:46
cis-Chlordane	< 3.37	ug/Kg		9/9/2016 17:46
delta-BHC	< 3.37	ug/Kg		9/9/2016 17:46
Dieldrin	< 3.37	ug/Kg		9/9/2016 17:46
Endosulfan I	< 3.37	ug/Kg		9/9/2016 17:46
Endosulfan II	< 3.37	ug/Kg		9/9/2016 17:46
Endosulfan Sulfate	< 3.37	ug/Kg		9/9/2016 17:46
Endrin	< 3.37	ug/Kg		9/9/2016 17:46
Endrin Aldehyde	< 3.37	ug/Kg		9/9/2016 17:46
Endrin Ketone	< 3.37	ug/Kg		9/9/2016 17:46
gamma-BHC (Lindane)	< 3.37	ug/Kg		9/9/2016 17:46
Heptachlor	< 3.37	ug/Kg		9/9/2016 17:46
Heptachlor Epoxide	< 3.37	ug/Kg		9/9/2016 17:46
Methoxychlor	< 3.37	ug/Kg		9/9/2016 17:46
Toxaphene	< 3.37	ug/Kg		9/9/2016 17:46
trans-Chlordane	< 3.37	ug/Kg		9/9/2016 17:46

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	38.3	10.2 - 141		9/9/2016 17:46
Tetrachloro-m-xylene (1)	18.8	10 - 93		9/9/2016 17:46

**Method Reference(s):** EPA 8081B

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** B1-15 ft

**Lab Sample ID:** 163832-02

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.12	ug/Kg		9/8/2016 19:23
4,4-DDE	< 3.12	ug/Kg		9/8/2016 19:23
4,4-DDT	< 3.12	ug/Kg		9/8/2016 19:23
Aldrin	< 3.12	ug/Kg		9/8/2016 19:23
alpha-BHC	< 3.12	ug/Kg		9/8/2016 19:23
beta-BHC	< 3.12	ug/Kg		9/8/2016 19:23
cis-Chlordane	< 3.12	ug/Kg		9/8/2016 19:23
delta-BHC	< 3.12	ug/Kg		9/8/2016 19:23
Dieldrin	< 3.12	ug/Kg		9/8/2016 19:23
Endosulfan I	< 3.12	ug/Kg		9/8/2016 19:23
Endosulfan II	< 3.12	ug/Kg		9/8/2016 19:23
Endosulfan Sulfate	< 3.12	ug/Kg		9/8/2016 19:23
Endrin	< 3.12	ug/Kg		9/8/2016 19:23
Endrin Aldehyde	< 3.12	ug/Kg		9/8/2016 19:23
Endrin Ketone	< 3.12	ug/Kg		9/8/2016 19:23
gamma-BHC (Lindane)	< 3.12	ug/Kg		9/8/2016 19:23
Heptachlor	< 3.12	ug/Kg		9/8/2016 19:23
Heptachlor Epoxide	< 3.12	ug/Kg		9/8/2016 19:23
Methoxychlor	< 3.12	ug/Kg		9/8/2016 19:23
Toxaphene	< 3.12	ug/Kg		9/8/2016 19:23
trans-Chlordane	< 3.12	ug/Kg		9/8/2016 19:23

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	29.9	10.2 - 141		9/8/2016 19:23
Tetrachloro-m-xylene (1)	12.8	10 - 93		9/8/2016 19:23

Method Reference(s): EPA 8081B

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-WC

**Lab Sample ID:** 163832-03A

**Date Sampled:** 9/1/2016

**Matrix:** TCLP Extract

**Date Received:** 9/2/2016

**TCLP Pesticides**

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
Chlordane	< 1.00	ug/L	30		9/8/2016 18:10
Endrin	< 1.00	ug/L	20		9/8/2016 18:10
gamma-BHC (Lindane)	< 1.00	ug/L	400		9/8/2016 18:10
Heptachlor	< 1.00	ug/L	8		9/8/2016 18:10
Heptachlor Epoxide	< 1.00	ug/L	8		9/8/2016 18:10
Methoxychlor	< 1.00	ug/L	10000		9/8/2016 18:10
Toxaphene	< 10.0	ug/L	500		9/8/2016 18:10
Surrogate	Percent Recovery		Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	72.1		18.7 - 134		9/8/2016 18:10
Tetrachloro-m-xylene (1)	75.9		10 - 109		9/8/2016 18:10

**Method Reference(s):** EPA 8081B  
EPA 1311 / 3510C  
**Preparation Date:** 9/6/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-13-14.5 ft

**Lab Sample ID:** 163832-04

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 2.95	ug/Kg		9/9/2016 18:00
4,4-DDE	< 2.95	ug/Kg		9/9/2016 18:00
4,4-DDT	< 2.95	ug/Kg		9/9/2016 18:00
Aldrin	< 2.95	ug/Kg		9/9/2016 18:00
alpha-BHC	< 2.95	ug/Kg		9/9/2016 18:00
beta-BHC	< 2.95	ug/Kg		9/9/2016 18:00
cis-Chlordane	< 2.95	ug/Kg		9/9/2016 18:00
delta-BHC	< 2.95	ug/Kg		9/9/2016 18:00
Dieldrin	< 2.95	ug/Kg		9/9/2016 18:00
Endosulfan I	< 2.95	ug/Kg		9/9/2016 18:00
Endosulfan II	< 2.95	ug/Kg		9/9/2016 18:00
Endosulfan Sulfate	< 2.95	ug/Kg		9/9/2016 18:00
Endrin	< 2.95	ug/Kg		9/9/2016 18:00
Endrin Aldehyde	< 2.95	ug/Kg		9/9/2016 18:00
Endrin Ketone	< 2.95	ug/Kg		9/9/2016 18:00
gamma-BHC (Lindane)	< 2.95	ug/Kg		9/9/2016 18:00
Heptachlor	< 2.95	ug/Kg		9/9/2016 18:00
Heptachlor Epoxide	< 2.95	ug/Kg		9/9/2016 18:00
Methoxychlor	< 2.95	ug/Kg		9/9/2016 18:00
Toxaphene	< 29.5	ug/Kg		9/9/2016 18:00
trans-Chlordane	< 2.95	ug/Kg		9/9/2016 18:00

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	48.8	10.2 - 141		9/9/2016 18:00
Tetrachloro-m-xylene (1)	31.4	10 - 93		9/9/2016 18:00

**Method Reference(s):** EPA 8081B

EPA 3550C

**Preparation Date:** 9/8/2016

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*Report Prepared Tuesday, September 13, 2016*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: D1-9.5-11.5 ft

Lab Sample ID: 163832-05

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.13	ug/Kg		9/9/2016 18:44
4,4-DDE	< 3.13	ug/Kg		9/9/2016 18:44
4,4-DDT	< 3.13	ug/Kg		9/9/2016 18:44
Aldrin	< 3.13	ug/Kg		9/9/2016 18:44
alpha-BHC	< 3.13	ug/Kg		9/9/2016 18:44
beta-BHC	< 3.13	ug/Kg		9/9/2016 18:44
cis-Chlordane	< 3.13	ug/Kg		9/9/2016 18:44
delta-BHC	< 3.13	ug/Kg		9/9/2016 18:44
Dieldrin	< 3.13	ug/Kg		9/9/2016 18:44
Endosulfan I	< 3.13	ug/Kg		9/9/2016 18:44
Endosulfan II	< 3.13	ug/Kg		9/9/2016 18:44
Endosulfan Sulfate	< 3.13	ug/Kg		9/9/2016 18:44
Endrin	< 3.13	ug/Kg		9/9/2016 18:44
Endrin Aldehyde	< 3.13	ug/Kg		9/9/2016 18:44
Endrin Ketone	< 3.13	ug/Kg		9/9/2016 18:44
gamma-BHC (Lindane)	< 3.13	ug/Kg		9/9/2016 18:44
Heptachlor	< 3.13	ug/Kg		9/9/2016 18:44
Heptachlor Epoxide	< 3.13	ug/Kg		9/9/2016 18:44
Methoxychlor	< 3.13	ug/Kg		9/9/2016 18:44
Toxaphene	< 3.13	ug/Kg		9/9/2016 18:44
trans-Chlordane	< 3.13	ug/Kg		9/9/2016 18:44

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	54.6	10.2 - 141		9/9/2016 18:44
Tetrachloro-m-xylene (1)	34.9	10 - 93		9/9/2016 18:44

Method Reference(s): EPA 8081B

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-15-16 ft

**Lab Sample ID:** 163832-06

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 2.90	ug/Kg		9/9/2016 19:27
4,4-DDE	< 2.90	ug/Kg		9/9/2016 19:27
4,4-DDT	< 2.90	ug/Kg		9/9/2016 19:27
Aldrin	< 2.90	ug/Kg		9/9/2016 19:27
alpha-BHC	< 2.90	ug/Kg		9/9/2016 19:27
beta-BHC	< 2.90	ug/Kg		9/9/2016 19:27
cis-Chlordane	< 2.90	ug/Kg		9/9/2016 19:27
delta-BHC	< 2.90	ug/Kg		9/9/2016 19:27
Dieldrin	< 2.90	ug/Kg		9/9/2016 19:27
Endosulfan I	< 2.90	ug/Kg		9/9/2016 19:27
Endosulfan II	< 2.90	ug/Kg		9/9/2016 19:27
Endosulfan Sulfate	< 2.90	ug/Kg		9/9/2016 19:27
Endrin	< 2.90	ug/Kg		9/9/2016 19:27
Endrin Aldehyde	< 2.90	ug/Kg		9/9/2016 19:27
Endrin Ketone	< 2.90	ug/Kg		9/9/2016 19:27
gamma-BHC (Lindane)	< 2.90	ug/Kg		9/9/2016 19:27
Heptachlor	< 2.90	ug/Kg		9/9/2016 19:27
Heptachlor Epoxide	< 2.90	ug/Kg		9/9/2016 19:27
Methoxychlor	< 2.90	ug/Kg		9/9/2016 19:27
Toxaphene	< 29.0	ug/Kg		9/9/2016 19:27
trans-Chlordane	< 2.90	ug/Kg		9/9/2016 19:27

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	56.6	10.2 - 141		9/9/2016 19:27
Tetrachloro-m-xylene (1)	31.9	10 - 93		9/9/2016 19:27

**Method Reference(s):** EPA 8081B

EPA 3550C

**Preparation Date:** 9/8/2016

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*Report Prepared Tuesday, September 13, 2016*





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** E2-5-6.5 ft

**Lab Sample ID:** 163832-07

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.24	ug/Kg		9/9/2016 19:42
4,4-DDE	< 3.24	ug/Kg		9/9/2016 19:42
4,4-DDT	< 3.24	ug/Kg		9/9/2016 19:42
Aldrin	< 3.24	ug/Kg		9/9/2016 19:42
alpha-BHC	< 3.24	ug/Kg		9/9/2016 19:42
beta-BHC	< 3.24	ug/Kg		9/9/2016 19:42
cis-Chlordane	< 3.24	ug/Kg		9/9/2016 19:42
delta-BHC	< 3.24	ug/Kg		9/9/2016 19:42
Dieldrin	< 3.24	ug/Kg		9/9/2016 19:42
Endosulfan I	< 3.24	ug/Kg		9/9/2016 19:42
Endosulfan II	< 3.24	ug/Kg		9/9/2016 19:42
Endosulfan Sulfate	< 3.24	ug/Kg		9/9/2016 19:42
Endrin	< 3.24	ug/Kg		9/9/2016 19:42
Endrin Aldehyde	< 3.24	ug/Kg		9/9/2016 19:42
Endrin Ketone	< 3.24	ug/Kg		9/9/2016 19:42
gamma-BHC (Lindane)	< 3.24	ug/Kg		9/9/2016 19:42
Heptachlor	< 3.24	ug/Kg		9/9/2016 19:42
Heptachlor Epoxide	< 3.24	ug/Kg		9/9/2016 19:42
Methoxychlor	< 3.24	ug/Kg		9/9/2016 19:42
Toxaphene	< 32.4	ug/Kg		9/9/2016 19:42
trans-Chlordane	< 3.24	ug/Kg		9/9/2016 19:42

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	33.3	10.2 - 141		9/9/2016 19:42
Tetrachloro-m-xylene (1)	17.8	10 - 93		9/9/2016 19:42

**Method Reference(s):** EPA 8081B

EPA 3550C

**Preparation Date:** 9/8/2016

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016


**PARADIGM**  
 ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**
**Client:** C&S Companies
**Project Reference:** 19 North Street

**Sample Identifier:** E2-9-10 ft

**Lab Sample ID:** 163832-08

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.13	ug/Kg		9/9/2016 19:56
4,4-DDE	< 3.13	ug/Kg		9/9/2016 19:56
4,4-DDT	< 3.13	ug/Kg		9/9/2016 19:56
Aldrin	< 3.13	ug/Kg		9/9/2016 19:56
alpha-BHC	< 3.13	ug/Kg		9/9/2016 19:56
beta-BHC	< 3.13	ug/Kg		9/9/2016 19:56
cis-Chlordane	< 3.13	ug/Kg		9/9/2016 19:56
delta-BHC	< 3.13	ug/Kg		9/9/2016 19:56
Dieldrin	< 3.13	ug/Kg		9/9/2016 19:56
Endosulfan I	< 3.13	ug/Kg		9/9/2016 19:56
Endosulfan II	< 3.13	ug/Kg		9/9/2016 19:56
Endosulfan Sulfate	< 3.13	ug/Kg		9/9/2016 19:56
Endrin	< 3.13	ug/Kg		9/9/2016 19:56
Endrin Aldehyde	< 3.13	ug/Kg		9/9/2016 19:56
Endrin Ketone	< 3.13	ug/Kg		9/9/2016 19:56
gamma-BHC (Lindane)	< 3.13	ug/Kg		9/9/2016 19:56
Heptachlor	< 3.13	ug/Kg		9/9/2016 19:56
Heptachlor Epoxide	< 3.13	ug/Kg		9/9/2016 19:56
Methoxychlor	< 3.13	ug/Kg		9/9/2016 19:56
Toxaphene	< 3.13	ug/Kg		9/9/2016 19:56
trans-Chlordane	< 3.13	ug/Kg		9/9/2016 19:56

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	61.1	10.2 - 141		9/9/2016 19:56
Tetrachloro-m-xylene (1)	39.7	10 - 93		9/9/2016 19:56

**Method Reference(s):** EPA 8081B

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: E2-14-15 ft

Lab Sample ID: 163832-09

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.01	ug/Kg		9/9/2016 20:11
4,4-DDE	< 3.01	ug/Kg		9/9/2016 20:11
4,4-DDT	< 3.01	ug/Kg		9/9/2016 20:11
Aldrin	< 3.01	ug/Kg		9/9/2016 20:11
alpha-BHC	< 3.01	ug/Kg		9/9/2016 20:11
beta-BHC	< 3.01	ug/Kg		9/9/2016 20:11
cis-Chlordane	< 3.01	ug/Kg		9/9/2016 20:11
delta-BHC	< 3.01	ug/Kg		9/9/2016 20:11
Dieldrin	< 3.01	ug/Kg		9/9/2016 20:11
Endosulfan I	< 3.01	ug/Kg		9/9/2016 20:11
Endosulfan II	< 3.01	ug/Kg		9/9/2016 20:11
Endosulfan Sulfate	< 3.01	ug/Kg		9/9/2016 20:11
Endrin	< 3.01	ug/Kg		9/9/2016 20:11
Endrin Aldehyde	< 3.01	ug/Kg		9/9/2016 20:11
Endrin Ketone	< 3.01	ug/Kg		9/9/2016 20:11
gamma-BHC (Lindane)	< 3.01	ug/Kg		9/9/2016 20:11
Heptachlor	< 3.01	ug/Kg		9/9/2016 20:11
Heptachlor Epoxide	< 3.01	ug/Kg		9/9/2016 20:11
Methoxychlor	< 3.01	ug/Kg		9/9/2016 20:11
Toxaphene	< 30.1	ug/Kg		9/9/2016 20:11
trans-Chlordane	< 3.01	ug/Kg		9/9/2016 20:11

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	67.3	10.2 - 141		9/9/2016 20:11
Tetrachloro-m-xylene (1)	46.9	10 - 93		9/9/2016 20:11

Method Reference(s): EPA 8081B

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-3-5 ft

Lab Sample ID: 163832-10

Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 2.98	ug/Kg		9/9/2016 20:25
4,4-DDE	< 2.98	ug/Kg		9/9/2016 20:25
4,4-DDT	< 2.98	ug/Kg		9/9/2016 20:25
Aldrin	< 2.98	ug/Kg		9/9/2016 20:25
alpha-BHC	< 2.98	ug/Kg		9/9/2016 20:25
beta-BHC	< 2.98	ug/Kg		9/9/2016 20:25
cis-Chlordane	2.09	ug/Kg	J	9/9/2016 20:25
delta-BHC	< 2.98	ug/Kg		9/9/2016 20:25
Dieldrin	< 2.98	ug/Kg		9/9/2016 20:25
Endosulfan I	< 2.98	ug/Kg		9/9/2016 20:25
Endosulfan II	< 2.98	ug/Kg		9/9/2016 20:25
Endosulfan Sulfate	< 2.98	ug/Kg		9/9/2016 20:25
Endrin	< 2.98	ug/Kg		9/9/2016 20:25
Endrin Aldehyde	< 2.98	ug/Kg		9/9/2016 20:25
Endrin Ketone	< 2.98	ug/Kg		9/9/2016 20:25
gamma-BHC (Lindane)	< 2.98	ug/Kg		9/9/2016 20:25
Heptachlor	< 2.98	ug/Kg		9/9/2016 20:25
Heptachlor Epoxide	< 2.98	ug/Kg		9/9/2016 20:25
Methoxychlor	2.59	ug/Kg	J	9/9/2016 20:25
Toxaphene	< 2.98	ug/Kg		9/9/2016 20:25
trans-Chlordane	< 2.98	ug/Kg		9/9/2016 20:25

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	60.3	10.2 - 141		9/9/2016 20:25
Tetrachloro-m-xylene (1)	39.7	10 - 93		9/9/2016 20:25

Method Reference(s): EPA 8081B

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-9-10 ft

Lab Sample ID: 163832-11

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.07	ug/Kg		9/9/2016 20:39
4,4-DDE	< 3.07	ug/Kg		9/9/2016 20:39
4,4-DDT	< 3.07	ug/Kg		9/9/2016 20:39
Aldrin	< 3.07	ug/Kg		9/9/2016 20:39
alpha-BHC	< 3.07	ug/Kg		9/9/2016 20:39
beta-BHC	< 3.07	ug/Kg		9/9/2016 20:39
cis-Chlordane	< 3.07	ug/Kg		9/9/2016 20:39
delta-BHC	< 3.07	ug/Kg		9/9/2016 20:39
Dieldrin	< 3.07	ug/Kg		9/9/2016 20:39
Endosulfan I	< 3.07	ug/Kg		9/9/2016 20:39
Endosulfan II	< 3.07	ug/Kg		9/9/2016 20:39
Endosulfan Sulfate	< 3.07	ug/Kg		9/9/2016 20:39
Endrin	< 3.07	ug/Kg		9/9/2016 20:39
Endrin Aldehyde	< 3.07	ug/Kg		9/9/2016 20:39
Endrin Ketone	< 3.07	ug/Kg		9/9/2016 20:39
gamma-BHC (Lindane)	< 3.07	ug/Kg		9/9/2016 20:39
Heptachlor	< 3.07	ug/Kg		9/9/2016 20:39
Heptachlor Epoxide	< 3.07	ug/Kg		9/9/2016 20:39
Methoxychlor	< 3.07	ug/Kg		9/9/2016 20:39
Toxaphene	< 30.7	ug/Kg		9/9/2016 20:39
trans-Chlordane	< 3.07	ug/Kg		9/9/2016 20:39

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	67.2	10.2 - 141		9/9/2016 20:39
Tetrachloro-m-xylene (1)	47.7	10 - 93		9/9/2016 20:39

Method Reference(s): EPA 8081B

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 3.11	ug/Kg		9/9/2016 20:54
4,4-DDE	< 3.11	ug/Kg		9/9/2016 20:54
4,4-DDT	< 3.11	ug/Kg		9/9/2016 20:54
Aldrin	< 3.11	ug/Kg		9/9/2016 20:54
alpha-BHC	< 3.11	ug/Kg		9/9/2016 20:54
beta-BHC	< 3.11	ug/Kg		9/9/2016 20:54
cis-Chlordane	< 3.11	ug/Kg		9/9/2016 20:54
delta-BHC	< 3.11	ug/Kg		9/9/2016 20:54
Dieldrin	< 3.11	ug/Kg		9/9/2016 20:54
Endosulfan I	< 3.11	ug/Kg		9/9/2016 20:54
Endosulfan II	< 3.11	ug/Kg		9/9/2016 20:54
Endosulfan Sulfate	< 3.11	ug/Kg		9/9/2016 20:54
Endrin	< 3.11	ug/Kg		9/9/2016 20:54
Endrin Aldehyde	< 3.11	ug/Kg		9/9/2016 20:54
Endrin Ketone	< 3.11	ug/Kg		9/9/2016 20:54
gamma-BHC (Lindane)	< 3.11	ug/Kg		9/9/2016 20:54
Heptachlor	< 3.11	ug/Kg		9/9/2016 20:54
Heptachlor Epoxide	< 3.11	ug/Kg		9/9/2016 20:54
Methoxychlor	< 3.11	ug/Kg		9/9/2016 20:54
Toxaphene	< 3.11	ug/Kg		9/9/2016 20:54
trans-Chlordane	< 3.11	ug/Kg		9/9/2016 20:54

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	69.5	10.2 - 141		9/9/2016 20:54
Tetrachloro-m-xylene (1)	19.5	10 - 93		9/9/2016 20:54

Method Reference(s): EPA 8081B

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F2-4-6 ft

Lab Sample ID: 163832-13

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 2.98	ug/Kg		9/9/2016 21:08
4,4-DDE	< 2.98	ug/Kg		9/9/2016 21:08
4,4-DDT	< 2.98	ug/Kg		9/9/2016 21:08
Aldrin	< 2.98	ug/Kg		9/9/2016 21:08
alpha-BHC	< 2.98	ug/Kg		9/9/2016 21:08
beta-BHC	< 2.98	ug/Kg		9/9/2016 21:08
cis-Chlordane	< 2.98	ug/Kg		9/9/2016 21:08
delta-BHC	< 2.98	ug/Kg		9/9/2016 21:08
Dieldrin	< 2.98	ug/Kg		9/9/2016 21:08
Endosulfan I	< 2.98	ug/Kg		9/9/2016 21:08
Endosulfan II	< 2.98	ug/Kg		9/9/2016 21:08
Endosulfan Sulfate	< 2.98	ug/Kg		9/9/2016 21:08
Endrin	< 2.98	ug/Kg		9/9/2016 21:08
Endrin Aldehyde	< 2.98	ug/Kg		9/9/2016 21:08
Endrin Ketone	< 2.98	ug/Kg		9/9/2016 21:08
gamma-BHC (Lindane)	< 2.98	ug/Kg		9/9/2016 21:08
Heptachlor	< 2.98	ug/Kg		9/9/2016 21:08
Heptachlor Epoxide	< 2.98	ug/Kg		9/9/2016 21:08
Methoxychlor	< 2.98	ug/Kg		9/9/2016 21:08
Toxaphene	< 29.8	ug/Kg		9/9/2016 21:08
trans-Chlordane	< 2.98	ug/Kg		9/9/2016 21:08

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	41.3	10.2 - 141		9/9/2016 21:08
Tetrachloro-m-xylene (1)	31.0	10 - 93		9/9/2016 21:08

Method Reference(s): EPA 8081B

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F2-9-10 ft

**Lab Sample ID:** 163832-14

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Chlorinated Pesticides**

Analyte	Result	Units	Qualifier	Date Analyzed
4,4-DDD	< 2.92	ug/Kg		9/9/2016 21:23
4,4-DDE	< 2.92	ug/Kg		9/9/2016 21:23
4,4-DDT	< 2.92	ug/Kg		9/9/2016 21:23
Aldrin	< 2.92	ug/Kg		9/9/2016 21:23
alpha-BHC	< 2.92	ug/Kg		9/9/2016 21:23
beta-BHC	< 2.92	ug/Kg		9/9/2016 21:23
cis-Chlordane	< 2.92	ug/Kg		9/9/2016 21:23
delta-BHC	< 2.92	ug/Kg		9/9/2016 21:23
Dieldrin	< 2.92	ug/Kg		9/9/2016 21:23
Endosulfan I	< 2.92	ug/Kg		9/9/2016 21:23
Endosulfan II	< 2.92	ug/Kg		9/9/2016 21:23
Endosulfan Sulfate	< 2.92	ug/Kg		9/9/2016 21:23
Endrin	< 2.92	ug/Kg		9/9/2016 21:23
Endrin Aldehyde	< 2.92	ug/Kg		9/9/2016 21:23
Endrin Ketone	< 2.92	ug/Kg		9/9/2016 21:23
gamma-BHC (Lindane)	< 2.92	ug/Kg		9/9/2016 21:23
Heptachlor	< 2.92	ug/Kg		9/9/2016 21:23
Heptachlor Epoxide	< 2.92	ug/Kg		9/9/2016 21:23
Methoxychlor	< 2.92	ug/Kg		9/9/2016 21:23
Toxaphene	< 29.2	ug/Kg		9/9/2016 21:23
trans-Chlordane	< 2.92	ug/Kg		9/9/2016 21:23

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	54.9	10.2 - 141		9/9/2016 21:23
Tetrachloro-m-xylene (1)	35.5	10 - 93		9/9/2016 21:23

Method Reference(s): EPA 8081B  
EPA 3550C  
Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

<b>Sample Identifier:</b>	B1-5-6 ft		
<b>Lab Sample ID:</b>	163832-01	<b>Date Sampled:</b>	9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b>	9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1221	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1232	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1242	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1248	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1254	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1260	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1262	< 0.0337	mg/Kg		9/12/2016 14:26
PCB-1268	< 0.0337	mg/Kg		9/12/2016 14:26

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	31.8	10 - 146		9/12/2016 14:26
Tetrachloro-m-xylene	20.2	10 - 141		9/12/2016 14:26

**Method Reference(s):** EPA 8082A  
EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** B1-15 ft

**Lab Sample ID:** 163832-02

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1221	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1232	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1242	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1248	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1254	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1260	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1262	< 0.0312	mg/Kg		9/12/2016 14:50
PCB-1268	< 0.0312	mg/Kg		9/12/2016 14:50

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	32.8	10 - 146		9/12/2016 14:50
Tetrachloro-m-xylene	19.5	10 - 141		9/12/2016 14:50

**Method Reference(s):** EPA 8082A  
EPA 3550C  
**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-WC

**Lab Sample ID:** 163832-03

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
PCB-1016	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1221	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1232	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1242	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1248	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1254	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1260	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1262	< 0.0320	mg/Kg		9/12/2016 15:13
PCB-1268	< 0.0320	mg/Kg		9/12/2016 15:13
<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
Decachlorobiphenyl	43.6	10 - 146		9/12/2016 15:13
Tetrachloro-m-xylene	32.1	10 - 141		9/12/2016 15:13

**Method Reference(s):** EPA 8082A

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-13-14.5 ft

**Lab Sample ID:** 163832-04

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1221	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1232	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1242	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1248	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1254	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1260	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1262	< 0.0295	mg/Kg		9/12/2016 15:38
PCB-1268	< 0.0295	mg/Kg		9/12/2016 15:38

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	81.4	10 - 146		9/12/2016 15:38
Tetrachloro-m-xylene	37.9	10 - 141		9/12/2016 15:38

**Method Reference(s):** EPA 8082A

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-9.5-11.5 ft

**Lab Sample ID:** 163832-05

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1221	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1232	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1242	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1248	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1254	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1260	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1262	< 0.0313	mg/Kg		9/12/2016 16:48
PCB-1268	< 0.0313	mg/Kg		9/12/2016 16:48

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	72.3	10 - 146		9/12/2016 16:48
Tetrachloro-m-xylene	47.7	10 - 141		9/12/2016 16:48

**Method Reference(s):** EPA 8082A

EPA 3550C

**Preparation Date:** 9/8/2016

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*Report Prepared Tuesday, September 13, 2016*


**PARADIGM**  
 ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-15-16 ft

**Lab Sample ID:** 163832-06

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1221	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1232	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1242	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1248	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1254	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1260	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1262	< 0.0290	mg/Kg		9/12/2016 17:58
PCB-1268	< 0.0290	mg/Kg		9/12/2016 17:58
Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	79.0	10 - 146		9/12/2016 17:58
Tetrachloro-m-xylene	45.2	10 - 141		9/12/2016 17:58

**Method Reference(s):** EPA 8082A  
 EPA 3550C  
**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** E2-5-6.5 ft

**Lab Sample ID:** 163832-07

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1221	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1232	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1242	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1248	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1254	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1260	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1262	< 0.0324	mg/Kg		9/12/2016 18:22
PCB-1268	< 0.0324	mg/Kg		9/12/2016 18:22
Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	38.3	10 - 146		9/12/2016 18:22
Tetrachloro-m-xylene	25.5	10 - 141		9/12/2016 18:22

**Method Reference(s):** EPA 8082A

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** E2-9-10 ft

**Lab Sample ID:** 163832-08

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
PCB-1016	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1221	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1232	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1242	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1248	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1254	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1260	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1262	< 0.0313	mg/Kg		9/12/2016 18:45
PCB-1268	< 0.0313	mg/Kg		9/12/2016 18:45
<b>Surrogate</b>	<b>Percent Recovery</b>	<b>Limits</b>	<b>Outliers</b>	<b>Date Analyzed</b>
Decachlorobiphenyl	83.6	10 - 146		9/12/2016 18:45
Tetrachloro-m-xylene	49.0	10 - 141		9/12/2016 18:45

**Method Reference(s):** EPA 8082A  
EPA 3550C  
**Preparation Date:** 9/8/2016

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*Report Prepared Tuesday, September 13, 2016*


**PARADIGM**  
 ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**
**Client:** C&S Companies
**Project Reference:** 19 North Street

**Sample Identifier:** E2-14-15 ft

**Lab Sample ID:** 163832-09

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1221	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1232	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1242	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1248	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1254	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1260	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1262	< 0.0301	mg/Kg		9/12/2016 19:08
PCB-1268	< 0.0301	mg/Kg		9/12/2016 19:08
Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	85.6	10 - 146		9/12/2016 19:08
Tetrachloro-m-xylene	52.0	10 - 141		9/12/2016 19:08

**Method Reference(s):** EPA 8082A

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-3-5 ft

Lab Sample ID: 163832-10

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1221	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1232	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1242	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1248	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1254	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1260	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1262	< 0.0298	mg/Kg		9/12/2016 19:32
PCB-1268	< 0.0298	mg/Kg		9/12/2016 19:32
Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	74.0	10 - 146		9/12/2016 19:32
Tetrachloro-m-xylene	48.4	10 - 141		9/12/2016 19:32

Method Reference(s): EPA 8082A

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-9-10 ft

Lab Sample ID: 163832-11

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1221	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1232	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1242	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1248	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1254	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1260	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1262	< 0.0307	mg/Kg		9/12/2016 19:55
PCB-1268	< 0.0307	mg/Kg		9/12/2016 19:55
Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	92.2	10 - 146		9/12/2016 19:55
Tetrachloro-m-xylene	57.0	10 - 141		9/12/2016 19:55

Method Reference(s): EPA 8082A

EPA 3550C

Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1221	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1232	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1242	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1248	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1254	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1260	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1262	< 0.0311	mg/Kg		9/12/2016 20:18
PCB-1268	< 0.0311	mg/Kg		9/12/2016 20:18
Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	85.9	10 - 146		9/12/2016 20:18
Tetrachloro-m-xylene	28.7	10 - 141		9/12/2016 20:18

Method Reference(s): EPA 8082A  
EPA 3550C  
Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F2-4-6 ft

**Lab Sample ID:** 163832-13

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
PCB-1016	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1221	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1232	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1242	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1248	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1254	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1260	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1262	< 0.0298	mg/Kg		9/12/2016 20:41
PCB-1268	< 0.0298	mg/Kg		9/12/2016 20:41

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
Decachlorobiphenyl	57.4	10 - 146		9/12/2016 20:41
Tetrachloro-m-xylene	38.0	10 - 141		9/12/2016 20:41

**Method Reference(s):** EPA 8082A

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016




**PARADIGM**  
 ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**
**Client:** C&S Companies
**Project Reference:** 19 North Street

**Sample Identifier:** F2-9-10 ft

**Lab Sample ID:** 163832-14

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1221	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1232	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1242	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1248	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1254	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1260	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1262	< 0.0292	mg/Kg		9/12/2016 21:05
PCB-1268	< 0.0292	mg/Kg		9/12/2016 21:05

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	72.5	10 - 146		9/12/2016 21:05
Tetrachloro-m-xylene	48.4	10 - 141		9/12/2016 21:05

**Method Reference(s):** EPA 8082A

EPA 3550C

**Preparation Date:** 9/8/2016

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163892

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: C4 7-8 ft

Lab Sample ID: 163892-01

Matrix: Soil

Date Sampled: 8/30/2016

Date Received: 9/8/2016

**PCBs**

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1221	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1232	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1242	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1248	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1254	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1260	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1262	< 0.0329	mg/Kg		9/14/2016 10:17
PCB-1268	< 0.0329	mg/Kg		9/14/2016 10:17
Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl	65.1	10 - 146		9/14/2016 10:17
Tetrachloro-m-xylene	23.9	10 - 141		9/14/2016 10:17

Method Reference(s): EPA 8082A  
EPA 3550C  
Preparation Date: 9/12/2016

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Report Prepared Thursday, September 15, 2016



# PARADIGM

ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: B1-5-6 ft

Lab Sample ID: 163832-01

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

## Metals

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	2.30	mg/Kg		9/8/2016 21:26
Barium	112	mg/Kg		9/8/2016 21:26
Beryllium	0.871	mg/Kg		9/8/2016 21:26
Cadmium	0.451 J	mg/Kg		9/8/2016 21:26
Chromium	22.2	mg/Kg		9/8/2016 21:26
Copper	18.7	mg/Kg		9/8/2016 21:26
Lead	13.7	mg/Kg		9/8/2016 21:26
Manganese	340 J	mg/Kg		9/8/2016 21:26
Nickel	24.2	mg/Kg		9/8/2016 21:26
Selenium	1.82 J	mg/Kg		9/12/2016 13:43
Silver	< 0.560	mg/Kg		9/8/2016 21:26
Zinc	94.8	mg/Kg		9/8/2016 21:26

Method Reference(s): EPA 6010C

EPA 3050B

Preparation Date: 9/3/2016

Data File: 090816b

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Report Prepared Tuesday, September 13, 2016

MAP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: B1-5-6 ft

Lab Sample ID: 163832-01

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Mercury**

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	0.0350	mg/Kg		9/8/2016 12:38

Method Reference(s): EPA 7471B

Preparation Date: 9/7/2016

Data File: Hg160908A

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** B1-15 ft

**Lab Sample ID:** 163832-02

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	0.668	mg/Kg		9/8/2016 21:30
Barium	19.7	mg/Kg		9/8/2016 21:30
Beryllium	0.159	mg/Kg	J	9/8/2016 21:30
Cadmium	0.231 J	mg/Kg	J	9/8/2016 21:30
Chromium	5.22	mg/Kg		9/8/2016 21:30
Copper	6.95 J	mg/Kg	B	9/8/2016 21:30
Lead	7.58	mg/Kg		9/8/2016 21:30
Manganese	223 J	mg/Kg		9/8/2016 21:30
Nickel	4.69	mg/Kg		9/8/2016 21:30
Selenium	1.09 J	mg/Kg		9/12/2016 13:47
Silver	< 0.563	mg/Kg		9/8/2016 21:30
Zinc	45.4	mg/Kg		9/8/2016 21:30

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:** 9/3/2016

**Data File:** 090816b

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Thursday, December 1, 2016

mxr 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: B1-15 ft

Lab Sample ID: 163832-02

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	< 0.00821	mg/Kg		9/8/2016 12:48

Method Reference(s): EPA 7471B

Preparation Date: 9/7/2016

Data File: Hg160908A

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-WC

**Lab Sample ID:** 163832-03A

**Date Sampled:** 9/1/2016

**Matrix:** TCLP Extract

**Date Received:** 9/2/2016

**TCLP RCRA Metals (ICP)**

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
Arsenic	< 0.100	mg/L	5		9/9/2016 23:32
Barium	0.674	mg/L	100		9/9/2016 23:32
Cadmium	< 0.0250	mg/L	1		9/9/2016 23:32
Chromium	< 0.0500	mg/L	5		9/9/2016 23:32
Lead	< 0.100	mg/L	5		9/9/2016 23:32
Selenium	< 0.100	mg/L	1		9/9/2016 23:32
Silver	< 0.0500	mg/L	5		9/9/2016 23:32

**Method Reference(s):** EPA 6010C  
EPA 1311 / 3005A  
**Preparation Date:** 9/8/2016  
**Data File:** 090916c

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Report Prepared Tuesday, September 13, 2016





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

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**Sample Identifier:** C2-WC

**Lab Sample ID:** 163832-03A

**Date Sampled:** 9/1/2016

**Matrix:** TCLP Extract

**Date Received:** 9/2/2016

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**TCLP Mercury**

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
Mercury	< 0.00200	mg/L	0.2		9/9/2016 11:38

**Method Reference(s):** EPA 7470A  
EPA 1311  
**Preparation Date:** 9/8/2016  
**Data File:** Hg160909A

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*Report Prepared Tuesday, September 13, 2016*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** C2-13-14.5 ft

**Lab Sample ID:** 163832-04

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	0.379	mg/Kg	J	9/8/2016 21:34
Barium	13.7	mg/Kg		9/8/2016 21:34
Beryllium	< 0.275	mg/Kg		9/8/2016 21:34
Cadmium	0.367 J	mg/Kg	M	9/8/2016 21:34
Chromium	4.24	mg/Kg		9/8/2016 21:34
Copper	7.90 J	mg/Kg	B	9/8/2016 21:34
Lead	7.42	mg/Kg		9/8/2016 21:34
Manganese	205 J	mg/Kg	M	9/8/2016 21:34
Nickel	3.49	mg/Kg		9/8/2016 21:34
Selenium	0.989 J	mg/Kg	D	9/12/2016 13:51
Silver	< 0.549	mg/Kg		9/8/2016 21:34
Zinc	36.5	mg/Kg		9/8/2016 21:34

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:** 9/3/2016

**Data File:** 090816b

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Report Prepared Thursday, December 1, 2016

mkp 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** C2-13-14.5 ft**Lab Sample ID:** 163832-04**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Mercury**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
Mercury	0.00442	mg/Kg	J	9/8/2016 12:52

**Method Reference(s):** EPA 7471B**Preparation Date:** 9/7/2016**Data File:** Hg160908A

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-9.5-11.5 ft

**Lab Sample ID:** 163832-05

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	0.916	mg/Kg		9/9/2016 00:41
Barium	22.2	mg/Kg		9/9/2016 00:41
Beryllium	0.203	mg/Kg	J	9/9/2016 00:41
Cadmium	0.222 J	mg/Kg	JM	9/9/2016 00:41
Chromium	6.53	mg/Kg		9/9/2016 00:41
Copper	8.63 J	mg/Kg		9/9/2016 00:41
Lead	8.54	mg/Kg		9/9/2016 00:41
Manganese	260 J	mg/Kg		9/9/2016 00:41
Nickel	5.71	mg/Kg		9/9/2016 00:41
Selenium	1.23 J	mg/Kg	D	9/12/2016 14:05
Silver	< 0.579	mg/Kg		9/9/2016 00:41
Zinc	49.4	mg/Kg		9/9/2016 00:41

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:** 9/7/2016

**Data File:** 090816b

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Report Prepared Tuesday, September 13, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: D1-9.5-11.5 ft

Lab Sample ID: 163832-05

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	0.00554	mg/Kg	J	9/8/2016 13:02

Method Reference(s): EPA 7471B

Preparation Date: 9/7/2016

Data File: Hg160908A

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** D1-15-16 ft

**Lab Sample ID:** 163832-06

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	0.933	mg/Kg		9/9/2016 17:57
Barium	11.9	mg/Kg		9/8/2016 22:05
Beryllium	< 0.265	mg/Kg		9/8/2016 22:05
Cadmium	0.233 J	mg/Kg	J	9/8/2016 22:05
Chromium	3.78	mg/Kg		9/8/2016 22:05
Copper	6.46 J	mg/Kg	B	9/8/2016 22:05
Lead	6.27	mg/Kg		9/8/2016 22:05
Manganese	198 J	mg/Kg		9/8/2016 22:05
Nickel	3.48	mg/Kg		9/8/2016 22:05
Selenium	< 0.530	mg/Kg		9/12/2016 14:18
Silver	< 0.530	mg/Kg		9/8/2016 22:05
Zinc	19.9	mg/Kg		9/8/2016 22:05

**Method Reference(s):** EPA 6010C  
EPA 3050B  
**Preparation Date:** 9/3/2016  
**Data File:** 090916c

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Report Prepared Thursday, December 1, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** D1-15-16 ft**Lab Sample ID:** 163832-06**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Mercury**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
Mercury	< 0.00862	mg/Kg		9/8/2016 13:12
Method Reference(s):	EPA 7471B			
Preparation Date:	9/7/2016			
Data File:	Hg160908A			

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** E2-5-6.5 ft

**Lab Sample ID:** 163832-07

**Matrix:** Soil

**Date Sampled:** 9/1/2016

**Date Received:** 9/2/2016

**Metals**

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	2.91	mg/Kg		9/8/2016 22:09
Barium	127	mg/Kg		9/8/2016 22:09
Beryllium	0.231	mg/Kg	J	9/8/2016 22:09
Cadmium	0.466 J	mg/Kg		9/8/2016 22:09
Chromium	8.18	mg/Kg		9/8/2016 22:09
Copper	20.9	mg/Kg		9/8/2016 22:09
Lead	224	mg/Kg		9/8/2016 22:09
Manganese	255 J	mg/Kg		9/8/2016 22:09
Nickel	7.04	mg/Kg		9/8/2016 22:09
Selenium	1.47 J	mg/Kg		9/12/2016 14:22
Silver	< 0.544	mg/Kg		9/8/2016 22:09
Zinc	182	mg/Kg		9/8/2016 22:09

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:** 9/3/2016

**Data File:** 090816b

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Report Prepared Tuesday, September 13, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** E2-5-6.5 ft**Lab Sample ID:** 163832-07**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Mercury**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
Mercury	0.365	mg/Kg		9/8/2016 13:15

**Method Reference(s):** EPA 7471B**Preparation Date:** 9/7/2016**Data File:** Hg160908A

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*Report Prepared Tuesday, September 13, 2016*



# PARADIGM

ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-9-10 ft

Lab Sample ID: 163832-08

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

## Metals

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	0.310	mg/Kg	J	9/8/2016 22:14
Barium	27.3	mg/Kg		9/8/2016 22:14
Beryllium	0.231	mg/Kg	J	9/8/2016 22:14
Cadmium	0.207 J	mg/Kg	J	9/8/2016 22:14
Chromium	6.97	mg/Kg		9/8/2016 22:14
Copper	4.18 J	mg/Kg	B	9/8/2016 22:14
Lead	6.02	mg/Kg		9/8/2016 22:14
Manganese	159 J	mg/Kg		9/8/2016 22:14
Nickel	5.80	mg/Kg		9/8/2016 22:14
Selenium	0.537 J	mg/Kg	J	9/12/2016 18:01
Silver	< 0.584	mg/Kg		9/8/2016 22:14
Zinc	62.3	mg/Kg		9/8/2016 22:14

Method Reference(s): EPA 6010C  
EPA 3050B  
Preparation Date: 9/3/2016  
Data File: 090816b

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Report Prepared Thursday, December 1, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street

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<b>Sample Identifier:</b>	E2-9-10 ft	
<b>Lab Sample ID:</b>	163832-08	<b>Date Sampled:</b> 9/1/2016
<b>Matrix:</b>	Soil	<b>Date Received:</b> 9/2/2016

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**Mercury**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
Mercury	0.0183	mg/Kg		9/8/2016 13:18

<b>Method Reference(s):</b>	EPA 7471B
<b>Preparation Date:</b>	9/7/2016
<b>Data File:</b>	Hg160908A

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*Report Prepared Tuesday, September 13, 2016*


**PARADIGM**  
 ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**
**Client:** C&S Companies
**Project Reference:** 19 North Street

**Sample Identifier:** E2-14-15 ft

**Lab Sample ID:** 163832-09

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	0.320	mg/Kg	J	9/8/2016 22:18
Barium	9.16	mg/Kg		9/8/2016 22:18
Beryllium	0.127	mg/Kg	J	9/8/2016 22:18
Cadmium	0.256 J	mg/Kg		9/8/2016 22:18
Chromium	3.83	mg/Kg		9/8/2016 22:18
Copper	6.54 J	mg/Kg	B	9/8/2016 22:18
Lead	6.21	mg/Kg		9/8/2016 22:18
Manganese	172 J	mg/Kg		9/8/2016 22:18
Nickel	3.12	mg/Kg		9/8/2016 22:18
Selenium	0.380 J	mg/Kg	J	9/12/2016 18:05
Silver	< 0.507	mg/Kg		9/8/2016 22:18
Zinc	34.1	mg/Kg		9/8/2016 22:18

**Method Reference(s):** EPA 6010C  
 EPA 3050B  
**Preparation Date:** 9/3/2016  
**Data File:** 090816b

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Report Prepared Thursday, December 1, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

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**Sample Identifier:** E2-14-15 ft

**Lab Sample ID:** 163832-09

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

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**Mercury**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
Mercury	0.00651	mg/Kg	J	9/8/2016 13:28

**Method Reference(s):** EPA 7471B

**Preparation Date:** 9/7/2016

**Data File:** Hg160908A

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*Report Prepared Tuesday, September 13, 2016*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F1-3-5 ft

**Lab Sample ID:** 163832-10

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	2.07	mg/Kg		9/8/2016 22:22
Barium	42.6	mg/Kg		9/8/2016 22:22
Beryllium	0.338	mg/Kg		9/8/2016 22:22
Cadmium	0.735 J	mg/Kg		9/8/2016 22:22
Chromium	8.56	mg/Kg		9/8/2016 22:22
Copper	16.7	mg/Kg		9/8/2016 22:22
Lead	54.9	mg/Kg		9/8/2016 22:22
Manganese	436 J	mg/Kg		9/8/2016 22:22
Nickel	7.31	mg/Kg		9/8/2016 22:22
Selenium	0.618 J	mg/Kg		9/12/2016 18:10
Silver	< 0.507	mg/Kg		9/8/2016 22:22
Zinc	218	mg/Kg		9/8/2016 22:22

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:** 9/3/2016

**Data File:** 090816b

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Report Prepared Tuesday, September 13, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-3-5 ft

Lab Sample ID: 163832-10

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Mercury**

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	0.134	mg/Kg		9/8/2016 13:32

Method Reference(s): EPA 7471B

Preparation Date: 9/7/2016

Data File: Hg160908A

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F1-9-10 ft

**Lab Sample ID:** 163832-11

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	1.10	mg/Kg		9/8/2016 22:27
Barium	15.9	mg/Kg		9/8/2016 22:27
Beryllium	0.145	mg/Kg	J	9/8/2016 22:27
Cadmium	0.228 J	mg/Kg	J	9/8/2016 22:27
Chromium	4.81	mg/Kg		9/8/2016 22:27
Copper	6.84 J	mg/Kg	B	9/8/2016 22:27
Lead	8.40	mg/Kg		9/8/2016 22:27
Manganese	263 J	mg/Kg		9/8/2016 22:27
Nickel	3.95	mg/Kg		9/8/2016 22:27
Selenium	0.409 J	mg/Kg	J	9/12/2016 18:14
Silver	< 0.538	mg/Kg		9/8/2016 22:27
Zinc	39.5	mg/Kg		9/8/2016 22:27

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:** 9/3/2016

**Data File:** 090816b

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Report Prepared Thursday, December 1, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** F1-9-10 ft**Lab Sample ID:** 163832-11**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Mercury**

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	0.00799	mg/Kg	J	9/8/2016 13:35

**Method Reference(s):** EPA 7471B**Preparation Date:** 9/7/2016**Data File:** Hg160908A

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*Report Prepared Tuesday, September 13, 2016*



# PARADIGM

ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

## Metals

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	0.839	mg/Kg		9/8/2016 22:31
Barium	25.3	mg/Kg		9/8/2016 22:31
Beryllium	0.206	mg/Kg	J	9/8/2016 22:31
Cadmium	0.276 J	mg/Kg	J	9/8/2016 22:31
Chromium	6.84	mg/Kg		9/8/2016 22:31
Copper	8.89 J	mg/Kg	B	9/8/2016 22:31
Lead	7.31	mg/Kg		9/8/2016 22:31
Manganese	237 J	mg/Kg		9/8/2016 22:31
Nickel	6.26	mg/Kg		9/8/2016 22:31
Selenium	1.12 J	mg/Kg		9/12/2016 18:19
Silver	< 0.553	mg/Kg		9/8/2016 22:31
Zinc	44.8	mg/Kg		9/8/2016 22:31

Method Reference(s): EPA 6010C  
EPA 3050B  
Preparation Date: 9/3/2016  
Data File: 090816b

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Report Prepared Thursday, December 1, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

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**Sample Identifier:** F1-15 ft

**Lab Sample ID:** 163832-12

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

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**Mercury**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Mercury	<b>0.0137</b>	mg/Kg		9/8/2016 13:38

**Method Reference(s):** EPA 7471B

**Preparation Date:** 9/7/2016

**Data File:** Hg160908A

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*Report Prepared Tuesday, September 13, 2016*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F2-4-6 ft

**Lab Sample ID:** 163832-13

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	1.50	mg/Kg		9/9/2016 18:36
Barium	21.3	mg/Kg		9/9/2016 01:12
Beryllium	0.257	mg/Kg		9/9/2016 01:12
Cadmium	0.283 J	mg/Kg		9/9/2016 01:12
Chromium	7.54	mg/Kg		9/9/2016 01:12
Copper	10.6 J	mg/Kg		9/9/2016 01:12
Lead	14.1	mg/Kg		9/9/2016 01:12
Manganese	326 J	mg/Kg		9/9/2016 01:12
Nickel	6.31	mg/Kg		9/9/2016 01:12
Selenium	0.770 J	mg/Kg		9/12/2016 18:23
Silver	< 0.503	mg/Kg		9/9/2016 01:12
Zinc	53.8	mg/Kg		9/9/2016 01:12

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:**

9/7/2016

**Data File:**

090916c

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Report Prepared Tuesday, September 13, 2016

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**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** F2-4-6 ft**Lab Sample ID:** 163832-13**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Mercury**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
Mercury	0.0446	mg/Kg		9/8/2016 13:42
<b>Method Reference(s):</b> EPA 7471B				
<b>Preparation Date:</b> 9/7/2016				
<b>Data File:</b> Hg160908A				

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*Report Prepared Tuesday, September 13, 2016*


**PARADIGM**  
 ENVIRONMENTAL SERVICES, INC.

**Lab Project ID: 163832**
**Client:** C&S Companies

**Project Reference:** 19 North Street

**Sample Identifier:** F2-9-10 ft

**Lab Sample ID:** 163832-14

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

**Metals**

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	1.05	mg/Kg		9/9/2016 01:16
Barium	29.5	mg/Kg		9/9/2016 01:16
Beryllium	0.230	mg/Kg	J	9/9/2016 01:16
Cadmium	0.176 J	mg/Kg	J	9/9/2016 01:16
Chromium	6.59	mg/Kg		9/9/2016 01:16
Copper	6.32 J	mg/Kg		9/9/2016 01:16
Lead	9.31	mg/Kg		9/9/2016 01:16
Manganese	125 J	mg/Kg		9/9/2016 01:16
Nickel	6.24	mg/Kg		9/9/2016 01:16
Selenium	0.754 J	mg/Kg		9/12/2016 18:27
Silver	< 0.493	mg/Kg		9/9/2016 01:16
Zinc	68.6	mg/Kg		9/9/2016 01:16

**Method Reference(s):** EPA 6010C

EPA 3050B

**Preparation Date:** 9/7/2016

**Data File:** 090816b

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016

MKP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** F2-9-10 ft**Lab Sample ID:** 163832-14**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Mercury**

<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Qualifier</b>	<b>Date Analyzed</b>
Mercury	0.0139	mg/Kg		9/8/2016 13:45

**Method Reference(s):** EPA 7471B**Preparation Date:** 9/7/2016**Data File:** Hg160908A

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

*Report Prepared Tuesday, September 13, 2016*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163892

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: C4 7-8 ft

Lab Sample ID: 163892-01

Matrix: Soil

Date Sampled: 8/30/2016

Date Received: 9/8/2016

Metals

Analyte	Result	Units	Qualifier	Date Analyzed
Arsenic	2.63	mg/Kg		9/15/2016 15:09
Barium	33.6	mg/Kg		9/12/2016 20:07
Beryllium	0.319	mg/Kg		9/12/2016 20:07
Cadmium	0.481 J	mg/Kg		9/12/2016 20:07
Chromium	8.62	mg/Kg		9/12/2016 20:07
Copper	8.93 J	mg/Kg		9/12/2016 20:07
Lead	20.1	mg/Kg		9/15/2016 15:09
Manganese	536 J	mg/Kg		9/12/2016 20:07
Nickel	8.15	mg/Kg		9/12/2016 20:07
Selenium	1.77 J	mg/Kg		9/15/2016 15:09
Silver	0.790	mg/Kg		9/12/2016 20:07
Zinc	77.2	mg/Kg		9/12/2016 20:07

Method Reference(s): EPA 6010C  
EPA 3050B  
Preparation Date: 9/9/2016  
Data File: 091516b

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Thursday, September 15, 2016

MRP 5/6/17





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163892

**Client:** C&S Companies

**Project Reference:** 19 North Street

---

**Sample Identifier:** C4 7-8 ft

**Lab Sample ID:** 163892-01

**Date Sampled:** 8/30/2016

**Matrix:** Soil

**Date Received:** 9/8/2016

---

**Mercury**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Mercury	0.0430	mg/Kg		9/9/2016 17:12

**Method Reference(s):** EPA 7471B

**Preparation Date:** 9/9/2016

**Data File:** Hg160909B

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*Report Prepared Thursday, September 15, 2016*



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: B1-5-6 ft

Lab Sample ID: 163832-01

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	0.244 J	mg/Kg	J	9/8/2016

Method Reference(s): EPA 9014

Preparation Date: 9/6/2016

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Report Prepared Tuesday, September 13, 2016

WXP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: B1-15 ft

Lab Sample ID: 163832-02

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Total Cyanide**

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.459	✓ mg/Kg		9/8/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/6/2016			

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Report Prepared Tuesday, September 13, 2016

mmp 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: C2-13-14.5 ft

Lab Sample ID: 163832-04

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.548	WS mg/Kg		9/8/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/6/2016			

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Report Prepared Tuesday, September 13, 2016

MMP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** D1-9.5-11.5 ft**Lab Sample ID:** 163832-05**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Total Cyanide**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Cyanide, Total	< 0.391	mg/Kg	M	9/12/2016

Method Reference(s): EPA 9014  
Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016

mvp5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: D1-15-16 ft

Lab Sample ID: 163832-06

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	0.393	J mg/Kg	J	9/8/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/6/2016			

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Report Prepared Tuesday, September 13, 2016

MEP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: E2-5-6.5 ft

Lab Sample ID: 163832-07

Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

**Total Cyanide**

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	0.541 J	mg/Kg		9/8/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/6/2016			

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Report Prepared Tuesday, September 13, 2016

MFP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: E2-9-10 ft

Lab Sample ID: 163832-08

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	0.289	J mg/Kg	J	9/8/2016

Method Reference(s): EPA 9014  
Preparation Date: 9/6/2016

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Report Prepared Tuesday, September 13, 2016

MHP 5/6/17





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

**Lab Project ID:** 163832

**Client:** C&S Companies

**Project Reference:** 19 North Street

---

**Sample Identifier:** E2-14-15 ft

**Lab Sample ID:** 163832-09

**Date Sampled:** 9/1/2016

**Matrix:** Soil

**Date Received:** 9/2/2016

---

**Total Cyanide**

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.512	WJ mg/Kg		9/8/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/6/2016			

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Report Prepared Tuesday, September 13, 2016

AKP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: F1-3-5 ft

Lab Sample ID: 163832-10

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	0.278 J	mg/Kg	J	9/8/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/6/2016			

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Report Prepared Tuesday, September 13, 2016

MEP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** F1-9-10 ft**Lab Sample ID:** 163832-11**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Total Cyanide**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Cyanide, Total	< 0.528	µg mg/Kg		9/8/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/6/2016			

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Report Prepared Tuesday, September 13, 2016

MEP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163832

Client: **C&S Companies**

Project Reference: 19 North Street

Sample Identifier: F1-15 ft

Lab Sample ID: 163832-12

Date Sampled: 9/1/2016

Matrix: Soil

Date Received: 9/2/2016

**Total Cyanide**

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.411	WS mg/Kg		9/12/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/8/2016			

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Report Prepared Tuesday, September 13, 2016

WAF 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** F2-4-6 ft**Lab Sample ID:** 163832-13**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Total Cyanide**

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.370	mg/Kg		9/12/2016

Method Reference(s): EPA 9014  
Preparation Date: 9/8/2016

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Report Prepared Tuesday, September 13, 2016

mkp 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** F2-9-10 ft**Lab Sample ID:** 163832-14**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016**Total Cyanide**

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.396	mg/Kg		9/12/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/8/2016			

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Report Prepared Tuesday, September 13, 2016

MFP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

Lab Project ID: 163892

Client: C&S Companies

Project Reference: 19 North Street

Sample Identifier: C4 7-8 ft

Lab Sample ID: 163892-01

Date Sampled: 8/30/2016

Matrix: Soil

Date Received: 9/8/2016

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	0.360	J mg/Kg	JM	9/13/2016
Method Reference(s):	EPA 9014			
Preparation Date:	9/12/2016			

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Thursday, September 15, 2016

MKP 5/6/17

**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** C2-WC**Lab Sample ID:** 163832-03**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016***Flash Point***

Analyte	Result	Units	Qualifier	Date Analyzed
Flash Point, Celsius	>70.0	C		9/7/2016
Method Reference(s):	EPA 1010A			

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

*Report Prepared Tuesday, September 13, 2016*



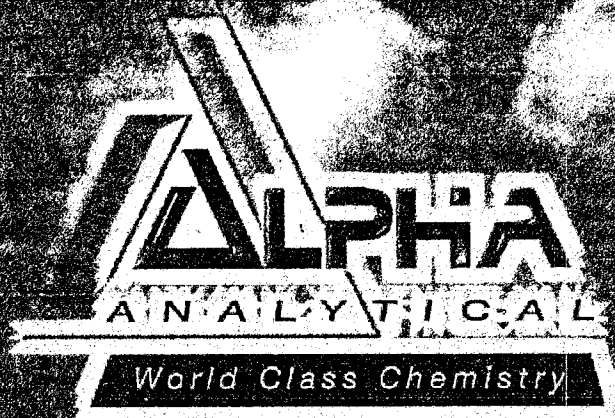
**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.**Lab Project ID:** 163832**Client:** C&S Companies**Project Reference:** 19 North Street**Sample Identifier:** C2-WC**Lab Sample ID:** 163832-03**Date Sampled:** 9/1/2016**Matrix:** Soil**Date Received:** 9/2/2016***pH***

Analyte	Result	Units	Qualifier	Date Analyzed
pH	9.17 @ 21.5 C.S.U.			9/6/2016 12:50

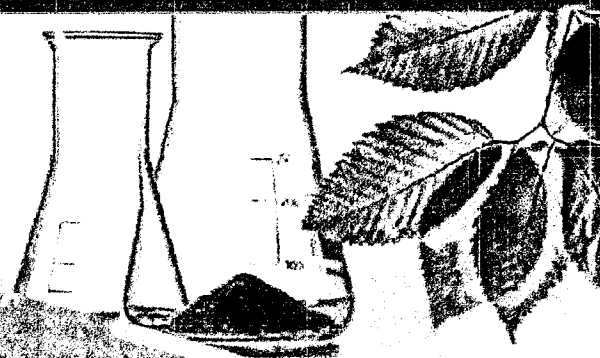
**Method Reference(s):** EPA 9045D

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*Report Prepared Tuesday, September 13, 2016*



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**Alpha Analytical**

**Laboratory Code: 11148**

**SDG Number: L1627717**

*The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.*

**Project Name:** 19 NORTH STREET  
**Project Number:** 19 NORTH ST

**Lab Number:** L1627717  
**Report Date:** 09/09/16

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.



**Project Name:** 19 NORTH STREET  
**Project Number:** 19 NORTH ST

**Lab Number:** L1627717  
**Report Date:** 09/09/16

**Case Narrative (continued)**

**Report Submission**

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

**Chromium, Hexavalent**

The WG930160-4/-5 MS/MSD RPD (27%), performed on L1627717-06, is above the acceptance criteria.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

**Authorized Signature:** *Melissa Cripps* Melissa Cripps

**Report Date:** 09/09/16

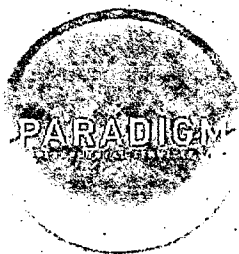
**Title:** Technical Director/Representative



**Project Name:** 19 NORTH STREET  
**Project Number:** 19 NORTH ST

**Lab Number:** L1627717  
**Report Date:** 09/09/16

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1627717-01	B1 - 5-6 FT	SOIL	Not Specified	09/01/16 09:10	09/01/16
L1627717-02	E2 - 14-15 FT	SOIL	Not Specified	09/01/16 14:25	09/01/16
L1627717-03	F1 - 3-5 FT	SOIL	Not Specified	09/01/16 14:44	09/01/16
L1627717-04	F1 - 9-10 FT	SOIL	Not Specified	09/01/16 14:46	09/01/16
L1627717-05	F2 - 9-10 FT	SOIL	Not Specified	09/01/16 15:15	09/01/16
L1627717-06	D1 - 9.5-11.5 FT	SOIL	Not Specified	09/01/16 11:17	09/01/16
L1627717-07	C2 - WC	SOIL	Not Specified	09/01/16 10:15	09/01/16



## 148071

**INVOICE TO:**

COMPANY: <b>Paradigm Environmental</b>		COMPANY: <b>Same</b>		LAB PROJECT #:	CLIENT PROJECT #:
ADDRESS: <b>179 Lake Avenue</b>		ADDRESS:			
CITY: <b>Rochester</b>	STATE: <b>NY</b>	ZIP: <b>14608</b>	CITY:	STATE:	ZIP:
PHONE:	FAX:	PHONE:	FAX:	TURNAROUND TIME: (WORKING DAYS)	
ATTN: <b>Toni Deuschner</b>		ATTN: <b>Meridith Dillman</b>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 5 <input type="checkbox"/> OTHER	
COMMENTS: <b>Please email results to khansen@paradigmenv.com and reporting@paradigmenv.com</b>					

PROJECT NAME/SITE NAME:

19 North Street

REQUESTED ANALYSIS

[illegible]

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter		NELAC Compliance	
Container Type:		Y <input type="checkbox"/>	N <input type="checkbox"/>
Comments: _____			
Preservation:		Y <input type="checkbox"/>	N <input type="checkbox"/>
Comments: _____			
Holding Time:		Y <input type="checkbox"/>	N <input type="checkbox"/>
Comments: _____			
Temperature:		Y <input type="checkbox"/>	N <input type="checkbox"/>
Comments: _____			

Client/

**Sampled By**

Date/Tiny

Relinquished By

Date/T/m

Received By

Date/Tim

Received By

Date/Time

Received @ Lab By

Date/Time

**Total Cost:**

P.I.F.

# Form 1

## GC Organics

**Client** : Paradigm Environmental Services  
**Project Name** : 19 NORTH STREET  
**Lab ID** : L1627717-07  
**Client ID** : C2 - WC  
**Sample Location** :  
**Sample Matrix** : SOIL  
**Analytical Method** : 1,8151A  
**Lab File ID** : 17160907-16  
**Sample Amount** : 200 ml  
**Extraction Method** : EPA 8151A  
**Extract Volume** : 5000 uL  
**GPC Cleanup** : N  
**Sulfur Cleanup** : N

**Lab Number** : L1627717  
**Project Number** : 19 NORTH ST  
**Date Collected** : 09/01/16 10:15  
**Date Received** : 09/01/16  
**Date Analyzed** : 09/07/16 15:51  
**Date Extracted** : 09/06/16  
**Dilution Factor** : 1  
**Analyst** : DM  
**Instrument ID** : PEST17  
**GC Column** : STX-CLP1  
**%Solids** : NA  
**Injection Volume** : 1 uL

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
94-75-7	2,4-D	ND	0.025	0.001	U
93-72-1	2,4,5-TP (Silvex)	ND	0.005	0.001	U



# Form 1

## WETCHEM

**Client** : Paradigm Environmental Services  
**Project Name** : 19 NORTH STREET  
**Lab ID** : L1627717-01  
**Client ID** : B1 - 5-6 FT  
**Sample Location** :  
**Sample Matrix** : SOIL  
**Analytical Method** : 1,7196A  
**Lab File ID** : WG930160.csv  
**Sample Amount** : 2.5031g  
**Digestion Method** : EPA 3060A

**Lab Number** : L1627717  
**Project Number** : 19 NORTH ST  
**Date Collected** : 09/01/16 09:10  
**Date Received** : 09/01/16  
**Date Analyzed** : 09/09/16 10:29  
**Dilution Factor** : 1  
**Analyst** : AL/WR  
**Instrument ID** : GENSYS10VI  
**%Solids** : 81  
**Date Digested** : 09/08/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.98	0.20	U





# Form 1

## WETCHEM

**Client** : Paradigm Environmental Services  
**Project Name** : 19 NORTH STREET  
**Lab ID** : L1627717-02  
**Client ID** : E2 - 14-15 FT  
**Sample Location** :  
**Sample Matrix** : SOIL  
**Analytical Method** : 1,7196A  
**Lab File ID** : WG930160.csv  
**Sample Amount** : 2.4932g  
**Digestion Method** : EPA 3060A

**Lab Number** : L1627717  
**Project Number** : 19 NORTH ST  
**Date Collected** : 09/01/16 14:25  
**Date Received** : 09/01/16  
**Date Analyzed** : 09/09/16 10:30  
**Dilution Factor** : 1  
**Analyst** : AL/WR  
**Instrument ID** : GENSYS10VI  
**%Solids** : 91  
**Date Digested** : 09/08/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.88	0.18	U



# Form 1

## WETCHEM

**Client** : Paradigm Environmental Services  
**Project Name** : 19 NORTH STREET  
**Lab ID** : L1627717-03  
**Client ID** : F1 - 3-5 FT  
**Sample Location** :  
**Sample Matrix** : SOIL  
**Analytical Method** : 1,7196A  
**Lab File ID** : WG930160.csv  
**Sample Amount** : 2.4571g  
**Digestion Method** : EPA 3060A

**Lab Number** : L1627717  
**Project Number** : 19 NORTH ST  
**Date Collected** : 09/01/16 14:44  
**Date Received** : 09/01/16  
**Date Analyzed** : 09/09/16 10:30  
**Dilution Factor** : 1  
**Analyst** : AL/WR  
**Instrument ID** : GENSYS10VI  
**%Solids** : 92  
**Date Digested** : 09/08/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.87	0.17	U



# Form 1

## WETCHEM

**Client** : Paradigm Environmental Services  
**Project Name** : 19 NORTH STREET  
**Lab ID** : L1627717-04  
**Client ID** : F1 - 9-10 FT  
**Sample Location** :  
**Sample Matrix** : SOIL  
**Analytical Method** : 1,7196A  
**Lab File ID** : WG930160.csv  
**Sample Amount** : 2.4989g  
**Digestion Method** : EPA 3060A

**Lab Number** : L1627717  
**Project Number** : 19 NORTH ST  
**Date Collected** : 09/01/16 14:46  
**Date Received** : 09/01/16  
**Date Analyzed** : 09/09/16 10:30  
**Dilution Factor** : 1  
**Analyst** : AL/WR  
**Instrument ID** : GENSYS10VI  
**%Solids** : 78  
**Date Digested** : 09/08/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	1.0	0.20	U



# Form 1

## WETCHEM

**Client** : Paradigm Environmental Services  
**Project Name** : 19 NORTH STREET  
**Lab ID** : L1627717-05  
**Client ID** : F2 - 9-10 FT  
**Sample Location** :  
**Sample Matrix** : SOIL  
**Analytical Method** : 1,7196A  
**Lab File ID** : WG930160.csv  
**Sample Amount** : 2.521g  
**Digestion Method** : EPA 3060A

**Lab Number** : L1627717  
**Project Number** : 19 NORTH ST  
**Date Collected** : 09/01/16 15:15  
**Date Received** : 09/01/16  
**Date Analyzed** : 09/09/16 10:31  
**Dilution Factor** : 1  
**Analyst** : AL/WR  
**Instrument ID** : GENSYS10VI  
**%Solids** : 91  
**Date Digested** : 09/08/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.88	0.18	U



# Form 1 WETCHEM

**Client** : Paradigm Environmental Services  
**Project Name** : 19 NORTH STREET  
**Lab ID** : L1627717-06  
**Client ID** : D1 - 9.5-11.5 FT  
**Sample Location** :  
**Sample Matrix** : SOIL  
**Analytical Method** : 1,7196A  
**Lab File ID** : WG930160.csv  
**Sample Amount** : 2.4764g  
**Digestion Method** : EPA 3060A

**Lab Number** : L1627717  
**Project Number** : 19 NORTH ST  
**Date Collected** : 09/01/16 11:17  
**Date Received** : 09/01/16  
**Date Analyzed** : 09/09/16 10:31  
**Dilution Factor** : 1  
**Analyst** : AL/WR  
**Instrument ID** : GENSYS10VI  
**%Solids** : 88  
**Date Digested** : 09/08/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
18540-29-9	Chromium, Hexavalent	ND	0.91	0.18	U



# Form 1 WETCHEM

Client	: Paradigm Environmental Services	Lab Number	: L1627717
Project Name	: 19 NORTH STREET	Project Number	: 19 NORTH ST
Lab ID	: L1627717-07	Date Collected	: 09/01/16 10:15
Client ID	: C2 - WC	Date Received	: 09/01/16
Sample Location	:	Date Analyzed	: 09/07/16 22:28
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,7.3	Analyst	: TLH
Lab File ID	: WG929671.csv	Instrument ID	: GENSYS10VI
Sample Amount	:	%Solids	: NA
Digestion Method	:	Date Digested	: 09/07/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Reactive	ND	10	10.	U



# Form 1 WETCHEM

Client	: Paradigm Environmental Services	Lab Number	: L1627717
Project Name	: 19 NORTH STREET	Project Number	: 19 NORTH ST
Lab ID	: L1627717-07	Date Collected	: 09/01/16 10:15
Client ID	: C2 - WC	Date Received	: 09/01/16
Sample Location	:	Date Analyzed	: 09/07/16 23:20
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,7.3	Analyst	: TLH
Lab File ID	: WG929672.csv	Instrument ID	: GENSYS10VI
Sample Amount	:	%Solids	: NA
Digestion Method	:	Date Digested	: 09/07/16

CAS NO.	Parameter	mg/kg			Qualifier
		Results	RL	MDL	
NONE	Sulfide, Reactive	ND	10	10.	U



## ***Appendix B***

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### ***Laboratory QC Documentation***





**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

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**QC Report for Matrix Spike and Matrix Spike Duplicate**

**Client:** C&S Companies

**Project Reference:** 19 North Street

**SDG #:** 3832-01

**Lab Project ID:** 163832

**Lab Sample ID:** 163832-05  
**Sample Identifier:** D1-9.5-11.5 ft  
**Matrix:** Soil

**Date Sampled:** 9/1/2016

**Date Received:** 9/2/2016

**Date Analyzed:** 9/7/2016

**Volatile Organics**

	<u>Sample</u>	<u>Result</u>	<u>MS</u>	<u>MS</u>	<u>MS %</u>	<u>MSD</u>	<u>MSD</u>	<u>MSD %</u>	<u>% Rec.</u>	<u>MS</u>	<u>MSD</u>	<u>Relative</u>	<u>RPD</u>	<u>RPD</u>
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Added</u>	<u>Result</u>	<u>Recovery</u>	<u>Added</u>	<u>Result</u>	<u>Recovery</u>	<u>Limits</u>	<u>Outlier</u>	<u>Outlier</u>	<u>% Diff.</u>	<u>Limit</u>	<u>Outlier</u>
1,1,1-Trichloroethane	< 3.90	ug/Kg	107	117	108	103	111	107	80.4 - 121			1.28	23.3	
1,1,2,2-Tetrachloroethane	< 3.90	ug/Kg	107	114	106	103	107	104	67.8 - 133			2.15	24	
1,1,2-Trichloroethane	< 3.90	ug/Kg	107	107	99.1	103	101	97.8	52.3 - 146			1.31	33	
1,1-Dichloroethane	< 3.90	ug/Kg	107	109	101	103	104	100	81.2 - 115			0.649	22.6	
1,1-Dichloroethene	< 3.90	ug/Kg	107	114	106	103	109	106	78.2 - 130			0.0882	24.4	
1,2-Dichlorobenzene	< 3.90	ug/Kg	107	84.7	78.8	103	80.0	77.4	78.4 - 117		*	1.73	15.6	
1,2-Dichloroethane	< 3.90	ug/Kg	107	116	108	103	109	106	79.4 - 123			2.03	29.6	
1,2-Dichloropropane	< 3.90	ug/Kg	107	105	98.1	103	100	97.0	79.8 - 114			1.12	19.8	
1,3-Dichlorobenzene	< 3.90	ug/Kg	107	82.4	76.7	103	76.9	74.4	75.6 - 114		*	2.97	16.8	
1,4-Dichlorobenzene	< 3.90	ug/Kg	107	78.5	73.0	103	73.8	71.5	77.2 - 111	*	*	2.11	16.5	
Benzene	< 3.90	ug/Kg	107	109	102	103	103	99.8	80 - 124			2.00	37.2	
Bromodichloromethane	< 3.90	ug/Kg	107	112	104	103	109	105	60.7 - 142			0.999	33.6	
Bromoform	< 9.75	ug/Kg	107	105	97.6	103	101	98.0	51.5 - 115			0.332	28.6	
Bromomethane	< 3.90	ug/Kg	107	106	99.0	103	107	103	56.2 - 158			4.22	15.5	

Any estimated values are displayed, and derived values calculated, based on numeric result only. See primary analytical report for data flags.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Friday, September 09, 2016

Method Path : C:\msdchem\1\METHODS\  
 Method File : 160826.M  
 Title : 8260/624 Analysis  
 Last Update : Fri Aug 26 14:12:18 2016  
 Response Via : Initial Calibration

8/26/16 BJB

Calibration Files

1 =x34824.D 2 =x34825.D 3 =x34826.D 4 =x34827.D 5 =x34828.D 6 =x34829.D 7 =x34830.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
-----ISTD-----									
1) I Fluorobenzene									
2) P Dichlorodifluo...	0.248	0.239	0.256	0.257	0.243	0.237	0.230	0.244	4.06
3) P Chloromethane	0.413	0.437	0.443	0.443	0.426	0.446	0.404	0.430	3.83
4) P Vinyl chloride	0.260	0.290	0.294	0.310	0.297	0.309	0.283	0.292	5.87
5) P Bromomethane	0.197	0.186	0.163	0.150	0.123	0.120		0.157	20.33
6) P Chloroethane	0.150	0.164	0.161	0.161	0.130	0.125	0.124	0.145	12.45
7) P Trichlorofluor...	0.360	0.364	0.385	0.394	0.355	0.353	0.347	0.365	4.84
8) Ethyl ether	0.200	0.204	0.201	0.208	0.198	0.200	0.178	0.198	4.80
9) P Freon 113	0.181	0.191	0.201	0.206	0.188	0.191	0.182	0.191	4.90
10) P 1,1-Dichloroet...	0.344	0.360	0.374	0.388	0.355	0.358	0.343	0.360	4.43
11) P Acetone	0.521	0.205	0.116	0.110	0.120	0.115		0.198	82.01
12) Isopropyl Alcohol	0.027	0.025	0.017	0.018	0.022	0.022		0.022	17.57
13) P Carbon disulfide	0.484	0.512	0.562	0.602	0.566	0.596	0.568	0.556	7.71
14) P Methyl acetate	0.182	0.233	0.184	0.193	0.218	0.219	0.140	0.195	15.96
15) P Methylene chlo...	0.235	0.229	0.219	0.223	0.210	0.221	0.201	0.220	5.12
16) Acrylonitrile	0.109	0.115	0.126	0.099	0.154	0.108	0.114	0.118	15.25
17) tert-Butyl Alc...	0.046	0.045	0.031	0.032	0.043	0.041		0.040	16.20
18) P Methyl tert-bu...	0.744	0.713	0.787	0.736	0.837	0.685	0.715	0.745	6.91
19) P trans-1,2-Dich...	0.392	0.364	0.469	0.416	0.444	0.342	0.426	0.408	11.03
20) P 1,1-Dichloroet...	0.551	0.598	0.607	0.623	0.580	0.577	0.572	0.587	4.13
21) Vinyl acetate	0.599	0.704	0.695	0.724	0.757	0.741	0.623	0.692	8.59
22) 2,2-Dichloropr...	0.362	0.392	0.427	0.444	0.425	0.422	0.422	0.413	6.66
23) P 2-Butanone		0.059	0.042	0.043	0.047	0.044		0.047#	14.87
24) P cis-1,2-Dichlo...	0.316	0.327	0.334	0.334	0.310	0.301	0.290	0.316	5.30
25) Bromochloromet...	0.127	0.158	0.148	0.151	0.143	0.142	0.132	0.143	7.51
26) P Chloroform	0.488	0.590	0.548	0.550	0.512	0.502	0.490	0.525	7.22
27) S Pentafluoroben...	0.507	0.502	0.505	0.516	0.497	0.491	0.484	0.500	2.18
28) Tetrahydrofuran	0.104	0.127	0.106	0.113	0.131	0.123	0.083	0.112	14.90
29) P 1,1,1-Trichlor...	0.379	0.412	0.449	0.464	0.436	0.434	0.429	0.429	6.33
30) P Cyclohexane	0.560	0.571	0.658	0.649	0.592	0.587	0.556	0.596	6.91
31) S 1,2-Dichloroet...	0.282	0.279	0.272	0.278	0.282	0.278	0.258	0.276	3.06
32) P Carbon Tetrach...	0.286	0.319	0.355	0.379	0.366	0.365	0.360	0.347	9.48
33) P Benzene	1.200	1.247	1.245	1.219	1.122	1.098	1.057	1.170	6.55
34) P 1,2-Dichloroet...	0.452	0.519	0.458	0.460	0.447	0.438	0.401	0.454	7.79
35) P Trichloroethene	0.304	0.342	0.327	0.325	0.304	0.302	0.294	0.314	5.54
36) tert-Butyl Ace...								0.000	-1.00
37) P Methylcyclohexane	0.484	0.504	0.568	0.564	0.526	0.523	0.510	0.526	5.89
38) 1,4-Dioxane			0.002	0.004	0.004	0.004	0.003	0.003	17.38

Initial Calibration Summary Table 157

RF < 0.005

\*curve is not av. of response factors

## Response Factor Report Instrument #1

Method Path : C:\msdchem\1\METHODS\  
 Method File : 160908.M  
 Title : 8260/624 Analysis  
 Last Update : Thu Sep 08 15:42:15 2016  
 Response Via : Initial Calibration

## Calibration Files

1 =x35171b.D 2 =x35172.D 3 =x35173.D 4 =x35174.D 5 =x35175.D 6 =x35176.D 7 =x35177.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1) I Fluorobenzene	-----ISTD-----								
2) P Dichlorodifluo...	0.242	0.210	0.226	0.213	0.213	0.212	0.216	0.219	5.15
3) P Chloromethane	0.495	0.461	0.496	0.466	0.461	0.471	0.476	0.475	3.08
4) P Vinyl chloride	0.317	0.297	0.338	0.319	0.320	0.320	0.324	0.319	3.80
5) P Bromomethane	0.280	0.200	0.183	0.154	0.140	0.135	0.134	0.175	30.02 *
6) P Chloroethane	0.193	0.186	0.190	0.173	0.158	0.145	0.139	0.169	13.07
7) P Trichlorofluor...	0.388	0.374	0.401	0.383	0.375	0.368	0.363	0.379	3.38
8) Ethyl ether	0.223	0.230	0.256	0.231	0.234	0.226	0.218	0.231	5.32
9) P Freon 113	0.198	0.206	0.224	0.210	0.206	0.202	0.201	0.207	4.15
10) P 1,1-Dichloroet...	0.409	0.402	0.444	0.419	0.412	0.402	0.400	0.412	3.79
11) P Acetone	0.461	0.167	0.142	0.114	0.117	0.114	0.114	0.176	72.53 *
12) Isopropyl Alcohol		0.025	0.023	0.020	0.021	0.021	0.021	0.022	7.32
13) P Carbon disulfide	0.540	0.519	0.630	0.617	0.628	0.624	0.634	0.599	8.02
14) P Methyl acetate	0.315	0.233	0.242	0.225	0.223	0.227	0.217	0.240	14.08
15) P Methylene chlo...	0.324	0.247	0.254	0.237	0.235	0.230	0.237	0.252	13.02
16) Acrylonitrile	0.126	0.126	0.129	0.117	0.117	0.116	0.118	0.121	4.53
17) tert-Butyl Alc...	0.042	0.038	0.038	0.034	0.037	0.036	0.038	0.038	6.57
18) P Methyl tert-bu...	0.732	0.700	0.741	0.706	0.706	0.693	0.697	0.711	2.58
19) P trans-1,2-Dich...	0.433	0.413	0.434	0.415	0.406	0.392	0.392	0.412	4.15
20) P 1,1-Dichloroet...	0.627	0.611	0.670	0.653	0.657	0.631	0.644	0.642	3.11
21) Vinyl acetate	0.713	0.656	0.741	0.729	0.751	0.733	0.737	0.723	4.39
22) 2,2-Dichloropr...	0.365	0.372	0.440	0.438	0.442	0.433	0.441	0.419	8.25
23) P 2-Butanone	0.028	0.040	0.040	0.039	0.040	0.039	0.039	0.038#	11.63
24) P cis-1,2-Dichlo...	0.323	0.312	0.340	0.325	0.318	0.307	0.307	0.319	3.69
25) Bromochloromet...	0.140	0.140	0.151	0.146	0.146	0.139	0.142	0.143	3.02
26) P Chloroform	0.492	0.511	0.569	0.537	0.528	0.517	0.521	0.525	4.61
27) S Pentafluoroben...	0.503	0.514	0.508	0.513	0.497	0.489	0.486	0.502	2.20
28) Tetrahydrofuran	0.128	0.122	0.120	0.113	0.118	0.116	0.115	0.119	4.15
29) P 1,1,1-Trichlor...	0.409	0.403	0.461	0.451	0.453	0.448	0.456	0.440	5.38
30) P Cyclohexane	0.707	0.639	0.709	0.667	0.687	0.647	0.672	0.675	4.05
31) S 1,2-Dichloroet...	0.288	0.282	0.282	0.280	0.285	0.284	0.279	0.283	1.08
32) P Carbon Tetrach...	0.279	0.290	0.349	0.362	0.370	0.372	0.378	0.343	11.98
33) P Benzene	1.245	1.182	1.264	1.190	1.156	1.112	1.107	1.179	5.13
34) P 1,2-Dichloroet...	0.445	0.463	0.498	0.472	0.471	0.457	0.458	0.466	3.63
35) P Trichloroethene	0.344	0.301	0.328	0.316	0.310	0.306	0.305	0.316	4.89
36) tert-Butyl Ace...							0.000		-1.00
37) P Methylcyclohexane	0.526	0.495	0.566	0.535	0.535	0.527	0.522	0.529	3.93
38) 1,4-Dioxane			0.003	0.004	0.003	0.004	0.004	0.004	2.54

9/8/16 B13

Initial Calibration Summary Table

185

RF &lt; 0.005

\* curve is not avg. of response factors

## Evaluate Continuing Calibration Report

218

Data File: C:\msdchem\1\DATA\160907\x35135.D

DataAcq Meth:8260RUN.M

Acq On : 7 Sep 2016 2:01 pm

Sample : 50ppb mega CC

Misc :

ALS Vial : 4 Sample Multiplier: 1

Operator: Bill Brew

Inst : Instrument #1

Quant Time: Sep 07 14:17:14 2016

Quant Method : C:\msdchem\1\METHODS\160826.M

Quant Title : 8260/624 Analysis

QLast Update : Fri Aug 26 14:45:45 2016

Response via : Initial Calibration

Integrator: RTE

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min  
 Max. RRF Dev : 20% Max. Rel. Area : 200%

9/7/16 BB

Compound	AvgRRF	CCRF	%Dev	Area%	Dev(min)
1 I Fluorobenzene	1.000	1.000	0.0	110	0.00
2 P Dichlorodifluoromethane	0.244	0.226	7.4	97	0.00
3 P Chloromethane	0.430	0.418	2.8	104	0.00
4 P Vinyl chloride	0.292	0.313	-7.2	111	0.00
5 P Bromomethane	0.157	0.157	0.0	115	0.02
6 P Chloroethane	0.145	0.166	-14.5	114	0.01
7 P Trichlorofluoromethane	0.365	0.391	-7.1	109	0.01
8 Ethyl ether	0.198	0.215	-8.6	114	0.00
9 P Freon 113	0.191	0.213	-11.5	113	0.01
10 P 1,1-Dichloroethene	0.360	0.398	-10.6	113	0.00
11 P Acetone	0.198	0.118	40.4#	117	0.00
12 Isopropyl Alcohol	0.022	0.018	18.2	107	0.00
13 P Carbon disulfide	0.556	0.631	-13.5	115	0.00
14 P Methyl acetate	0.195	0.187	4.1	106	0.00
15 P Methylene chloride	0.220	0.238	-8.2	117	0.00
16 Acrylonitrile	0.118	0.099	16.1	110	0.00
17 tert-Butyl Alcohol	0.040	0.032	20.0	109	0.00
18 P Methyl tert-butyl Ether	0.745	0.738	0.9	110	0.00
19 P trans-1,2-Dichloroethene	0.408	0.403	1.2	106	0.00
20 P 1,1-Dichloroethane	0.587	0.632	-7.7	111	0.00
21 Vinyl acetate	0.692	0.648	6.4	98	0.00
22 2,2-Dichloropropane	0.413	0.458	-10.9	113	0.00
23 P 2-Butanone	0.047	0.039#	17.0	100	0.00
24 P cis-1,2-Dichloroethene	0.316	0.329	-4.1	108	0.00
25 Bromochloromethane	0.143	0.148	-3.5	108	0.00
26 P Chloroform	0.525	0.549	-4.6	110	0.00
27 S Pentafluorobenzene	0.500	0.490	2.0	104	0.00
28 Tetrahydrofuran	0.112	0.102	8.9	99	0.00
29 P 1,1,1-Trichloroethane	0.429	0.450	-4.9	107	0.00
30 P Cyclohexane	0.596	0.685	-14.9	116	0.00
31 S 1,2-Dichloroethane-d4	0.276	0.269	2.5	106	0.00
32 P Carbon Tetrachloride	0.347	0.347	0.0	100	0.00
33 P Benzene	1.170	1.219	-4.2	110	0.00
34 P 1,2-Dichloroethane	0.454	0.455	-0.2	109	0.00
35 P Trichloroethene	0.314	0.322	-2.5	109	0.00
36 tert-Butyl Acetate	0.000	0.000	0.0	0#	0.00
37 P Methylcyclohexane	0.526	0.581	-10.5	113	0.00
38 1,4-Dioxane	0.003	0.003	0.0	86	0.00
39 UN Ethyl acetate	0.000	0.000	0.0	0#	0.00
40 P 1,2-Dichloropropane	0.345	0.354	-2.6	110	0.00
41 UN Isobutyl alcohol	0.000	0.000	0.0	0#	-0.06
42 Dibromomethane	0.181	0.186	-2.8	110	0.00
43 P Bromodichloromethane	0.379	0.380	-0.3	104	0.00
44 2-Chloroethyl vinyl Ether	0.002	0.003	-50.0#	150	0.15
45 UN Isopropyl acetate	0.000	0.000	0.0	0#	0.00
46 1,1-Dichloropropene	0.410	0.443	-8.0	111	0.00
47 P cis-1,3-Dichloropropene	0.471	0.498	-5.7	110	0.00

&gt; 20

NT

## Evaluate Continuing Calibration Report

219

Data File: C:\msdchem\1\DATA\160907\x35135.D

DataAcq Meth: 8260RUN.M

Acq On : 7 Sep 2016 2:01 pm

Operator: Bill Brew

Sample : 50ppb mega CC

Inst : Instrument #1

Misc :

ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 07 14:17:14 2016

Quant Method : C:\msdchem\1\METHODS\160826.M

Quant Title : 8260/624 Analysis

QLast Update : Fri Aug 26 14:45:45 2016

Response via : Initial Calibration

Integrator: RTE

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
48 P	4-Methyl-2-pentanone	0.173	0.133	23.1#	97	0.00
49 S	Toluene-D8	0.932	0.958	2.8	111	0.00
50 P	Toluene	1.334	1.327	0.5	108	0.00
51 P	trans-1,3-Dichloropropene	0.434	0.452	-4.1	107	0.00
52 P	1,1,2-Trichloroethane	0.295	0.272	7.8	106	0.00
53	1,3-Dichloropropane	0.503	0.491	2.4	109	0.00
54 P	Tetrachloroethene	0.365	0.373	-2.2	108	0.00
55 P	2-Hexanone	0.321	0.263	18.1	100	0.00
56 P	Dibromochloromethane	0.287	0.275	4.2	100	0.00
57 P	1,2-Dibromoethane	0.291	0.286	1.7	108	0.00
58 I	Chlorobenzene-d5	1.000	1.000	0.0	110	0.00
59 P	Chlorobenzene	1.151	1.132	1.7	109	0.00
60	1,1,1,2-Tetrachloroethane	0.372	0.360	3.2	103	0.00
61 P	Ethylbenzene	2.032	1.954	3.8	109	0.00
62 P	m,p-Xylene	0.778	0.743	4.5	109	0.00
63 P	o-Xylene	0.849	0.739	13.0	107	0.00
64 P	Styrene	1.201	1.204	-0.2	109	0.00
65 P	Bromoform	0.253	0.207	18.2	91	0.00
66 P	Isopropylbenzene	1.981	2.046	-3.3	110	0.00
67	1,2,3-Trichloropropane	0.159	0.145	8.8	106	0.00
68 S	4-Bromofluorobenzene	0.521	0.532	-2.1	111	0.00
69	Bromobenzene	0.539	0.516	4.3	106	0.00
70 P	1,1,2,2-Tetrachloroethane	0.545	0.484	11.2	102	0.00
71	n-Propylbenzene	2.459	2.454	0.2	108	0.00
72	2-Chlorotoluene	0.496	0.483	2.6	108	0.00
73	4-Chlorotoluene	0.512	0.506	1.2	107	0.00
74	1,3,5-Trimethylbenzene	1.745	1.790	-2.6	111	0.00
75	tert-Butylbenzene	0.414	0.420	-1.4	108	0.00
76	1,2,4-Trimethylbenzene	1.925	1.882	2.2	110	0.00
77	sec-Butylbenzene	2.245	2.320	-3.3	110	0.00
78	p-Isopropyltoluene	1.959	2.030	-3.6	111	0.00
79 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	0.00
80 P	1,3-Dichlorobenzene	1.778	1.712	3.7	108	0.00
81 P	1,4-Dichlorobenzene	1.840	1.701	7.6	108	0.00
82	n-Butylbenzene	2.962	3.071	-3.7	108	0.00
83 P	1,2-Dichlorobenzene	1.667	1.568	5.9	106	0.00
84 UN	Tetraethyllead	0.000	0.000	0.0	0#	0.00
85 P	1,2-Dibromo-3-Chloropropane	0.194	0.158	18.6	92	0.00
86 P	1,2,4-Trichlorobenzene	1.298	1.254	3.4	106	0.00
87	1,2,3-Trichlorobenzene	1.211	1.108	8.5	101	0.00
88	Hexachlorobutadiene	0.780	0.761	2.4	107	0.00
89	Naphthalene	2.687	2.418	10.0	98	0.00

(#)= Out of Range

SPCC's out = 1 CCC's out = 0

2D  
SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Paradigm Environmental Services  
 Lab Project #: 163832-3845-3892  
 QC Batch Number #: QC160908ABNS

Client Name: C&S Companies  
 Client Project #: N/A  
 Client Project Name: 19 North Street  
 SDG #: 3832-01

	SAMPLE NO.	S1 2-FP	S2 P-d5	S3 NB-d5	S4 2-FBP	S5 2,4,6-TBP	S6 TP-d14	TOT OUT
01	Blk1	50.0	53.4	52.2	57.8	61.7	97.8	0
02	LCS1	61.3	66.7	62.5	74.0	82.8	94.8	0
03	163832-01 B1-5-6 ft	47.1	54.7	47.3	54.0	73.9	80.6	0
04	163832-02 B1-15 ft	50.6	55.0	51.4	60.9	64.0	82.3	0
05	163832-04 C2-13-14.5 ft	27.6 *	28.4 *	28.8 *	33.5 *	39.4	58.4	4
06	163832-04MS	57.5	63.8	59.0	70.8	74.7	86.8	0
07	163832-04MSD	38.8	41.2	39.0	45.0	54.5	80.7	0
08	163832-05 D1-9.5-11.5 ft	40.7	43.2	42.1	47.6	48.3	69.7	0
09	163832-05MS	57.7	63.6	56.9	66.6	69.0	73.2	0
10	163832-05MSD	44.2	48.8	45.0	53.3	60.4	74.8	0
11	163832-06 D1-15-16 ft	47.9	51.9	48.2	55.0	58.3	85.6	0
12	163832-07 E2-5-6.5 ft	51.3	56.2	53.8	67.8	84.1	85.4	0
13	163832-08 E2-9-10 ft	48.4	53.1	48.8	52.7	58.3	86.2	0
14	163832-09 E2-14-15 ft	47.1	52.9	52.1	59.6	51.4	84.4	0
15	163832-10 F1-3-5 ft	40.4	44.1	43.5	50.9	69.9	78.3	0
16	163832-11 F1-9-10 ft	45.3	48.2	46.1	50.8	65.6	88.6	0
17	163832-12 F1-15 ft	37.4	40.7	36.6	40.5	50.4	80.6	0
18	163832-13 F2-4-6 ft	43.3	46.8	44.2	48.1	67.5	91.4	0
19	163832-14 F2-9-10 ft	42.9	47.3	39.9	39.9	45.1	72.5	0
20								

QC LIMITS %

S1 (2-FP) = 2-Fluorophenol	(35 - 84.1)
S2 (P-d5) = Phenol-d5	(38.5 - 88.8)
S3 (NB-d5) = Nitrobenzene-d5	(36.3 - 82.2)
S4 (2-FBP) = 2-Fluorobiphenyl	(36.4 - 95.1)
S5 (2,4,6-TBP) = 2,4,6-Tribromophenol	(34.1 - 104)
S6 (TP) = Terphenyl-d14	(54.9 - 114)

Notes: \* Values outside of current required QC limits  
 D Surrogate diluted out

2D

## SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Paradigm Environmental Services  
 Lab Project #: 163832-3845-3892  
 QC Batch Number #: QC160909ABNS

Client Name: C&S Companies  
 Client Project #: N/A  
 Client Project Name: 19 North Street  
 SDG #: 3832-01

	SAMPLE NO.	S1 2-FP	S2 P-d5	S3 NB-d5	S4 2-FBP	S5 2,4,6-TBP	S6 TP-d14	TOT OUT
01	Blk1	57.9	61.4	59.6	72.5	87.3	100.0	0
02	LCS1	66.0	71.1	66.1	81.8	88.6	98.3	0
03	163845-01 A4-22-23 ft	37.9	39.9	36.5	43.8	66.6	83.3	0
04	163845-01MS	39.8	47.8	31.4 *	46.7	67.7	83.3	1
05	163845-01MSD	35.2	41.1	30.2 *	41.3	60.1	89.5	1
06	163892-01 C4 7-8 ft	41.4	43.7	39.1	47.3	67.1	92.8	0
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

## QC LIMITS %

S1 (2-FP) = 2-Fluorophenol	(35 - 84.1)
S2 (P-d5) = Phenol-d5	(38.5 - 88.8)
S3 (NB-d5) = Nitrobenzene-d5	(36.3 - 82.2)
S4 (2-FBP) = 2-Fluorobiphenyl	(36.4 - 95.1)
S5 (2,4,6-TBP) = 2,4,6-Tribromophenol	(34.1 - 104)
S6 (TP) = Terphenyl-d14	(54.9 - 114)

Notes: \* Values outside of current required QC limits  
 D Surrogate diluted out



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

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QC Report for Matrix Spike and Matrix Spike Duplicate

Client: C&S Companies  
Project Reference: 19 North Street

SDG #: 3832-01  
Lab Project ID: 163832

Lab Sample ID: 163832-04  
Sample Identifier: C2-13-14.5 ft  
Matrix: Soil

Date Sampled: 9/1/2016  
Date Received: 9/2/2016  
Date Analyzed: 9/8/2016

Semi-Volatile Organics (Acid/Base Neutrals)

	<u>Sample</u>	<u>Result</u>	<u>MS</u>	<u>MS</u>	<u>MS %</u>	<u>MSD</u>	<u>MSD</u>	<u>MSD %</u>	<u>% Rec.</u>	<u>MS</u>	<u>MSD</u>	<u>Relative</u>	<u>RPD</u>	<u>RPD</u>
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Added</u>	<u>Result</u>	<u>Recovery</u>	<u>Added</u>	<u>Result</u>	<u>Recovery</u>	<u>Limits</u>	<u>Outlier</u>	<u>Outlier</u>	<u>% Diff.</u>	<u>Limit</u>	<u>Outlier</u>
1,2,4-Trichlorobenzene	< 323	ug/Kg	1620	858	52.8	1630	547	33.5	38 - 79		*	44.9	24.7	*
1,4-Dichlorobenzene	< 323	ug/Kg	1620	803	49.5	1630	497	30.4	34.4 - 72.4		*	47.7	22.6	*
2,4-Dinitrotoluene	< 323	ug/Kg	1620	1250	76.9	1630	907	55.6	49.3 - 94.4			32.2	26.2	*
2-Chlorophenol	< 323	ug/Kg	2440	1510	61.9	2450	967	39.5	43.2 - 86.7		*	44.2	21.3	*
4-Chloro-3-methylphenol	< 323	ug/Kg	2440	1580	64.9	2450	1020	41.7	49.4 - 96		*	43.5	23.5	*
4-Nitrophenol	< 646	ug/Kg	2440	2080	85.3	2450	1700	69.2	40.9 - 108			20.8	27	
Acenaphthene	< 323	ug/Kg	1620	1130	69.5	1630	722	44.2	43.8 - 88.3			44.5	26.1	*
N-Nitroso-di-n-propylamine	< 323	ug/Kg	1620	1050	64.7	1630	642	39.3	40.6 - 85.5		*	48.7	27.2	*
Pentachlorophenol	< 646	ug/Kg	2440	1800	74.0	2450	1430	58.4	20.9 - 146			23.5	39.4	
Phenol	< 323	ug/Kg	2440	1550	63.7	2450	999	40.8	44.7 - 87.6		*	43.8	21.5	*
Pyrene	< 323	ug/Kg	1620	1310	80.5	1630	1180	72.1	57.1 - 104			11.0	26.6	

Any estimated values are displayed, and derived values calculated, based on numeric result only. See primary analytical report for data flags.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Friday, September 09, 2016





QC Report for Matrix Spike and Matrix Spike Duplicate

Client: C&S Companies  
Project Reference: 19 North Street

SDG #: 3832-01  
Lab Project ID: 163832

Lab Sample ID: 163832-05  
Sample Identifier: D1-9.5-11.5 ft  
Matrix: Soil

Date Sampled: 9/1/2016  
Date Received: 9/2/2016  
Date Analyzed: 9/8/2016

Semi-Volatile Organics (Acid/Base Neutrals)

	<u>Sample</u>	<u>Result</u>	<u>MS</u>	<u>MS</u>	<u>MS %</u>	<u>MSD</u>	<u>MSD</u>	<u>MSD %</u>	<u>% Rec.</u>	<u>MS</u>	<u>MSD</u>	<u>Relative</u>	<u>RPD</u>	<u>RPD</u>
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Added</u>	<u>Result</u>	<u>Recovery</u>	<u>Added</u>	<u>Result</u>	<u>Recovery</u>	<u>Limits</u>	<u>Outlier</u>	<u>Outlier</u>	<u>% Diff.</u>	<u>Limit</u>	<u>Outlier</u>
1,2,4-Trichlorobenzene	< 334	ug/Kg	1650	801	48.5	1670	596	35.7	38 - 79		*	30.4	24.7	*
1,4-Dichlorobenzene	< 334	ug/Kg	1650	688	41.6	1670	483	28.9	34.4 - 72.4		*	36.1	22.6	*
2,4-Dinitrotoluene	< 334	ug/Kg	1650	1150	69.7	1670	1010	60.2	49.3 - 94.4			14.7	26.2	
2-Chlorophenol	< 334	ug/Kg	2480	1510	61.0	2510	1160	46.3	43.2 - 86.7			27.3	21.3	*
4-Chloro-3-methylphenol	< 334	ug/Kg	2480	1670	67.4	2510	1350	54.1	49.4 - 96			21.9	23.5	
4-Nitrophenol	< 668	ug/Kg	2480	1690	68.4	2510	1660	66.1	40.9 - 108			3.36	27	
Acenaphthene	< 334	ug/Kg	1650	1100	66.4	1670	891	53.3	43.8 - 88.3			21.8	26.1	
N-Nitroso-di-n-propylamine	< 334	ug/Kg	1650	1050	63.5	1670	812	48.6	40.6 - 85.5			26.5	27.2	
Pentachlorophenol	< 668	ug/Kg	2480	1620	65.5	2510	1350	53.9	20.9 - 146			19.5	39.4	
Phenol	< 334	ug/Kg	2480	1610	65.0	2510	1220	48.7	44.7 - 87.6			28.6	21.5	*
Pyrene	< 334	ug/Kg	1650	1150	69.3	1670	1140	68.2	57.1 - 104			1.69	26.6	

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Report Prepared Friday, September 09, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

298

QC Report for Matrix Spike and Matrix Spike Duplicate

Client: C&S Companies  
Project Reference: North Street

SDG #: 3832-01  
Lab Project ID: 163845

Lab Sample ID: 163845-01  
Sample Identifier: A4-22-23 ft  
Matrix: Soil

Date Sampled: 9/2/2016  
Date Received: 9/6/2016  
Date Analyzed: 9/10/2016

Semi-Volatile Organics (Acid/Base Neutrals)

	Sample	Result	MS	MS	MS %	MSD	MSD	MSD %	% Rec.	MS	MSD	Relative	RPD	RPD
Analyte	Result	Units	Added	Result	Recovery	Added	Result	Recovery	Limits	Outlier	Outlier	% Diff.	Limit	Outlier
1,2,4-Trichlorobenzene	< 327	ug/Kg	1650	659	39.9	1650	580	35.1	38 - 79		*	12.7	24.7	
1,4-Dichlorobenzene	< 327	ug/Kg	1650	561	34.0	1650	485	29.4	34.4 - 72.4	*	*	14.5	22.6	
2,4-Dinitrotoluene	< 327	ug/Kg	1650	1090	66.1	1650	933	56.5	49.3 - 94.4			15.7	26.2	
2-Chlorophenol	< 327	ug/Kg	2480	1300	52.6	2480	1030	41.4	43.2 - 86.7		*	23.8	21.3	*
4-Chloro-3-methylphenol	< 327	ug/Kg	2480	1540	62.4	2480	1250	50.7	49.4 - 96			20.7	23.5	
4-Nitrophenol	< 655	ug/Kg	2480	2260	91.3	2480	1980	79.8	40.9 - 108			13.4	27	
Acenaphthene	< 327	ug/Kg	1650	943	57.1	1650	797	48.3	43.8 - 88.3			16.8	26.1	
N-Nitroso-di-n-propylamine	< 327	ug/Kg	1650	866	52.5	1650	716	43.4	40.6 - 85.5			18.9	27.2	
Pentachlorophenol	< 655	ug/Kg	2480	2130	86.2	2480	1940	78.2	20.9 - 146			9.71	39.4	
Phenol	< 327	ug/Kg	2480	1370	55.3	2480	1070	43.3	44.7 - 87.6		*	24.2	21.5	*
Pyrene	< 327	ug/Kg	1650	1360	82.2	1650	1300	78.9	57.1 - 104			4.12	26.6	

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Report Prepared Monday, September 12, 2016

## Response Factor Report Instrument #1

Method Path : C:\msdchem\1\methods\

Method File : ABN160909.M

38) P	Caprolactam	0.145	0.148	0.157	0.166	0.165	0.163	0.137	0.154	7.24
39) P	1,2,4,5-Tetrac...	0.309	0.299	0.298	0.298	0.298	0.278	0.278	0.294	4.01
40) P	Biphenyl	0.833	0.807	0.801	0.808	0.794	0.756	0.736	0.791	4.23
41) I	Acenaphthene-d10	-----ISTD-----								
42) P	2-Chloronaphth...	0.385	0.373	0.365	0.362	0.360	0.348	0.339	0.362#	4.24
43) PM	Acenaphthene	1.185	1.164	1.138	1.174	1.144	1.121	1.100	1.146	2.62
44) P	Acenaphthylene	1.821	1.779	1.755	1.818	1.804	1.684	1.676	1.763	3.45
45) P	4-Chlorophenyl...	0.613	0.589	0.596	0.610	0.597	0.566	0.560	0.590	3.44
46) P	Dibenzofuran	1.689	1.636	1.623	1.677	1.641	1.599	1.607	1.639	2.07
47) P	Diethyl phthalate	1.350	1.280	1.297	1.348	1.337	1.270	1.270	1.307	2.80
48) P	Dimethyl phtha...	1.330	1.284	1.279	1.314	1.299	1.244	1.222	1.282	2.97
49) PM	2,4-Dinitrophenol	0.069	0.097	0.147	0.176	0.185	0.179	0.193	0.149	32.29*
50) PM	2,4-Dinitrotol...	0.388	0.386	0.408	0.415	0.420	0.403	0.417	0.405	3.38
51) P	2,6-Dinitrotol...	0.301	0.294	0.301	0.311	0.310	0.306	0.310	0.305	2.04
52) P	Fluorene	1.377	1.323	1.333	1.328	1.338	1.280	1.257	1.320	3.00
53) S	2-Fluorobiphenyl	1.377	1.324	1.308	1.320	1.307	1.268	1.264	1.310	2.91
54) P	Hexachlorocycl...	0.160	0.192	0.241	0.271	0.295	0.292	0.265	0.245	20.99*
55) P	2-Nitroaniline	0.352	0.379	0.390	0.407	0.407	0.411	0.420	0.395	5.99
56) P	3-Nitroaniline	0.308	0.310	0.334	0.348	0.346	0.339	0.350	0.334	5.29
57) P	4-Nitroaniline	0.292	0.297	0.336	0.333	0.340	0.328	0.338	0.323	6.25
58) PM	4-Nitrophenol	0.243	0.204	0.237	0.249	0.280	0.272	0.286	0.253	11.41
59) S	2,4,6-Tribromo...	0.158	0.149	0.153	0.156	0.156	0.145	0.144	0.152	3.74
60) PM	2,4,6-Trichlor...	0.344	0.344	0.352	0.351	0.352	0.342	0.345	0.347	1.22
61) P	2,4,5-Trichlor...	0.354	0.355	0.367	0.365	0.366	0.359	0.366	0.362	1.55
62) P	2,3,4,6-Tetrac...	0.300	0.291	0.305	0.292	0.286	0.281	0.282	0.291	3.13
63) P	Atrazine	0.357	0.343	0.313			0.337			6.56
64) I	Phenanthrene-d10	-----ISTD-----								
65) P	4-Bromophenyl ...	0.207	0.208	0.203	0.207	0.206	0.200	0.198	0.204	1.88
66) P	Di-n-butyl pht...	1.284	1.281	1.352	1.328	1.390	1.320	1.362	1.331	3.00
67) PM	4,6-Dinitro-2-...	0.083	0.102	0.133	0.144	0.152	0.158	0.164	0.134	22.70*
68) P	Fluoranthene	1.176	1.187	1.209	1.172	1.233	1.153	1.165	1.185	2.33
69) P	Hexachlorobenzene	0.210	0.210	0.213	0.213	0.213	0.212	0.213	0.212	0.59
70) P	N-Nitrosodiphe...	0.674	0.665	0.669	0.681	0.685	0.679	0.675	0.676	1.05
71) PM	Pentachlorophenol	0.100	0.106	0.123	0.119	0.123	0.123	0.133	0.118	9.66
72) P	Anthracene	1.167	1.162	1.159	1.155	1.181	1.155	1.157	1.162	0.81
73) P	Phenanthrene	1.150	1.133	1.125	1.129	1.147	1.111	1.126	1.131	1.18
74) P	Carbazole	1.087	1.079	1.098	1.091	1.125	1.059	1.075	1.088	1.89
75) P	Benzo (a) anth...	1.035	1.078	1.085	1.023	1.134	1.041	1.048	1.063	3.61
76) I	Chrysene-d12	-----ISTD-----								
77) P	Benzidine	0.569	0.597	0.480	0.447	0.429			0.504	14.81
78) P	Bis (2-ethylhe...	0.761	0.794	0.847	0.858	0.871	0.827	0.844	0.829	4.67
79) P	Butylbenzylpht...	0.578	0.596	0.637	0.640	0.651	0.627	0.639	0.624	4.28
80) P	Chrysene	1.104	1.111	1.100	1.094	1.089	1.050	1.051	1.086	2.29
81) P	3,3'-Dichlorob...	0.378	0.403	0.406	0.401	0.398	0.380	0.374	0.392	3.53
82) PM	Pyrene	1.295	1.247	1.290	1.311	1.293	1.246	1.269	1.279	1.97

3 pt. calibration  
us / 5 all

ICAC Summary Table

Data File: C:\msdchem\1\data\160906\B13871.D

Acq On : 7 Sep 2016 2:19 am

Sample : CCV - 50ppm

Misc :

Operator : M.Miller

ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 07 07:04:29 2016

Quant Method : C:\msdchem\1\methods\ABN160819I.M

Quant Title :

QLast Update : Tue Sep 06 12:11:27 2016

Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min  
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47 P	Diethyl phthalate	1.332	1.497	-12.4	118	0.00
48 P	Dimethyl phthalate	1.319	1.477	-12.0	118	0.00
49 PM	2,4-Dinitrophenol	0.180	0.151	16.1	88	0.00
50 PM	2,4-Dinitrotoluene	0.410	0.464	-13.2	119	0.00
51 P	2,6-Dinitrotoluene	0.305	0.351	-15.1	121	0.00
52 P	Fluorene	1.363	1.526	-12.0	119	0.00
53 S	2-Fluorobiphenyl	1.338	1.497	-11.9	118	0.00
54 P	Hexachlorocyclopentadiene	0.324	0.172	46.9#	56	0.00
55 P	2-Nitroaniline	0.398	0.450	-13.1	122	0.00
56 P	3-Nitroaniline	0.342	0.385	-12.6	120	0.00
57 P	4-Nitroaniline	0.333	0.382	-14.7	122	0.00
58 PM	4-Nitrophenol	0.269	0.281	-4.5	107	0.00
59 S	2,4,6-Tribromophenol	0.165	0.183	-10.9	114	0.00
60 PM	2,4,6-Trichlorophenol	0.374	0.401	-7.2	113	0.00
61 P	2,4,5-Trichlorophenol	0.382	0.415	-8.6	115	0.00
62 P	2,3,4,6-Tetrachlorophenol	0.322	0.335	-4.0	108	0.00
63 P	Atrazine	0.344	0.192	44.2#	56	0.00
64 I	Phenanthrene-d10	1.000	1.000	0.0	116	0.00
65 P	4-Bromophenyl phenyl ether	0.214	0.207	3.3	113	0.00
66 P	Di-n-butyl phthalate	1.299	1.354	-4.2	122	0.00
67 PM	4,6-Dinitro-2-methylphenol	0.139	0.112	19.4	94	0.00
68 P	Fluoranthene	1.170	1.177	-0.6	119	0.00
69 P	Hexachlorobenzene	0.216	0.214	0.9	116	0.00
70 P	N-Nitrosodiphenylamine	0.663	0.665	-0.3	119	0.00
71 PM	Pentachlorophenol	0.138	0.130	5.8	106	0.00
72 P	Anthracene	1.134	1.135	-0.1	117	0.00
73 P	Phenanthrene	1.122	1.125	-0.3	118	0.00
74 P	Carbazole	1.041	1.066	-2.4	120	0.00
75 P	Benzo (a) anthracene	1.043	1.041	0.2	118	0.00
76 I	Chrysene-d12	1.000	1.000	0.0	115	0.00
77	Benzidine	0.595	0.523	12.1	112	0.00
78 P	Bis (2-ethylhexyl) phthalat	0.823	0.862	-4.7	122	0.00
79 P	Butylbenzylphthalate	0.618	0.649	-5.0	121	0.00
80 P	Chrysene	1.069	1.087	-1.7	116	0.00
81 P	3,3'-Dichlorobenzidine	0.416	0.447	-7.5	124	0.00
82 PM	Pyrene	1.290	1.323	-2.6	119	0.00
83 S	Terphenyl-d14	0.831	0.860	-3.5	120	0.00
84 I	Perylene-d12	1.000	1.000	0.0	117	0.00
85 P	Benzo (b) fluoranthene	1.306	1.260	3.5	112	0.00
86 P	Benzo (k) fluoranthene	1.218	1.303	-7.0	123	0.00
87 P	Benzo (g,h,i) perylene	0.983	0.980	0.3	117	0.00
88 P	Benzo (a) pyrene	1.186	1.191	-0.4	116	0.00
89 P	Dibenz (a,h) anthracene	1.005	0.985	2.0	114	0.00
90 P	Di-n-octylphthalate	1.709	1.733	-1.4	117	0.00
91 P	Indeno (1,2,3-cd) pyrene	0.353	0.355#	-0.6	122	0.00

Data File: C:\msdchem\1\data\160907\B13913.D

Acq On : 8 Sep 2016 1:52 am

Sample : CCV - 50ppm

Misc :

Operator : M.Miller

ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 08 07:33:04 2016

Quant Method : C:\msdchem\1\methods\ABN160819J.M

Quant Title :

QLast Update : Wed Sep 07 13:21:43 2016

Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47 P	Diethyl phthalate	1.332	1.471	-10.4	118	0.00
48 P	Dimethyl phthalate	1.319	1.463	-10.9	120	0.00
49 PM	2,4-Dinitrophenol	0.180	0.075	58.3#	44#	0.00
50 PM	2,4-Dinitrotoluene	0.410	0.470	-14.6	123	0.00
51 P	2,6-Dinitrotoluene	0.305	0.342	-12.1	120	0.00
52 P	Fluorene	1.363	1.500	-10.1	119	0.00
53 S	2-Fluorobiphenyl	1.338	1.499	-12.0	121	0.00
54 P	Hexachlorocyclopentadiene	0.324	0.111	65.7#	37#	0.00
55 P	2-Nitroaniline	0.398	0.455	-14.3	125	0.00
56 P	3-Nitroaniline	0.342	0.392	-14.6	125	0.00
57 P	4-Nitroaniline	0.333	0.376	-12.9	122	0.00
58 PM	4-Nitrophenol	0.269	0.266	1.1	104	0.00
59 S	2,4,6-Tribromophenol	0.165	0.180	-9.1	115	0.00
60 PM	2,4,6-Trichlorophenol	0.374	0.397	-6.1	114	0.00
61 P	2,4,5-Trichlorophenol	0.382	0.409	-7.1	116	0.00
62 P	2,3,4,6-Tetrachlorophenol	0.322	0.322	0.0	106	0.00
63 P	Atrazine	0.344	0.176	48.8#	52	0.00
64 I	Phenanthrene-d10	1.000	1.000	0.0	118	0.00
65 P	4-Bromophenyl phenyl ether	0.214	0.201	6.1	112	0.00
66 P	Di-n-butyl phthalate	1.299	1.337	-2.9	123	0.00
67 PM	4,6-Dinitro-2-methylphenol	0.139	0.063	54.7#	54	0.01
68 P	Fluoranthene	1.170	1.198	-2.4	123	0.00
69 P	Hexachlorobenzene	0.216	0.209	3.2	115	0.00
70 P	N-Nitrosodiphenylamine	0.663	0.659	0.6	120	0.00
71 PM	Pentachlorophenol	0.138	0.127	8.0	105	0.01
72 P	Anthracene	1.134	1.150	-1.4	121	0.00
73 P	Phenanthrene	1.122	1.113	0.8	119	0.00
74 P	Carbazole	1.041	1.096	-5.3	125	0.00
75 P	Benzo (a) anthracene	1.043	1.051	-0.8	122	0.00
76 I	Chrysene-d12	1.000	1.000	0.0	119	0.00
77	Benzidine	0.595	0.588	1.2	130	0.00
78 P	Bis (2-ethylhexyl) phthalat	0.823	0.858	-4.3	125	0.00
79 P	Butylbenzylphthalate	0.618	0.658	-6.5	127	0.00
80 P	Chrysene	1.069	1.093	-2.2	121	0.00
81 P	3,3'-Dichlorobenzidine	0.416	0.456	-9.6	130	0.00
82 PM	Pyrene	1.290	1.296	-0.5	120	0.00
83 S	Terphenyl-d14	0.831	0.849	-2.2	122	0.00
84 I	Perylene-d12	1.000	1.000	0.0	113	0.00
85 P	Benzo (b) fluoranthene	1.306	1.377	-5.4	118	0.00
86 P	Benzo (k) fluoranthene	1.218	1.231	-1.1	113	0.00
87 P	Benzo (g,h,i) perylene	0.983	0.965	1.8	112	0.00
88 P	Benzo (a) pyrene	1.186	1.166	1.7	110	0.00
89 P	Dibenz (a,h) anthracene	1.005	0.970	3.5	109	0.00
90 P	Di-n-octylphthalate	1.709	1.840	-7.7	121	0.00
91 P	Indeno (1,2,3-cd) pyrene	0.353	0.356#	-0.8	119	0.00

Data File: C:\msdchem\1\data\160908\B13934.D

Acq On : 8 Sep 2016 2:34 pm

Sample : CCV - 50ppm

Misc :

Operator : M.Miller

ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 08 14:58:50 2016

Quant Method : C:\msdchem\1\methods\ABN160819k.M

Quant Title :

QLast Update : Wed Sep 07 13:21:43 2016

Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47 P	Diethyl phthalate	1.332	1.475	-10.7	137	0.01
48 P	Dimethyl phthalate	1.319	1.455	-10.3	138	0.01
49 PM	2,4-Dinitrophenol	0.180	0.187	-3.9	128	0.01
50 PM	2,4-Dinitrotoluene	0.410	0.450	-9.8	137	0.01
51 P	2,6-Dinitrotoluene	0.305	0.337	-10.5	137	0.01
52 P	Fluorene	1.363	1.501	-10.1	138	0.00
53 S	2-Fluorobiphenyl	1.338	1.478	-10.5	138	0.01
54 P	Hexachlorocyclopentadiene	0.324	0.283	12.7	110	0.01
55 P	2-Nitroaniline	0.398	0.433	-8.8	138	0.01
56 P	3-Nitroaniline	0.342	0.378	-10.5	140	0.01
57 P	4-Nitroaniline	0.333	0.368	-10.5	139	0.01
58 PM	4-Nitrophenol	0.269	0.246	8.6	111	0.02
59 S	2,4,6-Tribromophenol	0.165	0.170	-3.0	126	0.01
60 PM	2,4,6-Trichlorophenol	0.374	0.395	-5.6	132	0.00
61 P	2,4,5-Trichlorophenol	0.382	0.404	-5.8	133	0.01
62 P	2,3,4,6-Tetrachlorophenol	0.322	0.322	0.0	122	0.01
63 P	Atrazine	0.344	0.168	51.2#	58	0.01
64 I	Phenanthrene-d10	1.000	1.000	0.0	133	0.01
65 P	4-Bromophenyl phenyl ether	0.214	0.208	2.8	129	0.01
66 P	Di-n-butyl phthalate	1.299	1.319	-1.5	136	0.01
67 PM	4,6-Dinitro-2-methylphenol	0.139	0.139	0.0	133	0.02
68 P	Fluoranthene	1.170	1.134	3.1	131	0.00
69 P	Hexachlorobenzene	0.216	0.208	3.7	129	0.00
70 P	N-Nitrosodiphenylamine	0.663	0.663	0.0	136	0.01
71 PM	Pentachlorophenol	0.138	0.123	10.9	115	0.01
72 P	Anthracene	1.134	1.143	-0.8	135	0.00
73 P	Phenanthrene	1.122	1.126	-0.4	135	0.01
74 P	Carbazole	1.041	1.056	-1.4	135	0.01
75 P	Benzo (a) anthracene	1.043	0.992	4.9	129	0.00
76 I	Chrysene-d12	1.000	1.000	0.0	127	0.00
77	Benzydine	0.595	0.460	22.7#	109	0.00
78 P	Bis (2-ethylhexyl) phthalat	0.823	0.855	-3.9	133	0.00
79 P	Butylbenzylphthalate	0.618	0.643	-4.0	132	0.01
80 P	Chrysene	1.069	1.083	-1.3	128	0.00
81 P	3,3'-Dichlorobenzidine	0.416	0.422	-1.4	129	0.00
82 PM	Pyrene	1.290	1.319	-2.2	131	0.00
83 S	Terphenyl-d14	0.831	0.830	0.1	128	0.01
84 I	Perylene-d12	1.000	1.000	0.0	132	0.01
85 P	Benzo (b) fluoranthene	1.306	1.304	0.2	130	0.01
86 P	Benzo (k) fluoranthene	1.218	1.198	1.6	128	0.01
87 P	Benzo (g,h,i) perylene	0.983	0.980	0.3	133	0.01
88 P	Benzo (a) pyrene	1.186	1.168	1.5	128	0.01
89 P	Dibenz (a,h) anthracene	1.005	0.997	0.8	130	0.01
90 P	Di-n-octylphthalate	1.709	1.707	0.1	130	0.01
91 P	Indeno (1,2,3-cd) pyrene	0.353	0.381#	-7.9	148	0.01

Data File: C:\msdchem\1\data\160908\B13961.D

Acq On : 9 Sep 2016 3:46 am

Sample : CCV - 50ppm

Misc :

Operator : M.Miller

ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 09 06:57:53 2016

Quant Method : C:\msdchem\1\methods\ABN160819k.M

Quant Title :

QLast Update : Wed Sep 07 13:21:43 2016

Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
47 P	Diethyl phthalate	50.000	58.593	-17.2	120	0.00
48 P	Dimethyl phthalate	50.000	56.812	-13.6	117	0.00
49 PM	2,4-Dinitrophenol	50.000	46.281	7.4	100	0.00
50 PM	2,4-Dinitrotoluene	50.000	57.332	-14.7	118	0.00
51 P	2,6-Dinitrotoluene	50.000	56.413	-12.8	115	0.00
52 P	Fluorene	50.000	56.111	-12.2	116	0.00
53 S	2-Fluorobiphenyl	50.000	52.926	-5.9	109	0.00
54 P	Hexachlorocyclopentadiene	50.000	39.155	21.7#	81	0.00
55 P	2-Nitroaniline	50.000	55.459	-10.9	116	0.00
56 P	3-Nitroaniline	50.000	55.949	-11.9	117	0.00
57 P	4-Nitroaniline	50.000	59.063	-18.1	122	0.00
58 PM	4-Nitrophenol	50.000	48.240	3.5	97	0.00
59 S	2,4,6-Tribromophenol	100.000	105.431	-5.4	106	0.00
60 PM	2,4,6-Trichlorophenol	50.000	51.081	-2.2	105	0.00
61 P	2,4,5-Trichlorophenol	50.000	51.759	-3.5	108	0.00
62 P	2,3,4,6-Tetrachlorophenol	50.000	51.487	-3.0	104	0.00
63 P	Atrazine	50.000	25.208	49.6#	49	0.00
64 I	Phenanthrene-d10	40.000	40.000	0.0	117	0.00
65 P	4-Bromophenyl phenyl ether	50.000	46.817	6.4	110	0.00
66 P	Di-n-butyl phthalate	50.000	51.853	-3.7	122	0.00
67 PM	4,6-Dinitro-2-methylphenol	50.000	46.168	7.7	108	0.00
68 P	Fluoranthene	50.000	50.102	-0.2	119	0.00
69 P	Hexachlorobenzene	50.000	46.975	6.0	111	0.00
70 P	N-Nitrosodiphenylamine	50.000	49.641	0.7	118	0.00
71 PM	Pentachlorophenol	50.000	42.532	14.9	96	0.00
72 P	Anthracene	50.000	50.073	-0.1	118	0.00
73 P	Phenanthrene	50.000	48.705	2.6	116	0.00
74 P	Carbazole	50.000	51.297	-2.6	120	0.00
75 P	Benzo (a) anthracene	50.000	46.704	6.6	111	0.00
76 I	Chrysene-d12	40.000	40.000	0.0	108	0.00
77	Benzidine	50.000	41.711	16.6	100	0.00
78 P	Bis (2-ethylhexyl) phthalat	50.000	54.296	-8.6	119	0.00
79 P	Butylbenzylphthalate	50.000	55.335	-10.7	120	0.00
80 P	Chrysene	50.000	52.078	-4.2	112	0.00
81 P	3,3'-Dichlorobenzidine	50.000	51.629	-3.3	112	0.00
82 PM	Pyrene	50.000	53.763	-7.5	117	0.00
83 S	Terphenyl-d14	50.000	53.314	-6.6	117	0.00
84 I	Perylene-d12	40.000	40.000	0.0	107	0.00
85 P	Benzo (b) fluoranthene	50.000	47.522	5.0	101	0.00
86 P	Benzo (k) fluoranthene	50.000	53.744	-7.5	113	0.00
87 P	Benzo (g,h,i) perylene	50.000	49.672	0.7	107	0.00
88 P	Benzo (a) pyrene	50.000	49.740	0.5	105	0.00
89 P	Dibenz (a,h) anthracene	50.000	47.787	4.4	102	0.00
90 P	Di-n-octylphthalate	50.000	53.731	-7.5	114	0.00
91 P	Indeno (1,2,3-cd) pyrene	50.000	53.293	-6.6	119	0.00

240%  
see Rstd, OK for NDS

see Rstd, OK for NDS

Data File: C:\msdchem\1\data\160909\B13989.D

Acq On : 9 Sep 2016 7:16 pm

Sample : 8270 ICAL 50 ppm

Misc :

Operator : M. Miller

ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 10 09:25:12 2016

Quant Method : C:\msdchem\1\methods\ABN160909.M

Quant Title :

QLast Update : Sat Sep 10 09:11:16 2016

Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47 P	Diethyl phthalate	1.307	1.297	0.8	100	0.00
48 P	Dimethyl phthalate	1.282	1.279	0.2	100	0.00
49 PM	2,4-Dinitrophenol	0.149	0.147	1.3	100	0.00
50 PM	2,4-Dinitrotoluene	0.405	0.408	-0.7	100	0.00
51 P	2,6-Dinitrotoluene	0.305	0.301	1.3	100	0.00
52 P	Fluorene	1.320	1.333	-1.0	100	0.00
53 S	2-Fluorobiphenyl	1.310	1.308	0.2	100	0.00
54 P	Hexachlorocyclopentadiene	0.245	0.241	1.6	100	0.00
55 P	2-Nitroaniline	0.395	0.390	1.3	100	0.00
56 P	3-Nitroaniline	0.334	0.334	0.0	100	0.00
57 P	4-Nitroaniline	0.323	0.336	-4.0	100	0.00
58 PM	4-Nitrophenol	0.253	0.208	17.8	88	0.00
59 S	2,4,6-Tribromophenol	0.152	0.153	-0.7	100	0.00
60 PM	2,4,6-Trichlorophenol	0.347	0.352	-1.4	100	0.00
61 P	2,4,5-Trichlorophenol	0.362	0.367	-1.4	100	0.00
62 P	2,3,4,6-Tetrachlorophenol	0.291	0.305	-4.8	100	0.00
63 P	Atrazine	0.337	0.313	7.1	100	0.00
64 I	Phenanthrene-d10	1.000	1.000	0.0	100	0.00
65 P	4-Bromophenyl phenyl ether	0.204	0.203	0.5	100	0.00
66 P	Di-n-butyl phthalate	1.331	1.352	-1.6	100	0.00
67 PM	4,6-Dinitro-2-methylphenol	0.134	0.133	0.7	100	0.00
68 P	Fluoranthene	1.185	1.209	-2.0	100	0.00
69 P	Hexachlorobenzene	0.212	0.213	-0.5	100	0.00
70 P	N-Nitrosodiphenylamine	0.676	0.669	1.0	100	0.00
71 PM	Pentachlorophenol	0.118	0.123	-4.2	100	0.00
72 P	Anthracene	1.162	1.159	0.3	100	0.00
73 P	Phenanthrene	1.131	1.125	0.5	100	0.00
74 P	Carbazole	1.088	1.098	-0.9	100	0.00
75 P	Benzo (a) anthracene	1.063	1.085	-2.1	100	0.00
76 I	Chrysene-d12	1.000	1.000	0.0	100	0.00
77	Benzidine	0.504	0.480	4.8	100	0.00
78 P	Bis (2-ethylhexyl) phthalat	0.829	0.847	-2.2	100	0.00
79 P	Butylbenzylphthalate	0.624	0.637	-2.1	100	0.00
80 P	Chrysene	1.086	1.100	-1.3	100	0.00
81 P	3,3'-Dichlorobenzidine	0.392	0.406	-3.6	100	0.00
82 PM	Pyrene	1.279	1.290	-0.9	100	0.00
83 S	Terphenyl-d14	0.791	0.795	-0.5	100	0.00
84 I	Perylene-d12	1.000	1.000	0.0	100	0.00
85 P	Benzo (b) fluoranthene	1.254	1.201	4.2	100	0.00
86 P	Benzo (k) fluoranthene	1.120	1.179	-5.3	100	0.00
87 P	Benzo (g,h,i) perylene	1.017	1.007	1.0	100	0.00
88 P	Benzo (a) pyrene	1.136	1.153	-1.5	100	0.00
89 P	Dibenz (a,h) anthracene	0.987	0.977	1.0	100	0.00
90 P	Di-n-octylphthalate	1.591	1.614	-1.4	100	0.00
91 P	Indeno (1,2,3-cd) pyrene	0.279	0.371#	-33.0#	137	0.00



## Evaluate Continuing Calibration Report

540

Data File: C:\msdchem\1\data\160912\B14024.D

Acq On : 12 Sep 2016 11:39 am

Sample : CCV-50ppm

Misc :

Operator : J. Burdett

ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 12 12:14:01 2016

Quant Method : C:\msdchem\1\methods\ABN160909.M

Quant Title :

QLast Update : Sat Sep 10 09:29:11 2016

Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min  
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47 P	Diethyl phthalate	1.307	1.484	-13.5	95	0.00
48 P	Dimethyl phthalate	1.282	1.457	-13.7	94	0.00
49 PM	2,4-Dinitrophenol	0.149	0.173	-16.1	97	0.00
50 PM	2,4-Dinitrotoluene	0.405	0.456	-12.6	92	0.00
51 P	2,6-Dinitrotoluene	0.305	0.338	-10.8	93	0.00
52 P	Fluorene	1.320	1.503	-13.9	93	0.00
53 S	2-Fluorobiphenyl	1.310	1.480	-13.0	93	0.00
54 P	Hexachlorocyclopentadiene	0.245	0.269	-9.8	92	0.00
55 P	2-Nitroaniline	0.395	0.446	-12.9	94	0.00
56 P	3-Nitroaniline	0.334	0.378	-13.2	94	0.00
57 P	4-Nitroaniline	0.323	0.362	-12.1	89	0.00
58 PM	4-Nitrophenol	0.253	0.265	-4.7	92	0.00
59 S	2,4,6-Tribromophenol	0.152	0.172	-13.2	92	0.00
60 PM	2,4,6-Trichlorophenol	0.347	0.398	-14.7	93	0.00
61 P	2,4,5-Trichlorophenol	0.362	0.414	-14.4	93	0.00
62 P	2,3,4,6-Tetrachlorophenol	0.291	0.329	-13.1	89	0.00
63 P	Atrazine	0.337	0.139	58.8#	37#	0.00
64 I	Phenanthrene-d10	1.000	1.000	0.0	92	0.00
65 P	4-Bromophenyl phenyl ether	0.204	0.209	-2.5	95	0.00
66 P	Di-n-butyl phthalate	1.331	1.327	0.3	91	0.00
67 PM	4,6-Dinitro-2-methylphenol	0.134	0.133	0.7	92	0.00
68 P	Fluoranthene	1.185	1.181	0.3	90	0.00
69 P	Hexachlorobenzene	0.212	0.213	-0.5	93	0.00
70 P	N-Nitrosodiphenylamine	0.676	0.682	-0.9	94	0.00
71 PM	Pentachlorophenol	0.118	0.117	0.8	88	0.00
72 P	Anthracene	1.162	1.178	-1.4	94	0.00
73 P	Phenanthrene	1.131	1.146	-1.3	94	0.00
74 P	Carbazole	1.088	1.070	1.7	90	0.00
75 P	Benzo (a) anthracene	1.063	1.010	5.0	86	0.00
76 I	Chrysene-d12	1.000	1.000	0.0	84	0.00
77	Benzidine	0.504	0.428	15.1	75	0.00
78 P	Bis (2-ethylhexyl) phthalat	0.829	0.861	-3.9	85	0.00
79 P	Butylbenzylphthalate	0.624	0.642	-2.9	84	0.00
80 P	Chrysene	1.086	1.114	-2.6	85	0.00
81 P	3,3'-Dichlorobenzidine	0.392	0.428	-9.2	88	0.00
82 PM	Pyrene	1.279	1.375	-7.5	89	0.00
83 S	Terphenyl-d14	0.791	0.843	-6.6	89	0.00
84 I	Perylene-d12	1.000	1.000	0.0	84	0.00
85 P	Benzo (b) fluoranthene	1.254	1.199	4.4	84	0.00
86 P	Benzo (k) fluoranthene	1.120	1.215	-8.5	87	0.00
87 P	Benzo (g,h,i) perylene	1.017	1.046	-2.9	88	0.00
88 P	Benzo (a) pyrene	1.136	1.157	-1.8	85	0.00
89 P	Dibenz (a,h) anthracene	0.987	1.033	-4.7	89	0.00
90 P	Di-n-octylphthalate	1.591	1.654	-4.0	87	0.00
91 P	Indeno (1,2,3-cd) pyrene	0.279	0.260#	6.8	81	0.00

7F

## PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: Paradigm Environmental ServicesClient Name: C&S CompaniesLab Project #: 163832-3845-3892Client Project #: N/AClient Project Name: 19 North StreetGC Column: RTX-PCBID: (mm) 0.32Initial Calibration File ID: P091016.M(9/10)Detector: ECD1 Anarrow boreDate Analyzed: 9/14/2016Time Analyzed: 02:04File/LAB #: 160913B\PCB57898.DCAL ID: 16/60 CCV 0.500

INDIVIDUAL COMPOUND		RT	RT FROM	WINDOW TO	AVERAGE CALC. AMT ng	TARGET AMT ng	AVERAGE %D	pass/ fail
PCB-1016	1	7.13	6.63	7.63	0.469	0.500	-6.3	pass
	2	7.56	7.06	8.06				
	3	8.94	8.44	9.44				
PCB-1260	1	11.26	10.76	11.76	0.365	0.500	-27.0	fail*
	2	11.81	11.31	12.31				
	3	12.94	12.44	13.44				

\* = Outside QC limit-Matrix Interference suspected

Note: Average % D with Acceptance window of +/- 20% used per 8082 method.

+/- 20% = Pass



**Method Blank Report**

**Client:** C&S Companies  
**Project Reference:** 19 North Street  
**Lab Project ID:** 163832  
**SDG #:** 3832-01  
**Matrix:** Soil

**Metals**

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	<0.495	mg/Kg		9/7/2016 20:48
Barium	<4.95	mg/Kg		9/7/2016 20:48
Beryllium	<0.248	mg/Kg		9/7/2016 20:48
Cadmium	<0.248	mg/Kg	✓	9/7/2016 20:48
Chromium	<0.495	mg/Kg		9/7/2016 20:48
Copper	1.36	mg/Kg		9/7/2016 20:48
Lead	<0.495	mg/Kg		9/7/2016 20:48
Manganese	<0.743	mg/Kg	✓	9/7/2016 20:48
Nickel	<1.98	mg/Kg		9/7/2016 20:48
Selenium	<0.495	mg/Kg		9/7/2016 20:48
Silver	<0.495	mg/Kg		9/7/2016 20:48
Zinc	<2.97	mg/Kg		9/7/2016 20:48

**Method Reference(s):** EPA 6010C  
EPA 3050B  
**Preparation Date:** 9/3/2016  
**Data File:** 090716c  
**QC Batch ID:** QC160903soil  
**QC Number:** 1

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016

mmp 5/6/17



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

941

QC Report for Sample Spike and Sample Duplicate

Client: C&S Companies  
Project Reference: 19 North Street

SDG #: 3832-01  
Lab Project ID: 163832

Lab Sample ID: 163832-04  
Sample Identifier: C2-13-14.5 ft  
Matrix: Soil

Date Sampled: 9/1/2016  
Date Received: 9/2/2016

**Metals**

<u>Analyte</u>	<u>Sample Results</u>	<u>Result Units</u>	<u>Spike Added</u>	<u>Spike Result</u>	<u>Spike % Recovery</u>	<u>% Rec Limits</u>	<u>Spike Outliers</u>	<u>Duplicate Result</u>	<u>Relative % Difference</u>	<u>RPD Limit</u>	<u>RPD Outliers</u>	<u>Date Analyzed</u>
Arsenic	0.379	mg/Kg	135	112	83.1	75 - 125		<0.560	NC	20		9/8/2016
Barium	13.7	mg/Kg	135	126	83.3	75 - 125		13.6	0.550	20		9/8/2016
Beryllium	< 0.275	mg/Kg	27.0	21.6	80.0	75 - 125		<0.280	NC	20		9/8/2016
Cadmium	0.367	mg/Kg	53.9	40.6	74.6	75 - 125	*	0.318	14.2	20		9/8/2016
Chromium	4.24	mg/Kg	135	124	88.9	75 - 125		4.32	1.93	20		9/8/2016
Copper	7.90	mg/Kg	135	131	91.6	75 - 125		8.05	1.81	20		9/8/2016
Lead	7.42	mg/Kg	135	112	77.9	75 - 125		7.51	1.29	20		9/8/2016
Manganese	205	mg/Kg	53.9	241	66.7	75 - 125	*	206	0.689	20		9/8/2016
Nickel	3.49	mg/Kg	270	219	79.9	75 - 125		3.47	0.651	20		9/8/2016
Selenium	0.989	mg/Kg	135	116	85.1	75 - 125		0.801	21.0	20	*	9/12/2016
Silver	< 0.549	mg/Kg	13.5	12.6	93.4	75 - 125		<0.560	NC	20		9/8/2016
Zinc	36.5	mg/Kg	135	171	99.9	75 - 125		41.7	13.2	20		9/8/2016

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

944

QC Report for Sample Spike and Sample Duplicate

Client: C&S Companies  
Project Reference: 19 North Street

SDG #: 3832-01

Lab Project ID: 163832

Lab Sample ID: 163832-05  
Sample Identifier: D1-9.5-11.5 ft  
Matrix: Soil

Date Sampled: 9/1/2016

Date Received: 9/2/2016

**Metals**

<u>Analyte</u>	<u>Sample Results</u>	<u>Result Units</u>	<u>Spike Added</u>	<u>Spike Result</u>	<u>Spike % Recovery</u>	<u>% Rec Limits</u>	<u>Spike Outliers</u>	<u>Duplicate Result</u>	<u>Relative % Difference</u>	<u>RPD Limit</u>	<u>RPD Outliers</u>	<u>Date Analyzed</u>
Arsenic	0.916	mg/Kg	143	112	77.8	75 - 125		0.786	15.3	20		9/9/2016
Barium	22.2	mg/Kg	143	142	83.3	75 - 125		21.4	3.31	20		9/9/2016
Beryllium	0.203	mg/Kg	28.7	22.3	76.9	75 - 125		0.193	NC	20		9/9/2016
Cadmium	0.222	mg/Kg	57.3	41.9	72.7	75 - 125	*	0.207	NC	20		9/9/2016
Chromium	6.53	mg/Kg	143	130	86.0	75 - 125		6.12	6.46	20		9/9/2016
Copper	8.63	mg/Kg	143	138	90.3	75 - 125		8.42	2.58	20		9/9/2016
Lead	8.54	mg/Kg	143	117	75.6	75 - 125		8.11	5.24	20		9/9/2016
Manganese	260	mg/Kg	57.3	321	107	75 - 125		254	2.34	20		9/9/2016
Nickel	5.71	mg/Kg	287	230	78.1	75 - 125		5.38	5.86	20		9/9/2016
Selenium	1.23	mg/Kg	143	119	82.5	75 - 125		0.574	72.6	20	*	9/12/2016
Silver	< 0.579	mg/Kg	14.3	12.9	90.3	75 - 125		<0.541	NC	20		9/9/2016
Zinc	49.4	mg/Kg	143	188	96.8	75 - 125		45.9	7.41	20		9/9/2016

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

1616

QC Report for Laboratory Control Sample

Client: C&S Companies  
Project Reference: 19 North Street  
Lab Project ID: 163832  
SDG #: 3832-01  
Matrix: Soil

Total Cyanide

<u>Analyte</u>	<u>Spike Added</u>	<u>Spike Units</u>	<u>LCS Result</u>	<u>LCS % Recovery</u>	<u>% Rec Limits</u>	<u>LCS Outliers</u>	<u>Date Analyzed</u>
Cyanide, Total	7.70	mg/Kg	10.3	134	85 - 115	*	9/12/2016

Method Reference(s): EPA 9014  
Preparation Date: 9/8/2016  
QC Number: 1  
QC Batch ID: QC160912stcn

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Report Prepared Tuesday, September 13, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

1619

QC Report for Sample Spike and Sample Duplicate

Client: C&S Companies

SDG #: 3832-01

Lab Project ID: 163892

Project Reference: 19 North Street

Lab Sample ID: 163892-01

Date Sampled: 8/30/2016

Sample Identifier: C4 7-8 ft

Date Received: 9/8/2016

Matrix: Soil

Total Cyanide

<u>Analyte</u>	<u>Sample Results</u>	<u>Result Units</u>	<u>Spike Added</u>	<u>Spike Result</u>	<u>Spike % Recovery</u>	<u>% Rec Limits</u>	<u>Spike Outliers</u>	<u>Duplicate Result</u>	<u>Relative % Difference</u>	<u>RPD Limit</u>	<u>RPD Outliers</u>	<u>Date Analyzed</u>
Cyanide, Total	0.360	mg/Kg	10.4	8.59	79.0	80 - 120	*	0.361	NC	20		9/13/2016
Method Reference(s):		EPA 9014										
Preparation Date:		9/12/2016										
QC Batch ID:		QC160913stcn										

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

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Report Prepared Thursday, September 15, 2016



**PARADIGM**  
ENVIRONMENTAL SERVICES, INC.

1620

QC Report for Sample Spike and Sample Duplicate

Client: C&S Companies  
Project Reference: 19 North Street

SDG #: 3832-01  
Lab Project ID: 163832

Lab Sample ID: 163832-05  
Sample Identifier: D1-9.5-11.5 ft  
Matrix: Soil

Date Sampled: 9/1/2016  
Date Received: 9/2/2016

Total Cyanide

<u>Analyte</u>	<u>Sample Results</u>	<u>Result Units</u>	<u>Spike Added</u>	<u>Spike Result</u>	<u>Spike % Recovery</u>	<u>% Rec Limits</u>	<u>Spike Outliers</u>	<u>Duplicate Result</u>	<u>Relative % Difference</u>	<u>RPD Limit</u>	<u>RPD Outliers</u>	<u>Date Analyzed</u>
Cyanide, Total	< 0.391	mg/Kg	8.63	12.0	139	80 - 120	*	<0.497	NC	20		9/12/2016
Method Reference(s):		EPA 9014										
Preparation Date:		9/8/2016										
QC Batch ID:		QC160912stcn										

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

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Report Prepared Tuesday, September 13, 2016



# Form 5a Matrix Spike

Client : Paradigm Environmental Services  
Project Name : 19 NORTH STREET  
Client Sample ID : D1 - 9.5-11.5 FT  
Lab Sample ID : L1627717-06  
Matrix Spike : WG930160-4  
Matrix Spike Dup : WG930160-5

Lab Number : L1627717  
Project Number : 19 NORTH ST  
Matrix : SOIL  
MS Analysis Date : 09/09/16 10:32  
MSD Analysis Date : 09/09/16 10:32

Parameter	Sample Conc. (mg/kg)	Matrix Spike Sample			Matrix Spike Duplicate			RPD	Recovery Limits	RPD Limit
		Spike Added (mg/kg)	Spike Conc. (mg/kg)	%R	Spike Added (mg/kg)	Spike Conc. (mg/kg)	%R			
Chromium, Hexavalent	ND	903	840	93	1190	1100	92	27 Q	75-125	20

435%



## *Appendix C*

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### *Validator Qualifications*

**KENNETH R. APPLIN**  
**Geochemist/Data Validator**

Ph.D., Geochemistry and Mineralogy, The Pennsylvania State University

M.S., Geochemistry and Mineralogy, The Pennsylvania State University

B.A., Geological Sciences, SUNY at Geneseo, NY

Dr. Applin has over 35 years of experience working with the geochemistry of natural waters. His prior experience includes working as an Assistant Professor of Geology at the University of Missouri-Columbia and as Chief Hydrogeologist and Geochemist with a leading engineering firm in Rochester, NY. In 1993, he established KR Applin and Associates, a small consulting business that focuses on the geochemistry of natural waters, especially as applied to problems involving the contamination of groundwater and surface water.

Dr. Applin is also an experienced analytical data validator and has provided data validation services since 1994 to a variety of clients performing brownfield cleanup projects, hazardous waste remediation, groundwater monitoring at solid waste facilities, and other projects requiring third-party data validation. Dr. Applin has several years of hands-on experience with the laboratory analysis of natural waters and has successfully completed the USEPA Region II certification courses for performing inorganic and organic analytical data validation.

**MICHAEL K. PERRY**  
**Chemist/Data Validator**

B.S. Chemistry, Georgia State University, Atlanta, GA

A.A.S., Chemical Technology, Alfred State College, Alfred, NY

Mr. Perry has over 30 years of experience in the analytical laboratory business. During his early career, he spent several years as a laboratory analyst performing the analysis of soil, water, and air samples for inorganic and organic chemical parameters. During his last 20 years in the environmental laboratory business, he managed and directed two major analytical laboratories in Rochester, NY. His management responsibilities included oversight of the daily operations of the lab, staff training and supervision, the selection, purchase, and maintenance of analytical instruments, the introduction of new laboratory methods, analytical quality assurance and quality control, data acquisition and management, and other business-related activities.

Mr. Perry has an extensive working knowledge of the methods and procedures used for sampling and analyzing both inorganic and organic analytes in soil, water, and air. He is an accomplished laboratory chemist and is familiar with the analytical methods and procedures established under the USEPA Contract Laboratory Protocols (CLP), the NYSDEC Analytical Services Protocols (ASP), and the NYSDOH Environmental Laboratory Approval Program (ELAP).