REMEDIAL INVESTIGATION/ ALTERNATIVES ANALYSIS REPORT

68 TONAWANDA STREET
BUFFALO, NEW YORK 14207
NYSDEC SITE # C915316

Prepared for:

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July 2018

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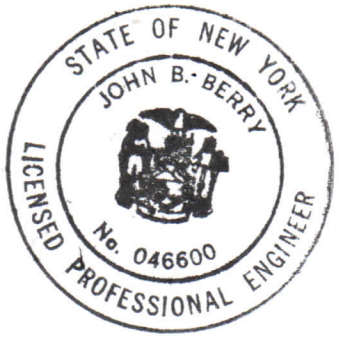
CERTIFICATION

I John B. Berry certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Investigation/Alternative Analysis Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

John B. Berry, PE



I Jason Brydges certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Investigation/Alternative Analysis Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Jason Brydges, PE

1.0 INTRODUCTION

Buffalo Freight House, LLC owner of the 68 Tonawanda Street Site (NYSDEC Site #C915316) located at 68 Tonawanda Street, Buffalo, New York (refer to Figure 1) has entered into a Brownfield Cleanup Program (BCP) Agreement with the NYSDEC under the Voluntary section of the "Brownfield Cleanup Program Act". Buffalo Freight House, LLC has contracted BE3 Corp/Panamerican (BE3) to conduct a Remedial Investigation (RI) and prepare an Alternatives Analysis Report (AAR) as required by the BCP Agreement and complete remedial measures as necessary. This document presents a RI/AAR for the site.

The RI/AAR program is being completed in accordance with BCP requirements as defined in section 375-3.8 of the NYSDEC 6NYCRR Part 375 Environmental Remediation Program Regulations. It is anticipated that the remedial measure selected will lead to a site remedy as defined in Part 375-1.8(g)(2)(ii); achieve Soil Cleanup Objectives as defined in Part 375-6.8(b); and mitigate any environmental impacted media issues at the site.

The contemplated future use of the site includes repurposing an existing freight house into 37 market rate apartments and 2,500 square feet of light commercial space as well as approximately 60 parking spaces.

1.1 SITE BACKGROUND

The 68 Tonawanda Street site is approximately 1.74-acres and located in the Black Rock area of the City of Buffalo. The site is located within the City of Buffalo Tonawanda Street Corridor Brownfield Opportunity Area (BOA). The Tonawanda Street Corridor BOA is comprised of 514 acres of primarily under-utilized industrial brownfields in northwest Buffalo stretching from Scajaquada Creek (Creek) to just south of the Tonawanda municipal boundary, and along Chandler Street.

The area and site have a long historic commercial and industrial use. Commercial/industrial use of the general area occurred in the early 1800's situated around Black Rock. Located just north and across Tonawanda Street from the corner of West and Tonawanda Streets, the elongated subject 68 Tonawanda Street site is situated between active rail lines and Tonawanda Street. The site contains the former *New York Central Freight House and Office*. This long narrow 1½-story brick freight house structure was constructed in the early 1900s. The structure does not contain a basement. The building has been recommended as National Register Eligible for its association with the transportation and industrial history of the City of Buffalo at the local, national and international levels.

Historical information and maps suggest that by 1889 the Black Rock Passenger Station was located in the southern part of the site with some sheds and other disconnected buildings including freight platforms and separate smaller freight houses extending north where the freight house is currently. By 1916 the Freight house building was located on the property and rail tracts extended across the adjacent northern rail parcel. A review of 1916 historic maps suggest that the structure included a freight office.

The former freight house building was recently used by EB Atlas Steel Corp. and Steel Crazy Iron Art which specialize in steel construction, architectural and ornamental metal work. The structure contains eight separate bays. Floors are cement, and lighting is a combination mercury and florescent. Various materials associated with steel construction and architectural art are found throughout the building including steel/metal, various steel working machines, welding equipment etc. Small quantities of paints and lacquers are also contained in the structure in 55-gallon drums or smaller containers. Most or all of

this has recently been removed as part of the property transfer. The building used cooking grease and fry oil as a fuel for heating. This material was contained in 55-gallon drums and other size containers and fed into a heating system. North of the building was the former lay-down area where steel and other materials were stored. This lay-down area extends north onto the adjoining rail parcel. The rail parcel is vacant land beyond the lay-down section. A few 55-gallon drums were observed during the Phase I in the lay-down area and behind the building. The 55-gallon drums at this facility were reportedly associated with three different purposes including storage of the vegetable oil used for heating system or they contain primer paint or sand used in the metal work. A covered section attached to the western side of the building was recently removed from the northern end of the structure. This area had steel I-beams and other materials and was used for both storage and manufacturing activities.

The site has been associated with rail operations since the mid-late 1800's. By the late 1800's the site contained freight platforms and separate freight depots. As a freight depot, much of the raw and manufactured products that supported the surrounding industry and residential community were probably temporarily stored at this location. Materials where on/off loaded from freight trains on the western rail side of the property and off/on loaded to vehicles on the eastern Tonawanda Street side of the site.

Rail tracts are located immediately adjacent to the west and a vacant undeveloped "triangle shaped" area is further west. Immediately south of the property is a vacant residential/restaurant structure and a vehicle repair shop towards the intersection of Niagara and Tonawanda Streets. Historically the property immediately south had a series of small store and residential structures. Tenements were indicated on the southern adjacent property during the early 1900's and by the 1950's these properties were restaurant and filling station/auto repair facilities. The area immediately north was mostly rail with an office and later a restaurant north of Parish Street at Tonawanda Street. Now mostly vacant, major manufacturing complexes including production of paint and lacquers, automotive parts, metal machining, brick and sewer pipe, and steel foundry operations were located east of the site across Tonawanda Street.

1.2 PREVIOUS INVESTIGATIONS

Historical information indicates the following previous environmental investigation activities have been completed on the site:

February 2013 – Phase I Environmental Site Assessment - In February 2013, PEI conducted a Phase I Environmental Site Assessment (ESA) on the subject Site. The Phase I noted several Recognized Environmental Conditions (RECs) including the following.

- The site has been associated with rail use and freight storage since the mid-late 1800's. In general, railroad operations have historically produced low level contamination of surrounding areas and therefore the possibility of soil contamination associated with the former railroad operations cannot be discounted. Railroad environmental issues sometimes involve diesel fuel and other petroleum products and rail areas have also been associated with other contaminants such as heavy metals, chlorinated hydrocarbons, and PAHs above NYSDEC guidelines. In general, soils at former rail road property typically consists of fill near the surface which is typically a black cindery fill layer consistent with materials typically found at rail yards including cinder, gravel, coal and sometimes slag. The fill typically contains elevated concentrations of a few PAHs and metals which may slightly exceed the New York State Department of Environmental Conservation (NYSDEC) soil cleanup guidance values. PAH and metal compounds are common constituents of fill material found in urban environments and are typically associated with rail yards and particularly with the cindery fill used at rail yards.

- The Fedders-Quigan Corporation occupied the southern portion of the freight house by at least 1950. The main Fedders complex was located across Tonawanda Street. Indications were that the site was used for freight warehousing products/raw materials. It is unknown if Fedders conducted any manufacturing at the site.
- The site has been associated with steel fabrication in the recent past. Depending on the extent of the fabrication, various materials such as metal shavings and metallic dust are likely present. Use of metal cleaning/polishing compounds, and abrasives as well as any fuel may have contributed to environmental impacts.
- Soil mounds and a small number of drums were observed in the rear of the site. These reportedly are empty drums that previously contained either paint primer, sand or used cooking grease/vegetable oil.
- Foundry and machine shop operations were located adjacent to the site. Environmental impacts associated with these facilities include elevated levels of lead and other metals in soils and wastes associated with slag/foundry sands such as phenols. Other contaminants, including solvents and petroleum products were associated with these properties. The large Pratt & Lambert paint; resin and lacquer facility which included above ground and underground storage of chemicals and petroleum in numerous tanks, drums and vessels was located adjacent to the site. It is possible that releases from these facilities have impacted area surface and near-surface soils above "normal" urban background regarding metals and polycyclic aromatic hydrocarbons (PAH) as well as other organic compounds.
- A former Manufacturing Gas Plant (MGP) was located east and nearby the site during the early 1900's until the 1950's. Another MGP plant was located southeast across the creek in the early 1900's. The distance from the subject properties and these facilities was most likely too far to have a significant environmental effect on the site.
- The adjacent Fedders complex properties have a history of chemical and petroleum use and storage. Industrial wastes were reported to include solder dross, degreasing still bottoms including trichloroethylene (TCE) and tetrachloroethene compounds, petroleum-based lubricating fluids and other products and wastes. However, it is likely based on topography and groundwater flow that this facility is mostly either cross/down-gradient of the site.
- A gasoline service station and auto repair facility were located adjacent/nearby to the south. However, it is likely based on topography and groundwater flow that this property is cross/down-gradient of the site.
- Due to the site use history and adjacent property uses, PEI believes potential vapor concerns exist.

March 2014 and January 2016- Phase II Environmental Site Assessments - In March 2014, PEI/BE3 conducted a limited Phase II ESA and in January 2016 conducted a second Phase II ESA that built upon the findings of the first assessment. A February Phase II ESA Report combined the findings of both assessments. The specific scope of work of both ESAs was directed at the examination of surface/subsurface conditions at the site and the collection of soil samples.

A summary of the ESAs is as follows.

- PEI/BE3 completed a field soil screening using a total organic vapor monitor (PID) and soil sampling using Geoprobe® direct push technology to investigate subsurface conditions at the property. A total of seventeen (17) Geoprobe borings were advanced in an array around the western, northern and southern perimeter of the 68 Tonawanda Street structure (refer to Figure 2). Three borings were placed along the eastern side of the building during the 2014 field investigation (Boreholes BH-6, BH-7 and BH-8). These are not associated with this property and therefore not covered in this Phase II ESA report but are mentioned to explain why they are

missing from the figures, table and discussion. The eastern perimeter of the site is the structures eastern wall. Borings were advanced to an average depth of 8 feet below ground surface.

- Elevated PID readings and minor odors were observed at two locations during the 2014 event; borehole BH-4 at a depth of 4-8 feet below ground surface (bgs) and in borehole BH-9 at a depth of between 3-4 feet. Borehole 4 was in the southwest corner of the site and borehole BH-9 was located in the northwest portion of the site adjacent to six 55-gallon drums which are no longer present at the site at that location. Stronger petroleum odor was observed at borehole BH-9A during the 2016 sampling event at between 6-8 feet. Borehole BH-9A is located just south of BH-4 and probably represents the same petroleum impacts observed at that borehole.
- The concentration of PCBs at BH-4A exceeded residential/restricted residential SCOs.
- A total of ten soil samples were collected for laboratory analysis; three (3) soil samples were collected during the 2014 event and seven (7) were collected from the 2016 field event.
- The results of the Phase II ESAs indicate that SVOCs (primarily PAHs) and metal compounds were detected throughout the site at variable levels above residential and restricted residential SCOs in the soil fill that pose a potential risk to construction workers and future residents (see Table 1 and Figures 3a and 3b). Additionally, results indicate that volatile compounds and PCB/Pesticides were detected in concentrations below SCOs in various locations across the site indicating potential impact from previous site operations. The potential of a petroleum impacted area in the southwest corner of the site was also identified.

1.3 CONSTITUENTS OF CONCERN (COCS)

Based on the prior investigations and the Remedial Investigation completed in 2018, the primary constituents of concern (COCs) at the Site are PAHs and metals in the fill/soil and groundwater.

1.4 IDENTIFICATION OF STANDARDS, CRITERIA AND GUIDANCE

SCGs are promulgated requirements ("standards" and "criteria") and non-promulgated guidance ("guidance") that govern activities that may affect the environment and are used by the NYSDEC at various stages in the investigation and remediation of a site. The following are the primary SCGs for this project:

- NYSDEC 6NYCRR Part 375 – Environmental Remediation Programs December 2006;
- NYSDEC DER-10 – Technical Guidance for Site Investigations and Remediation May 2010;
- NYSDEC - Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998;
- NYSDEC Policy – CP-51- Soil Cleanup Guidance; Date Issued: October 21, 2010; and,
- New York State Department of Health October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York and its May 2017 amendment.

2.0 REMEDIAL INVESTIGATION

All RI activities were carried out in accordance with the requirements of the approved RI work plan *(Work Plan for Remedial Investigation, 68 Tonawanda Street Site (*Site #C915316*), 68 Tonawanda Street, Buffalo, New York 14207, prepared for*; *Buffalo Freight House, LLC, prepared by: BE3*

Corp/Panamerican (BE3), January 2018). The work plan was approved by NYSDEC Region 9 as part of the BCP process.

The remedial investigation (RI) activities were completed between January and February of 2018 at the 68 Tonawanda Street Site.

Section 4.0 discusses the results of the sampling program.

2.1 FILL/SOIL INVESTIGATION

The primary purpose of the surface/subsurface assessment is to visually inspect and describe near surface and subsurface conditions across a large area and to assess the fill/soil by collecting and analyzing soil samples. The intent was to add to the data that exists for the site from the previous Phase II ESA reports.

A series of 14 soil borings and six (6) test pits were installed across the Site on February 7, 2018 and February 13, 2018 respectively in an approximate grid pattern focusing on areas where impacted soils were identified during the previous phase II ESAs, and to also assess other areas across the site (refer to figure 2 for boring/test pit locations). The precise location of borings/trenches and sampling were based on field observations, and specifically targeted potential contaminant features in an effort to gain representative samples across the property while at the same time ensuring that areas of concern were examined. A primary objective was also to identify the depth of fill and to obtain some samples below the fill level of "native" material for chemical analysis.

Soil borings were advanced to a depth of between 12 to 16 feet below ground surface (bgs) into native material using Geoprobe® direct push technology. Continuous soil sampling was conducted using the Geoprobe® with a two-inch diameter sampler. Fill material across the site was found to range from 4 to 7 feet in depth.

Test Trenches installed varied in dimension based on field conditions and ranged from 4 feet wide by 10 feet long to 4 feet wide by 17 feet long. Depths ranged from 6 feet to 7 feet below ground surface (bgs). Each test trench was backfilled in the order in which the fill was removed prior to moving to the next test trench location.

The following was completed during each boring and trench excavation:

- A description of the soil stratigraphy was made (refer to boring test trench logs in Appendix A);
- Visual observations (staining, odors, etc.) were recorded if noted;
- Total organic vapor monitoring (PID) was completed as each boring was installed; and
- Cleaning of equipment between each boring/trench location.

A MiniRae 3000 PID with a 11.7 eV Lamp was used for VOC screening. No PID readings were recorded above background in any of the borings or test pits except for test pit TP-5 (1-3 ppm) and TP-6 (3-10 ppm). Petroleum odors were also observed at the TP-6 location. Soil samples were collected from both locations as discussed below and the analytical results are discussed in Section 4.0. A field GPS unit was used to established coordinates for all boring/trench locations. GPS coordinates for all investigation locations are provided in Table 2. PID readings and location of odors are also noted on the boring and test pit logs located in Appendix A

A total of 18 soil samples were collected from the soil borings and a total of nine (9) soil samples were collected from the test trenches for a total of 27 soil samples. All soil samples were collected for analysis for either the full or partial NYSDEC Part 375 brownfield constituents. Since a significant amount of data existed from the previous Phase II ESAs, it was determined that the full Part 375 list was not necessary on all samples. Soil samples were collected based on PID readings, visual observations and to obtain representative soils across the site. Subsurface samples were collected from fill material at different depths and from "native" soils just below the fill material. Pursuant to protocol, surface soil samples were not analyzed for volatile compounds. A few "native" soil samples were collected to ascertain if the native soil has been impacted.

During the prior Phase II ESAs, ten samples were analyzed for the full suite of Part 375 analytes. Based upon these results, the NYSDEC agreed that additional analyses for volatile organic compounds and pesticides were not required during the RI. Also, during the Phase II ESAs, metals exceedances were detected throughout the site and were determined to likely be the determinant compounds for remediation. Therefore, a total of 13 of the soil samples noted above were analyzed for metals only.

All remaining soil samples were analyzed for the full list of Part 375 TAL metals, TCL semi-volatile organic compounds (SVOCs), SVOC tentatively identified compounds (TICs) and PCBs. Based on the results of the previous Phase II ESAs, volatile organic compounds (VOC) were not analyzed for except for two boring and two test trench sample locations. Petroleum odors were observed in BH-1, BH-12, TP-5 and TP-6. The samples analyzed for VOC included (RI-BH-1 - 8-12 feet, RI-BH-12- 4.5 feet, TP-5 4-5 feet and TP-6 4-5 feet.

The samples were submitted to Paradigm Laboratory, a NYSDOH ELAP certified laboratory and a full Contract Laboratory Program (CLP). Samples were analyzed in accordance with NYSDEC Category B, with full CLP-type analytical data package deliverables.

Analytical results for all soil samples are discussed in Section 4.0 and exceedances shown on Figures 3a & 3b and Tables 3 & 4).

2.2 GROUNDWATER INVESTIGATION

A total of four (4) overburden groundwater monitoring wells were installed (see Figure 2) using a conventional track mounted drill rig with hollow stem auger drilling. Wells were installed per the RIWP. Well construction diagrams are provided in Appendix A. Monitoring wells were installed between February 14 and February 16, 2018 and sampling completed on February 23, 2018.

The following are the measured well depths and water levels from the top of casing at the time of sampling.

- MW-1 – 32.00 feet to bottom of well – 5.84 feet to standing water
- MW-2 – 32.00 feet to bottom of well – 9.21 feet to standing water
- MW-3 – 38.00 feet to bottom of well – 10.18 feet to standing water
- MW-4 – 32.00 feet to bottom of well – 10.23 feet to standing water

One groundwater sample was collected from each of the 4 wells. Well development and sampling were conducted in accordance with the work plan.

All samples were submitted to Paradigm Laboratory and were analyzed for TCL volatile (VOCs) and semi-volatile organic compounds (SVOCs), VOC/SVOC tentatively identified compounds (TICs), TAL metals and PCBs.

To ascertain if high turbidity in MW-3 during sampling was the cause of elevated concentrations of some metal compounds a second round of sampling was conducted on July 6,2018 in MW-3 for only metals using field filtration.

Subsequent to the completion of the first round of groundwater sampling the NYSDEC issued new analytical requirements for groundwater samples. The NYSDEC agreed that only one upgradient (MW-1) and two downgradient wells (MW-3 and MW-4) needed to be sampled for the new required compounds; Per-polyfluoroalky (PFAS) and 1,4 Dioxane at lower laboratory detection limits. The sampling was performed at the same time the filtered metal sample was collected.

Analytical results are discussed in Section 4.0.

2.3 BUILDING ENVIRONMENTAL CONDITION ASSESSMENT

Environmental condition assessments were conducted at the on-site building. These included an asbestos containing materials (ACM) survey, lead-based paint (LBP) survey and a PCB inventory/assessment. Figure 2 shows the location of the building on Site and a summary description of the building is provided in Section 1.1.

A New York State licensed asbestos firm, 56 Services of Buffalo, New York, conducted the asbestos survey and AMD Environmental of Buffalo, New York conducted the lead-based paint assessment and PCB inventory. AMD is licensed to perform these assessments.

The results of the ACM survey indicated the presence of ACM in the building, primarily in the roof flashing. Sampling of window caulking for PCB content indicated that the material sampled was found to be below the 50-ppm threshold for PCB's by laboratory analysis. A review of the X-Ray florescence (XRF) instrument results indicates that LBP is present and shows deterioration on interior and exterior building components in the building.

Detail reports for the above surveys/assessments are provided in Appendix B.

2.4 SOIL VAPOR INTRUSION INVESTIGATION

Based on site history and previous sampling analytical results, a sub-slab vapor study was completed in the site building.

This investigation consisted of sampling vapors from beneath the Building floor slab along with sampling building indoor air. Vapor samples were collected from five (5) locations across the facility. A total of two ambient indoor air samples were also collected along with one outdoor ambient air sample (see Figure 4 for sampling locations). To collect sub-slab vapor samples, the concrete floor was drilled removing a concrete core. and Vapor samples were collected from beneath the floor slab using a one-inch probe and a Summa canister. Summa canisters were also used to collect indoor/outdoor air samples. Sample collection was in accordance with the October 2006, New York State Department of Health *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* and its May 2017 amendment and the approved RI workplan.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

3.1 SURFACE FEATURES

The 68 Tonawanda Street site is approximately 1.74-acres. The site contains a long narrow 1½-story

brick freight house structure that was constructed in the early 1900s and is approximately 40 feet wide by 742 feet long. The structure does not contain a basement. The site fronts along Tonawanda Street to the east and includes green space along its western border with the railroad. The site is generally flat and gently sloping from west to east and north to south. Surface drainage is generally laterally in all directions towards low spots but primarily towards the east and south and the storm drains located along Tonawanda Street to the east and southeast. A topographic and boundary survey map is provided in Appendix C.

3.2 GEOLOGY/HYDROGEOLOGY

The stratigraphy/geology encountered by the test borings/test pits/monitoring wells consisted of man-placed fill soils/debris to 6 +/- feet bgs., which overlie native soils consisting of red-brown, stiff clay, some Silt with traces of gravel and sand. The man-placed fill consisted of miscellaneous gravel, cinder, plastic, cement pieces, rubble, timber-rail ties.

Based on measured groundwater depths from the four monitoring wells, groundwater flows from the northwest to the southeast end of the property towards Tonawanda Street and Scajaquada Creek. Groundwater contours are provided on Figure 5 and groundwater elevations are provided on Table 6.

3.3 DEMOGRAPHY AND LAND USE

The 1.74-acre Tonawanda Street site is located in the Black Rock area of the City of Buffalo. The area and site have a long historic commercial and industrial use. Commercial/industrial use of the general area occurred in the early 1800's situated around Black Rock. Located just north and across Tonawanda Street from the corner of West and Tonawanda Streets, the 68 Tonawanda Street site is situated between active rail lines and Tonawanda Street. The site contains the former *New York Central Freight House and Office*. This long narrow 1½-story brick freight house structure was constructed in the early 1900s. The structure does not contain a basement. The building has been recommended as National Register Eligible for its association with the transportation and industrial history of the City of Buffalo at the local, national and international levels.

The former freight house building was recently being used by EB Atlas Steel Corp. and Steel Crazy Iron Art which specialize in steel construction, architectural and ornamental metal work. The structure contains eight separate bays. Rail tracts are located immediately adjacent to the west. and a vacant undeveloped "triangle shaped" area is further east. The site is surrounded by vacant industrial buildings and land to the north, east and south and by commercial uses and vacant land to the south and west. The immediate neighborhood is mixed use residential and commercial.

The building reuse will result in repurposing an existing warehouse/manufacturing facility into 37 market rate apartments and 2,500 square feet of light commercial space as well as approximately 60 parking spaces (refer to Figure c1.0).

4.0 NATURE AND EXTENT OF CONTAMINATION BY MEDIA

4.1 INTRODUCTION

This section discusses the results of the RI activities, and the nature and extent of contaminants detected in the media investigated. The assessment is based on the RI program combined with the data obtained in previous investigations to provide an overview of the nature and extent of impacts at the site.

All soil and groundwater samples were submitted for analysis to Paradigm Environmental Services, Inc. a New York State certified laboratory. Air samples were submitted for analysis to Centek Laboratory, LLC., also, a New York State certified laboratory.

All analytical data was validated by KR Applin & Associates (EDU), a certified data validator. Data Usability Summary Reports (DUSR Text Only) for all data is provided in Appendix D. Full reports will be submitted, if requested, under separate cover.

Photographs of all investigation work are provided in Appendix E.

4.2 POTENTIAL SOURCES

This section discusses potential sources of contamination that have resulted in the impacted fill/soil detected during the RI and previous investigations at the site.

Historical operations at the site and man placed fill across the site are the most likely sources of any impacts to the site soils.

The following potential source of contamination were noted in previous environmental assessments.

- The site has been associated with rail use and freight storage since the mid-late 1800's. Railroad environmental issues sometimes involve diesel fuel and other petroleum products and rail areas have also been associated with other contaminants such as heavy metals, chlorinated hydrocarbons, and PAHs above NYSDEC guidelines. In general, soils at former rail road properties typically consists of fill near the surface which is typically a black cindery fill layer consistent with materials typically found at rail yards including cinder, gravel, coal and sometimes slag. The fill typically contains elevated concentrations of a few PAHs and metals. The property was used as a rail depot which most likely supported the industry across Tonawanda Street and the general area. It is unknown what was stored at this facility during rail operations. The property has been associated with steel fabrication in the recent past. Depending on the extent of the fabrication, various materials such as metal shavings and metallic dust are likely present. Use of metal cleaning/polishing compounds, and abrasives as well as any fuel may have contributed to environmental impacts.

- Fill material has been placed on the property from various sources.

- Foundry and machine shop operations were located adjacent to the site. Environmental impacts associated with these facilities include elevated levels of lead and other metals in soils and wastes associated with slag/foundry sands such as phenols. Other contaminants, including solvents and petroleum products were associated with these properties. The large Pratt & Lambert paint; resin and lacquer facility which included above ground and underground storage of chemicals and petroleum in numerous tanks, drums and vessels was located east of the property across Tonawanda Street. It is possible that releases from these facilities have impacted area surface and near-surface soils above "normal" urban background with regard to metals and polycyclic aromatic hydrocarbons (PAH) as well as other organic compounds.

4.3 SOIL SAMPLE ANALYTICAL RESULTS

The following provides a summary of the RI soil sample analytical program. Also discussed in this section are the results from the Phase II ESA programs. Compounds detected during the Phase II ESA programs are summarized in Table 1. Compound concentration levels detected in soil samples

collected during the RI are summarized in Tables 3 and 4. Compound concentrations from both the Phase II ESAs and RI programs that exceed Unrestricted SCOs and Restricted Residential SCOs are depicted on Figures 3a and 3b respectively.

4.3.1Semi-Volatile Organic Compounds (SVOCs)

Numerous SVOCs consisting primarily of PAHs were detected in almost all RI fill samples and many of the Phase II program samples. The three samples collected in native soil material did not have any SVOCs detected. Some of the fill samples exceeded Restricted Residential SCOs. These included:

- ....3 samples of 10 collected from the Phase II ESA programs;
- ....2 samples of 6 collected from the RI borings; and
- ....2 samples of 6 collected from the RI test pits.

Refer to Tables 1, 3 and 4 for a summary of the results.

4.3.2 PCBs

PCBs were detected in several fill samples. Only one (1) sample had a concentration above the Restricted Residential SCO. Test Pit TP-3 (2'-4') had a single PCB compound detected at 5.6 ppm (1.0 ppm Restricted Residential SCO). It should also be noted that the sample from BH-4A during the Phase 2 program a PCB at a concentration of 5.52 ppm.

Two (2) additional samples had PCB concentrations that exceeded Unrestricted SCOs.

Refer to Tables 3 and 4 for a summary of PBC results.

4.3.3 Metals

Metal compounds were detected in all soil samples, from both the Phase 2 and RI programs. Several soil fill samples had metal concentrations that exceeded Restricted Residential SCOs as follows:

- ....Phase 2 samples – 6 samples of 10 collected;
- ....RI boring samples – 5 samples of 17 collected; and
- ....RI test pit samples – 3 samples of 7 collected.

4.3.4 Volatile Organic Compounds

No VOC concentrations were detected in the Phase II ESA soil samples or the RI boring /test pit samples that exceeded Restricted Residential SCOs.

A total of four (4) samples had VOC concentrations that exceeded Unrestricted SCOs.

Several petroleum related VOCs were detected in TP-6 excavated outside the southwest corner of the building where petroleum odors were detected during excavation; however, the concentrations were below Unrestricted Use SCOs. Similar levels of petroleum related compounds and odors were observed in Phase II borings in the same location.

Refer to Tables 1,3 and 4 for a summary of VOC results.

4.3.5 Soil Results Summary

The results of the RI and Phase 2 soils investigations indicate that SVOCs (primarily PAHs) and metal compounds were detected throughout the site fill at variable concentrations and various depths above restricted residential SCOs. Fill materials were observed from 3 to 6+ feet bgs across the site.

The results also indicate that a few petroleum related VOCs were detected at concentrations below the comparison SCOs in the southwest end of the property along the outside wall of the building. These may extend under the floor in the southern most bay of the structure. PCBs were detected in several samples but only in one (1) sample at a concentration above its Restricted Residential SCO related to the RI program and one (1) samples during the earlier Phase 2 program.

4.4 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Compounds detected in GW samples collected during the RI are summarized in Table 5.

Table 5 presents a comparison of the detected groundwater compound concentrations from both rounds of sampling to the Class GA Groundwater Quality Standards (GWQS) per NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998). Groundwater elevations and contours along with elevated concentrations of compounds detected in GW samples above TOGs guidelines are provided in Figure 5.

Data Usability Summary Reports (DUSR-text only) are provided in Appendix D for the RI data results. Analytical Results from samples collected from the four (4) installed groundwater monitoring wells are summarized below along with the second round of metals sampling in MW-3.

4.4.1 Semi-Volatile Organic Compounds

SVOCs were not detected in any of the GW samples except for monitoring well MW-3, with only one compound exceeding its TOG Guidance Value as follows.

MW-3
Naphthalene – 118 ppb versus 10 ppb TOGs value

4.4.2 PCBs

PCBs were not detected in any of the GW samples except for MW-3, with only one compound exceeding its TOG Guidance Value as follows.

MW-3
PCB-1260 – 0.24 ppb versus 0.09 ppb TOGs value

4.4.3 Metals

Metal compounds were detected in all monitoring well GW samples with several concentrations exceeding TOGs guidance values as follows.

MW-1
Manganese – 363 ppb versus 3 ppb TOGs value
Selenium – 14.1 ppb versus 10 ppb TOGs value

MW-2
Manganese – 585 ppb versus 3 ppb TOGs value

MW-3
Chromium – 447 ppb versus 50 ppb TOGs value
Selenium – 33.3 ppb versus 10 ppb TOGs value

MW-4
Manganese – 456 ppb versus 3 ppb TOGs value

The field filtered sample collected from MW-3 on July 6, 2018 for metal analysis indicated no exceedances of TOGs standards/guidance values for any metal compounds (refer to **Table 5**).

4.4.4 Volatile Organic Compounds

A few VOCs were detected in the GW samples. Of these results, only one VOC was detected at concentrations that exceeded its TOGs guidance value as follows.

MW-3
Acetone – 148 ppb versus 50 ppb TOGs value

MW-4
Acetone – 94.6 ppb versus 50 ppb TOGs value

Acetone is common in laboratory cleaning solution and acetone was also noted in the trip blank. Given the results, this is the likely cause of the acetone exceedances above.

4.4.5 Groundwater Results Summary

The groundwater analytical results indicate minor impacts to groundwater. Metal concentrations could be a result of natural variability in soils and or from the fill materials. Monitoring well MW-3 appears to have more impacts than the other wells. However, some of the impacts in the well sample, particularly elevated metals, maybe a result of high turbidity during sample collection. To ascertain if high turbidity in MW-3 during sampling was the cause of elevated concentrations of some metal compounds a second round of sampling was conducted on July 6, 2018 in MW-3 for only metals using field filtration. The second-round results indicated no TOGs exceedances for any metal compounds.

TOGs exceedances include the following.

MW-3
PCB-1260 – 0.24 ppb versus 0.09 ppb TOGs value
Naphthalene – 118 ppb versus 10 ppb TOGs value
Acetone – 148 ppb versus 50 ppb TOGs value
Chromium – 447 ppb (RD 1) versus 50 ppb TOGs value - 18.7 ppb (RD 2)
Selenium – 33.3 ppb (RD 1) versus 10 ppb TOGs value - Non-detect (RD 2)

MW-4
Acetone – 94.6 ppb versus 50 ppb TOGs value

As noted, the Acetone presence is likely due to lab contamination as it is a typical compound used in cleaning solutions. Acetone was also detected in the trip blank.

As noted in section 2.2, subsequent to the completion of the initial groundwater sampling round at the facility the NYSDEC issued new analytical requirements for groundwater samples. A second groundwater sampling round was conducted for the new required compounds Per-polyfluoroalky (PFAS) and also for 1,4 Dioxane at lower laboratory detection limits. As agreed to by NSYSDEC, MW-1, MW-3 and MW-4 were sampled for the new compounds. The results of the sampling are provided in **Table 8**.

4.5 SOIL VAPOR ANALYTICAL RESULTS

A total of five (5) sub-slab vapor samples and three ambient air samples (two indoor and one outdoor location) were sampled and analyzed in accordance with the approved work plan. Samples were submitted to a NYSDEC certified contract laboratory and analyzed for TCL VOCs by EPA method TO-15. Several VOC compounds were detected in both the indoor/outdoor ambient air samples and in the sub-slab vapor samples. The VOC compounds detected during the sampling program are summarized in Table 7 and discussed in detail below.

Chemicals are found in the indoor air of buildings and the outdoor air that can enter a structure. Typical concentrations of these chemicals are referred to as "background levels." Background levels of volatile chemicals are one of the factors considered when evaluating sampling results at a site. The VOCs detected in the indoor air samples collected within Building 2 were, in general, consistent with those detected in the outdoor ambient air control sample and detected at similar concentrations with a few exceptions.

The NYSDOH has developed guideline values (document referenced above) for acceptable background levels for eight (8) specific VOCs in ambient air. Three (3) of the eight (8) VOCs, carbon tetrachloride, methylene chloride and trichloroethene (TCE), were detected in indoor and/or outdoor ambient air samples at the site at values below guideline values. The highest concentration of methylene chloride detected in the ambient air was 5.5 ug/m3 in each of the ambient air samples versus the guideline value of 60 ug/m3. The highest concentration of TCE detected in the ambient air was 0.38 ug/m3 versus the guideline value of 2.0 ug/m3. There is no set guideline value for carbon tetrachloride.

The goals of collecting sub-slab vapor samples were to identify potential or impacts from soil vapor. New York State currently does not have any standards, criteria or guidance values for concentrations of compounds in sub-slab vapor. Additionally, there are no databases available of background levels of volatile chemicals in subsurface vapors. However, the NYSDOH has developed in their guidance document decision matrices as a risk management tool to provide guidance on a case-by-case basis about actions that should be taken to address current and potential exposures related to soil vapor intrusion. The matrices are intended to be used when evaluating the results from buildings with full slab foundations such as the 68 Tonawanda street building. The matrices encapsulate the data evaluation processes and actions recommended to address potential exposures.

The NYSDOH has developed three (3) matrices, which are included in Appendix F for reference, to use as tools in making decisions when soil vapor may be entering buildings that may be of a health concern.

Soil Vapor/Indoor Air Matrix	Volatile Chemical
Matrix A	carbon tetrachloride 1,1-dichloroethene *cis*-1,2-dichloroethene trichloroethene
Matrix B	methylene chloride tetrachloroethene 1,1,1-trichloroethane
Matrix C	vinyl chloride

Using the Matrix, A, B and C models from the Guidance (refer to Appendix F), the concentrations of these VOCs detected at the site were evaluated as follows:

- Matrix A - Concentrations of 1,1-Dichloroethene, carbon tetrachloride, trichloroethene (TCE) and cis-1,2- Dichloroethene are less than 1 ug/m3 in all indoor air samples (refer to table 7) and concentrations for these compounds in all five (5) sub-slab samples are less than 60 ug/m3 (Matrix A value) resulting in “No Further Action” for these compounds.

- Matrix B – Concentrations of tetrachloroethene, 1,1,1-trichloroethane and methylene chloride are less than 3 ug/m3 for all indoor air samples (refer to Table 7) and concentrations for these compounds in all five (5) sub-slab samples are less than 100 ug/m3 (Matrix B value) resulting in “No Further Action” for these compounds”.

- Matrix C - The concentration of vinyl chloride was less than 0.02 ug/m3 in all indoor air samples (refer to Table 7) and concentrations for this compound in all five (5) sub-slab samples was less than100 ug/m3 (Matrix C value) resulting in “No Further Action” for this compound”.

Assessment of Matrix Results:

The building sub-slab vapor intrusion analytical results reveal that all eight (8) of the specific VOCs established by the NYSDOH for evaluation of indoor air quality were detected at concentrations, that when evaluated with the NYSDOH guideline matrices, were acceptable and no further action is required for these compounds.

5.0 FATE AND TRANSPORT OF CONTAMINATES OF CONCERN

The fill/soil, groundwater and air sample analytical results were incorporated with the physical site conditions to evaluate the fate and transport of constituents of concern (COC) in site media. COC for the site include metals and PAHs. The mechanisms by which the COC can migrate to other areas or media are briefly outlined below.

The new development entails renovating the existing building and providing new asphalt parking areas, driveways and sidewalks across most of the remaining site space outside the building. It is estimated that 16 percent of the total site area will be greenspace (grass and vegetated areas) with the remaining area hardscape. To meet Restricted Residential SCOs a minimum of two feet of soil will be removed from areas to remain greenspace and backfilled with a minimum of two feet of clean material to finished

grade. Also, existing soil will be removed to the depth of the proposed pavement section or approximately one (1) foot.

5.1 FUGITIVE DUST

Chemicals present in soil can be released to ambient air because of fugitive dust generation. Presently, most of the site is covered with the building, asphalt pavement or grassed areas that limits any fugitive dust generation.

Impacted soil/fill will be excavated as part of the remedial work and new development. During new development a large portion of the site will be covered by the building, asphalt/concrete pavement/sidewalks (approximately 84 percent) and the remainder landscaped areas. However, during construction/remedial work fugitive dust maybe generated. A health and safety plan along with a community air monitoring plan will be prepared as required by the Remedial Action Work Plan (RAWP) called for under the BCP which will minimize fugitive dust concerns during this time.

The fugitive dust migration pathway is not at present a relevant pathway. During remedial construction, however, fugitive dust migration will be more relevant, but not relevant thereafter due to the proposed new site development.

5.2 SURFACE WATER

There are no surface water bodies on site or directly adjacent the site. The potential for impacted soil particle transport with surface water runoff is low at present due to the cover system previously described over most of the site. Presently, site runoff is collected in a storm water collection system along Tonawanda Street. Beside the site building structure, under the new development, the remainder of the site will be covered by paved areas and vegetation and have a storm water collection system (refer to Figure c1.0). Therefore, the movement of impacted soil by surface water runoff is not considered a relevant migration pathway post remediation

5.3 VOLATILIZATION

As noted in Section 4, several petroleum related VOCs were detected in soil samples at concentrations significantly below both Restricted Residential and Unrestricted Use SCOs. Groundwater samples collected from on-site monitoring wells during the RI indicated the presence of only one VOC (Acetone) that exceeded TOGs guidelines. However, as noted in Section 4.4.4 Acetone is common in laboratory cleaning solutions which could result in the acetone concentrations noted.

The building sub-slab vapor analytical results reveal that all eight (8) of the specific VOCs established by the NYSDOH for evaluation of indoor air quality were detected at concentration levels, that when evaluated with the NYSDOH guideline matrices, were acceptable and no further action was required related to indoor air quality.

The volatilization pathway, therefore, is not a relevant pathway.

5.4 LEACHING

Leaching refers to chemicals present in soil/fill migrating downward to groundwater as a result of infiltration of precipitation. As noted above, several petroleum VOCs were detected in the fill/soils at very low concentrations and only the compound Acetone was detected in the groundwater above TOGs

guidelines. Both SVOCs (PAHs) and metals were detected in the site soils, however, these compounds are not very mobile in soils, in that they have low solubility with water and tend to adsorb to the soil grains. These compounds do not readily breakdown in the environment and PAHs deposited from combustion of coal or other fuels years ago would most likely still be present today. Only one SVOC was detected in one groundwater sample that exceeded TOGs guidelines. Several metals were detected above TOGs guidelines, however, metal compounds in groundwater are common under natural conditions and the area surrounding the site has been primarily industrial which may also be a source for metals in the groundwater. Also, turbidity of some of the groundwater samples may have influenced the impacts noted.

Based on the above, the potential for COCs to be leached from the on-site soils to groundwater is minimal.

5.5 GROUNDWATER TRANSPORT

Groundwater under the site flows from the northwest to the southeast end of the property towards Tonawanda Street and Scajaquada Creek.

Since the site and surrounding area are serviced by municipal water, significant exposure to any chemicals in the groundwater are minimal.

5.6 EXPOSURE PATHWAY SUMMARY

Based on the above assessment, the pathway through which site COCs could reach receptors at significant exposure concentrations is minimal.

6.0 QUALITATIVE EXPOSURE ASSESSMENT

6.1 HUMAN EXPOSURE RISKS

The site in its present condition provides minimum human exposure risks as related to COCs in the site soils and groundwater. The elevated COCs in soils are primarily PAHs and metals which are not very mobile in soils, in that they have low solubility with water and tend to adsorb to the soil grains. Their moving to possibly effect the human population off site is considered minimal.

The proposed site remediation will remove impacted soils to the depth of two (2) feet or the depth of new hardscape cover for the new development across the entire open area of the site. A minimum of two (2) feet of clean fill will be placed in greenspace areas and the new development hardscape (parking areas, driveways and sidewalks) will be placed across the remainder of the site. The propsed remediation and new development will remove human exposure to the site COCs.

Soil sampling will be conducted in any areas that subsurface soils will be required to be removed (buried utility runs, etc.) under the new site development. This sampling will confirm that any impacted soils encountered have been removed to meet SCOs and proper cover system replaced.

The primary population at risk would be construction workers performing remedial activities. However, contractor health and safety plans will be in effect as will be required by a Remedial Action Work Plan during all remediation activities to minimize any human exposure.

The RI program noted several elevated metal compounds and a few SVOC/VOC compounds in groundwater along with PCBs in one well that exceeded NYSDEC TOGs Guidance. Municipal water

supply will be used for all site water requirements of the new development thereby eliminating any future human exposure. A restriction on the use of groundwater will also be placed on the site.

6.2 Ecological Exposure Risks

The Site in its current condition is not a habitat to wildlife. The new development will be covering approximately 84 percent of the Site with building and paved areas. The Site provides no wildlife habitat or pond/water features. The DER-10 Appendix 3C Fish and Wildlife Resources Impact Analysis (FWRIA) Decision Key is provided in Appendix D. No FWRIA is needed based on the completed decision key process because the Site will be remediated to Restricted Residential status. The Site does not have a habitat of an endangered, threatened or special concern species present. Therefore, no unacceptable ecological risks are anticipated under the current or any anticipated future site-use scenario.

7.0 REMEDIAL ALTERNATIVES ANALYSIS

7.1 Remedial Action Objectives

The final remedial measures for the 68 Tonawanda Site must satisfy Remedial Action Objectives (RAOs), which are site-specific statements that convey the goals for minimizing or eliminating substantial risks to public health and the environment. The primary RAOs identified for the site are the following.

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil
- Prevent inhalation of, or exposure from contaminants volatilizing/radiating from, contaminants in soil and groundwater.

RAOs for Environmental Protection

- Prevent/minimize contaminated soils impact on the environment (groundwater, air and surface waters).

7.2 Alternatives Selection Factors

In addition to achieving RAOs, NYSDEC's Brownfield Cleanup Program prescribes an approach to evaluate remedial alternatives in accordance with 6 NYCRR Part 375-3 and DER-10 Technical Guidance for Site Investigation and Remediation. This alternatives analysis section evaluates the remedial alternative developed for the site using the following selection factors.

- **Overall Protection of Public Health and the Environment**. This criterion is an evaluation of the remedy's ability to achieve each of the RAOs, and protect public health and the environment, assessing how each existing or potential pathway of exposure is eliminated, reduced, or controlled through removal, treatment, engineering controls, or institutional controls.
- **Compliance with Standards, Criteria, and Guidance (SCGs)**. Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance. The SCGs applicable to this site are listed in section 2.2.5.
- **Long-Term Effectiveness and Permanence**. This criterion is an evaluation of the long-term effectiveness and permanence of an alternative or remedy after implementation.

- **Reduction of Toxicity, Mobility or Volume with Treatment**. This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination. Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the contamination at the Site.

- **Short-Term Effectiveness**. Short-term effectiveness is an evaluation of the potential short-term adverse impacts and human exposures, and nuisance conditions during construction and/or implementation. This includes a discussion of how the identified adverse conditions will be controlled, and the effectiveness of the controls. This criterion also includes a discussion of engineering controls that will be used to mitigate short term impacts (i.e., dust control measures), and an estimate of the length of time needed to achieve the remedial objectives. Sustainability is also evaluated.

- **Implementability**. The implementability criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

- **Cost**. This criterion evaluates the overall cost effectiveness of an alternative or remedy.

- **Community Acceptance**. This criterion evaluates the public's comments, concerns, and overall perception of the remedy.

7.3 LAND USE EVALUATION

In developing and screening remedial alternatives, NYSDEC's Part 375 regulations require that the reasonableness of the anticipated future land use be factored into the evaluation. The future land use will meet the Part 375 Restricted Residential site use category.

The contemplated future use of the site includes repurposing an existing freight house into 37 market rate apartments and 2,500 square feet of light commercial space as well as approximately 60 parking spaces. The project area and scope fit well within The Buffalo Green Codes' Land Use Plan as it meets the expanding area need for housing. The Land Use Plan serves as a bridge between the city's comprehensive plan and zoning code by recommending the appropriate type, intensity, and character of development. It envisions a future for Buffalo built around the restoration of walkable, mixed-use, transit-served neighborhoods and economic centers. The plan focuses on three core strategies: fuel economic generators, restore neighborhoods, and repair environmental assets.

This new development project will help the area capitalize on its strategic assets; an opportunity to start a process aimed at repairing neighborhood edges that have been disproportionately impacted by industrial uses over time and creating new opportunities for working and living within the area. The population and growth in Western NY and in the Black Rock section of Buffalo has been declining and or remaining static in recent years. The planned re-development should enhance the potential growth as it will offer residential living with water views and access to water recreational areas in a designated BOA area.

7.4 SELECTION OF ALTERNATIVES FOR EVALUATION

The results of the RI and previous Phase 2 environmental assessments indicate the following:

- SVOCs (primarily PAHs) and metal compounds were detected throughout the site fill soils (up to 6+/- feet bgs) at variable concentrations above restricted residential SCOs;

- No VOC concentrations were detected in the Phase 2 soil samples or the RI boring /test pit samples that exceeded Restricted Residential SCOs and only the VOC acetone exceeded its Unrestricted Use SCO in several soil samples. Several petroleum related VOCs were detected in a soil sample collected from a test pit excavated outside the southwest corner of the building where petroleum odors were detected during excavation, however, the concentrations were also below Restricted Residential SCOs;

- ....The groundwater analytical results indicate minor impacts to groundwater from several metals which, considering the site's location in a historically industrial area, is understandable. There are also minor PCB, SVOC and VOC impacts from singular compound exceedances of TOGs guideline values;

- ....The building sub-slab vapor intrusion analytical results reveal that all eight (8) of the specific VOCs established by the NYSDOH for evaluation of indoor air quality were detected at concentrations, that when evaluated with the NYSDOH guideline matrices, were acceptable and no further action is required related to indoor air quality; and

- ....The building environmental condition assessment indicated the presence of asbestos and LBP containing material in the existing building that will be removed during renovation in accordance with local regulations.

Based on the completion of the RI program the following remedial alternatives have been selected for evaluation.

- Alternative 1 – Restricted Residential: Remove Impacted soil across the area of the new proposed hardscape to the depth of the hardscape thickness and remove impacted soil to a depth of two (2) feet in proposed new development greenspace (or add clean soil to a depth of 2 foot, or a combination of both). Due to strong petroleum odors in some borings and test pits soils that exhibit petroleum odors will also be removed as stipulated by owner's representative/NYSDEC. These actions will satisfy Part 375-3.8 Track 4 and Part 375-6.8 Restricted Residential SCOs including Institutional and Engineering Controls (IC/EC).

- Alternative 2 – Residential: Excavate all fill/soil that exceeds Track 2 Part 375 Residential SCOs Fill/soil or native soils that do not exceed Residential SCOs will remain in place unless required to be removed for the new development. Due to strong petroleum odors in some borings and test pits soils that exhibit petroleum odors will also be removed as stipulated by owner's representative/NYSDEC. The Site will be backfilled with clean impervious soil or placement of new development hardscape to meet the new development grades.

- Alternative 3 – Unrestricted Use alternative: Remove impacted soil across the entire site to a depth where Unrestricted SCOs are satisfied per Part 375-6.8(a) Track 1.

The following section discusses the evaluation of these alternatives.

7.4.1 Alternative 1 – Restricted Residential

The details of this alternative include.

1. Remove Impacted soil across the area of the new proposed hardscape to the depth of the hardscape cross section (minimum one (1) foot depth) and remove impacted soil to a depth of two (2) feet in proposed new development greenspace. Due to strong petroleum odors in some borings and test pits soils that exhibit petroleum odors will also be removed as stipulated by owner's representative/NYSDEC. Backfill hardscape areas with approved clean stone/gravel base and asphalt/concrete and backfill proposed greenspace areas with two (2) feet of approved clean soil/stone and topsoil all to meet Part 375-3.8 Track 4 and Part 375-6.8 Restricted Residential SCOs.

2. Buried utilities for the new development will be installed during remediation and excavated material from utility trenches will be assessed during excavation and any material determined by visual assessment to be clean will be stockpiled for sampling/testing to determine reuse. All utility trenches will be backfilled with clean stone, including a minimum of one foot of stone below and around the utility line.

3. Imposition of IC in the form of an environmental easement for the controlled property that:

- Requires the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of IC/EC in accordance with NYSDEC Part 375-1.8(h)(3);

- Allows the use and development of the controlled property for restricted residential, commercial, and industrial uses as defined by Part 375-1.8(g)., although land use is subject to local zoning laws;

- Restricts the use of Groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and

- Requires compliance with an approved Site Management Plan.

4. Implement a Site Management Plan (SMP) that includes the following:

- An IC/EC plan that identifies all use restrictions and manages the EC of the soil/hardscape cover system across the site;

- An Excavation Plan which details provisions for management of future excavations in areas of remaining contamination;

- Descriptions of the provisions of the environmental easement including any land use or groundwater use restrictions;

- Provisions for the management and inspection of the identified ECs;

- Maintaining site access controls and NYSDEC notifications; and,

- The steps necessary for the periodic reviews and certifications of the IC/ECs.

The following is an evaluation of this alternative using the DER-10 guidance criteria.

Overall Protection of Public Health and the Environment – The site will be protective of human

health and the environment upon completion of the remediation and new development along with the implementation of institutional and engineering controls to prevent more restrictive forms of future site use (e.g., unrestricted and residential). The excavation of all impacted soil to a depth of two (2) feet across the site or one (1) foot under the proposed hardscape area and backfilling greenspace with two (2) feet of clean soil and hardscape across the rest of the site will provide protection to the public from impacted soils remaining on site.

The SMP requires periodic inspection and monitoring of the cover system to assure its integrity and the SMP excavation work plan will apply to any future disturbance of the remaining impacted soils including the requirement to prepare an approved health and safety plan for all work.

Compliance with SCGs – With completion of the remedial measure and under the planned future site development conditions the site meets the restricted residential SCGs

Long-Term Effectiveness and Permanence – The remedial measure will effectively achieve RAOs and meet Restricted Residential SCOs. Implementation of the SMP for long term management also includes monitoring and inspection of the soil and a site-wide Inspection program to assure that the ICs/ECs placed on the Site have not been altered and remain effective. As such, this alternative is expected to provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume with Treatment – The remedial measure either permanently or significantly will reduce the mobility of site contamination. The site Management Plan will include: an excavation work plan to address any impacted soil/fill encountered during future development and/or maintenance activities and include a site-wide Inspection program to assure that the ICs/ECs placed on the Site have not been altered and remain effective. This alternative will not, however, reduce the toxicity of the soil contaminants left in place upon completion of the remedial measure. Therefore, this alternative partially satisfies this criterion.

Short-Term Effectiveness – As noted above the remedial measure achieves the RAOs for the site. Short-term adverse impacts and risks to the community, the workers, and the environment during the implementation of the remedial measure and new development will effectively be controlled through a Remedial Action Work Plan (RAWP) that will be implemented prior to remediation which will require the contractor to prepare and implement a site-specific health and Safety plan to cover all workers. A Community Air Monitoring Program (CAMP) will also be implemented to protect the surrounding community.

Implementability – There are no implementation issues related to the proposed remediation or related to the Institutional and Engineering Controls placed on the site under this alternative.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets, public comment periods on documents and other planned Citizen Participation activities. To date there have been no public comments during any of the public comment periods.

Cost – The values used in estimating alternatives are order-of-magnitude estimates for the purpose of comparing alternatives and are not meant to be a specific remedial criterion. The estimated cost for this Alternative is $487,290. The cost summary for this alternative is provided in Appendix H.

7.4.2 Alternative 2 – Residential

The details of this alternative include.

1. Excavate all fill/soil that exceeds Track 2 Part 375 Residential SCOs for the top 15 feet of soil or to bedrock if less than 15 feet. Fill/soil or native soils that do not exceed Residential SCOs will remain in place unless required to be removed for the new development. Due to strong petroleum odors in some borings and test pits soils that exhibit petroleum odors will also be removed as stipulated by owner's representative/NYSDEC. The Site will be backfilled with clean impervious soil or placement of new development hardscape to meet the new development grades.

2. Buried utilities for the new development will be installed during remediation and excavated material from utility trenches will be assessed during excavation and any material determined by visual assessment to be clean will be stockpiled for sampling/testing to determine reuse. All utility trenches will be backfilled with clean stone, including a minimum of one foot of stone below and around the utility line.

3. No EE or SMP will be required for this alternative.

The following is an evaluation of this alternative using the DER-10 guidance criteria.

Overall Protection of Public Health and the Environment – The site will be protective of human health and the environment upon completion of the remediation and new development. The excavation of all impacted soil that exceeds Residential SCOs to a maximum depth of 15 feet and backfilling the site with clean soil and hardscape will provide protection to the public from impacted soils remaining on site.

Compliance with SCGs – With completion of the remedial measure and under the planned future site development conditions the site meets the residential SCGs

Long-Term Effectiveness and Permanence – The remedial measure will effectively achieve RAOs and meet Residential SCOs. The removal of all soils that exceed Residential SCOs to a maximum depth of 15 feet across the site and backfilling with clean soil and approved hardscape along with groundwater restrictions is expected to provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume with Treatment – The remedial measure either permanently or significantly will reduce the mobility of site contamination by removing all soils that exceed Residential SCOs to a maximum depth of 15 feet. Therefore, this alternative satisfies this criterion.

Short-Term Effectiveness – As noted above the remedial measure achieves the RAOs for the site. Short-term adverse impacts and risks to the community, the workers, and the environment during the implementation of the remedial measure and new development will effectively be controlled through a Remedial Action Work Plan (RAWP) that will be implemented prior to remediation which will require the contractor to prepare and implement a site-specific health and Safety plan to cover all workers. A Community Air Monitoring Program (CAMP) will also be implemented to protect the surrounding community.

Implementability – Technical implementability of this alternative would be more difficult compared to Alternative 1. Sheet piling/slope protection will most likely be required for the excavations along the building and property perimeters, especially adjacent to Tonawanda Street and the rail tracks to the west.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets, public comment periods on documents and other planned Citizen Participation activities. To date there have been no public comments during any of the public comment periods.

Cost – The values used in estimating alternatives are order-of-magnitude estimates for the purpose of comparing alternatives and are not meant to be a specific remedial criterion. The estimated cost for this Alternative is $1,404,040. The cost summary for this alternative is provided in Appendix H.

7.4.3 Alternative 3 - Unrestricted Use

The details of this alternative include:

1. Excavate all fill/soil across the open areas of the site to a depth of approximately 6 feet (approximate fill and natural soil interface) and Backfill with clean soil or hardscape to meet new development grades (see Figures c1.0).

2. Confirmation soil sampling would be conducted at the fill - natural soil interface to assess if material remaining meets Unrestricted SCOs.

3. No EE or SMP will be required for this alternative.

The following is an evaluation of this alternative using the DER-10 guidance criteria.

Overall Protection of Public Health and the Environment – The Unrestricted Use alternative would achieve the corresponding Part 375 SCOs, which are designed to be protective of human health under any reuse scenario.

Compliance with SCGs – The Unrestricted Use alternative would comply with SCOs.

Long-Term Effectiveness and Permanence – The Unrestricted Use alternative would achieve removal of all impacted soil/fill exceeding the Unrestricted SCOs from the Site. As such, the Unrestricted Use alternative would provide long-term effectiveness and permanence. Post-remedial monitoring and certifications would not be required.

Reduction of Toxicity, Mobility, or Volume with Treatment – Through removal of all impacted fill/soil exceeding Unrestricted SCOs, the Unrestricted Use alternative would permanently and/or significantly reduce the toxicity, mobility, and volume of Site contamination along with restrictions on groundwater use.

Short-Term Effectiveness – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the Unrestricted Use alternative would increase. The duration of time community, workers, and the environment is exposed to possible fugitive dust would increase. Adverse impacts will be greatly reduced, however, through the implementation of the health and safety plan and a CAMP required by the RAWP.

Implementability – Technical implementability of the Unrestricted Use alternative would be more difficult compared to Alternative 1. Sheet piling/slope protection may be required for the deeper excavations along the building and property perimeters, especially adjacent to Tonawanda Street and the rail tracks to the west.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets, public comment periods on documents and other planned Citizen Participation activities.

Cost - The capital cost of implementing an Unrestricted Use alternative is estimated at approximately $1,606,990. The cost summary for this alternative is provided in Appendix H.

7.5 RECOMMENDED REMEDIAL ALTERNATIVE

Based on the alternatives analysis evaluation Alternative 1 satisfies the remedial action objectives and is fully protective of human health and the environment. Therefore, Alternative 1 is the recommended final remedy for the site.

8.0 FINDINGS AND CONCLUSIONS

8.1 REMEDIAL INVESTIGATION

The RI tasks were completed in accordance with a defined scope of work and approved work plan. The following provides a summary of the site investigation activities at the site:

- Assessment of soil and fill across the site by installing a series of 14 soil borings and six (6) test pits and collecting a total of 27 soil and fill samples;
- Assessment of groundwater conditions by installing four (4) on-site overburden groundwater monitoring wells and collecting a total of four (4) groundwater samples;
- Assessment of sub-slab vapor intrusion in the existing site building by collecting five (5) sub-slab vapor samples, two (2) indoor air samples and one (1) outdoor air sample.;
- Performing a building environmental assessment (asbestos, lead based paint and PCBs);
- Performing laboratory analysis on all soil/fill/water samples. Analysis included TAL metals, TCL VOCs plus TICs (no surface soil samples), TCL SVOCs plus TICs and PCBs; and
- Performing laboratory analysis on all air samples for TO-15 VOCs.

Summary of Results by Medium

Soil

The results of the RI and Phase 2 soils investigations indicate that SVOCs (primarily PAHs) and metal compounds were detected throughout the site fill soils (up to 6+/- feet bgs) at variable concentrations above Restricted Residential SCOs.

The results also indicate that a few petroleum related VOCs were detected at concentrations below the comparison SCOs at a few locations primarily at the south end of the property where petroleum odors were noted during excavation. PCBs were detected in several samples but only in two (2) sample at concentrations above Restricted Residential SCOs.

Tables 1,3 and 4 provide sampling results for all soil and fill samples and Figures 3a and 3b show the

specific sampling locations and compound concentration levels that exceed Restricted Residential and Unrestricted SCOs.

Groundwater

The groundwater analytical results indicate minor impacts to groundwater from several metal compounds which, considering the site's location in a historically industrial area, is understandable. There are also minor PCB, SVOC and VOC compound exceedances of TOGs guideline values in select wells, primarily MW-3. These exceedances include:

MW-3
PCB-1260 – 0.24 ppb versus 0.09 ppb TOGs value
Naphthalene – 118 ppb versus 10 ppb TOGs value
Acetone – 148 ppb versus 50 ppb TOGs value
Chromium – 447 ppb versus 50 ppb TOGs value

MW-4
Acetone – 94.6 ppb versus 50 ppb TOGs value

It should be noted that the Acetone presence may be due to lab contamination as it is used in cleaning solutions.

Table 5 provides analytical results for all groundwater samples and Figure 4 shows the specific sampling locations, groundwater contours and associated concentrations that exceed TOGs guideline values.

Soil Vapor/Air

The building sub-slab vapor intrusion analytical results reveal that all eight (8) of the specific VOCs established by the NYSDOH for evaluation of indoor air quality were detected at concentrations, that when evaluated with the NYSDOH guideline matrices, were acceptable and that no further action is required for these compounds.

Table 7 provided the analytical results for all TO-15 compounds detected and Figure 4 shows the specific sampling locations.

Building Environmental Condition Assessment

The results of the ACM survey indicated the presence of ACM in the building, primarily in the roof flashing. Sampling of window caulking for PCB content indicated that the material sampled was found to be below the 50-ppm threshold for PCB's by laboratory analysis. A review of the X-Ray florescence (XRF) instrument results indicates that LBP is present and shows deterioration on interior and exterior building components in the building. Detail reports for the above surveys/assessments are provided in Appendix B.

8.2 ALTERNATIVES ASSESSMENT

An Alternatives Analysis was completed to evaluate potential remedial alternatives that satisfy site specific remedial action objectives. Based on that analysis, the selected remedy is Alternative 1 which includes.

1. Remove Impacted soil across the area of the new proposed hardscape to the depth of the hardscape depth (minimum one (1) foot depth) and remove impacted soil to a depth of two (2) feet in proposed new development greenspace. Due to strong petroleum odors in some borings and test pits soils that exhibit petroleum odors will also be removed as stipulated by owner's representative/NYSDEC. Backfill hardscape areas with approved clean stone/gravel base and asphalt/concrete and backfill proposed greenspace areas with two (2) feet of approved clean soil/stone and topsoil all to meet Part 375-3.8 Track 4 and Part 375-6.8 Restricted Residential SCOs.

2. Buried utilities for the new development will be installed during remediation and excavated material from utility trenches will be assessed during excavation and any material determined by visual assessment to be clean will be stockpiled for sampling/testing to determine reuse. All utility trenches will be backfilled with clean stone, including a minimum of one foot of stone below and around the utility line.

3. Implementation of a SMP that includes an IC/EC Plan, Operation and Maintenance Plan, Excavation Work Plan, Site Monitoring Plan and an Environmental Easement.

The selected remedial alternative fully satisfies the remedial action objectives and is protective of human health and the environment. Therefore, this alternative is the recommended final remedial approach for the 68 Tonawanda site.

TABLE 1
68 TONAWANDA STREET - PHASE 2 ESA SOIL SAMPLE ANALYTICAL RESULTS SUMMARY

Sampling Program	PEI - Phase 2 ESA SOIL BORING SAMPLING PROGRAM												
Sample Number	BH 3	BH 4	BH 9	BH 1A	BH 2A	BH 4A	BH 5A	BH 6A	BH 8A	BH 9A	NYSDEC	NYSDEC	NYSDEC
Sample Date	3/5/2014	3/5/2014	3/5/2014	1/26/2017	1/26/2017	1/26/2017	1/26/2017	1/26/2017	1/26/2017	1/26/2017	PART 375	PART 375	PART 375
Sample depth (bgs)	0' - 2'	5' - 6'	3' - 4'	1' - 4'	1' - 3'	1' - 6'	1' - 6'	0' - 3'	0' - 4'	6' - 8'	Unrestricted	Residential	Restrict Res
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm			
Metals													
Mercury	0.2	0.03	0.3	0.09	0.31	0.14	0.38	0.052	ND	0.207	0.18	0.81	1
Arsenic	6.70	3.7	13.8	4.83	10.3	6.93	25.7	14.7	1.27	9.89	13	16	16
Barium	78.3	85	58.9	42.3	138	48.2	94.4	528	ND	82.4	350	350	400
Beryllium	ND	ND	ND	0.26	0.57	NA	0.67	ND	ND	1.55	7.2	14	72
Cadmium	ND	ND	ND	0.627	1.14	1.23	6	11.7	0.356	1.07	2.5	2.5	4.3
Chromium	85.7	13.4	17.6	7.57	14.8	17.1	15.1	191	161	12	30	36	180
Copper	1960.0	690	829	40.2	67.4	35.5	139	455	161	224	50	270	270
Lead (Axial)	221.0	65.7	88.6	80.8	428	183	189	355	4.93	117	63	400	400
Manganese	448	140	285	110	261	430	318	2090	297	371	1600	2000	2000
Nickel	45.9	16	14.4	8.31	15.2	9.64	27.6	153	71.7	9.02	30	140	310
Selenium	ND	ND	ND	2.5	3.96	5.75	6.59	26.8	ND	3.75	3.9	36	180
Silver	ND	ND	ND	0.66	1.1	ND	3.22	ND	ND	ND	2	36	180
Zinc	228	296	149	96	165	193	1450	3960	112	118	109	2200	10000
Total Cyanide	NA	NA	NA	ND	ND	0.548	ND	ND	ND	ND	27	27	27
PCBS													
PCB-1248	0.3	ND	ND	0.1	ND	ND	0.566	ND	ND	ND	0.1	1	1
PCB-1260	0.3	ND	ND	0.1	ND	5.52	ND	0.698	ND	ND	0.1	1	1
Pesticides													
4,4-DDT	ND	ND	ND	0.016	ND	0.48	0.045	0.049	ND	ND	0.0033	1.7	7.9
Aldrin	ND	ND	ND	0.005	ND	ND	0.004	ND	ND	ND	0.005	0.019	0.097
alpha-BHC	ND	ND	ND	0.003	ND	ND	ND	ND	ND	ND	0.02	0.097	0.48
beta BHC	ND	ND	ND	ND	ND	ND	ND	0.008	ND	ND	0.036	0.072	0.36
delta BHC	ND	ND	ND	0.004	ND	ND	ND	0.029	ND	ND	0.04	100	100
Endosulfan I	ND	ND	ND	0.004	ND	ND	ND	ND	ND	ND	2.4	4.8	24
Endosulfan II	ND	ND	ND	ND	ND	0.033	0.014	0.014	ND	ND	2.4	4.8	24
Endosulfan Sulfate	ND	ND	ND	0.019	ND	0.086	0.049	0.05	ND	0.007	2.4	4.8	24
Lindane	ND	ND	ND	0.014	ND	ND	ND	0.007	ND	0.01	0.1	0.28	1.3
Dieldrin	ND	ND	ND	0.007	ND	0.037	0.009	0.01	ND	0.004	0.005	0.039	0.2
Endrin	ND	ND	ND	0.009	ND	0.4	0.036	0.005	ND	ND	0.014	2.2	11
VOCs													
Acetone	ND	ND	ND	0.9	1.19	0.114	ND	ND	ND	ND	0.05	100	100
Naphthalene	ND	ND	ND	0.02	0.96	0.092	ND	ND	ND	ND	12	100	100
m, p Xylene	ND	ND	ND	ND	ND	0.00766	ND	ND	ND	ND	0.26	100	100
n-Butylbenzene	ND	0.5	ND	ND	ND	ND	ND	ND	ND	0.398	12	NA	ND
n-propylbenzene	ND	0.2	ND	ND	ND	ND	ND	ND	ND	0.14	3.9	100	100
Toluene	ND	ND	ND	ND	ND	0.0108	ND	ND	ND	ND	0.7	100	100
Sec-Butylbenzene	ND	0.2	ND	ND	ND	ND	ND	ND	ND	0.19	11	100	100
1,2,4 Trimethylbenzene	ND	1.7	ND	ND	ND	ND	ND	ND	ND	0.428	3.6	47	52
1,3,5 Trimethylbenzene	ND	ND	0.4	ND	ND	ND	ND	ND	ND	ND	8.4	47	52
TICs (Total)	0.03	66.9	128.4	ND	ND	ND	ND	ND	ND	35.9	NA	N/A	N/A
SVOCs													
Anthracene	ND	ND	ND	5.3	2.00	ND	ND	ND	ND	ND	100	100	100
Benzo(a)anthracene	1.3	ND	ND	16.2	ND	ND	1.13	0.371	ND	0.419	1	1	1
Benzo(a)pyrene	1.4	ND	ND	18.9	ND	ND	0.782	0.317	ND	0.368	1	1	1
Benzo(b)fluoranthene	1.1	ND	ND	19.9	ND	ND	0.885	0.399	ND	0.417	1	1	1
Benzo(g,h,I)perylene	1	ND	ND	13.5	ND	ND	0.544	0.403	ND	ND	100	100	100
Benzo(k)fluoranthene	1.1	ND	ND	9.9	ND	ND	0.555	ND	ND	ND	0.8	1	3.9
Chrysene	1.4	ND	ND	17.5	ND	ND	1.07	0.385	ND	0.42	1	1	3.9
Fluoranthene	2.8	ND	ND	47.4	3.34	ND	2.49	0.711	ND	0.752	100	100	100
Fluorene	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	30	100	100
Indeno(1,2,3-cd)pyrene	1.1	ND	ND	ND	ND	ND	0.554	0.402	ND	ND	0.5	0.5	0.5
Phenanthrene	1.9	4.4	ND	23.2	5.00	ND	1.2	ND	ND	0.792	100	100	100
Pyrene	2.4	ND	ND	38.4	2.5	ND	1.71	0.483	ND	0.641	100	100	100
TICs (Total)	17.9	167.5	515	ND	ND	ND	ND	ND	ND	ND	NA	N/A	N/A

ND - Non-Detect NA - Not Applicable

TICs - Tentitively Identified Compounds

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 2
68 TONAWANDA RI LOCATION COORDINATES

Sample Identification	Coordinates-North American Datum 1983	
	Latitude	Longitude
Boreholes		
RI-01	42.93080622	-78.89747178
RI-02	42.93094231	-78.89757917
RI-03	42.93109858	-78.89761244
RI-04	42.93141463	-78.89758093
RI-05	42.93176994	-78.89755499
RI-06	42.93193806	-78.89751742
RI-07	42.93239117	-78.89740486
RI-08	42.93252813	-78.89746704
RI-09	42.93288538	-78.89722696
RI-10	42.93311572	-78.89720037
RI-11	42.93335586	-78.89712128
RI-12	42.93336566	-78.8973264
RI-13	42.93319923	-78.89731132
RI-14	42.93302469	-78.89734779
Test Pits		
TP- 1	42.93337735	-78.89722714
TP- 2	42.93324833	-78.89724759
TP- 3	42.93263784	-78.89740701
TP- 4	42.93087375	-78.8976017
TP- 5	42.93085768	-78.89759593
TP- 6	42.93093964	-78.89759045
Monitoring Wells		
MW- 1	42.93338781	-78.89731792
MW- 2	42.9333861	-78.89714343
MW- 3	42.93197751	-78.8975382
MW- 4	42.93075041	-78.89744599

TABLE 3

68 TONAWANDA STREET - RI SOIL BORING SAMPLE ANALYTICAL RESULTS SUMMARY

Contaminants	Sample Identification								Date Sampled: 2/7/18		PART 375 Soil Cleanup Objectives		
	RI BH-1 (4-6') Fill	RI BH-1 (8-12') Native	RI BH-2 (0-4') Fill	RI BH-3 (1-4') Fill	RI BH-4 (2-5') Fill	RI BH-4 (6-8') Native	RI BH-4D (2-5') Fill	RI BH-5 (1-4') Fill	RI BH-6 (1-4') Fill	RI BH-7 (2-6') Fill	Unrestricted Use	Residential	Restricted Residential
METALS													
Arsenic	ND	3.47	ND	10.9	48.4	4.39	34.5	1.81	27.7	31.9	13	16	16
Barium	43.2	80	27.1	75	166	135	177	75.7	53.5	158	350	350	400
Beryllium	0.388	0.499	0.214	0.676	0.743	0.842	0.782	0.563	0.546	0.434	7.2	14	72
Cadmium	0.441	0.217	0.144	0.201	4.37 J	0.154	2.49 J	0.371	1.17	2.03	2.5	2.5	4.3
Chromium	15.2	15.7	6.27	8.74	23.5 J	24.5	39.3 J	13.7	11.4	16.2	30	36	180
Copper	14	12.4	1.99	120	161	17.6	133	16.7	131	1540	50	270	270
Lead	40.6	14.2	25.1	259	1030 J	9.06	1470 J	47.9	95.4	307	63	400	400
Manganese	329	527	232	127	502 J	452	780 J	382	312	441	1600	2,000	2,000
Total Mercury	0.019	0.011	0.019	0.264	ND	0.016	ND	0.091	0.083	0.255	0.18	0.81	0.81
Nickel	9.94	17.5	5.05	16.2	24.7	26.3	27.3	11.8	39.5	21.4	30	140	310
Selenium	ND	ND	ND	1.51	ND	ND	ND	ND	2.77	ND	3.9	36	180
Silver	0.481	0.447	0.356	0.651	1.37 J	0.729	J	0.614	2.93	1.24	2	36	180
Zinc	57.1	48.3	38.4	97.4	866	62.9	789	98	462	783	109	2200	10,000
PCBs													
PCB-1254	0.057 J	ND	NA	NA	ND	ND	ND	NA	NA	NA	0.1	1	1
PCB-1260	ND	ND	NA	NA	0.046 J	ND	0.0513 J	NA	NA	NA	0.1	1	1
SEMIVOLATILE ORGANIC COMPOUNDS													
Acenaphthene	ND	ND	NA	NA	ND	ND	1.07 J	NA	NA	NA	20	100	100
Acenapthylene	ND	ND	NA	NA	1.03	ND	1.12 J	NA	NA	NA	100	100	100
Anthracene	ND	ND	NA	NA	1.55	ND	3.43	NA	NA	NA	100	100	100
Benz(a)anthracene	ND	ND	NA	NA	4.29	ND	9.48	NA	NA	NA	1	1	1
Benzo(a)pyrene	ND	ND	NA	NA	3.9	ND	8.24	NA	NA	NA	1	1	1
Benzo(b)fluoranthene	ND	ND	NA	NA	4.24	ND	7.87	NA	NA	NA	1	1	1
Benzo(g,h,i)perylene	ND	ND	NA	NA	2.71	ND	5.6	NA	NA	NA	100	100	100
Benzo(k)fluoranthene	ND	ND	NA	NA	2.99	ND	6.34	NA	NA	NA	0.8	1	3.9
Chrysene	ND	ND	NA	NA	4.46	ND	9.37	NA	NA	NA	1	1	3.9
Dibenz(a,h)anthracene	ND	ND	NA	NA	0.833 J	ND	1.81	NA	NA	NA	0.33	0.33	0.33
Fluoranthene	0.842	ND	NA	NA	8.69	ND	21.5	NA	NA	NA	100	100	100
Fluorene	ND	ND	NA	NA	ND	ND	1.29 J	NA	NA	NA	30	100	100
Indeno(1,2,3-cd)pyrene	ND	ND	NA	NA	3.01	ND	6.14	NA	NA	NA	0.5	0.5	0.5
Phenanthrene	ND	ND	NA	NA	5.74	ND	17	NA	NA	NA	100	100	100
Pyrene	ND	ND	NA	NA	7.56	ND	17.7	NA	NA	NA	100	100	100
TICs	26.5 J	1.38 J	NA	NA	21.1 J	4.16 J	46.2 J	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds													
Acetone	NA	0.504	NA	NA	NA	NA	NA	NA	NA	NA	0.05	100	100
Toluene	NA	0.00456	NA	NA	NA	NA	NA	NA	NA	NA	0.7	100	100
1,2,4-Trimethylbenzene	NA	0.00448	NA	NA	NA	NA	NA	NA	NA	NA	3.6	47	52
1,3,5- Trimethylbenzene	NA	0.00564	NA	NA	NA	NA	NA	NA	NA	NA	8.4	47	52
TICs	NA	5.03 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

ND - Non-Detect NA - Not Applicable All Data is Validated J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 3

68 TONAWANDA STREET - RI SOIL BORING SAMPLE ANALYTICAL RESULTS SUMMARY

Contaminants	Sample Identification					Date Sampled: 2/7/18			PART 375 Soil Cleanup Objectives		
	RI BH-8 (2-4') Fill	RI BH-9 (1-4') Fill	RI BH-10 (3-4') Fill	RI BH-11 (2-4') Fill	RI BH-12 (2-4') Fill	RI BH-12 (4.5') Fill	RI BH-13 (3-4.5') Fill	RI BH-14 (2-4') Fill	Unrestricted Use	Residential	Restricted Residential
METALS											
Arsenic	4.46	4.13	2.74	8.39	31.7	NA	8.08	6.28	13	16	16
Barium	65.4	34	29.7	111	130	NA	88.6	101	350	350	400
Beryllium	0.519	0.307	0.192	1.61	0.758	NA	0.436	0.476	7.2	14	72
Cadmium	0.236	0.276	0.34	1.1	1.48	NA	0.905	0.44	2.5	2.5	4.3
Chromium	13.2	7.11	7.73	17.7	21.6	NA	16.9	15.8	30	36	180
Copper	16.4	60.8	37.1	241	83.5	NA	44.2	77.4	50	270	270
Lead	37.8	66.3	47.7	107	207	NA	134	129	63	400	400
Manganese	410	409	204	954	498	NA	404	396	1600	2,000	2,000
Total Mercury	0.123	0.109	0.093	3	0.799	NA	0.415	0.098	0.18	0.81	0.81
Nickel	12.7	8.23	7.1	18.1	19.6	NA	14.2	13.3	30	140	310
Selenium	ND	ND	ND	ND	0.864	NA	ND	ND	3.9	36	180
Silver	0.538	0.481	0.378	0.82	0.704	NA	0.811	0.611	2	36	180
Zinc	70	54.4	72.3	243	345	NA	161	155	109	2200	10,000
PCBs											
PCB-1254	ND	NA	NA	NA	NA	NA	NA	NA	0.1	1	1
PCB-1260	0.698	NA	NA	NA	NA	NA	NA	NA	0.1	1	1
SEMIVOLATILE ORGANIC COMPOUNDS											
Benz(a)anthracene	0.21	NA	NA	NA	NA	NA	NA	NA	1	1	1
Chrysene	0.206	NA	NA	NA	NA	NA	NA	NA	1	1	3.9
Fluoranthene	0.317	NA	NA	NA	NA	NA	NA	NA	100	100	100
Phenanthrene	0.192	NA	NA	NA	NA	NA	NA	NA	100	100	100
Pyrene	0.271	NA	NA	NA	NA	NA	NA	NA	100	100	100
TICs	9.2 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds											
TICs	NA	NA	NA	NA	NA	1.96 J	NA	NA	NA	NA	NA

ND - Non-Detect NA - Not Applicable All Data is Validated J - The analyte was positively identified; value is the approximate concentration of the analyte in the sample.

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 4

68 TONAWANDA STREET - RI TEST PIT SOIL SAMPLE ANALYTICAL RESULTS SUMMARY

Contaminants	Sample Identification						Date Sampled: 2/13/18			PART 375 Soil Cleanup Objectives		
	TP-4 (4-5') Fill	TP-4D (4-5') Fill	TP-5 (1-4') Fill	TP-5 (4-5') Fill	TP-6 (4-5') Fill	TP-1 (2-4') Fill	TP-2 (2-4') Fill	TP-2 (6') Native	TP-3 (2-4') Fill	Unrestricted Use	Residential	Restricted Residential
METALS												
Arsenic	7.53 J	3.9 J	10.9	NA	NA	7.93	5.35	1.39	2.77	13	16	16
Barium	72	75.4	82.9	NA	NA	404	109	112	72.2	350	350	400
Beryllium	0.477	0.52	0.574	NA	NA	0.521	0.75	0.621	0.484	7.2	14	72
Cadmium	1 J	0.708 J	0.737	NA	NA	0.923	0.977	0.387	0.422	2.5	2.5	4.3
Chromium	16 J	12.9 J	8.52	NA	NA	14.6	16.5	20	10.6	30	36	180
Copper	93.9	94.4	1090	NA	NA	82.5	320	13.5	16.5	50	270	270
Lead	178 J	143 J	395	NA	NA	140	106	8.3	92.1	63	400	400
Manganese	356	349	141	NA	NA	338	431	400	268	1600	2,000	2,000
Total Mercury	0.223 J	0.338 J	0.724	NA	NA	0.135	0.281	0.0139	0.107	0.18	0.81	0.81
Nickel	15.9	13.5	11.8	NA	NA	16.6	18.9	21.4	11.5	30	140	310
Silver	1.05	ND	0.97	NA	NA	1.09	ND	0.576	0.733	2	36	180
Zinc	199 J	168 J	395	NA	NA	248	290	54.7	117	109	2200	10,000
PCBs												
PCB-1248	ND	ND	NA	NA	NA	ND	0.17 J	ND	5.6 J	0.1	1	1
PCB-1260	ND	ND	NA	NA	NA	ND	0.0745 J	ND	ND	0.1	1	1
SEMIVOLATILE ORGANIC COMPOUNDS												
Acenaphthene	ND	0.17 J	NA	NA	2.95	NA	0.187	ND	ND	20	100	100
Anthracene	ND	0.308 J	NA	NA	0.508	NA	0.348	ND	ND	100	100	100
Benz(a)anthracene	0.552	1.22	NA	NA	0.414	NA	1.31	ND	0.347	1	1	1
Benzo(a)pyrene	0.499	1.13	NA	NA	0.424	NA	1.18	ND	0.288	1	1	1
Benzo(b)fluoranthene	0	1.01	NA	NA	0.356	NA	1.14	ND	0.336	1	1	1
Benzo(g,h,i)perylene	0.341	0.728	NA	NA	ND	NA	0.805	ND	0.225	100	100	100
Benzo(k)fluoranthene	0.434	0.74	NA	NA	ND	NA	0.934	ND	0.213	0.8	1	3.9
Chrysene	0.547	1.27	NA	NA	0.401	NA	1.27	ND	0.365	1	1	3.9
Dibenz(a,h)anthracene	ND	ND	NA	NA	ND	NA	0.201	ND	ND	0.33	0.33	0.33
Fluoranthene	0.965	2.14	NA	NA	0.638	NA	2.59	ND	0.72	100	100	100
Fluorene	ND	ND	NA	NA	3.85	NA	ND	ND	ND	30	100	100
Indeno(1,2,3-cd)pyrene	0.369	0.88	NA	NA	0.351	NA	0.939	ND	0.236	0.5	0.5	0.5
Phenanthrene	0.459	1.19	NA	NA	10.4	NA	1.23	ND	0.351	100	100	100
Pyrene	0.868 J	2.25 J	NA	NA	0.878	NA	2.14	ND	0.59	100	100	100
TICs	1.4 J	7.26 J	NA	NA	305 J	NA	6.85 J	0.25 J	5.65 J	NA	NA	NA
Volatile Organic Compounds												
Acetone	NA	NA	NA	0.0338	0.0501	NA	NA	NA	NA	0.05	100	100
n-Propylbenzene	NA	NA	NA	ND	0.0182	NA	NA	NA	NA	3.9	100	100
sec-Butylbenzene	NA	NA	NA	ND	0.0408	NA	NA	NA	NA	11	100	100
1,2,4-Trimethylbenzene	NA	NA	NA	ND	0.0364	NA	NA	NA	NA	3.6	47	52
Xylene (mixed)	NA	NA	NA	ND	0.00468	NA	NA	NA	NA	0.26	100	100
TICs	NA	NA	NA	6.54 J	7.37 J	NA	NA	NA	NA	NA	NA	NA

ND - Non-Detect NA - Not Applicable All Data is Validated J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

>/= to Residential/Restricted-Residential SCO and Unrestricted Use SCO

>Unrestricted Use SCO but <Residential/Restricted-Residential SCO

>Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 5
68 TONAWANDA STREET - RI GW SAMPLE ANALYTICAL RESULTS SUMMARY

Contaminants	Sample Identification (results in ppm)					NYSDEC
	MW-1	MW-2	MW-3	MW-3B (2)	MW-4	TOGS 1.1.1. GA (1)
Sample Date	2/23/18	2/23/2018	2/23/2018	7/6/2018	2/23/2018	
METALS						
Arsenic	8.3	ND	7.9	ND	ND	25
Barium	50.6	106	156	ND	ND	1000
Beryllium	ND	ND	ND	ND	ND	3
Chromium	ND	ND	**447**	18.7	ND	50
Copper	ND	ND	22.8	16.9 J	ND	200
Manganese	**363**	**585**	232	ND	**456**	300
Total Mercury	ND	0.23	ND	ND	ND	0.7
Selenium	**14.1**	ND	**33.3**	ND	ND	10
PCBs						
PCB-1260	ND	ND	**0.24 J**	N/A	ND	0.09
SEMIVOLATILE ORGANIC COMPOUNDS						
2-Methylnapthalene	ND	ND	21.6	N/A	ND	NA
Acenaphthene	ND	ND	15.7	N/A	ND	20
Fluorene	ND	ND	6.21	N/A	ND	50
Naphthalene	ND	ND	**118**	N/A	ND	10
TICs	151 J	79.7 J	437 J	N/A	73 J	NA
Volatile Organic Compounds						
Acetone	25.5 J	34.1 J	**148 B**	N/A	**94.6 B**	50
1,2,4-Trimethylbenzene	ND	ND	2.62	N/A	ND	**5**
Carbon disulfide	ND	1.68	ND	N/A	ND	NA
TICs	ND	16.4 J	43.8 J	N/A	ND	NA
Field Parameters						
Turbidity (NTU)	47.7	6.2	800	721	93.1	NA
pH	7.18	6.4	10.36	10.13	7.22	NA
Dissolved Oxygen	0	15.75	0	0	0.74	NA
Temp (degrees C)	10.64	11.71	9.73	16.04	11.48	NA
Conductivity	1.32	3.65	5.13	5.27	3.37	NA

N/A - Not Applicable ND - Non-detect All Data is Validated

(1) - TOGs 1.1.1 GA - Technical and Operational Guidance Series (1.1.1) Source of Drinking Water (Groundwater)

(2) - Field filtered metals sample

Exceeds TOGs GA Guidance Value

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

B - Derected in Trip Blank

TABLE 6
68 TONAWANDA STREET SITE - GROUNDWATER ELEVATIONS

Well Number	T of C Elevation (ft) (1)	Water Level 3/30/2018	Groundwater Elevation
MW - 1	585.57	5.84	579.73
MW - 2	585.55	9.21	576.34
MW - 3	584.26	10.18	574.08
MW - 4	579.22	10.23	568.99

(1) - Elevations are referenced to Datum NAVD 88

TABLE 7
68 TONAWANDA BUILDING - SUB SLAB VAPOR & AMBIENT AIR ANALYTICAL RESULTS SUMMARY
EPA Air Method Toxic Organics -15 (TO-15)

Contaminants	Sample Identification											NYSDOH (1)	NYSDOH (1)
	SS-01	IA-01	SS-02	IA-01	SS-03	IA-02	SS-04	IA-02	SS-05	IA-02	OA-01	Sub Slab Vapor Concentration	Indoor Air Concentration
	Sub Slab	Indoor	Sub Slab	Indoor	Sub Slab	Indoor	Sub Slab	Indoor	Sub Slab	Indoor	Outdoor	Decision Matrix - Min Action Level	Min Action Level
	2/20/2018	2/20/2018	2/20/2018	2/20/2018	2/20/2018	2/20/2018	2/20/2018	2/20/2018	2/20/2018	2/20/2018	2/20/2018	ug/m3	ug/m3
Volatile Organic Compounds (2)													
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**100**	**3**
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6**	**0.2**
1,2,4-Trimethylbenzene	0.88	0.79	1.5	0.79	1.4	8.0	1.0	8.0	1.1	8.0	ND		
1,3,5-Trimethylbenzene	0.64	ND	1.1	ND	0.93	2.20	0.74	2.20	ND	2.20	ND		
2,2,4-trimethylpentane	ND	1.8	7.8	1.8	1.8	1.1	2.9	1.1	ND	1.1	ND		
4-ethyltoluene	ND	ND	0.54	ND	ND	1.90	ND	1.90	ND	1.90	ND		
Acetone	19	24	48	24	30	66	460	66	48	66	6.7		
Benzene	5.2	0.57	8.6	0.57	6.1	1.50	4.1	1.50	69	1.50	0.48		
Carbon disulfide	4.1	ND	5.8	ND	11	ND	170	ND	23	ND	ND		
Carbon tetrachloride	ND	0.31	ND	0.31	ND	0.4	ND	0.4	ND	0.4	0.44	**6**	**0.2**
Chloroethane	1.5	ND	2.3	ND	0.90	ND	1.6	ND	1.0	ND	ND		
Chloroform	ND	ND	3.0	ND	ND	ND	ND	ND	ND	ND	ND		
Chloromethane	ND	0.52	0.81	0.52	0.35	1.0	0.58	1.0	ND	1.0	0.68		
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6**	**0.2**
Cyclohexane	3900	2.7	180	2.7	24	0.89	21	0.89	2500	0.89	3.80		
Ethyl acetate	2.7	ND	ND	ND	3.9	0.72	ND	0.72	ND	0.72	0.61		
Ethylbenzene	0.82	ND	ND	ND	0.78	4.90	ND	4.90	ND	4.90	ND		
Freon 11	1.8	1.1	2.0	1.1	1.0	1.40	1.5	1.40	110	1.40	1.00		
Freon 12	1.7	1.3	1.7	1.3	1.9	2.70	1.8	2.70	76	2.70	1.50		
Heptane	2000	1.9	100	1.9	35	2.50	230	2.50	1400	2.50	2.70		
Hexane	5100	4.7	92	4.7	46	2.40	170	2.40	1500	2.40	3.00		
Isopropyl alcohol	ND	ND	3.9	ND	ND	ND	ND	ND	ND	ND	ND		
m&p-Xylene	2.6	1.1	2.7	1.1	2.5	20	2	20	8	20	0.61		
Methyl Ethyl Ketone	2.1	1.5	3.8	1.5	5.7	34	16	34	3	34	1.30		
Methylene chloride	21	2.5	19	2.5	21	5.50	23	5.50	2.6	5.50	2.80	**100**	**3**
o-Xylene	ND	0.52	ND	0.52	1.1	8.0	ND	8.0	ND	8.0	ND		
Styrene	ND	ND	ND	ND	0.43	1.20	ND	1.20	ND	1.20	ND		
Tetrachloroethylene	ND	ND	ND	ND	ND	1.40	ND	1.40	5.4	1.40	ND	**100**	**3**
Toluene	42	14	15	14	54	130	58	130	92	130	4.60		
Trichloroethene	2.1	0.21	2.4	0.21	5.8	0.38	2.6	0.38	6.1	0.38	0.32	**6**	**0.2**
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6**	**0.2**

N/A - Not Applicable ND - Non-detect
Red values are above Air Guideline Derived by NYSDOH in Table 3.1 of NYSDOH Guidance titled "Evaluating Soil Vapor Intrusion in the State of New York", October 2006 (and subsequent updates).
J indicates an estimated value
(1) New York State Department of Health (NYSDOH), Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006 and subsequent updates (select matrix coumpounds).
(2) Compounds with detected concentrations

NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, May 2017 Decision Matrices Notes:

NO FURTHER ACTION:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures

IDENTIFY SOURCE(S) AND RESAMPLE OR MITIGATE:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor int rusion given the concentration detected in the sub slab vapor sample.
Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers capped or by storing VOC containing products in places where people do not spend much time, such as a garage or shed).
Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concen trations in the indoor air or sub slab vapor have changed.
Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed.
The type and frequency of monitoring is determined on a site specific and building specific basis, taking into account applicable environmental data and building operating conditions.
Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub slab depressurization system,
and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building specific basis, taking into account building construction and operating conditions.
Mitigation is considered a temporary measure implemented to address exposures related to soil vapor in trusion until contaminated environmental media are remediated.

TABLE 8 - 68 TONAWANDA - PFAS AND 1,4 DIOXANE IN GROUNDWATER ANALYTICAL RESULTS SUMMARY				
Sample Number	**MW-1B**	**MW-3B**	**MW-4B**	**NYSDEC**
Sample Date	**7/6/2018**	**7/6/2018**	**7/6/2018**	**Guideline**
Compounds	**ppb**	**ppb**	**ppb**	**ppb**
1,4 Dioxane by 8270D				
1,4 Dioxane	ND	ND	**1.20**	**0.35**
Perfluorinated Alkyl Acids by Isotope Dilution EPA 537				
Perfluorobutanoic Acid (PFBA)	0.0007	ND	0.0060	
Perfluoropentanoic Acid (PFPeA)	ND	ND	0.0016	
Perfluorobutanesulfonic Acid (PFBS)	0.0005	ND	0.002	
Perfluorohexanoic Acid (PFHxA)	ND	ND	0.0017	
Perfluoroheptanoic Acid (PFHpA)	ND	ND	0.0012	
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	0.001	
Perfluorooctanoic Acid (PFOA)	0.0004	0.0007	0.0024	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.027	0.0004	0.0007	
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ND	
Perfluorononanoic Acid (PFNA)	0.0001	0.0001	0.0003	
Perfluorooctanesulfonic Acid (PFOS)	0.0007	ND	0.0017	
Perfluorodecanoic Acid (PFDA)	0.0002	ND	0.0004	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	0.0009	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	0.0016	
Perfluoroundecanoic Acid (PFUnA)	ND	ND	0.0004	
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ND	
Perfluorooctanesulfonamide (FOSA)	ND	ND	ND	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	0.0009	
Perfluorododecanoic Acid (PFDoA)	ND	ND	0.0004	
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	0.0007	
Perfluorotetradecanoic Acid (PFTA)	ND	ND	0.0007	
Totals	0.0292	0.0012	0.0246	**0.07**

Shaded Value Exceeds NYSDEC Guideline

N/A - Not Applicable ND - Non-detect

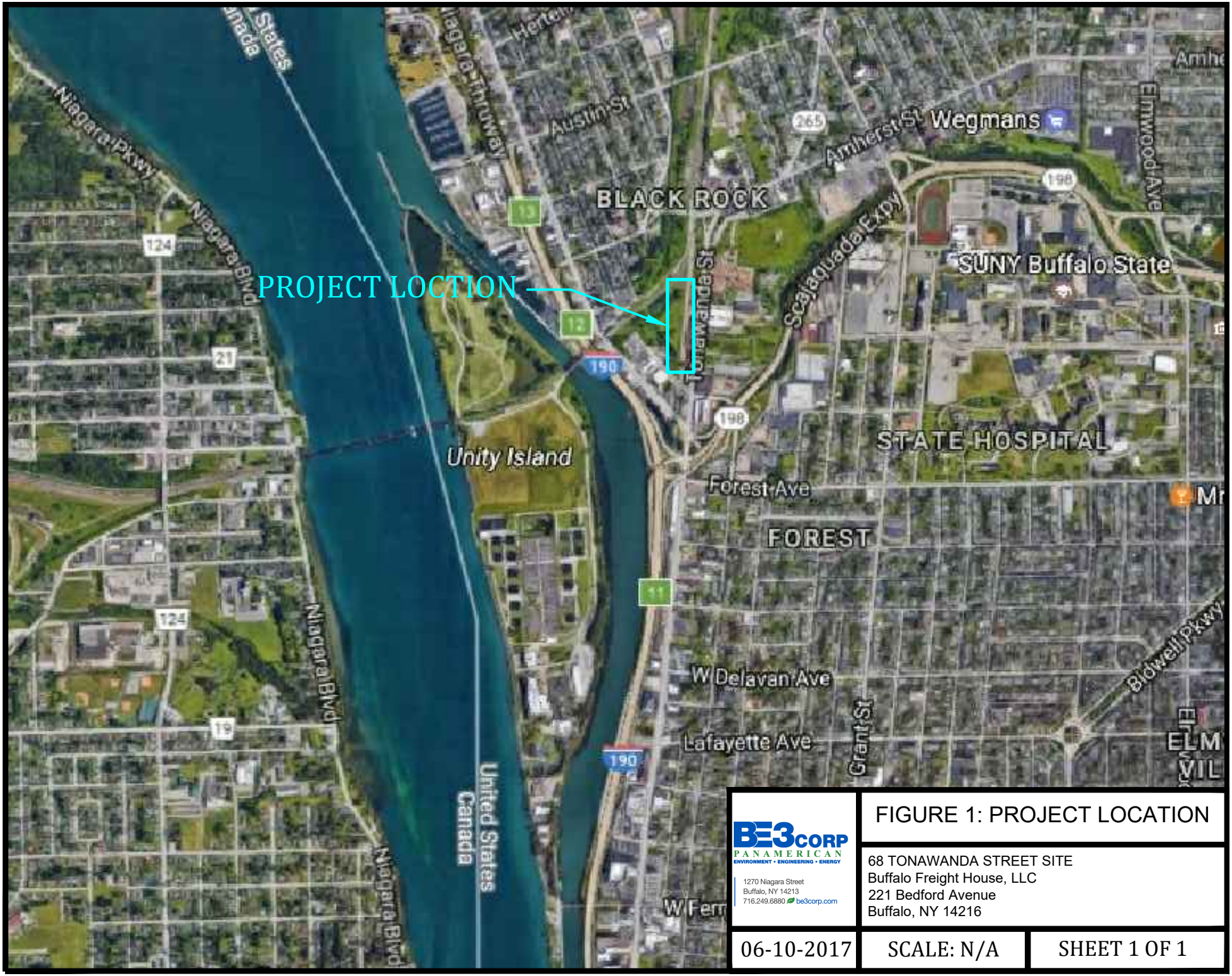


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FIGURE 1: PROJECT LOCATION

68 TONAWANDA STREET SITE
Buffalo Freight House, LLC
221 Bedford Avenue
Buffalo, NY 14216

06-10-2017	SCALE: N/A	SHEET 1 OF 1

LEGEND

RI-01	RI BORINGS
TP-02	RI TEST PIT
BH-1	2014 PHASE II BORING
BH-2A	2017 PHASE II BORING
MW-01	RI MONITORING WELLS

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FIGURE 2: RI LOCATION PLAN

68 TONAWANDA STREET SITE
Buffalo Freight House, LLC
221 Bedford Avenue
Buffalo, NY 14216

2-28-2017 | SCALE: N/A | SHEET 1 OF 1

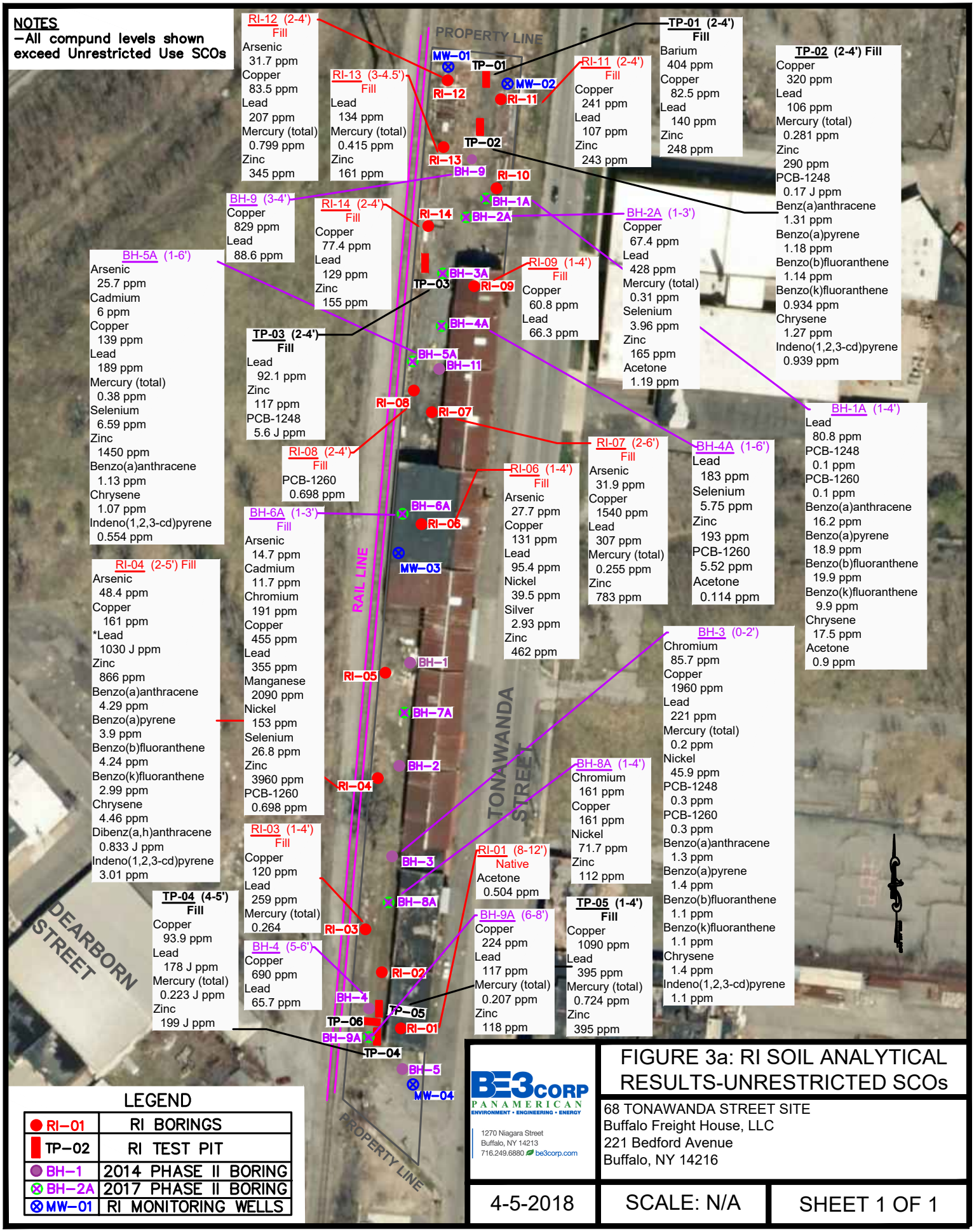
NOTES
–All compund levels shown exceed Unrestricted Use SCOs
PROPERTY LINE
RAIL LINE
TONAWANDA STREET
DEARBORN STREET
PROPERTY LINE
RI-12 (2-4') Fill
Arsenic 31.7 ppm
Copper 83.5 ppm
Lead 207 ppm
Mercury (total) 0.799 ppm
Zinc 345 ppm
RI-13 (3-4.5') Fill
Lead 134 ppm
Mercury (total) 0.415 ppm
Zinc 161 ppm
TP-01 (2-4') Fill
Barium 404 ppm
Copper 82.5 ppm
Lead 140 ppm
Zinc 248 ppm
RI-11 (2-4') Fill
Copper 241 ppm
Lead 107 ppm
Zinc 243 ppm
TP-02 (2-4') Fill
Copper 320 ppm
Lead 106 ppm
Mercury (total) 0.281 ppm
Zinc 290 ppm
PCB-1248 0.17 J ppm
Benz(a)anthracene 1.31 ppm
Benzo(a)pyrene 1.18 ppm
Benzo(b)fluoranthene 1.14 ppm
Benzo(k)fluoranthene 0.934 ppm
Chrysene 1.27 ppm
Indeno(1,2,3-cd)pyrene 0.939 ppm
BH-9 (3-4') Copper 829 ppm Lead 88.6 ppm
RI-14 (2-4') Fill
Copper 77.4 ppm
Lead 129 ppm
Zinc 155 ppm
BH-2A (1-3')
Copper 67.4 ppm
Lead 428 ppm
Mercury (total) 0.31 ppm
Selenium 3.96 ppm
Zinc 165 ppm
Acetone 1.19 ppm
BH-5A (1-6')
Arsenic 25.7 ppm
Cadmium 6 ppm
Copper 139 ppm
Lead 189 ppm
Mercury (total) 0.38 ppm
Selenium 6.59 ppm
Zinc 1450 ppm
Benzo(a)anthracene 1.13 ppm
Chrysene 1.07 ppm
Indeno(1,2,3-cd)pyrene 0.554 ppm
RI-09 (1-4') Fill
Copper 60.8 ppm
Lead 66.3 ppm
TP-03 (2-4') Fill
Lead 92.1 ppm
Zinc 117 ppm
PCB-1248 5.6 J ppm
BH-1A (1-4')
Lead 80.8 ppm
PCB-1248 0.1 ppm
PCB-1260 0.1 ppm
Benzo(a)anthracene 16.2 ppm
Benzo(a)pyrene 18.9 ppm
Benzo(b)fluoranthene 19.9 ppm
Benzo(k)fluoranthene 9.9 ppm
Chrysene 17.5 ppm
Acetone 0.9 ppm
RI-08 (2-4') Fill
PCB-1260 0.698 ppm
RI-07 (2-6') Fill
Arsenic 31.9 ppm
Copper 1540 ppm
Lead 307 ppm
Mercury (total) 0.255 ppm
Zinc 783 ppm
BH-4A (1-6')
Lead 183 ppm
Selenium 5.75 ppm
Zinc 193 ppm
PCB-1260 5.52 ppm
Acetone 0.114 ppm
RI-06 (1-4') Fill
Arsenic 27.7 ppm
Copper 131 ppm
Lead 95.4 ppm
Nickel 39.5 ppm
Silver 2.93 ppm
Zinc 462 ppm
BH-6A (1-3') Fill
Arsenic 14.7 ppm
Cadmium 11.7 ppm
Chromium 191 ppm
Copper 455 ppm
Lead 355 ppm
Manganese 2090 ppm
Nickel 153 ppm
Selenium 26.8 ppm
Zinc 3960 ppm
PCB-1260 0.698 ppm
RI-04 (2-5') Fill
Arsenic 48.4 ppm
Copper 161 ppm
*Lead 1030 J ppm
Zinc 866 ppm
Benzo(a)anthracene 4.29 ppm
Benzo(a)pyrene 3.9 ppm
Benzo(b)fluoranthene 4.24 ppm
Benzo(k)fluoranthene 2.99 ppm
Chrysene 4.46 ppm
Dibenz(a,h)anthracene 0.833 J ppm
Indeno(1,2,3-cd)pyrene 3.01 ppm
BH-3 (0-2')
Chromium 85.7 ppm
Copper 1960 ppm
Lead 221 ppm
Mercury (total) 0.2 ppm
Nickel 45.9 ppm
PCB-1248 0.3 ppm
PCB-1260 0.3 ppm
Benzo(a)anthracene 1.3 ppm
Benzo(a)pyrene 1.4 ppm
Benzo(b)fluoranthene 1.1 ppm
Benzo(k)fluoranthene 1.1 ppm
Chrysene 1.4 ppm
Indeno(1,2,3-cd)pyrene 1.1 ppm
BH-8A (1-4')
Chromium 161 ppm
Copper 161 ppm
Nickel 71.7 ppm
Zinc 112 ppm
RI-03 (1-4') Fill
Copper 120 ppm
Lead 259 ppm
Mercury (total) 0.264
RI-01 (8-12') Native
Acetone 0.504 ppm
TP-04 (4-5') Fill
Copper 93.9 ppm
Lead 178 J ppm
Mercury (total) 0.223 J ppm
Zinc 199 J ppm
BH-4 (5-6')
Copper 690 ppm
Lead 65.7 ppm
BH-9A (6-8')
Copper 224 ppm
Lead 117 ppm
Mercury (total) 0.207 ppm
Zinc 118 ppm
TP-05 (1-4') Fill
Copper 1090 ppm
Lead 395 ppm
Mercury (total) 0.724 ppm
Zinc 395 ppm
MW-01
TP-01
MW-02
RI-12
RI-11
TP-02
RI-13
BH-9
RI-10
BH-1A
RI-14
BH-2A
BH-3A
TP-03
RI-09
BH-4A
BH-5A
BH-11
RI-08
RI-07
BH-6A
RI-06
MW-03
BH-1
RI-05
BH-7A
BH-2
RI-04
BH-3
BH-8A
RI-03
RI-02
BH-4
TP-05
TP-06
RI-01
BH-9A
TP-04
BH-5
MW-04
LEGEND
RI-01 RI BORINGS
TP-02 RI TEST PIT
BH-1 2014 PHASE II BORING
BH-2A 2017 PHASE II BORING
MW-01 RI MONITORING WELLS
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FIGURE 3a: RI SOIL ANALYTICAL RESULTS-UNRESTRICTED SCOs
68 TONAWANDA STREET SITE
Buffalo Freight House, LLC
221 Bedford Avenue
Buffalo, NY 14216
4-5-2018
SCALE: N/A
SHEET 1 OF 1

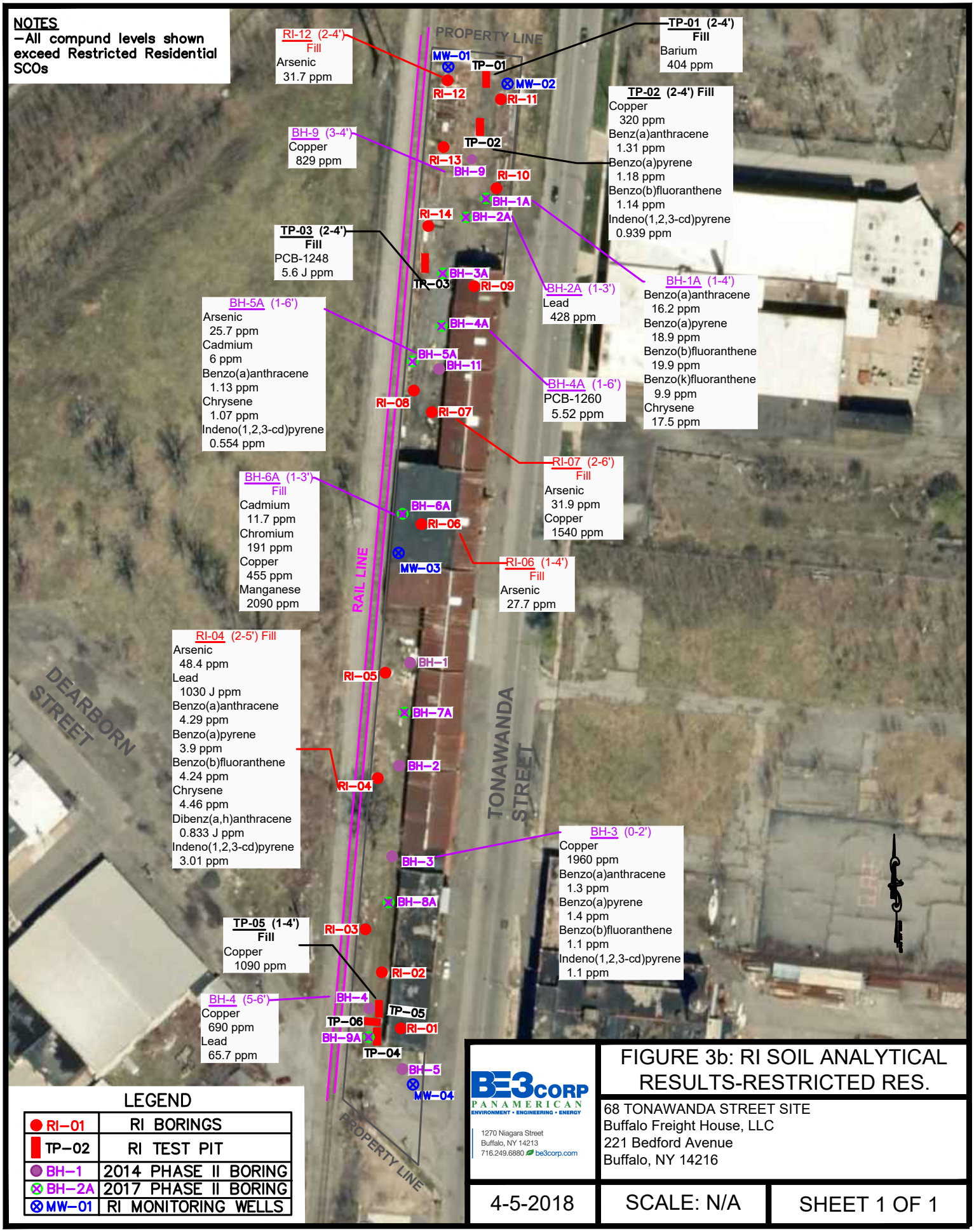
NOTES
-All compund levels shown exceed Restricted Residential SCOs
RI-12 (2-4') Fill
Arsenic
31.7 ppm
PROPERTY LINE
MW-01
TP-01
TP-01 (2-4') Fill
Barium
404 ppm
MW-02
RI-12
RI-11
TP-02 (2-4') Fill
Copper
320 ppm
Benz(a)anthracene
1.31 ppm
Benzo(a)pyrene
1.18 ppm
Benzo(b)fluoranthene
1.14 ppm
Indeno(1,2,3-cd)pyrene
0.939 ppm
BH-9 (3-4')
Copper
829 ppm
TP-02
RI-13
BH-9
RI-10
BH-1A
RI-14
BH-2A
TP-03 (2-4') Fill
PCB-1248
5.6 J ppm
BH-3A
TP-03
RI-09
BH-2A (1-3')
Lead
428 ppm
BH-1A (1-4')
Benzo(a)anthracene
16.2 ppm
Benzo(a)pyrene
18.9 ppm
Benzo(b)fluoranthene
19.9 ppm
Benzo(k)fluoranthene
9.9 ppm
Chrysene
17.5 ppm
BH-5A (1-6')
Arsenic
25.7 ppm
Cadmium
6 ppm
Benzo(a)anthracene
1.13 ppm
Chrysene
1.07 ppm
Indeno(1,2,3-cd)pyrene
0.554 ppm
BH-4A
BH-5A
BH-11
BH-4A (1-6')
PCB-1260
5.52 ppm
RI-08
RI-07
RI-07 (2-6') Fill
Arsenic
31.9 ppm
Copper
1540 ppm
BH-6A (1-3') Fill
Cadmium
11.7 ppm
Chromium
191 ppm
Copper
455 ppm
Manganese
2090 ppm
BH-6A
RI-06
MW-03
RI-06 (1-4') Fill
Arsenic
27.7 ppm
RAIL LINE
RI-04 (2-5') Fill
Arsenic
48.4 ppm
Lead
1030 J ppm
Benzo(a)anthracene
4.29 ppm
Benzo(a)pyrene
3.9 ppm
Benzo(b)fluoranthene
4.24 ppm
Chrysene
4.46 ppm
Dibenz(a,h)anthracene
0.833 J ppm
Indeno(1,2,3-cd)pyrene
3.01 ppm
DEARBORN STREET
BH-1
RI-05
BH-7A
TONAWANDA STREET
BH-2
RI-04
BH-3 (0-2')
Copper
1960 ppm
Benzo(a)anthracene
1.3 ppm
Benzo(a)pyrene
1.4 ppm
Benzo(b)fluoranthene
1.1 ppm
Indeno(1,2,3-cd)pyrene
1.1 ppm
BH-3
BH-8A
TP-05 (1-4') Fill
Copper
1090 ppm
RI-03
RI-02
BH-4 (5-6')
Copper
690 ppm
Lead
65.7 ppm
BH-4
TP-05
TP-06
RI-01
BH-9A
TP-04
BH-5
MW-04
PROPERTY LINE
LEGEND
RI-01 RI BORINGS
TP-02 RI TEST PIT
BH-1 2014 PHASE II BORING
BH-2A 2017 PHASE II BORING
MW-01 RI MONITORING WELLS
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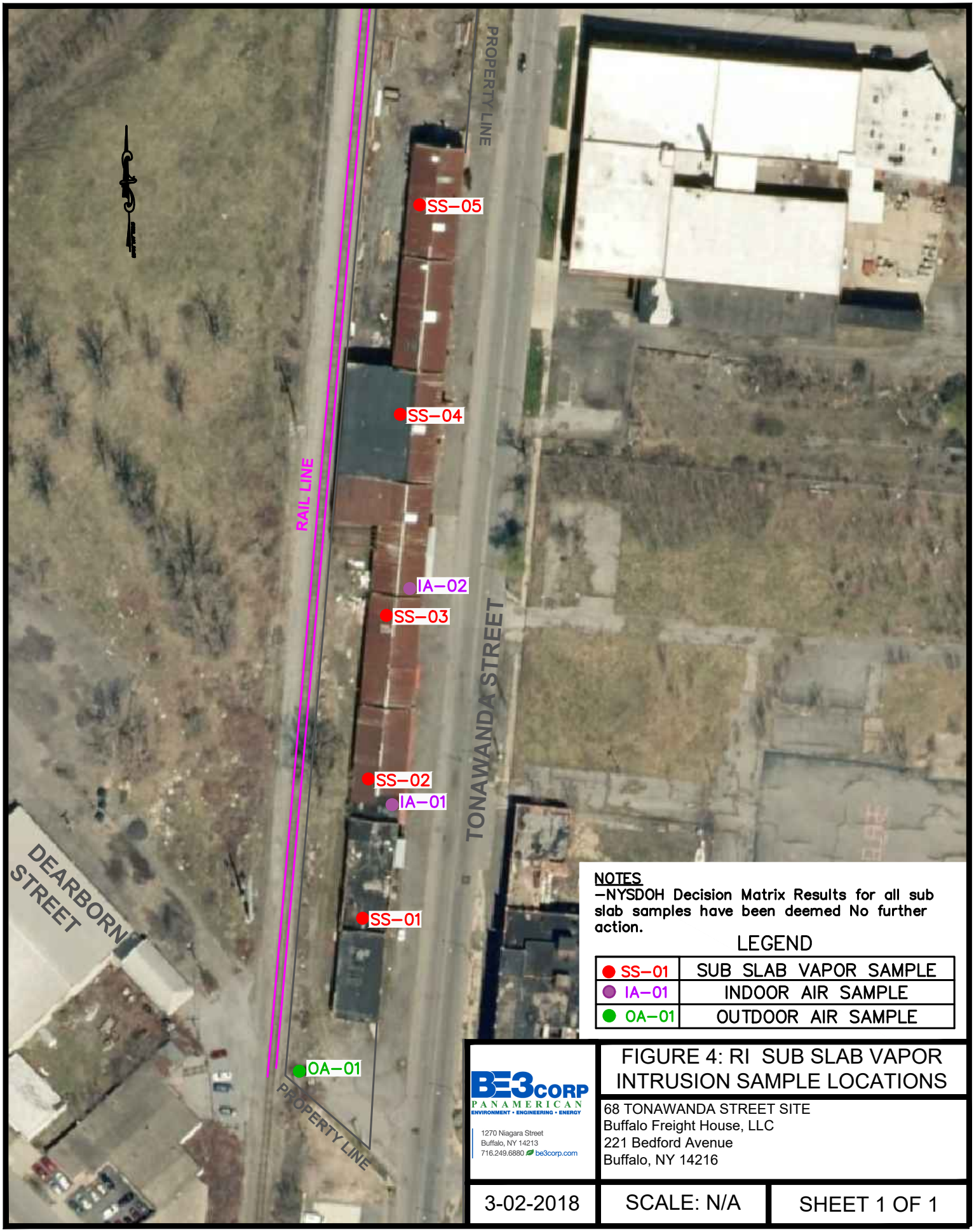
FIGURE 3b: RI SOIL ANALYTICAL RESULTS-RESTRICTED RES.
68 TONAWANDA STREET SITE
Buffalo Freight House, LLC
221 Bedford Avenue
Buffalo, NY 14216
4-5-2018
SCALE: N/A
SHEET 1 OF 1



NOTES
-NYSDOH Decision Matrix Results for all sub slab samples have been deemed No further action.

LEGEND

SS-01	SUB SLAB VAPOR SAMPLE
IA-01	INDOOR AIR SAMPLE
OA-01	OUTDOOR AIR SAMPLE

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FIGURE 4: RI SUB SLAB VAPOR INTRUSION SAMPLE LOCATIONS

68 TONAWANDA STREET SITE
Buffalo Freight House, LLC
221 Bedford Avenue
Buffalo, NY 14216

3-02-2018 | SCALE: N/A | SHEET 1 OF 1

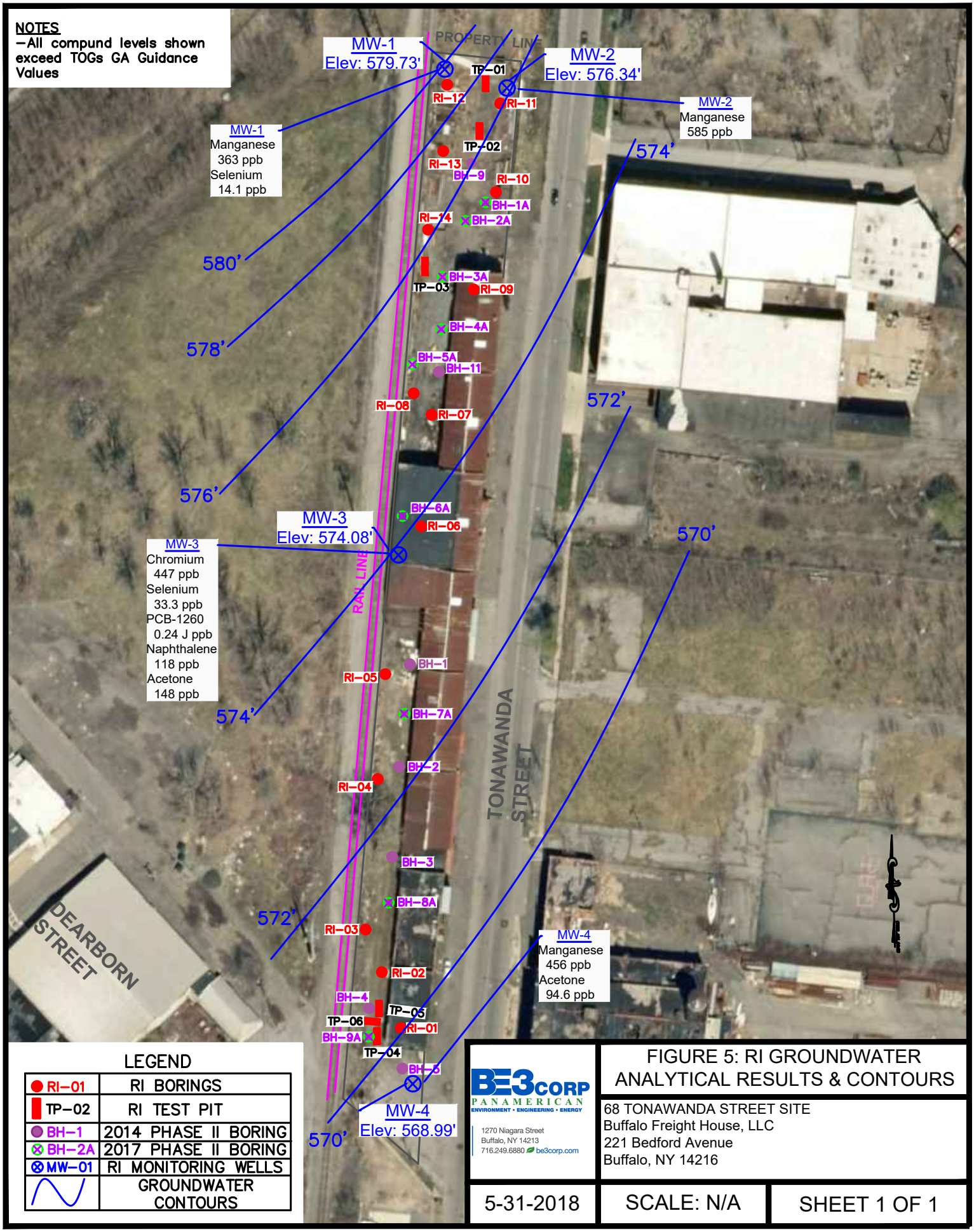
NOTES
–All compund levels shown exceed TOGs GA Guidance Values
MW-1
Elev: 579.73'
MW-2
Elev: 576.34'
MW-1
Manganese
363 ppb
Selenium
14.1 ppb
MW-2
Manganese
585 ppb
MW-3
Elev: 574.08'
MW-3
Chromium
447 ppb
Selenium
33.3 ppb
PCB-1260
0.24 J ppb
Naphthalene
118 ppb
Acetone
148 ppb
MW-4
Elev: 568.99'
MW-4
Manganese
456 ppb
Acetone
94.6 ppb
PROPERTY LINE
RAIL LINE
TONAWANDA STREET
DEARBORN STREET
580'
578'
576'
574'
572'
570'
574'
572'
570'
TP-01
TP-02
TP-03
TP-04
TP-05
TP-06
RI-12
RI-11
RI-13
RI-10
RI-14
RI-09
RI-08
RI-07
RI-06
RI-05
RI-04
RI-03
RI-02
RI-01
BH-9
BH-1A
BH-2A
BH-3A
BH-4A
BH-5A
BH-11
BH-6A
BH-1
BH-7A
BH-2
BH-3
BH-8A
BH-4
BH-9A
BH-5
LEGEND
RI-01 RI BORINGS
TP-02 RI TEST PIT
BH-1 2014 PHASE II BORING
BH-2A 2017 PHASE II BORING
MW-01 RI MONITORING WELLS
GROUNDWATER CONTOURS
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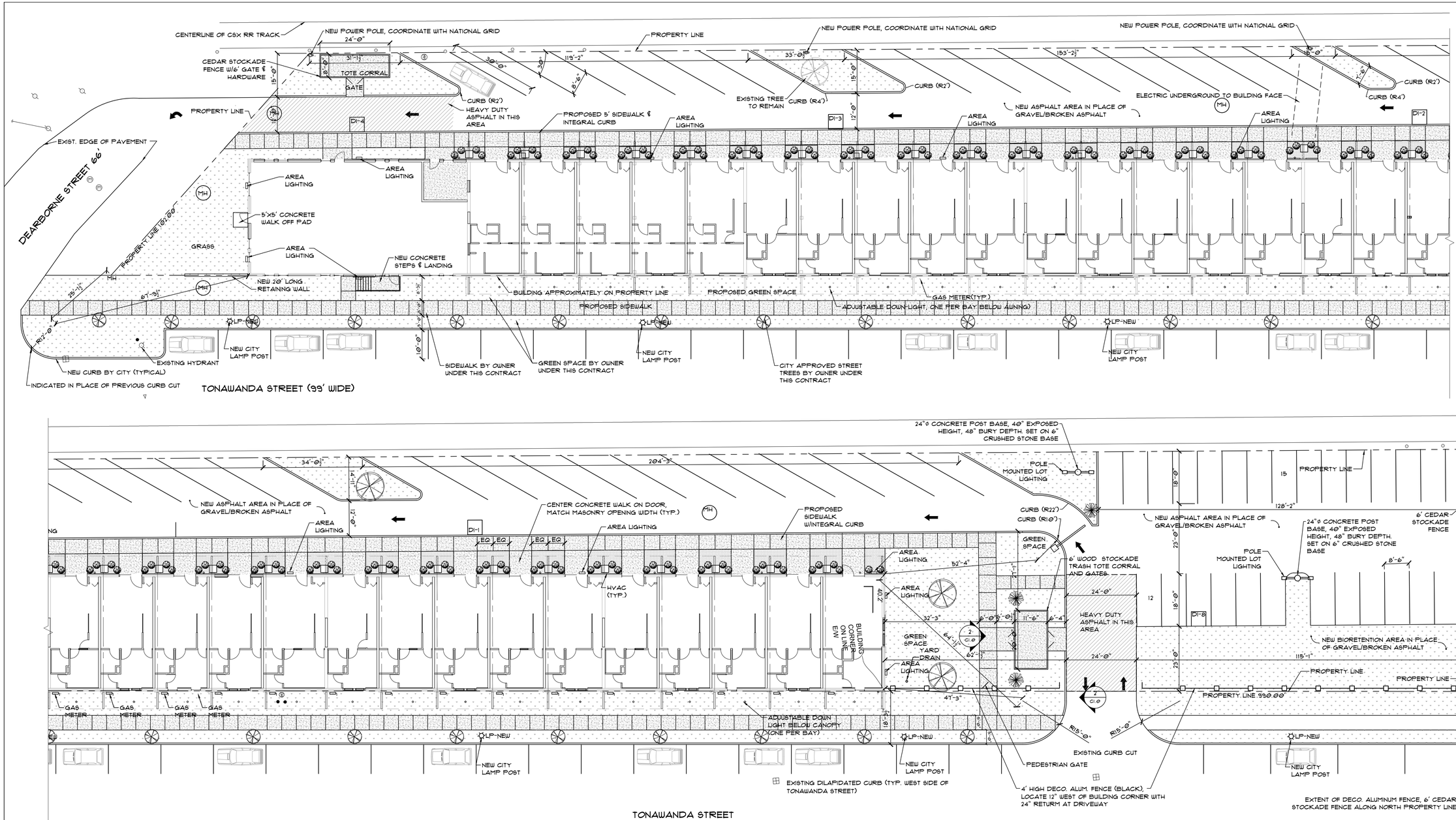
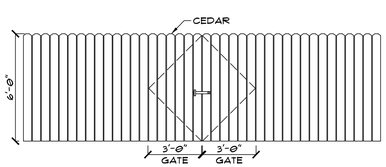
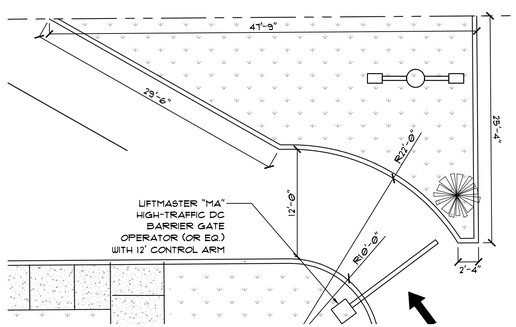
FIGURE 5: RI GROUNDWATER ANALYTICAL RESULTS & CONTOURS
68 TONAWANDA STREET SITE
Buffalo Freight House, LLC
221 Bedford Avenue
Buffalo, NY 14216
5-31-2018
SCALE: N/A
SHEET 1 OF 1



1 ARCHITECTURAL SITE PLAN
1/16"=1'-0"
SEE SURVEY & CIVIL PLANS FOR DIMENSIONS & FURTHER INFORMATION



2 TRASH TOTE CORRAL
1/4"=1'-0"



2 ENLARGED PARTIAL PLAN
1/8"=1'-0"

THE FRIZLEN GROUP ARCHITECTS
THE FRIZLEN GROUP ARCHITECTS
257 LAFAYETTE AVENUE
SUITE 102
BUFFALO, NEW YORK 14213
TEL: (716) 881-0046 FAX: (716) 883-5110 EMAIL: frizlen@frizlengroup.com

ADAPTIVE RE-USE
68 TONAWANDA STREET
BUFFALO, NY 14207

ARCHITECTURAL SITE PLAN

TFG #: 2171

IFC Date:	APRIL 9, 2018
Designed by:	JPB
Drawn by:	JPB
Checked by:	KF
Approved by:	JPB

Revisions # Description

Sheet No. C1.0

APPENDIX A

BORING/TEST TRENCH/MW LOGS

Geoprobe
Bore Hole Log

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93080622 Long -78.89747178
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-1	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			
5			
6			0-6 feet - fill with cinder, ash, gravel, wood
			wood at 6 feet
7			
8			
9			
10			
11			
12			7-12 - silty clay; red-brown
			slight odor of naphalene-weathered petroelum
13			Silty clay -red-brown is likely native material
14			
15			
16			

Comments: PID - 0 ppm above background - slight odor of napthalene/weathered petroleum. Collect fill sample; Collected clay sample. Note, borehole was inside south end of building through a dirt floor

Geoprobe
Bore Hole Log

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93094231 Long -78.89757917
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-2	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			0-4 feet - fill with silty cinder soil and brick
5			
6			
7			
8			
9			
10			
11			
12			4-12 - silty clay; red-brown
			Silty red-brown clay is likely native material
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 1-4 feet for metal analysis only

Geoprobe
Bore Hole Log

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93109858 Long -78.89761244
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-3	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			
			0-4.5 Feet - fill with cinder and sand. Sand at 4 feet - wet
5			
6			
7			
8			
9			
10			
11			
12			4.5-12 - silty clay; red-brown
			Silty red-brown clay is likely native material
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 1-4 feet for metals only.

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93141463 Long -78.89758093
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-4	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			
5			0-5 Feet - fill with cinder, sand, gravel, cement, stone.
6			
7			
8			
9			
10			
11			
12			5-12 - silty clay; red-brown
			red-brown silty clay is likley native material
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 2-5 feet for metals and SVOcs only. Took sample from 6-8 feet (native) for full analysis list

Geoprobe
Bore Hole Log

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93176994 Long -78.89755499
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-5	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			0-4 feet - fill
5			
6			
7			
8			4-8 feet - silty clay; red-brown
			Red-brown silty clay is likely native material
9			
10			
11			
12			
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 1-4 feet for metals.

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93193806 Long -78.89751742
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-6	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			
5			0-5 feet - fill with sand, cinder, gravel, cement
6			
7			
8			
9			
10			
11			
12			5-12 silty clay; red-brown very wet
			Red-brown Silty clay is likely native material
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 1-5 feet for metals.

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93239117 Long -78.89740486
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-7	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			
5			0-5 feet - fill with sand, cinder, gravel
			wood at 5-6 feet
6			
7			
8			
9			
10			
11			
12			6-12 silty clay; red-brown
			Red-brown Silty clay is likely native material
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 2-6 feet for metals.

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Bore Hole Log

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93239117 Long -78.89740486
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-8	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			0-4 feet - silty sandy fill with cinder, stone, cement, rock-gravel
5			
6			
7			
8			4-8 feet - silty clay; red-brown
			Red-brown Silty clay is likely native material
9			
10			
11			
12			
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 2-4 feet for metals and SVOC analysis.

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Bore Hole Log

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93288538 Long -78.89722696
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-9	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			0-1 feet - cement floor (6-7 inches), black cinder fill
2			1-2 feet - silty clay
3			
4			2-4 feet - black cindery fill
5			
6			
7			
8			
9			
10			
11			
12			4-12 feet - silty clay; red brown
			Red-brown Silty clay is likely native material
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 2-4 feet for metals analysis. Note this boring was completed inside the north end of building

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93311572 Long -78.89720037
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-10	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			
			0-4.5 feet - fill incuding gravel, sandy silty soil with black cinders at 4 feet
5			
6			
7			
8			4.5-8 feet - silty sandy clay; red-brown
			Red-brown Silty clay is likely native material
9			
10			
11			
12			4-12 feet - silty clay; red brown
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 3-4 feet for metals analysis only

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93335586 Long -78.89712128
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-11	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			0-3.5 feet - fill with gravel, silt,brick and cinder
4			3.5-4 feet -sand; wet
5			
6			
7			
8			4.5-8 feet - silty sandy clay; red-brown
			Red-brown Silty clay is likely native material
9			
10			
11			
12			4-12 feet - silty clay; red brown
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 2-4 feet for metals analysis only

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93336566 Long -78.8973264
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-12	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			0-4.5 feet -fill with gravel,silt, cinder, brick, cement
5			4.5-5 feet - wood, slight odor
			refusal at 5 feet
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 1-3 feet. Collected sample at 4.5 feet for VOC analysis

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93319923 Long -78.89731132
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-13	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			0-4.5 feet -fill with silt, cinder, cement
5			
6			
7			
8			4.5-8 feet - silty clay - red-brown
			Red-brown Silty clay is likely native material
9			
10			
11			
12			
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 3-4.5 feet for metals analysis.

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Project: 68 Tonawanada Street	Sheet: 1 of 1
Client:Buffalo Freight House, LLC	Location: 68 Tonawanda Street, Buffalo NY
Contractor: Natures Way	Ground Elevation: Lat 42.93302469 Long -78.89734779
Date Started: February 7, 2018	Operator:
Date Completed: February 7, 2018	Geologist/Technician: Brennen/Gorton
Bore Hole Number: RI-14	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
3			
4			0-4 feet -fill with silt, cinder, cement
			refusal at 4 feet (concrete) 3 attempts to move
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Comments: PID - 0 ppm above background - Collect fill sample at 2-4 feet for metals analysis.

TEST PIT LOG

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Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Buffalo Freight House, LLC	Job Number: BCP #C015316
Contractor: Pinto	Location: 68 Tonawanda Street, Buffalo, New York
Date Started: February 13, 20018	Ground Elevation: Lat. 42.93337735 Long -78.89722714
Date Completed: February 13, 2018	Operator:
Pit Number: Test Pit - TP-1	Geologist/Technician: Gorton
	Ground Water: NA

Depth (ft)	Sample #	Sample Type	Description
1			0-1 feet - asphalt tailings
2			
3			
4			
5			
6			
7			1-7 feet - fill including stone-gravel, wood, concrete pieces
			Hard concrete floor at 7 feet - refusal Test Pit ends. Perched water fills bottom of pit
8			
9			
10			
11			
12			

Comments: Approximatelt 4 feet wide by 12 feet long by 7 feet deep
Sample fill at 2-4 feet for metals analysis

PID - no PID above background

TEST PIT LOG

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Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Buffalo Freight House, LLC	Job Number: BCP #C015316
Contractor: Pinto	Location: 68 Tonawanda Street, Buffalo, New York
Date Started: February 13, 20018	Ground Elevation: Lat. 42.93324833 Long -78.89724759
Date Completed: February 13, 2018	Operator:
Pit Number: Test Pit - TP-2	Geologist/Technician: Gorton
	Ground Water: NA

Depth (ft)	Sample #	Sample Type	Description
1			
2			
3			
4			0-4.7 feet - fill including brick,stone-gravel, cement pieces
5			
6			4.7 - 6 feet - sand
7			6-7 feet - clay Test pit ends Red-brown Silty clay is likely native material
8			
9			
10			
11			
12			

Comments: Approximatelt 4 feet wide by 10 feet long by 7 feet deep
Sample fill at 2-4 feet for full analysis
Sample clay (native) at 6 feet for full analysis
PID - no PID above background

TEST PIT LOG

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Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Buffalo Freight House, LLC	Job Number: BCP #C015316
Contractor: Pinto	Location: 68 Tonawanda Street, Buffalo, New York
Date Started: February 13, 20018	Ground Elevation: Lat. 42.93263784 Long -78.89740701
Date Completed: February 13, 2018	Operator:
Pit Number: Test Pit - TP-3	Geologist/Technician: Gorton
	Ground Water: NA

Depth (ft)	Sample #	Sample Type	Description
1			
2			
3			
4			
5			0-5 feet - fill including gravel, cinder, plastic, cement pieces, rubble, gravel, timber-rail ties
			perced water enter pit at 3 feet possibly old storm drain
6			end pit at 5 feet due to water
7			
8			
9			
10			
11			
12			

Comments: Approximatelt 4 feet wide by 9 feet long by 5 feet deep
Sample fill at 2-4 feet for full analysis
No Sample clay (native).
PID - no PID above background

TEST PIT LOG

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Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Buffalo Freight House, LLC	Job Number: BCP #C015316
Contractor: Pinto	Location: 68 Tonawanda Street, Buffalo, New York
Date Started: February 13, 20018	Ground Elevation: Lat. 42.93087375 Long -78.8976017
Date Completed: February 13, 2018	Operator:
Pit Number: Test Pit - TP-4	Geologist/Technician: Gorton
	Ground Water: NA

Depth (ft)	Sample #	Sample Type	Description
1			
2			
3			
4			
5			0-5 feet - fill with brick, cement pieces
6			
7			
8			5-8 feet - silty clay; red-brown
			Test pit end - Red-brown Silty clay is likely native material
9			
10			
11			
12			

Comments: Approximatelt 4 feet wide by 17 feet long by 8 feet deep
Sample fill at 4-5 just above clay native layer; full analysis

No PID organic vapor readings above background

TEST PIT LOG

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Buffalo Freight House, LLC	Job Number: BCP #C015316
Contractor: Pinto	Location: 68 Tonawanda Street, Buffalo, New York
Date Started: February 13, 20018	Ground Elevation: Lat. 42.93085768 Long -78.89759593
Date Completed: February 13, 2018	Operator:
Pit Number: Test Pit - TP-5	Geologist/Technician: Gorton
	Ground Water: NA

Depth (ft)	Sample #	Sample Type	Description
1			
2			
3			
4			
5			0-5 feet - fill with rail ties, brick, cement pieces and wodden blocks (possible old wodden floor)
			5-6 feet - stone-gravel; perched water enters pit from this layer
6			6 feet - silty clay (native)
7			6-7 feet - silty clay; red-brown
			Test Pit ends at 7 feet - Red-brown Silty clay is likely native material
8			
9			
10			
11			
12			

Comments: Approximatelt 4 feet wide by 15 feet long by 7 feet deep
Sample fill at 4-5 feet for VOC analysis
Sample Fill from 1-4 feet for metal analysis
PID organic vapor readings of 1-3 ppm at 5.5-6 feet.

TEST PIT LOG

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Buffalo Freight House, LLC	Job Number: BCP #C015316
Contractor: Pinto	Location: 68 Tonawanda Street, Buffalo, New York
Date Started: February 13, 20018	Ground Elevation: Lat. 42.93093964 Long -78.89759045
Date Completed: February 13, 2018	Operator:
Pit Number: Test Pit - TP-6	Geologist/Technician: Gorton
	Ground Water: NA

Depth (ft)	Sample #	Sample Type	Description
1			
2			
3			
4			
5			0-5.5 feet - fill with brick, cement pieces and gravel
			perched water in pit
6			5.5 - 6.5 feet - silty clay (native)
			Test pit end at 6.5 feet - Red-brown Silty clay is likely native material
7			
8			
9			
10			
11			
12			

Comments: Approximatelt 4 feet wide by 16 feet long by 6.5 feet deep
Sample fill at 4-5 feet for VOC and SVOC analysis
Sample Fill from 1-4 feet for metal analysis
PID organic vapor readings of 3-10 ppm at 4-5.5 feet. Strong petroleum odor

DRILLING SUMMARY

Geologist: John Boyd

Contractor: Nature's Way

Operators: Steve Gingritol, Nate Gingritol

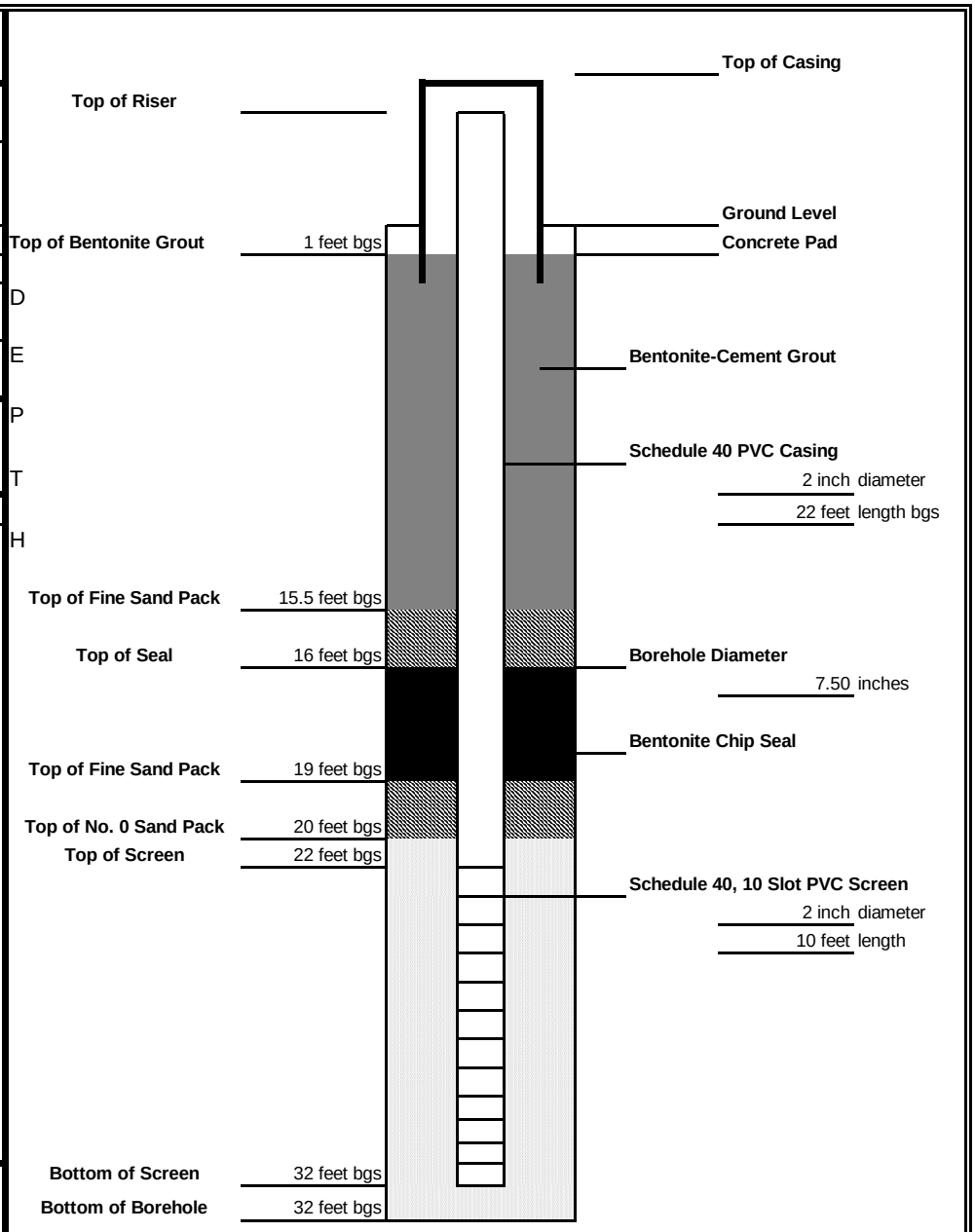
Model: Track Mounted Rig

Date: 2/14/2018

GEOLOGIC LOG

Depth(ft.)	Description
N/A	

WELL DESIGN



CASING MATERIAL

Surface: 4" Steel protective cover (Stick Up)

Monitor: 2" Schedule 40 PVC

SCREEN MATERIAL

Type: 2" Schedule 40 PVC

Slot Size: 0.010"

Setting: 22 to 32 feet bgs

FILTER MATERIAL

Type: #0 well sand

Setting: 20 to 32 feet bgs

SEAL MATERIAL

Type 1: Bentonite-Cement Grout

Setting: 1 to 15.5 feet bgs

Type 1: Bentonite Chip Seal

Setting: 16 to 19 feet bgs

COMMENTS:

Ground elevations and well/casing elevations not measured.

LEGEND

- Bentonite-Cement Grout
- Fine Sand
- Bentonite Chip Seal
- No. 0 Sand Pack

Client: Yots & Frizlen

Location: 68 Tonawanda St

Project No.:

BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-1

DRILLING SUMMARY

Geologist: John Boyd

Contractor: Nature's Way

Operators: Steve Gingritol, Nate Gingritol

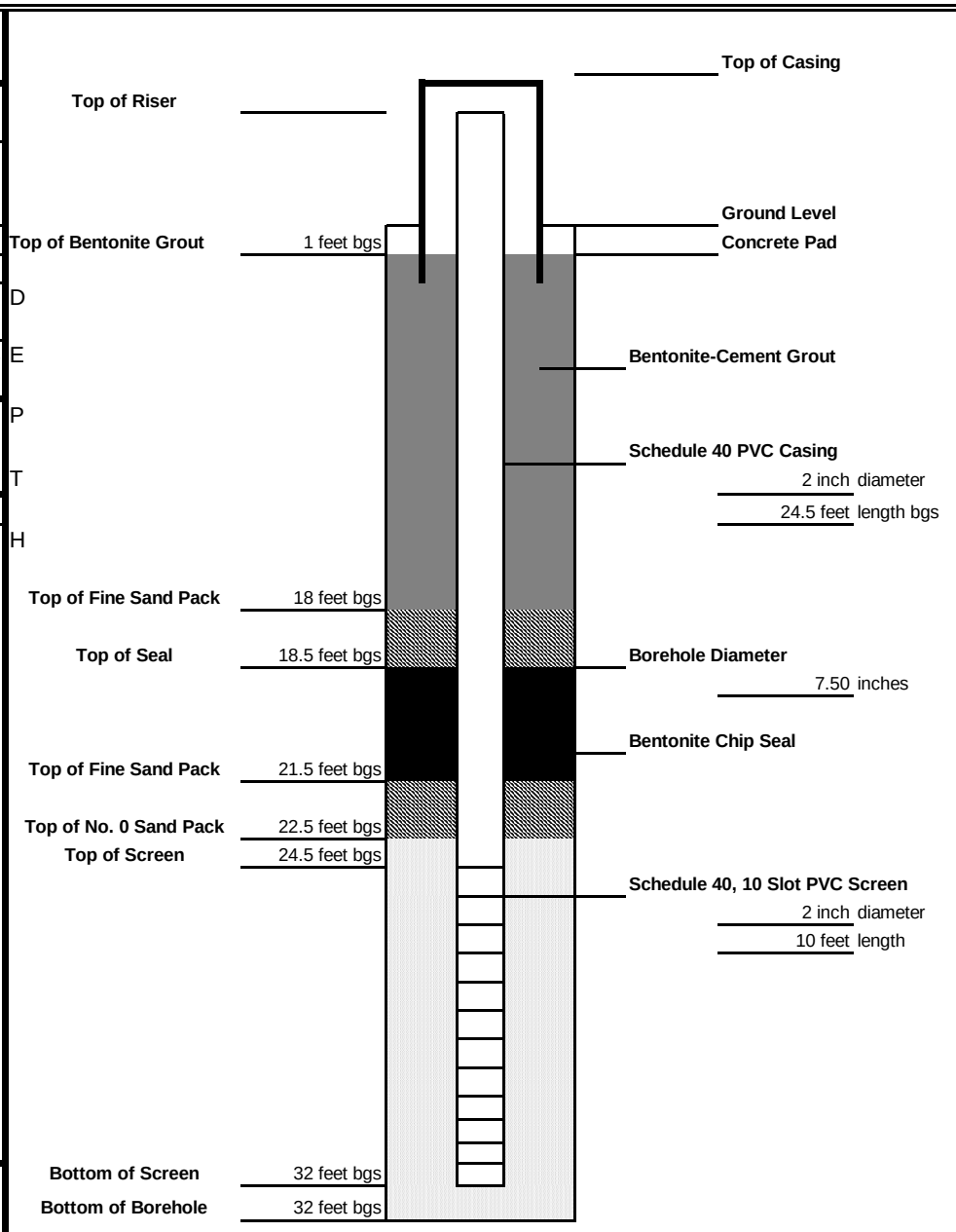
Model: Track Mounted Rig

Date: 2/15/2018

GEOLOGIC LOG

Depth(ft.)	Description
N/A	

WELL DESIGN



CASING MATERIAL

Surface: 4" Steel protective cover (Stick Up)

Monitor: 2" Schedule 40 PVC

SCREEN MATERIAL

Type: 2" Schedule 40 PVC

Slot Size: 0.010"

Setting: 24.5 to 34.5 feet bgs

FILTER MATERIAL

Type: #0 well sand

Setting: 22.5 to 34.5 feet bgs

SEAL MATERIAL

Type 1: Bentonite-Cement Grout

Setting: 1 to 18 feet bgs

Type 1: Bentonite Chip Seal

Setting: 18.5 to 21.5 feet bgs

COMMENTS:

Ground elevations and well/casing elevations not measured.

LEGEND

- Bentonite-Cement Grout
- Fine Sand
- Bentonite Chip Seal
- No. 0 Sand Pack

Client: Yots & Frizlen

Location: 68 Tonawanda St

Project No.:

BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-2

DRILLING SUMMARY

Geologist: John Boyd

Contractor: Nature's Way

Operators: Steve Gingritol, Nate Gingritol

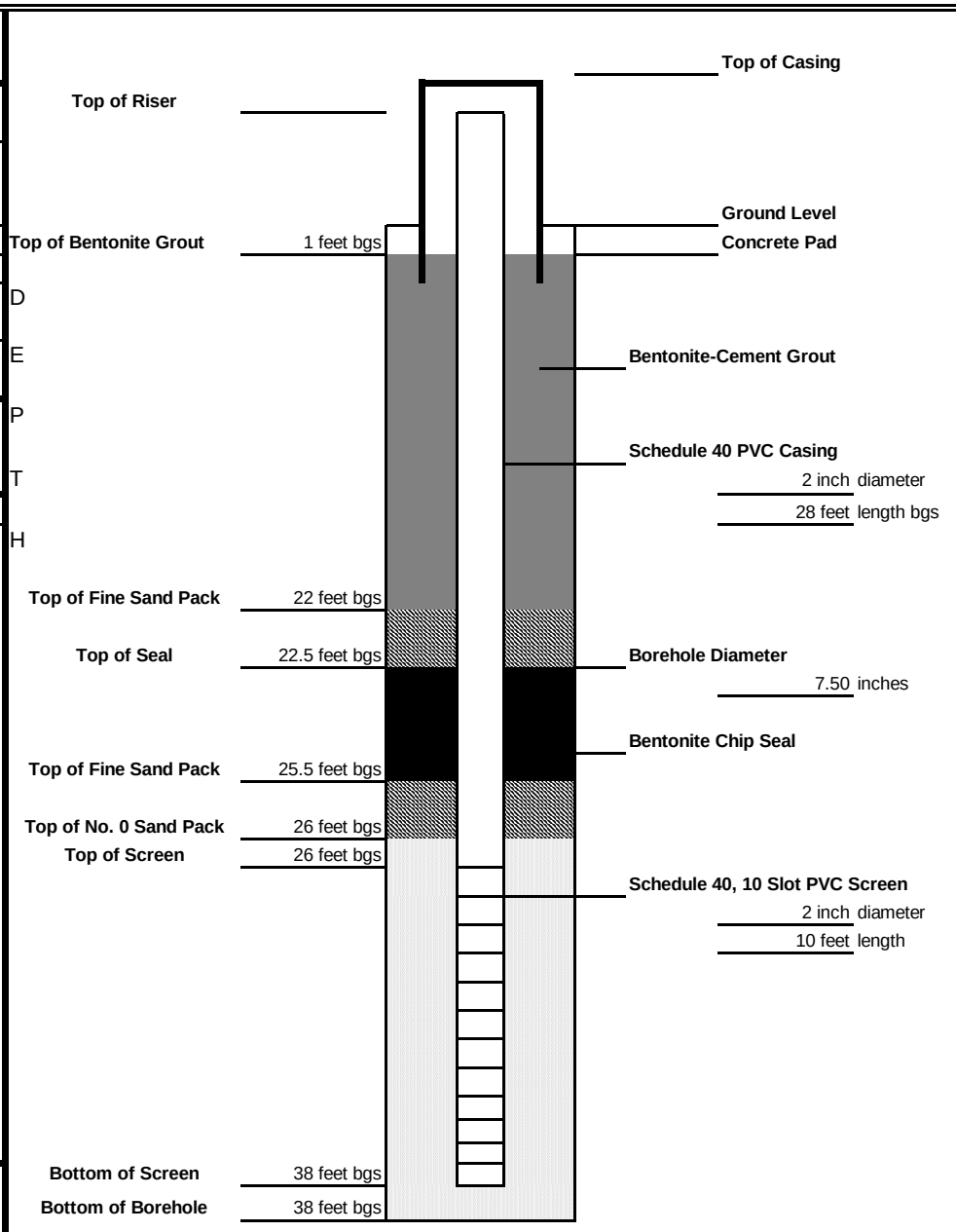
Model: Track Mounted Rig

Date: 2/16/2018

GEOLOGIC LOG

Depth(ft.)	Description
N/A	

WELL DESIGN



CASING MATERIAL

Surface: 4" Steel protective cover (Stick Up)

Monitor: 2" Schedule 40 PVC

SCREEN MATERIAL

Type: 2" Schedule 40 PVC

Slot Size: 0.010"

Setting: 28 to 38 feet bgs

FILTER MATERIAL

Type: #0 well sand

Setting: 26 to 38 feet bgs

SEAL MATERIAL

Type 1: Bentonite-Cement Grout

Setting: 1 to 22 feet bgs

Type 1: Bentonite Chip Seal

Setting: 22.5 to 25.5 feet bgs

COMMENTS:

Ground elevations and well/casing elevations not measured.

LEGEND

- Bentonite-Cement Grout
- Fine Sand
- Bentonite Chip Seal
- No. 0 Sand Pack

Client: Yots & Frizlen

Location: 68 Tonawanda St

Project No.:

BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-3

DRILLING SUMMARY

Geologist: John Boyd

Contractor: Nature's Way

Operators: Steve Gingritol, Nate Gingritol

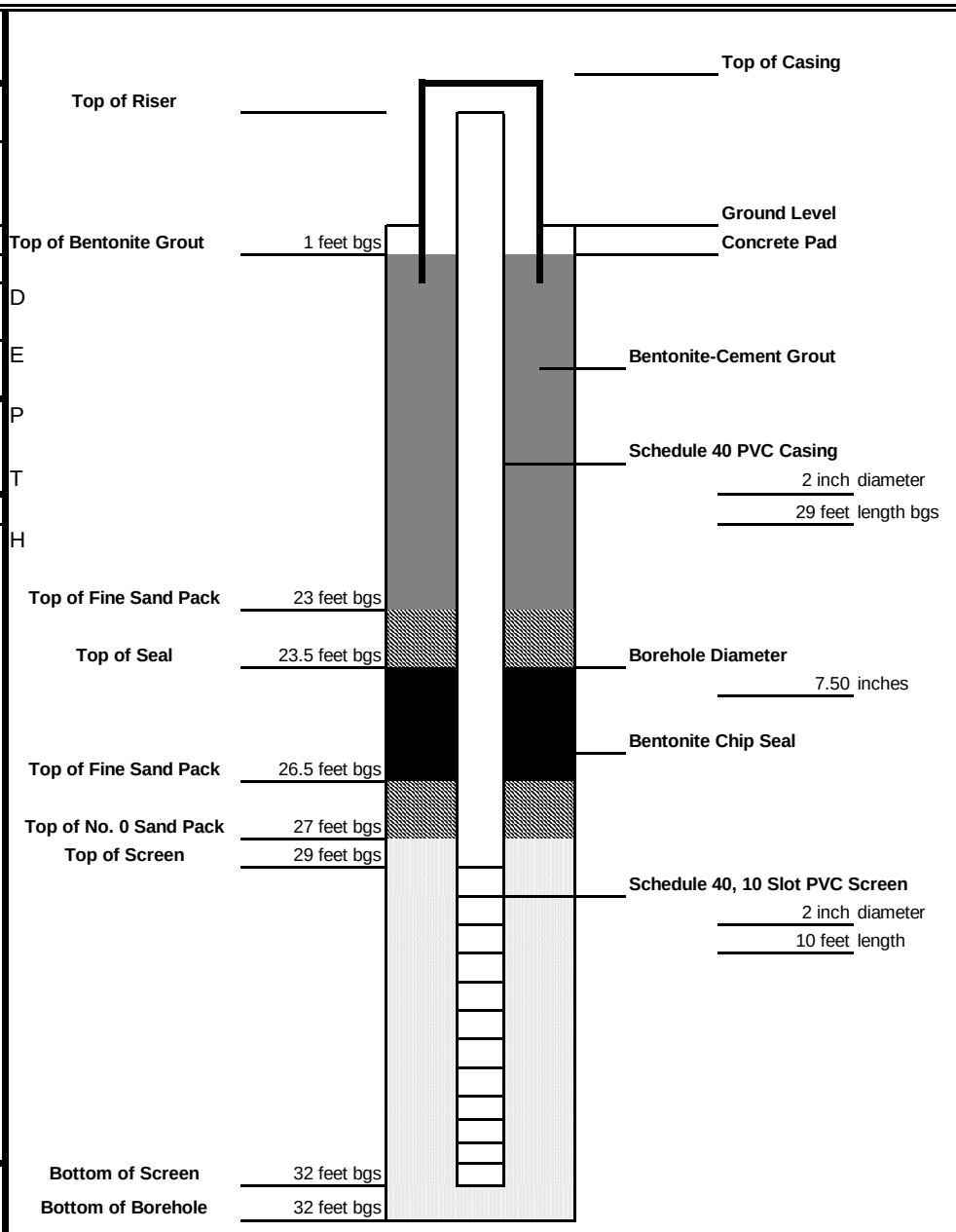
Model: Track Mounted Rig

Date: 2/16/2018

GEOLOGIC LOG

Depth(ft.)	Description
N/A	

WELL DESIGN



CASING MATERIAL

Surface: 4" Steel protective cover (Stick Up)

Monitor: 2" Schedule 40 PVC

SCREEN MATERIAL

Type: 2" Schedule 40 PVC

Slot Size: 0.010"

Setting: 29 to 39 feet bgs

FILTER MATERIAL

Type: #0 well sand

Setting: 27 to 39 feet bgs

SEAL MATERIAL

Type 1: Bentonite-Cement Grout

Setting: 1 to 23 feet bgs

Type 1: Bentonite Chip Seal

Setting: 23.5 to 26.5 feet bgs

COMMENTS:

Ground elevations and well/casing elevations not measured.

LEGEND

- Bentonite-Cement Grout
- Fine Sand
- Bentonite Chip Seal
- No. 0 Sand Pack

Client: Yots & Frizlen

Location: 68 Tonawanda St

Project No.:

BE3 CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-4

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 68 Tonawanda | Site: 68 Tonwanda St | Well I.D.: MW-1

Date: 2/23/2018 | Sampling Personnel: John Boyd & Alex Brennen | Company: BE3 Corp/Panamerican

Purging/Sampling Device: Peristaltic Pump | Tubing Type: LDPE Silicone | Pump/Tubing Inlet Location: Screen Midpoint

Measuring Point: Below Top of Riser | Initial Depth to Water: 5.78 | Depth to Well Bottom: 33.32 | Well Diameter: 2" | Screen Length: 10'

Casing Type: PVC | Volume in 1 Well Casing (gallons): 4.5 | Estimated Purge Volume (gallons): 5

Sample ID: MW-1 | Sample Time: 1200 | QA/QC: 20180223-FD-1 (Field Duplicate)

Sample Parameters: Part 375 Metals, Part 375 SVOC, Part 375 VOCs, Part 375 PCBs (low level), SVOC/VOC TICs

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1050	Meter not working							
1055	Pump off							
1110	Pump back on							
1115	7.32	9.77	1.30	0.00	72.90	111	250	8.58
1120	7.27	10.06	1.31	0.00	76.20	100	420	10.60
1125	7.27	10.18	1.31	0.00	76.10	91	360	11.78
1130	7.27	10.15	1.31	0.00	75.70	84	260	13.18
1135	7.25	10.24	1.31	0.00	60.70	77	250	13.85
1140	7.23	10.37	1.32	0.00	64.30	70	450	14.50
1145	7.22	10.49	1.32	0.00	55.10	63	300	14.90
1150	7.19	10.55	1.32	0.00	57.30	59	300	15.30
1155	7.18	10.64	1.32	0.00	47.70	60	310	15.55
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

Pump on at 1046
Pump off at 1055
Pump back on at 1110

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 68 Tonawanda | Site: 68 Tonwanda St | Well I.D.: MW-2

Date: 2/23/2018 | Sampling Personnel: John Boyd & Alex Brennen | Company: BE3 Corp/Panamerican

Purging/Sampling Device: Bailer | Tubing Type: | Pump/Tubing Inlet Location:

Measuring Point: Below Top of Riser | Initial Depth to Water: 31.75 | Depth to Well Bottom: 37.20 | Well Diameter: 2" | Screen Length: 10'

Casing Type: PVC | Volume in 1 Well Casing (gallons): 0.9 | Estimated Purge Volume (gallons): 2.70

Sample ID: MW-2 | Sample Time: 1030 | QA/QC:

Sample Parameters: Part 375 Metals, Part 375 SVOC, Part 375 VOCs, Part 375 PCBs (low level), SVOC/VOC TICs

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1212	6.40	11.71	3.65	15.75	6.20	63	-	-
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

1225: Bailed well dry approx. 2 gallons

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 68 Tonawanda | Site: 68 Tonwanda St | Well I.D.: MW-3

Date: 2/23/2018 | Sampling Personnel: John Boyd & Alex Brennen | Company: BE3 Corp/Panamerican

Purging/Sampling Device: Peristaltic Pump | Tubing Type: LDPE Silicone | Pump/Tubing Inlet Location: Screen Midpoint

Measuring Point: Below Top of Riser | Initial Depth to Water: 9.74 | Depth to Well Bottom: 37.90 | Well Diameter: 2" | Screen Length: 10'

Casing Type: PVC | Volume in 1 Well Casing (gallons): 4.6 | Estimated Purge Volume (gallons): 5.2

Sample ID: MW-3 | Sample Time: 1350 | QA/QC: MS/MSD

Sample Parameters: Part 375 Metals, Part 375 SVOC, Part 375 VOCs, Part 375 PCBs (low level), SVOC/VOC TICs

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1306	8.88	10.51	5.15	0.00	>1000	85	350.00	15.20
1311	9.37	10.62	5.01	0.00	579	75	400.00	17.90
1316	9.58	10.45	4.94	0.00	800	68	250.00	18.75
1325	10.03	9.75	4.79	0.00	>1000	55	200	21.25
1335	10.36	9.97	5.13	0.00	800	46	200	23.45
1341	10.39	9.86	5.15	0.00	800	45	200	24.45
1346	10.36	9.73	5.13	0.00	800	44	190	25.26
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

Pump on at 1300

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 68 Tonawanda | Site: 68 Tonwanda St | Well I.D.: MW-4

Date: 2/23/2018 | Sampling Personnel: John Boyd & Alex Brennen | Company: BE3 Corp/Panamerican

Purging/Sampling Device: Peristaltic Pump | Tubing Type: LDPE Silicone | Pump/Tubing Inlet Location: Screen Midpoint

Measuring Point: Below Top of Riser | Initial Depth to Water: 10.34 | Depth to Well Bottom: 41.30 | Well Diameter: 2" | Screen Length: 10'

Casing Type: PVC | Volume in 1 Well Casing (gallons): 5.0 | Estimated Purge Volume (gallons): 5.0

Sample ID: MW-4 | Sample Time: 1545 | QA/QC: None

Sample Parameters: Part 375 Metals, Part 375 SVOC, Part 375 VOCs, Part 375 PCBs (low level), SVOC/VOC TICs

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1500	8.54	11.52	3.41	2.61	800	118	300	12.30
1505	8.04	11.45	3.39	1.78	345	119	250	13.00
1510	7.64	11.34	3.37	1.36	150	119	250	15.17
1515	7.43	11.33	3.37	1.12	101	119	240	16.45
1520	7.35	11.44	3.36	0.98	60	119	220	17.66
1525	7.3	11.42	3.37	0.83	55	120	240	18.35
1530	7.27	11.42	3.37	0.83	58	118	225	19.2
1535	7.23	11.52	3.37	0.79	103	118	250	19.99
1540	7.22	11.48	3.37	0.74	93.10	118	240	20.95
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

Pump on at 1457

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-1**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
			0-2 - fill - black, gravely, sand and ash
2			
3			2-4 - sand and gravel
4			
			4-6 - fill - black silty sand with gravel
5			
6			6
7			6-8 - red clay soft to firm towards 8 feet
8			
9			8-12 - reddish-brown clay
10			
11			
12			Borehole ends at 12 foot

Comments: No sample collected. No PID readings observed and No odor

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.933026 W78.897231
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-1A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-4 - Fill consisting of black sandy with some gravel and ash - possible foundry sand
3			
4			
5			
6			4-8 - Reddish brown clay; stiff
7			
8			
9			
			8-12 - Reddish brown clay; stiff wet
10			
11			
12			End of Boring

Comments: Collected sample at 1-4 feet. Hole filled with water

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-2**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
			0-2 - fill - sandy silt
2			
3			2-3.5 - black ash/cinder fill with wood
4			
			4-6 - fill - black silty sand with gravel
5			
6			3.5-8 - red clay
7			
8			End of boring
9			
10			
11			
12			Borehole ends at 12 foot

Comments: No sample collected. No PID readings observed and No odor

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.932889 W78.897244
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-2A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-3.5 - Fill consisting of black chert with light gray and black sand
3			with piecs of brick and wood
4			
5			
6			
7			
8			
9			
			3.5-12 - Reddish brown clay; stiff
10			
11			
12			End of Boring

Comments: Collected sample at 1-3 feet.

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-3**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			0-1 - fill - black sandy silty gravel with cinder
2			1-2 - brick
3			2-2.5 - grey sandy with gravel
4			2.5-4 - red clay. Borehole end at 4 feet
5			
6			
7			
8			
9			
10			
11			
12			

Comments: Collected sample from 0-2 feet. No PID readings observed and No odor

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.932785 W78.897391
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-3A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-4 - Fill consisting of brown-grey silty sand
3			with piecs of brick, gravel and black chert
4			
5			4-6 - fill with brick, gravel, black sandy chert - wet
6			
			6-7 - reddish brown clay
7			
8			
9			
			7-12 - Reddish brown clay; very wet
10			
11			
12			End of Boring

Comments: No sample collected

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-4**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			0-1 - fill - dark brown sandy silt
2			1-2 - Fill - brown silty sand with gravel
3			2-3 - Fill - black cherty
			3-3.5 - brick
4			3.5-4 - clayey silt
5			4-6 - silty clay - petroleum odor - PID 14-15 ppm
6			
7			6-8 - black sand - petroleum odor - PID 28-30 ppm
8			
9			8-11 - black silty sand
10			
11			
			11-12 - red clay
12			boring end

Comments: Collected sample from 5-7 feet. PID 14-30 ppm and petroleum odor

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.932727 W78.897440
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-4A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-4 - Fill - oily at surface - consisting of brown-grey-black silty sand and gravel
3			
4			
5			
6			4-9 - wet black, gravely, sandy silt - very wet
7			
8			
9			
			9-12 - Reddish brown clay; very wet
10			
11			
12			End of Boring

Comments: Sample collected from 0-6 feet

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-5**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			0-1 - fill - silty gravel
2			1-3 - red-black sandy-ash fill
3			3-3.5 - cement
4			
5			
			3.5-7 - red clay
6			
7			Boreing end
8			
9			
10			
11			
12			

Comments: No sample collected. No PID readings observed and No odor

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.932511 W78.897565
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-5A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-4 - Fill - Silty, clayey sand with brick, stone and cement
3			
4			
5			
6			4-6- brown-black, gravely, sandy silt
7			
8			
9			
			6-12 - Reddish brown clay; very wet
10			
11			
12			End of Boring

Comments: Sample collected from 1-6 feet

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.932134 W78.897330
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-6A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-4 - Fill - sand with ash, brick, stone and cement
3			
4			
5			
6			4-8- brown-black, gravely, sandy silt - wet
7			
8			Borehole ended at 8 feet refusal
9			
10			
11			
12			

Comments: Sample collected from 0-3 feet

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.931753 W78.897628
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-7A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-4 - Fill - sand with ash, brick, stone and cement
3			
4			
5			
6			4-8- reddish-brown clay
7			
8			Borehole ended at 8 feet
9			
10			
11			
12			

Comments: No sample collected

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.931228 W78.897542
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-8A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-4 - Fill - pink and brown sand
3			
4			
5			
6			4-8- reddish-brown clay
7			
8			Borehole ended at 8 feet
9			
10			
11			
12			

Comments: Sample collected from 0-4 feet

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-9**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			0-0.5 - stone
1			0-1 - fill - silty gravel
2			1-3 - red-black sandy-ash fill
3			0.5-3 - silty fill with gravel
4			3-4 - black gravel sandy fill with chert
			Boring end at 4 feet
5			
6			
7			
8			
9			
10			
11			
12			

Comments: Sample collected at 3-4 feet. PID 16 ppm odor

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Yots & Frizlen	Location: See Associated Figure
Contractor: SJB	Ground Elevation: N42.930781 W78.897763
Date Started: 1-26-17	Operator:
Date Completed: 1-26-17	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-9A**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
2			
			0-3.5 - Fill - stone, brick, silty clay
3			
			3.5 - dark silty clay with petroleum odor
4			
			4-6 - silty clay
5			
6			
7			6-8 - Black sand with strong petroleum odor
8			Borehole ended at 8 feet
9			
10			
11			
12			

Comments: SVOC Sample collected from 2-6 feet and VOC sample collected from 6-8 feet. PID not functioning due to rain

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-10**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			0-0.5 - gravely silty fill
1			
2			
3			0.5-4 - gravel-cherty fill
4			
5			
6			4-8 - clay
7			
8			
9			
10			
11			
12			

Comments: No sample collected. No PID readings observed and No odor

Bore Hole Log

Panamerican Environmental, Inc
2391 Clinton Street
Buffalo, NY 14227
(716) 821-1650

Project: 68 Tonawanda Street	Sheet: 1 of 1
Client: Wayne Bacon & Ed Hogel	Location: See Associated Figure
Contractor: Natures Way	Ground Elevation:
Date Started: 3-5-14	Operator:
Date Completed: 3-5-14	Geologist/Technician: Pete Gorton
Bore Hole Number: **BH-11**	Ground Water:

Depth (FT)	Sample NO	Sample TYPE	Description
0			
1			
			0-2 feet - black sandy gravely fill
2			
			2-3 - cement
3			
4			3-5 - black sandy gravely fill with wood
5			
6			5-8 - red clay
7			
8			
9			
10			
11			
12			

Comments: No sample collected. No PID readings observed and No odor

APPENDIX B

ASBESTOS/LEAD BASED PAINT/PCB ASSESSMENT REPORTS

Asbestos Sampling Report

Location:

68-120 TONAWANDA STREET
Buffalo, NY 14213

Conditions as of:

18 September 2017

Prepared For:

The Frizlen Group
257 Lafayette Avenue
Buffalo, NY 14207

21 September 2017

Prepared By:

PO Box 561 Buffalo, NY 14213
716.341.8601 (ph) 716.408.9567 (fax)
www.56services.com

TABLE OF CONTENTS

1.0 Executive Summary - 68-120 Tonawanda Street

56 Services, Inc. was retained to perform asbestos sampling for pre-renovation purposes at the above referenced address on 18 September 2017. In total, sixteen (16) samples were collected for asbestos analysis from accessible areas within the scope of work (*AmeriSci Richmond Job #117091650)* and only represent conditions as of 18 September 2017.

> *Areas sampled as part of this sampling report include: interior and exterior areas and materials to be disturbed as part of the renovation project.*

The purpose of the sampling report was to determine the presence, location and condition of accessible ACM (assumed and asbestos containing materials) in accessible areas within the above referenced location. This sampling report includes the following:

- Identification of suspect materials within the described scope of work.
- Sampling and analysis of accessible suspect materials within the scope of work - materials to be impacted by renovation activities.
- Identification of the location, approximate quantity, friability and condition of confirmed and accessible asbestos containing and assumed asbestos containing materials (ACM).

Only accessible materials in areas to be impacted by renovation activities were sampled as part of this report. No other areas or materials, including any materials or debris from adjacent structures were sampled.

General Conditions of Inspection

Any reported quantities found in this report, if applicable, are field approximations of materials in readily accessible areas only and should be field verified prior to abatement. This report is not designed to serve as a specification for abatement. Please, find enclosed the laboratory analytical results and chain of custody documentation, if applicable. Drawings, if applicable, are provided for reference purposes only and are not to scale.

Any materials found within the scope of work and not specifically accounted for with applicable sampling in this report should be presumed to contain asbestos and treated accordingly until sampled and proven otherwise, including but not limited to; below grade materials, sub-flooring under installed existing flooring and materials and insulation within walls and above fixed and suspended ceiling systems, if applicable.

Any included laboratory results, if applicable, are submitted pursuant to 56 Services current terms and conditions of sale, including the company's standard warrant and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

This report is based on the condition and contents present at the above referenced location at the time of inspection. Any listed asbestos containing or presumed asbestos containing materials should only be handled and/or disturbed by licensed individuals, adhering to both state and federal regulations for abatement.

2.0 Recommended Field Sampling Procedures and Sample Analysis Methods for ACMs

Guidelines used for the visual inspection were established by the Environmental Protection Agency (EPA) in the “Guidance for Controlling Asbestos Containing Materials in Buildings, Office of Pesticides and Toxic Substances, Doc 560/5-85-024”.

Field information was organized in accordance with the AHERA methodology of homogenous area (HA). During the visual inspection, reasonable effort was made to identify all locations and types of ACM associated with the scope of work. Sampling, when applicable, should included multiple samples of the same materials chosen at random. However, due to inconsistencies of a manufacturer's processes and the contractor’s installation methods, materials of similar construction may contain various amounts of asbestos. Furthermore, some materials that were not originally specified to contain asbestos may in fact contain this mineral. For example, cementitious pipe insulation and plaster were frequently mixed with asbestos at the construction site for ease of application. Locating all asbestos materials can only be definitively achieved by conducting exploratory demolition and sampling every section of pipe insulation, fitting or valve covering, fireproofing, and other suspect ACM.

Bulk samples of suspect ACM may be analyzed using polarized light microscopy (PLM) coupled with dispersion staining, as described in 40 CFR Part 763 and the National Emissions Standard for Hazardous Air Pollutants (NESHAPS). NESHAPS is the standard industry protocol for the determination of asbestos in building materials. A suspect material is immersed in a solution of known refractive index and subjected to illumination by polarized light. The color displays that result are compared to a standardized atlas whereby the specific variety of asbestos is determined. It should also be recognized that PLM is primarily a qualitative identification method whereby asbestos percentage, if any, is estimated. EPA and New York State regulations governing ACM consider materials containing greater than 1-percent as asbestos containing materials.

The New York State Department of Health has revised the PLM Stratified Point Counting Method. The new method, "Polarized Light Microscopy Methods for Identifying and Quantifying Asbestos in Bulk Samples" can be found as item 198.1 in the Environmental Laboratory Approval program (ELAP) Certification manual. The method specifies a procedure of analysis for bulk samples that fall into the category of "Non-friable Organically Bound" (NOB). This category includes any sample in a flexible to rigid asphalt or vinyl matrix (floor tiles, mastic, roofing shingles, roofing felt, etc.). Additional materials that may fall into this category are textured paints and stucco, pipe valve and joint packing, and a variety of other applications. These samples must be “ashed” in a muffle furnace at 480-degrees Celsius (to remove organic matrix), treated with acid (to remove any mineral carbonate), and filtered through a 0.4-micron filter before being analyzed by PLM. The sample must be weighed between each of these steps to track the percent loss of organic matrix.

ELAP has determined that analysis of NOB materials is not reliably performed by PLM. Therefore, if PLM yields results of 1-percent asbestos or less, the result must be confirmed by TEM. Bulk samples that undergo TEM analysis use the sample reduction methodology stated above for NOB analysis by PLM. ELAP certified laboratories must include the following statement with their PLM analysis results for each “negative” (1-percent or less asbestos) NOB sample: "Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Before this material can be considered or treated as non-ACM, confirmation must be made by quantitative transmission electron microscopy".

Some samples are initially analyzed by Polarized Light Microscopy. Samples which yield a negative PLM result and which are classified as a "non-friable" material should then re-analyzed utilizing Transmission Electron Microscopy methodology described above. The laboratory performing both these analysis procedures shall be ELAP accredited.

Any listed quantities within this submission are field approximations of materials in accessible areas only and should be field verified prior to abatement. This report is not designed to serve as a specification for abatement. Please, find enclosed the laboratory analytical results and chain of custody documentation, if applicable.

Any included laboratory results, if applicable, are submitted pursuant to 56 Services current terms and conditions of sale, including the company’s standard warrant and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.

This report is based on the condition and contents present in accessible areas at the above referenced location at the time of sampling. This report only reflects material quantity and conditions at time of visual inspection. In the event that future sampling is required in this building, it is recommended that the aforementioned procedures are adhered to.

3.0 Asbestos Containing Materials:

If applicable, Polarized Light Microscopy (PLM) and, where required, Transmission Electron Microscopy (TEM) revealed asbestos in the following analyzed and assumed samples (ACM)

Asbestos Containing Material*	Location	Condition	Friability	Approximate Quantity SF	Approximate Quantity LF
Flashing	*Roof*	*Poor*	*Non-friable*	*750 SF*	-

***Notes on asbestos containing materials:**

Flashing includes all edge, parapet and cap stone flashing, if applicable.

Inaccessible materials. Any materials found within the scope of work and not specifically accounted for with sampling in this report should be presumed to contain asbestos and treated accordingly until sampled and proven otherwise. No materials or debris from adjacent structures were sampled or surveyed as part of this report.

PO Box 561 Buffalo, NY 14213
716.341.8601 (ph) 716.408.9567 (fax)
www.56services.com

Sampled Homogeneous Materials:

HAN	Homogeneous Material	Sample #	PLM/TEM Result	ACM
-	*Drywall*	*01*	*NAD*	*NA*
-	*Drywall*	*02*	*NAD*	*NA*
-	*Drywall joint compound*	*03*	*NAD*	*NA*
-	*Drywall joint compound*	*04*	*NAD*	*NA*
-	*Stucco*	*05*	*NAD*	*NA*
-	*Stucco*	*06*	*NAD*	*NA*
-	*Stucco*	*07*	*NAD*	*NA*
-	*Ceiling tile*	*08*	*NAD*	*NA*
-	*Flooring*	*09*	*NAD*	*NA*
-	*Adhesive*	*10*	*NAD*	*NA*
-	*Tar paper*	*11*	*NAD*	*NA*
-	*Window glaze*	*12*	*TRACE*	*NA*
-	*Roofing*	*13*	*NAD*	*NA*
-	*Roofing*	*14*	*NAD*	*NA*
-	*Flashing*	*15*	*Chrysotile 4.0*	*ACM*
-	*Flashing*	*16*	*NA*	*ACM*

Notes:

HAN = Homogeneous Area Number
PLM = Analyzed by Polarized Light Microscopy
TEM = Analyzed by Transmission Electron Microscopy
ACM = >1.0% asbestos, assumed asbestos containing
FT = Floor tile
NAD = No asbestos detected
NA = Not applicable
PS = Positive stop
Ext = Exterior of structure, including roof
TRACE = Less than 1% asbestos - Non-ACM

APPENDIX A

Laboratory Results

Please Reply To:

AmeriSci Richmond
13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: (804) 763-1200 • FAX: (804) 763-1800

FACSIMILE TELECOPY TRANSMISSION

To:	Robert Barr	**From:**	David W. Ralbovsky
	56 Services, Inc	**AmeriSci Job #:**	117091650
Fax #:		**Subject:**	ELAP-PLM/TEM 24 hour Results
		Client Project:	17-09029; 68-120 Tonawanda St
Email:	rob@56services.com,rbarr27@yahoo.com		

Date: Wednesday, September 20, 2017
Time: 10:23:07
Comments:

Number of Pages: 8 (including cover sheet)

Table I
Summary of Bulk Asbestos Analysis Results
17-09029; 68-120 Tonawanda St

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	01		----	----	----	----	NAD	NA
Location:	Drywall; Office							
02	02		----	----	----	----	NAD	NA
Location:	Drywall; Apt							
03	03		----	----	----	----	NAD	NA
Location:	Compound; Office							
04	04		----	----	----	----	NAD	NA
Location:	Compound; Apt							
05	05		----	----	----	----	NAD	NA
Location:	Stucco; Apt 2nd FL							
06	06		----	----	----	----	NAD	NA
Location:	Stucco; Apt 2nd FL							
07	07		----	----	----	----	NAD	NA
Location:	Stucco; Apt 2nd FL							
08	08		0.193	16.3	27.3	56.4	NA	NAD
Location:	Ceiling Tile; Offices							
09	09		0.221	18.1	77.7	4.2	NA	NAD
Location:	Flooring; Office, End Of File / Bath							
10	10		0.152	42.3	39.4	18.3	NA	NAD
Location:	Adhesive; Office							
11	11		0.218	95.2	1.3	3.5	NA	NAD
Location:	Tar Paper; Interior							
12	12		0.190	7.3	84.9	7.7	NAD	Anthophyllite Trace
Location:	Win Glaze;							
13	13		0.112	71.0	8.2	20.8	NA	NAD
Location:	Roofing; Bottom							
14	14		0.123	70.3	22.2	7.6	NA	NAD
Location:	Roofing; Top							
15	15	1	0.081	77.4	2.8	15.8	NA	Chrysotile 4.0
Location:	Flashing; Roof							
16	16	1	0.098	73.0	7.5	19.5	NA	NA/PS
Location:	Flashing; Roof							

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results
17-09029; 68-120 Tonawanda St

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM

TEM Analyzed By: Beverly A. Schrage Date Analyzed: 9/20/2017 Reviewed By: Date Reviewed: 9/20/2017

Semi-Quantitative Analysis: NAD = no asbestos detected; NA = not analyzed; NA/PS = not analyzed due to positive stop; Trace = <1%;
PLM analysis by EPA 600/R-93/116 per 40 CFR 763 (NVLAP Lab Code 101904-0) or NY ELAP 198.1 for New York friable samples which includes quantitation of any vermiculite observed (198.6 for NOB samples) or EPA 400 pt ct by EPA 600/M4-82-020 (NY ELAP Lab # 10984);
TEM prep by EPA 600/R-93/116 Section 2.3 (analysis by Section 2.5, not covered by NVLAP Bulk accreditation); or NY ELAP 198.4 for New York NOB samples (NY ELAP Lab # 10984);

** Warning Notes: Consider PLM fiber diameter limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris, soils or other heterogeneous materials for which a combination PLM/TEM evaluation is recommended; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only.

AmeriSci Richmond
13635 GENITO ROAD
MIDLOTHIAN, VIRGINIA 23112
TEL: (804) 763-1200 • FAX: (804) 763-1800

PLM Bulk Asbestos Report

56 Services, Inc
Attn: Robert Barr
PO Box 561

Buffalo, NY 14213

Date Received 09/19/17 **AmeriSci Job #** 117091650
Date Examined 09/20/17 **P.O. #**
ELAP # 10984 **Page** 1 **of** 4
RE: 17-09029; 68-120 Tonawanda St

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
01	117091650-01	*No*	NAD (by NYS ELAP 198.1) by David W. Ralbovsky on 09/20/17
Location: Drywall; Office			
Analyst Description: Brown/Lt.Gray, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
02	117091650-02	*No*	NAD (by NYS ELAP 198.1) by David W. Ralbovsky on 09/20/17
Location: Drywall; Apt			
Analyst Description: Brown/Off-White, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
03	117091650-03	*No*	NAD (by NYS ELAP 198.1) by David W. Ralbovsky on 09/20/17
Location: Compound; Office			
Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
04	117091650-04	*No*	NAD (by NYS ELAP 198.1) by David W. Ralbovsky on 09/20/17
Location: Compound; Apt			
Analyst Description: White, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
05	117091650-05	*No*	NAD (by NYS ELAP 198.1) by David W. Ralbovsky on 09/20/17
Location: Stucco; Apt 2nd FL			
Analyst Description: Beige/White, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

17-09029; 68-120 Tonawanda St

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
06	117091650-06	*No*	NAD (by NYS ELAP 198.1) by David W. Ralbovsky on 09/20/17
Location: Stucco; Apt 2nd FL			
Analyst Description: Beige/White, Heterogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
07	117091650-07	*No*	NAD (by NYS ELAP 198.1) by David W. Ralbovsky on 09/20/17
Location: Stucco; Apt 2nd FL			
Analyst Description: Beige/White, Heterogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 100 %			
08	117091650-08		NA
Location: Ceiling Tile; Offices			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
Comment: Heat Sensitive (organic): 16.3%; Acid Soluble (inorganic): 27.3%; Inert (Non-asbestos): 56.4%			
09	117091650-09		NA
Location: Flooring; Office, End Of File / Bath			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
Comment: Heat Sensitive (organic): 18.1%; Acid Soluble (inorganic): 77.7%; Inert (Non-asbestos): 4.2%			
10	117091650-10		NA
Location: Adhesive; Office			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
Comment: Heat Sensitive (organic): 42.3%; Acid Soluble (inorganic): 39.4%; Inert (Non-asbestos): 18.3%			

See Reporting notes on last page

PLM Bulk Asbestos Report

17-09029; 68-120 Tonawanda St

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
11	117091650-11		NA
	Location: Tar Paper; Interior		
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:** **Comment:** Heat Sensitive (organic): 95.2%; Acid Soluble (inorganic): 1.3%; Inert (Non-asbestos): 3.5%			
12	117091650-12	***No***	NAD
	Location: Win Glaze;		(by NYS ELAP 198.6) by David W. Ralbovsky on 09/20/17
Analyst Description: Gray, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-Asbestos 7.8 % **Comment:** Heat Sensitive (organic): 7.3%; Acid Soluble (inorganic): 84.9%; Inert (Non-asbestos): 7.8%			
13	117091650-13		NA
	Location: Roofing; Bottom		
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:** **Comment:** Heat Sensitive (organic): 71.0%; Acid Soluble (inorganic): 8.2%; Inert (Non-asbestos): 20.8%			
14	117091650-14		NA
	Location: Roofing; Top		
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:** **Comment:** Heat Sensitive (organic): 70.3%; Acid Soluble (inorganic): 22.2%; Inert (Non-asbestos): 7.6%			
15 1	117091650-15		NA
	Location: Flashing; Roof		
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:** **Comment:** Heat Sensitive (organic): 77.4%; Acid Soluble (inorganic): 2.8%; Inert (Non-asbestos): 19.8%			

See Reporting notes on last page

PLM Bulk Asbestos Report

17-09029; 68-120 Tonawanda St

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
16	117091650-16		NA
1	**Location:** Flashing; Roof		

Analyst Description: Bulk Material
Asbestos Types:
Other Material:
Comment: Heat Sensitive (organic): 73.0%; Acid Soluble (inorganic): 7.5%; Inert (Non-asbestos): 19.5%

Reporting Notes:

Analyzed by: David W. Ralbovsky Date: 9/20/2017 Reviewed by:

*NAD = no asbestos detected, Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/R-93/116 per 40 CFR 763 (NVLAP Lab Code 101904-0) and ELAP PLM Analysis Protocol 198.1 for New York friable samples which includes quantitation of any vermiculite observed (198.6 for NOB samples) or EPA 400 pt ct by EPA 600/M4-82-020 (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

17-09029
56 Services Project Number

Lab ID Number

18 Sept 17
Sampling Date

RUSH (24H) 48H 3D 5D

68-120 Tonawanda St.
Project Address

16
Number of Samples

117091650
Results Due By

						Lab ID
01			Drywall	OFFICE		
02			↓	Apt		
03			Compound	OFFICE		
04			↓	Apt		
05			STUCCO	Apt 2nd FL		
06			↓	↓		
07			↓	↓		
08		x	Ceiling tile	OFFICES		
09		x	Flooring	OFFICE ENTOFFICE/BATH		
10		x	Adhesive	OFFICE		
11		x	TAR PAPER	Interior		
12			Win Glaze			
13		x	Roofing	bottom		
14		x	↓	Top		
15			Flashing	Roof		
16			↓	Roof		

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SEP 19 2017
By

Additional Instructions:

- ☐ Analyze PLM then TEM if negative AND NOB
- ☐ Stop ALL analysis if _____ ACM
- ☒ TEM Analysis only (or as marked above)
- ☒ Positive Stop per group: (15-16)

Analyze for the following State:

- ☐ Pennsylvania
- ☐ Illinois
- ☐ Louisiana
- ☐ West Virginia
- ☐ Other_____

Please analyze as per NYS
If no other state is selected

email results to – rob@56services.com

PO Box 561 Buffalo, NY 14213
716.341.8601 (ph) 716.408.9567 (fax)

www.56services.com

56 services

APPENDIX B

56 Services Accreditations and Personnel Certifications

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

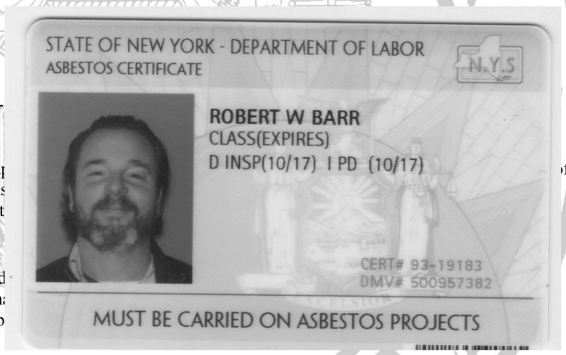
ASBESTOS HANDLING LICENSE

56 Services, Inc.

P.O. Box 561

Buffalo, NY 14213

FILE NUMBER: 07-0281
LICENSE NUMBER: 29631
LICENSE CLASS: FULL
DATE OF ISSUE: 04/26/2017
EXPIRATION DATE: 04/30/2018



Duly Authorized Representative – Robert Barr

This license has been issued in accordance with ap
the New York State Codes, Rules and Regulations
serious violation of state, federal or local laws wit
responsibility in the conduct of any job involving

This license is valid only for the contractor named
asbestos project worksite. This license verifies tha
State have been issued an Asbestos Certificate, ap
Department of Labor.

Eileen M. Franko, Director
For the Commissioner of Labor

SH 432 (8/12)

Limited Hazardous Materials Inspection Report

- **Lead-Based Paint and PCB's in Caulks**

Project Location:

68 Tonawanda Street
Buffalo, New York 14204

Project ID: 18-0121DB-A

Conditions as of: January 24th, 2018

Prepared for:

BE3 Corp./Panamerican
1270 Niagara Street
Buffalo, New York 14213

Prepared by:

AMD Environmental Consultants, Inc.
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Buffalo, NY 14202
OFFICE (716) 833-0043 | FAX (716) 241-8689
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January 30, 2018

BE3 Corp./ Panamerican
1270 Niagara Street
Buffalo, New York 14213

Re: Limited Hazardous Materials Inspection Report
68 Tonawanda Street
Amherst, New York 14203
AMD Project ID: 18-0124DB-A

I am pleased to present this summary of hazardous materials survey services at the above referenced address.

AMD Environmental conducted a Limited Hazardous Materials Inspection at the above referenced address on January 24th, 2018. Lead-Based Paint and Polychlorinated Biphenyls in caulk (PCB) were sampled for this report. For more detail please refer to the summary's provided for each material category which can be found via the table of contents on the following page.

AMD Environmental Consultants, Inc. surveys are intended to determine, to a reasonable extent, the presence, location, quantity, and condition of accessible asbestos containing materials (surfacing, thermal systems insulation, and miscellaneous materials). The information contained herein is representative of conditions found onsite during the date/time this survey was conducted. Environmental conditions, renovation, vandalism, etc. may alter conditions from the date/time that this survey was conducted, potentially creating new hazards.

Please do not hesitate to contact me if I may provide any additional information.

Sincerely,

Anthony DeMiglio
President

AMD Environmental Consultants, Inc.
712 Main Street. Suite L1
Buffalo, NY 14202
Office 716 833-0043 Fax 716 241-8689
www.amdenvironmental.com

Table of Contents

AMD Environmental Consultants, Inc.
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1.0 Lead-Based Paint Inspection

1.1 Introduction

AMD Environmental Consultants, Inc (AMD) was retained by BE3 Corp. / Panamerican to conduct representative lead based paint testing throughout the building located at 68 Tonawanda Street in Buffalo, NY for the presence of surfaces containing lead-based paint.

AMD was assigned to:

- Locate suspect surfaces
- Measuring lead concentrations on suspect surface, using an X-ray florescence spectrum analyzer, and

Although this report is a representative analysis of the lead-based paint in this structure, the following information, as well as a reading of the sources listed at the end of this section, will help ensure compliance to applicable rules, laws and regulations regarding lead based paint.

TITLE X:

On October 28, 1995, the Housing and Community Development Act of 1992 was signed into law. Title X, as this bill is commonly referred to, is comprehensive and significant in addressing lead poisoning and prevention. Under the Toxic Substances Control Act (TSCA), as amended by Title X, EPA is developing regulations governing lead-based paint hazard evaluation and abatement in private and public housing, public and commercial buildings, and commercial structures.

Although it is recommended that property owners, lenders, insurers, etc. become familiar with the full content of Title X and the EPA regulations, an understanding of the following terms will assist in the interpretation of the results of this survey:

1. The term “lead-based paint” as used in Title X is defined as paint on surfaces with lead in excess of 1.0 mg/cm^2 (milligrams per centimeter squared) as measured by X-ray fluorescence (XRF) detector or 0.5 percent by weight.

2. The term “lead based paint hazard” is defined as any condition that causes exposure to lead sufficient to cause adverse human effects.

3. “Deteriorated LBP” is any interior or exterior LBP that is peeling, chipping, chalking, or cracking, or located on a surface or fixture that is damaged or deteriorated.

4. LBP on any “friction surface” is defined as any interior or exterior surface subject to damage by repeated impacts, such as painted floors and friction surfaces on windows.

5. LBP on any “impact surface” is defined as any interior or exterior surface subject to damage by repeated impacts, such as parts of door frames.

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6. LBP on any "accessible surface" is defined as any interior or exterior surface accessible for a young child to mouth or chew, such as a window sill.

7. "Lead-contaminated dust" is defined as a surface dust in residential dwellings that contains an area or mass concentration of lead in excess of the standard to be established by EPA.

OSHA

On May 4, 1993, OSHA promulgated the Lead Exposure in Construction Rule (29 CFR Part 1926.62). This regulation applies to all construction activities involving potential lead exposures. This regulation defines construction work as "…work for construction, alteration and/or repair including painting and decorating" and further states "…the standard for the construction industry applies to all occupational exposure to lead in all construction work in which lead, in any amount, is present in an occupationally related context … where the source of the lead is employment related…"

The employer must ensure that no worker is exposed to concentrations of lead in excess of the permissible exposure limit (PEL) for lead, which is an eight hour time weighted average (TWA) exposure of 50 mg/m3 (micrograms per cubic meter). This means that the pre-project site must be inspected to determine if a lead hazard exists. If determined to exist, the employer must either perform an "Exposure Assessment" as defined in 29 CFR Part 1926.62 paragraph (d), or implement employee protective measures as prescribed in paragraph (d)(2)(v) including appropriate respiratory protection, personal protective clothing, change areas, hand washing facilities, biological monitoring, and training.

HUD

The statutory requirements and foundations for HUD Guidelines can be found in Section 302 of the Lead-Based Paint Poisoning Prevention Act (LBPPPA).

Certain aspects of the HUD Guidelines are typically applied to public and commercial buildings. The most common adopted techniques used to identify LBP are X-ray Fluorescence Spectrum Analyzer (XRF) and Atomic Absorption Spectroscopy (AAS). HUD defines LBP as having an XRF reading greater than 1.0 mg of lead per centimeter squared, or a paint chip analyzed by AAS having greater than 0.5 percent lead by weight.

The above information coupled with this report will help assure compliance to applicable laws and regulations and protect the occupants and contractors from exposure while in the building.

1.2 Methodology

All work performed by AMD Environmental Consultants, Inc. was conducted in accordance with applicable regulations. All AMD personnel assigned to conduct inspections have completed the Environmental Protection Agency (EPA) required training. Please see appendices for certifications and licenses and risk assessors' signatures.

AMD Environmental Consultants, Inc. used a Heuresis Pb200i XRF Spectrum Analyzer to test suspect painted surfaces. Progression through the structure followed a clockwise direction around the floor plan. Each component tested is identified by its particular side of the building, labeled walls "A, B, C, or D". Side A of any room is always the same side as the front exterior entrance (or address side of the building). Side B is the side to the left of side A, and so on.

Representative surfaces/components were tested in a manner designed to adequately represent the different components, substrates, types of paint, construction and paint history at various locations throughout the building, including areas exhibiting peeling, chipping and flaking paint.

1.3 Lead-Based Paint Inspection Summary

AMD's on-site lead risk assessor conducted representative sampling off materials to be impacted by the upcoming renovations on January 24th, 2018. Painted components throughout the interior and exterior of the property located at 68 Tonawanda Street, Buffalo, NY were identified and tested based on component groups and paint history. Surfaces tested included (interior walls, ceilings, doors, structural members, window components and exterior components.

The XRF analysis indicated that the following painted surfaces have a lead content at greater than 1.0 mg/cm^2 and are therefore classified as lead-based paint, based on Title X. For any renovations undertaken that require demolition of these painted surfaces, contractors should be advised of the presence of lead, and required to comply with the previously mentioned OSHA regulations for construction worker safety.

Component groups that were identified to contain lead-based paint are:

- **Original Remaining Wood Windows**
- **Metal Ceiling Beams**
- **A-side wall in Bay 3**
- **Grey metal fire doors bay 3 and bay 6**
- **A-side wood door bay 7**
- **Exterior a-side wood doors (red)**

Please see the table in Section 1.4 for the complete XRF analysis of individual components and substrates.

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1.4 XRF Spectrum Analyzer Report

Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
1			Calibration			1		
2			Calibration			1		
3			Calibration			1		
4			Calibration			0.1		
5			Calibration			0.1		
6			Calibration			0		
7	**B**	**bay 1**	**Win. Sash**	**Wood**	**Beige**	**8.9**	**POOR**	**Positive**
8	**B**	**bay 1**	**Win. Casing**	**Wood**	**Brown**	**6.8**	**POOR**	**Positive**
9	B	bay 1	Door	Metal	Grey	0	POOR	Negative
10	C	bay 1	Door	Metal	Grey	0.1	POOR	Negative
11	A	bay 2	Door	Wood	Grey	-0.1	POOR	Negative
12	A	bay 2	Door Lintel	Metal	Grey	0.2	POOR	Negative
13	B	bay 2	Door	Metal	White	0.1	POOR	Negative
14	B	bay 2	Door Casing	Metal	Green	-0.1	POOR	Negative
15	B	bay 2	Wall	Metal	Grey	0	POOR	Negative
16	C	bay 2	Door Casing	Metal	Black	0.2	POOR	Negative
17	A	bay 2	Win. Casing	Wood	White	-0.1	POOR	Negative
18	A	bay 2	Door	Metal	Black	0.1	POOR	Negative
19	C	bay 2	Column	Metal	Black	0.1	POOR	Negative
20	C	bay 2	Wall	Brick	White	0.1	POOR	Negative
21	D	bay 2	Wall	Brick	White	-0.2	POOR	Negative
22	D	bay 2	Door	Metal	Grey	0.1	POOR	Negative
23	D	bay 2	Door Casing	Metal	Red	0.2	POOR	Negative
24	D	bay 2	Beam	Metal	Black	0.1	POOR	Negative
25	A	bay 3 upper	Win. Sash	Wood	White	0.4	POOR	Negative
26	A	bay 3 upper	Wall	Drywall	White	0.2	POOR	Negative

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
27	B	bay 3 upper	Door	Wood	Stain	0	POOR	Negative
28	B	bay 3 upper	Door Casing	Wood	Stain	0	POOR	Negative
29	**D**	**bay 3 upper**	**Beam**	**Metal**	**Black**	**10.5**	**POOR**	**Positive**
30	A	bay 3	Wall	Stucco	White	0.1	POOR	Negative
31	A	bay 3	Door Casing	Metal	Black	0.1	POOR	Negative
32	A	bay 3	Door	Metal	Grey	0	POOR	Negative
33	B	bay 3	Wall	Drywall	Red	0.1	POOR	Negative
34	B	bay 3	Door	Wood	Grey	0.1	POOR	Negative
35	B	bay 3	Door Casing	Wood	Black	-0.1	POOR	Negative
36	B	bay 3	Wainscoting	Wood	Brown	0	POOR	Negative
37	**A**	**bay 3**	**Wall**	**Cinder block**	**Grey**	**3**	**POOR**	**Positive**
38	A	bay 3	Wall	Brick	Grey	-0.2	POOR	Negative
39	A	bay 3	Wall	Brick	Grey	0.9	POOR	Negative
40	**A**	**bay 3**	**Wall**	**Brick**	**Grey**	**7.2**	**POOR**	**Positive**
41	A	bay 3	Wall	Cinderblock	Blue	0	POOR	Negative
42	A	bay 3	Door Casing	Metal	Grey	0.2	POOR	Negative
43	A	bay 3	Door	Metal	Grey	0.1	POOR	Negative
44	C	bay 3	Wall	Brick	Grey	0	POOR	Negative
45	C	bay 3	Wall	Brick	Grey	-0.1	POOR	Negative
46	C	bay 3	Wall	Brick	Grey	0.5	POOR	Negative
47	D	bay 3	Wall	Brick	Grey	-0.1	POOR	Negative
48	D	bay 3	Wall	Brick	Grey	-0.1	POOR	Negative
49	**D**	**bay 3**	**Door**	**Metal**	**Grey**	**21.5**	**POOR**	**Positive**
50	A	bay 4	Wall	Brick	Red	0.2	POOR	Negative
51	A	bay 4	Wall	Brick	Red	0	POOR	Negative
52	A	bay 4	Door Casing	Metal	Beige	0	POOR	Negative
53	A	bay 4	Door	Metal	Beige	0.1	POOR	Negative
54	A	bay 4	Door Lintel	Metal	Red	0.2	POOR	Negative
55	B	bay 4	Wall	Brick	Red	-0.2	POOR	Negative

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
56	B	bay 4	Wall	Brick	Grey	0	POOR	Negative
57	C	bay 4	Wall	Brick	Red	-0.2	POOR	Negative
58	C	bay 4	Wall	Brick	Red	0.2	POOR	Negative
59	C	bay 4	Door	Metal	Red	0.1	POOR	Negative
60	D	bay 4	Door	Metal	Red	0	POOR	Negative
61	D	bay 4	Door	Metal	Red	0.2	POOR	Negative
62	A	bay 4	Wall	Drywall	Grey	0	POOR	Negative
63	A	bay 4	Door Casing	Wood	Stain	0	POOR	Negative
64	A	bay 4	Door	Wood	Stain	0.1	POOR	Negative
65	A	bay 5	Wall	Brick	Blue	-0.1	POOR	Negative
66	A	bay 5	Win. Casing	Wood	Beige	0.1	POOR	Negative
67	A	bay 5	Wall	Drywall	Blue	0.1	POOR	Negative
68	A	bay 5	Door Casing	Metal	Grey	0.1	POOR	Negative
69	A	bay 5	Door	Metal	Grey	0.1	POOR	Negative
70	C	bay 5	Win. Casing	Wood	Grey	0	POOR	Negative
71	D	bay 5	Door Casing	Wood	Grey	0	POOR	Negative
72	D	bay 5	Door	Wood	Grey	0.1	POOR	Negative
73	A	bay 5 upper	Wall	Drywall	White	0.1	POOR	Negative
74	C	bay 5 upper	Wall	Brick	Grey	0	POOR	Negative
75	D	bay 5 upper	Win. Casing	Wood	White	0.1	POOR	Negative
76	B	bay 5 upper	Stair Thread	Metal	Grey	0.1	POOR	Negative
77	B	bay 5 upper	Stair Riser	Metal	Grey	0	POOR	Negative
78	B	bay 5 upper	Stair Stringer	Wood	Grey	0	POOR	Negative
79	A	bay 5	Door	Metal	Red	0.3	POOR	Negative
80	A	bay 5	Wall	Brick	Red	0.1	POOR	Negative
81	A	bay 5	Door Casing	Metal	Red	0.2	POOR	Negative
82	B	bay 5	Wall	Drywall	Brown	-0.2	POOR	Negative

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
83	C	bay 5	Wall	Cinderblock	Red	0.1	POOR	Negative
84	C	bay 5	Wall	Brick	Grey	0.2	POOR	Negative
85	D	bay 5	Door Casing	Metal	Red	0.2	POOR	Negative
86	A	bay 5	Stair Thread	Metal	Grey	0	POOR	Negative
87	A	bay 5	Stair Stringer	Metal	Grey	0.2	POOR	Negative
88	A	bay 5	Railing	Metal	Grey	0	POOR	Negative
89	A	bay 5	Door	Metal	Grey	0	POOR	Negative
90	A	bay 6	Wall	Brick	White	0	POOR	Negative
91	B	bay 6	Door Casing	Wood	White	-0.1	POOR	Negative
92	B	bay 6	Door	Wood	White	-0.1	POOR	Negative
93	A	bay 6	Door	Metal	Red	-0.1	POOR	Negative
94	B	bay 6	Door	Metal	Red	0.2	POOR	Negative
95	C	bay 6	Door	Metal	Grey	0	POOR	Negative
96	**D**	**bay 6**	**Door**	**Metal**	**Grey**	**7.6**	**POOR**	**Positive**
97	**A**	**bay 7**	**Door**	**Wood**	**Grey**	**1.8**	**POOR**	**Positive**
98	A	bay 7	Wall	Brick	Red	0.1	POOR	Negative
99	A	bay 7	Wall	Brick	Grey	0	POOR	Negative
100	B	bay 7	Wall	Brick	Grey	-0.2	POOR	Negative
101	B	bay 7	Door Casing	Metal	Grey	0.2	POOR	Negative
102	D	bay 7	Wall	Brick	Red	0.1	POOR	Negative
103	A	bay 8	Wall	Brick	Red	0.1	POOR	Negative
104	B	bay 8	Wall	Brick	Red	-0.2	POOR	Negative
105	C	bay 8	Wall	Brick	Red	-0.2	POOR	Negative
106	C	bay 8	Wall	Brick	Red	0	POOR	Negative
107	A	bay 8	Wall	Drywall	Grey	0.1	POOR	Negative
108	**A**	**bay 8**	**Win. Sash**	**Wood**	**Grey**	**5.5**	**POOR**	**Positive**
109	**A**	**bay 8**	**Win. Casing**	**Wood**	**Grey**	**4.8**	**POOR**	**Positive**
110	D	bay 8	Door	Metal	Grey	0.1	POOR	Negative
111	A	bay 8	Stair Stringer	Metal	Red	0	POOR	Negative
112	A	bay 8	Stair Thread	Metal	Red	0.2	POOR	Negative

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Reading #	Side	Room	Component	Substrate	Color	XRF Reading	Condition	Result
113	A	bay 8	Railing	Metal	Red	0.1	POOR	Negative
114	A	Exterior	Railing	Metal	Black	0.1	POOR	Negative
115	A	Exterior	Stair Stringer	Metal	Black	0.1	POOR	Negative
116	A	Exterior	Stair Thread	Metal	Red	0	POOR	Negative
117	A	Exterior	Stair Riser	Metal	Red	0.1	POOR	Negative
118	**A**	**Exterior**	**Win. Casing**	**Wood**	**Black**	**1.3**	**POOR**	**Positive**
119	A	Exterior	Wall	Brick	Red	-0.1	POOR	Negative
120	A	Exterior	Wall	Brick	Red	0.1	POOR	Negative
121	A	Exterior	Trim	Metal	Red	0.9	POOR	Negative
122	A	Exterior	Wall	Brick	Red	0	POOR	Negative
123	**A**	**Exterior**	**Door**	**Wood**	**Red**	**3.1**	**POOR**	**Positive**
124	A	Exterior	Door Casing	Metal	Red	0.1	POOR	Negative
125	A	Exterior	Stair Stringer	Metal	Black	0	POOR	Negative
126	A	Exterior	Railing	Metal	Black	0	POOR	Negative
127	A	Exterior	Door	Metal	Red	0.3	POOR	Negative

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2.0 Polychlorinated Biphenyls (PCB) in caulks

Sample Number	Type	Location	Results (µg/kg)	Results reported In ppm	Hazardous Waste (Y/N)
1	Window / Door Caulk	Exterior Front of Bldg.	< 493	<0.493	No
2	Window / Door Caulk	Exterior Rear of Bldg.	<469	<0.469	No
3	Window / Door Caulk	Exterior Side of Bldg.	<455	<0.455	No

During the PCB Caulk sampling conducted January 24th, 2018, three (3) sample was collected for analysis. The Laboratory analysis performed on caulk/sealant samples revealed the following:

- **The material sampled on the date of inspection was found to be below the 50 ppm threshold for PCB's by laboratory analysis.**

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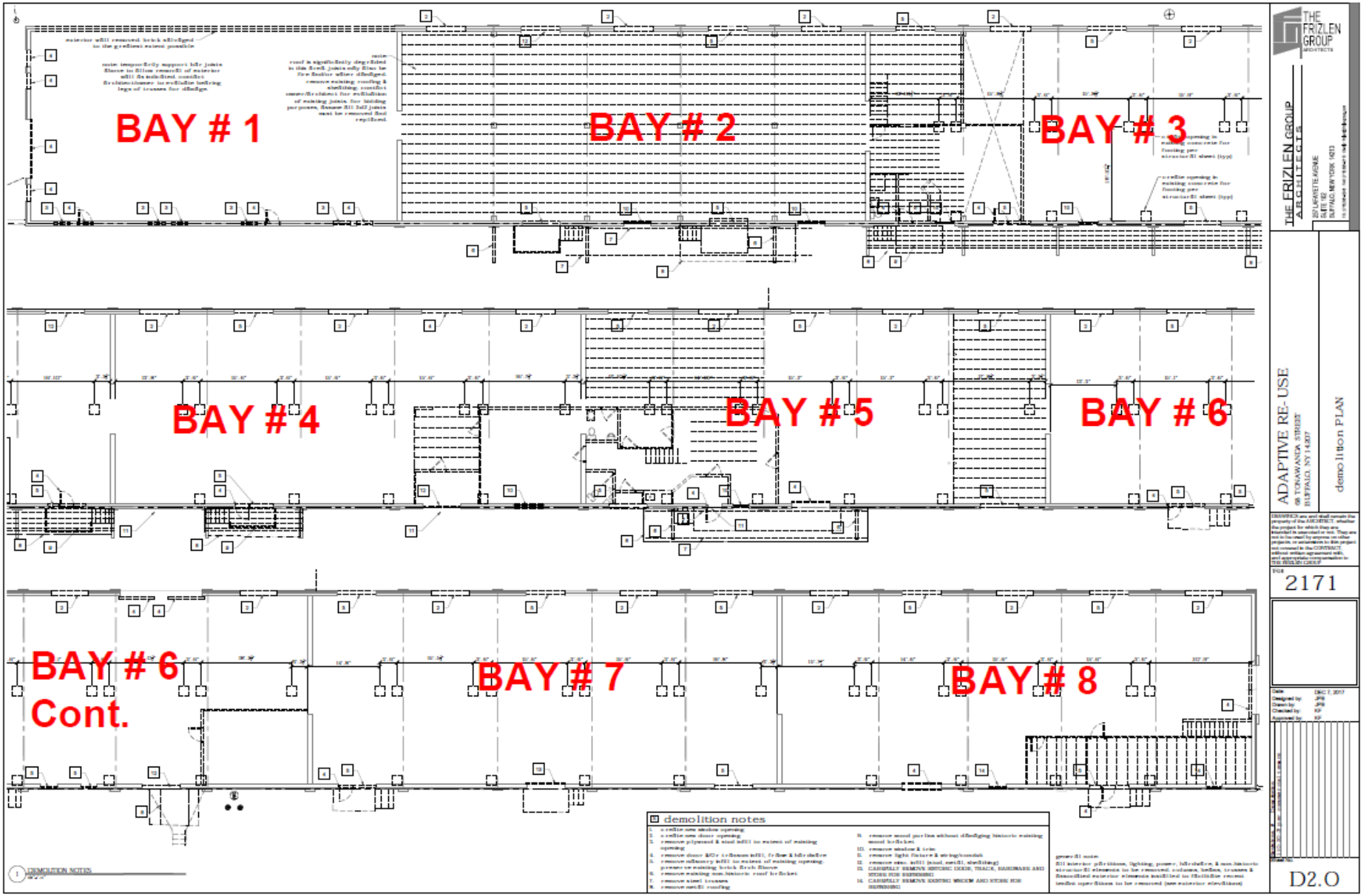
Appendix A: Site Map(s)


BAY # 1
BAY # 2
BAY # 3
BAY # 4
BAY # 5
BAY # 6
BAY # 6 Cont.
BAY # 7
BAY # 8
demolition notes
THE FRIZLEN GROUP
ADAPTIVE RE-USE
68 TONAWANDA STREET
BUFFALO, NY 14207
demolition PLAN
2171
D2.0

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Appendix B: PCB's Sample Analyses & Sample Chains of Custody

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: AMD Environmental Consultants (4689)
Address: 712 Main St
Suite L1
Buffalo, NY 14202

Attn:

Project:
Location: 68 Tonawanda St. BLO
Number: 180/24DB.A

Order #: 245216

Matrix Bulk
Received 01/26/18
Reported 02/01/18

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Location / Result	RL*	Units	Analysis Date	Analyst
245216-001	1	68 Tonawanda St.				
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1221	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1232	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1242	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1248	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1254	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1260	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1262	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
Aroclor - 1268	SW846 8082A	**<493**	493	µg/Kg	01/30/18	AE
PCB - Surrogate Recoveries						
DCB	MI					
TCMX	MI					
245216-002	2	68 Tonawanda St.				
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1221	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1232	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1242	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1248	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1254	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1260	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1262	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
Aroclor - 1268	SW846 8082A	**<469**	468	µg/Kg	01/30/18	AE
PCB - Surrogate Recoveries						
DCB	MI					
TCMX	MI					

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: AMD Environmental Consultants (4689)
Address: 712 Main St
Suite L1
Buffalo, NY 14202

Attn:

Project:
Location: 68 Tonawanda St. BLO
Number: 180/24DB.A

Order #: 245216

Matrix Bulk
Received 01/26/18
Reported 02/01/18

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Result	RL*	Units	Analysis Date	Analyst
245216-003	3 / 68 Tonawanda St.					
Semi-volatile Organic Compounds						
Aroclor - 1016	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1221	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1232	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1242	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1248	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1254	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1260	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1262	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
Aroclor - 1268	SW846 8082A	**<455**	455	µg/Kg	01/30/18	AE
PCB - Surrogate Recoveries						
DCB	MI					
TCMX	MI					

245216-02/01/18 02:35 PM

Reviewed By: **Ben Wood**
Analyst

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.

Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

Customer: AMD Environmental Consultants (4689)
Address: 712 Main St
Suite L1
Buffalo, NY 14202

Attn:

Project:
Location: 68 Tonawanda St. BLO
Number: 180/24DB.A

Order #: 245216

Matrix Bulk
Received 01/26/18
Reported 02/01/18

PO Number:

Sample ID / Parameter	Cust. Sample ID / Method	Location	Result	RL*	Units	Analysis Date	Analyst

State Certifications

Method	Parameter	New York	Virginia
SW846 8082A	Aroclor - 1016	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1221	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1232	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1242	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1248	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1254	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1260	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1262	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1268	ELAP Certified	VELAP Certified

State	Certificate Number
New York	ELAP 56000
Virginia	VELAP 9017

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.

245216 R 3

V:\245\245216

fghraizi 1/26/2018 9:2 :00 AM

UPS 1Z2E2899906)5030?1

SCHNEIDER LABORATORIES GLOBAL, INC.

2512 West Cary Street, Richmond, Virginia 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475
www.slabinc.com e-mail: info@slabinc.com

Submitting Co.	AMD ENVIRONMENTAL	Lab WO#	Phone 716.833.0043
712 MAIN ST. STE. L1 BUFFALO, NY		Acct #	Fax \ Email ON FILE
		Status/ Collection NY	Coolers Required ☐ Yes ☐ No

Project Name:	
Project Location:	68 TONAWANDA ST. BLO
Project Number:	180124DB.A
Purchase Order #	
TAT Requested	(Business Day) ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☒ 5 ☐ 10 ☐ Other: _____

Special Instructions [include requests for special reporting or data packages]

Sample #	Date/Time Sampled	# Containers	Chlorine (Cl)	Temp *	pH	Matrix: Drinking Water	Waste Water	Ground Water	Soil / Sludge	Wipe	Oil or Air	Bulk	Analysis Request: BTEX ☐ MTBE ☐ Naphthalene ☐	Purgeable Aromatics 8021 ☐	Petrol Hydrocarbons GC 8015M Diesel ☐ 8015M Gas ☐	TPH 418.1 ☐	Corrosivity ☐ Reactivity ☐ Flashpoint, Closed Cup ☐	Volatile Organics 624 ☐ 8260 ☐	Semivolatile Organics 625 ☐ 8270 ☐	PAHs 610 ☐ 8270 ☐ 8310 By HPLC ☐	TCLP Semi-Vols ☐ BNAs ☐ Pest ☐ Herb ☐ VOAs ☐ Full ☐	Pesticides 608 ☐ 8081 ☐ Herbicides 8151 ☐ PCB's 8082 ☒	Other
#1												X									X		
2												X									X		
3												X									X		

Sampled by
NAME S. DUNLAP
SIGNATURE S. Dunlap
DATE/TIME 18-0124DB-A

Relinquished to lab by
NAME _____
SIGNATURE _____
DATE/TIME _____ 18

Preserved ☐ Yes ☐ No ☐ Ambient temp ☐ Ice ☐R ☐S ☐X

68 Tonawanda St

☐ Receive a physical copy of report.

Sample Disposal
If samples over req. weight (Refer to Fee Schedule)
☐ Return to Sender (Shipping fees)
☐ Disposal by lab ($50 fee)

Shipping Methods
☐ FX ☐ UPS ☐ USM ☐ HD ☐ DB
WB: _____

AMD Environmental Consultants, Inc.
712 Main Street. Suite L1
Buffalo, NY 14202
Office 716 833-0043 Fax 716 241-8689
www.amdenvironmental.com

Appendix C: Firm Certifications & Personnel Licenses

AMD Environmental Consultants, Inc.
712 Main St. Suite L1
Buffalo, NY 14202
Office: 716-833-0043 Fax: 716-241-8689
www.amdenvironmental.com

United States Environmental Protection Agency

This is to certify that

AMD Environmental Consultants, Inc.

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires December 25, 2019

LBP-83285-1
Certification #

December 15, 2016
Issued On

Michelle Price, Chief
Lead, Heavy Metals, and Inorganics Branch

AMD Environmental Consultants, Inc.
712 Main St. Suite L1
Buffalo, NY 14202
Office: 716-833-0043 Fax: 716-241-8689
www.amdenvironmental.com

United States Environmental Protection Agency

This is to certify that

David Charles Batt Jr.,

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires May 14, 2019

LBP-R-1388-1
Certification #

March 11, 2016
Issued On

John Gorman, Chief
Pesticides & Toxic Substances Branch

AMD Environmental Consultants, Inc.
712 Main St. Suite L1
Buffalo, NY 14202
Office: 716-833-0043 Fax: 716-241-8689
www.amdenvironmental.com

United States Environmental Protection Agency

This is to certify that

Gerald Dunlap

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received cert fication to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification s valid from the date of issuance and expires May 01, 2019

LBP-R-128132-1
Certification #

June 30, 2016
Issued On

John Gorman, Chief
Pesticides & Toxic Substances Branch

AMD Environmental Consultants, Inc.
712 Main Street. Suite L1
Buffalo, NY 14202
Office 716 833-0043 Fax 716 241-8689
www.amdenvironmental.com

Appendix D: Laboratory Certifications

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2016
Issued April 01, 2015

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. FAYEZ ABOUZAKI
SCHNEIDER LABORATORIES GLOBAL, INC
2512 WEST CARY STREET
RICHMOND, VA 23220-5117

NY Lab Id No: 11413

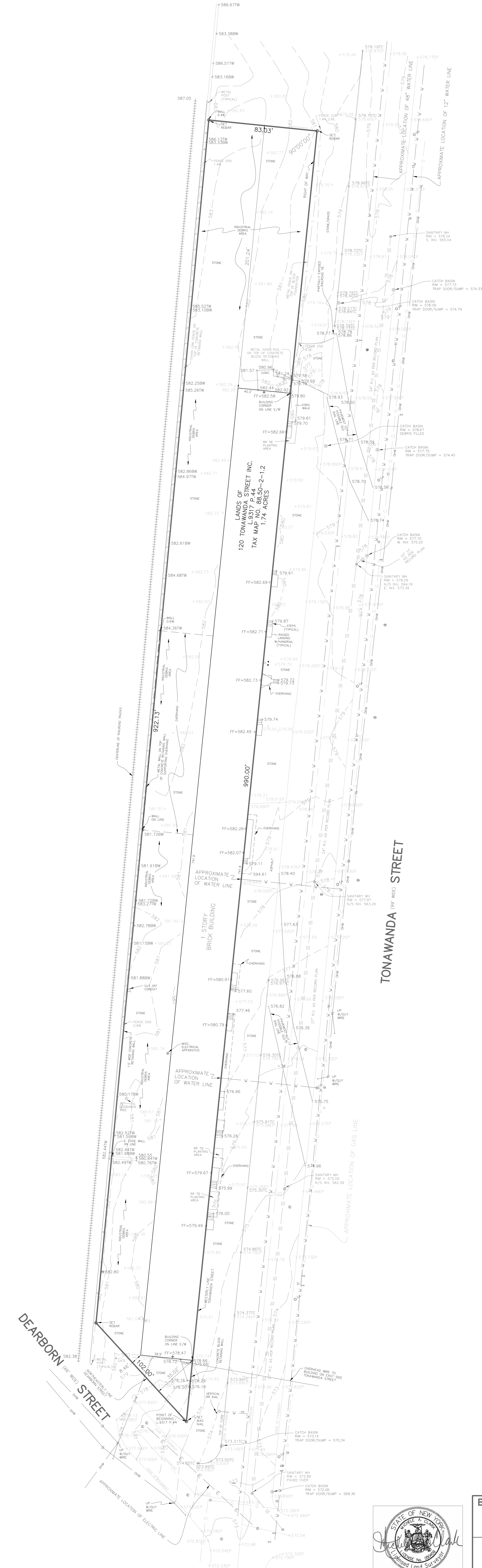
is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Characteristic Testing		**Polychlorinated Biphenyls**	
TCLP	EPA 1311	PCB-1268	EPA 8082A
Metals I		**Sample Preparation Methods**	
Barium, Total	EPA 6010C		EPA 3010A
Cadmium, Total	EPA 6010C		EPA 3050B
Chromium, Total	EPA 6010C		EPA 3550C
Lead, Total	EPA 6010C		EPA 3031
	EPA 7000B		
Nickel, Total	EPA 6010C		
Silver, Total	EPA 6010C		
Metals II			
Antimony, Total	EPA 6010C		
Arsenic, Total	EPA 6010C		
Chromium VI	EPA 7196A		
Mercury, Total	EPA 7471B		
Selenium, Total	EPA 6010C		
Polychlorinated Biphenyls			
PCB-1016	EPA 8082A		
PCB-1221	EPA 8082A		
PCB-1232	EPA 8082A		
PCB-1242	EPA 8082A		
PCB-1248	EPA 8082A		
PCB-1254	EPA 8082A		
PCB-1260	EPA 8082A		
PCB-1262	EPA 8082A		

Serial No.: 52362

APPENDIX C

SITE BOUNDARY/TOPOGRAPHIC MAP



LEGEND

FF	FINISHED FLOOR AT DOOR THRESHOLD
BW	BOTTOM WALL
TW	TOP WALL
BC	BOTTOM CURB
TC	TOP CURB
EP	EDGE PAVEMENT
Ⓦ	WATER MANHOLE
⋈	WATER VALVE
	HYDRANT
	GAS LINE MARKER
Ⓖ	GAS VALVE
	GAS METER
Ⓔ	ELECTRIC MANHOLE
	UTILITY POLE
OHW	OVERHEAD WIRE
LP	LIGHT POLE
	SEWER MANHOLE
⊞	CATCH BASIN
	UNKNOWN MANHOLE
•	BOLLARD

ONLY VISIBLE UTILITY SERVICES AND/OR ENCUMBRANCES WERE LOCATED AND ARE SHOWN.

THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN UPDATED ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATEMENT OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

ONLY BOUNDARY SURVEY MAPS WITH THE SURVEYOR'S EMBOSSED SEAL ARE GENUINE, TRUE AND CORRECT COPIES OF THE SURVEYOR'S ORIGINAL WORK AND OPINION.

ALTERING THIS DOCUMENT IS IN VIOLATION OF THE LAW EXCEPTING AS PROVIDED IN SECTION 7209, PART 2 OF THE NEW YORK STATE EDUCATION LAW.

THE ALTERATION OF BOUNDARY SURVEY MAPS BY ANYONE OTHER THAN THE ORIGINAL PREPARER IS MISLEADING, CONFUSING, AND NOT IN THE GENERAL WELFARE AND BENEFIT OF THE PUBLIC.

NOTE:

1) ALL UTILITY INFORMATION SHOWN IS APPROXIMATE.

PROPERTY MAY BE AFFECTED BY THE FOLLOWING:

– A PERPETUAL EASEMENT FOR INGRESS AND EGRESS TO CONSOLIDATED RAIL CORPORATION – L.9317 P.44

– EASEMENT TO NIAGARA MOHAWK CORPORATION AND NEW YORK TELEPHONE COMPANY – L.10807 P.650

REVISED 12/6/16: ADD GAS LINE, WATER LINE & ELECTRIC LINE INFORMATION

STATE OF NEW YORK
MICHELE A. CLARK
LICENSE No. 050459
Licensed Land Surveyor

MICHELE A. CLARK
NEW YORK STATE PROFESSIONAL
LAND SURVEYOR
LICENSE NUMBER 50459

PRELIMINARY SURVEY

BOUNDARY & TOPOGRAPHIC SURVEY

TONAWANDA STREET

PART OF LOT NOS. 103, 104, 105, 106, 163, 164, 215 & 216
OF THE PARISH TRACT
CITY OF BUFFALO
COUNTY OF ERIE ~ STATE OF NEW YORK

CREEKSIDE BOUNDARY LAND SURVEYING, PLLC

1746 HIGGINS ROAD
WARSAW, NEW YORK 14569
PHONE: 585-786-5640 EMAIL: mclark@creeksideboundary.com

SCALE: 1" = 30'	DATE: 11/22/16	
DWN BY: MAC	CKD BY: MAC	JOB NO.: 88.50-2-1.2

APPENDIX D

DATA USABILITY SUMMARY REPORTS (DUSR)

DATA USABILITY SUMMARY REPORT (DUSR)

68 Tonawanda St.
Buffalo, NY
NYSDEC BCP # C915316

SDG: 0461-01

18 soil samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

March 2018

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

Table of Contents

Tables

REVIEWER'S NARRATIVE
SDG 0461-01

The data associated with this Sample Delivery Group (SDG) 0461-01, 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: 3/28/18

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	68 Tonawanda St. Buffalo, NY
SAMPLING DATE:	February 09, 2018
SAMPLE TYPE:	18 soil samples
LABORATORY:	Paradigm Environmental Services, Inc. Rochester, NY
SDG No.:	0461-01

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 eighteen soil samples collected on February 09, 2018. These samples were analyzed for Part 375 Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, and Metals.

All analyses were performed by Paradigm Environmental Services, Inc., Rochester, NY and analyzed as SDG 0461-01. 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.

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.

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

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

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality 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 6-4. 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 0461-01, eighteen samples were analyzed and results were reported for 829 analytes. Two results were rejected. Even though some results were flagged with a "J" as estimated, all other results (99.7%) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

NOTE: 1) As noted by the laboratory, the soil samples were not collected following SW846 5035A protocol. This adds an element of uncertainty to the analytical results for volatile organic analytes (VOAs). Although not specifically indicated on the final data sheets with a "J" flag, the VOA analytical results should be considered estimated, but usable.

NOTE: 2) The data packages for this project contained no laboratory QC data for the CRDL standard for metals (Form 2B) and the Serial Dilutions of metals (Form 8). Therefore, no evaluation of the CRDL recoveries and the serial dilution results were performed by this data reviewer and no data were qualified as a result.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TICs at RT 4.73 and 6.34	R detects	Detects in Method Blank Library Search	TICs are rejected
RI-BH-4 2-5FT RI-BH-4D 2-5FT	Acenaphthene	UJ non-detects J detects	MS/MSD < QC limit	Data may be biased low

Table 6-3 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
RI-BH-1 4-6FT RI-BH-4 2-5FT RI-BH-4D 2-5FT RI-BH-8 2-4FT	All	J detects	No 2nd column confirmation	Detects should be considered estimated

Table 6-4 TAL Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
RI-BH-4-2-5FT RI-BH-4D 2-5F	Chromium Selenium	UJ non-detects J detects	MS < QC limit	Data may be biased low
RI-BH-4 2-5FT RI-BH-4D 2-5FT	Lead	J detects	MS > QC limit	Data may be biased high
RI-BH-4 2-5FT RI-BH-4D 2-5FT	Mercury	R detects	MS >200%	Data is rejected
RI-BH-4 2-5FT RI-BH-4D 2-5FT	Cadmium Chromium Lead Managnese Silver	J detects	RPD Field Dups > 35 %	Data is estimated
RI-BH-4 2-5FT RI-BH-4D 2-5FT	Mercury	R detects	RPD Field Dups >120%	Data is rejected

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

Validated Analytical Results

LAB PROJECT NARRATIVE: 180461
PROJECT NAME: 68 Tonawanda St.
SDG: 0461-01
CLIENT: Panamerican Environmental Consultants

Eighteen Soil Samples were collected by the client on 02/07/2018 and received at the Paradigm laboratory on 02/09/2018. Container and holding times were acceptable at time of receipt; the samples were received at 3° Centigrade and were on ice. The samples were submitted for the Part 375 list for VOCs, SVOCs, PCBs, and Metals. TICs were requested on the VOCs and the SVOCs. 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

The 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.

All surrogate recoveries for the samples and associated QC samples were within acceptance limits.

Site specific QC was not requested on this SDG. 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.

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

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.

SEMI-VOLATILES

Holding times were met for all samples.

All surrogate recoveries for the samples and the QC samples were within QC limits, except Nitrobenzene-d5 was out low in sample RI-BH-1 4-6Ft(Fill) and Terphenyl-d14 was out low in many of the samples (See the QC Summary Table for specifics). The outliers have been flagged with an "*" on the QC Summary Table and the sample reports accordingly. Matrix Interference is suspected.

Site specific QC was requested on sample RI-BH-4D 2-5Ft. Acenaphthene and 2,4-Dinitrophenol were out low and have been flagged with an "M" on the sample report and an "*" on the QC Summary Table if applicable accordingly. Matrix Interference is suspected. The Pyrene result was greater than ten times the Spike added so could not be calculated. The Laboratory Control Sample recovered within acceptance limits.

The method blank was 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.

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 on sample RI-BH-4D 2-5Ft. The Matrix Spike, Matrix Spike Duplicate, and the Laboratory Control Samples recovered within acceptance limits. The RPDs were within acceptance limits.

The extract for RI-BH-8 2-4Ft. required a Copper Clean-up to address possible Sulfur interference. Additional method blanks have been analyzed and included for this reason. All method blanks were free from contamination within the reportable ranges.

All data for the initial calibrations were within acceptance limits. The internal acceptance criteria for the initial calibrations was 0.99 or better for each peak.

All continuing calibration data was within acceptable QC limits except, except the closing CCVs for samples analyzed for PCBs on 1/31 and 2/2 were out low. The same sample set was analyzed both dates so the CCV failure due to Matrix Interference was verified. The raw data for the initial or repeat run has been supplied after the raw data for the reported run. No further evaluation of this data or corresponding summary forms has been made. Additionally, for Pesticides, DCBP was out high in CCV 2/5 on the A column.

The Aroclor 1254 and 1260 hits were confirmed on a second column. Raw data for the confirmations is supplied after the raw data for the reported results. No further evaluation of this data has been made. As the Aroclors appear to be representative of this site, no further confirmations will be run unless sample profile changes.

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 on sample RI-BH-4D 2-5Ft. Any of the requested metals that were outside QC limits for the Matrix Spike Recoveries and/or the Sample Duplicate Percent Differences 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 range.

All data for the initial calibrations was within acceptance limits.

All continuing calibrations data was within acceptance limits.

(signed)_____ (date) 3/8/2018

Bruce Hoogesteger- President

BATCH LOG

Lab Name: Paradigm Environmental Services
Lab Project #: 180461
Client Name: Panamerican Environmental Consultants
Client Project Name: 68 Tonawanda St
Client Project #: N/A
SDG No.: 0461-01

Protocol: SW846 Report Due Date: 2/22/2018 Batch Due Date: 3/11/2018

LAB SAMPLE NO.	MATRIX	CLIENT SAMPLE ID	REQUESTED ANALYSIS	DATE SAMPLED	DATE REC'D
180461-01	Soil	RI-BH-1 4-6 Ft (Fill)	Pt.375 Mets, SVOA+TICs, PCB	2/7/2018	2/9/2018
180461-02	Soil	RI-BH-1 8-12 Ft (Native)	Pt.375 Mets, SVOA+TICs, VOA+TICs, PCB	2/7/2018	2/9/2018
180461-03	Soil	RI-BH-2 0-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-04	Soil	RI-BH-3 1-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-05	Soil	RI-BH-4 2-5 Ft	Pt.375 Mets, SVOA+TICs, PCB	2/7/2018	2/9/2018
180461-06	Soil	RI-BH-4 6-8 Ft (Native)	Pt.375 Mets, SVOA+TICs, PCB	2/7/2018	2/9/2018
180461-07	Soil	RI-BH-4D 2-5 Ft Site QC	Pt.375 Mets, SVOA+TICs, PCB	2/7/2018	2/9/2018
180461-08	Soil	RI-BH-5 1-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-09	Soil	RI-BH-6 1-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-10	Soil	RI-BH-7 2-6 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-11	Soil	RI-BH-8 2-4 Ft	Pt.375 Mets, SVOA+TICs, PCB	2/7/2018	2/9/2018
180461-12	Soil	RI-BH-9 1-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-13	Soil	RI-BH-10 3-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-14	Soil	RI-BH-11 2-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-15	Soil	RI-BH-12 2-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-16	Soil	RI-BH-12 4.5 Ft	Pt.375 VOA+TICs	2/7/2018	2/9/2018
180461-17	Soil	RI-BH-13 3-4.5 Ft	Pt.375 Mets	2/7/2018	2/9/2018
180461-18	Soil	RI-BH-14 2-4 Ft	Pt.375 Mets	2/7/2018	2/9/2018

1 of 3

SHEET 1 OF 2

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:	
CLIENT:	BE3 Partnership	CLIENT:	LAB PROJECT ID: 180461
ADDRESS:	1270 Niagara St	ADDRESS: SAME	
CITY: Buffalo STATE: NY ZIP: 14092 14213		CITY: STATE: ZIP:	Quotation #:
PHONE:	716-308-8220	PHONE:	Email:
ATTN:	Pete Gorton	ATTN:	

PROJECT REFERENCE

68 Tonawanda St

Matrix Codes:

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

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	375 Metals	SVOCs	PCBs	TICs	VOCs						REMARKS	PARADIGM LAB SAMPLE NUMBER
2-7-18	9:00		X	RI-BH-1 4-6 FT	SO	1	X	X	X	X							Fill	01
	900		X	RI-BH-1 8-12FT	SO	2	X	X	X	X	X						Native	02
	~~400~~		~~X~~	~~RI-BH-1V 8-12FT~~	~~SO~~	~~1~~					X						~~Native~~	
	945		X	RI-BH-2 0-4 FT	SO	1	X											03
	1030		X	RI-BH-3 1-4 FT	SO	1	X											04
	1050		X	RI-BH-4 2-5 FT	SO	1	X	X	X	X								05
	1050		X	RI-BH-4 6-8 FT	SO	1	X	X	X	X							Native	06
↓	1100		X	RI-BH-4D 2-5 FT	SO	1	X	X	X	X							MS/MSD	07
	~~1100~~		~~X~~	~~RI-BH-4D 6-8 FT~~	~~SO~~	~~1~~	X	X	X	X							Native SP 2/9/18	
	1130		X	RI-BH-5 1-4 FT	SO	1	X										AB	08

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☒		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed:	☐

Alex Brennan

Sampled By: [signature] Date/Time: 2/7/18

Relinquished By: [signature] Date/Time: 2/8/18

Received By: [signature] Date/Time: 2/8/18

Received @ Lab By: [signature] Date/Time: 2/9/18 10:07

Total Cost:

P.I.F.

3°C iced 2/9/18 0907. Custody Seal intact, signed, dated. SP 2/9/18

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

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

2 of 3

CHAIN OF CUSTODY

SHEET 2 OF 2

REPORT TO:		INVOICE TO:		LAB PROJECT ID
CLIENT:	BE3/Panamerican	CLIENT:		180461
ADDRESS:	1270 Niagara St	ADDRESS:	SAME	Quotation #:
CITY:	Buffalo STATE: NY ZIP: 14213	CITY:	STATE: ZIP:	Email:
PHONE:	716-308-8220	PHONE:		
ATTN:	Pete Gorton	ATTN:		

PROJECT REFERENCE

68 Tonawanda St

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

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	REQUESTED ANALYSIS: 375 Metals	375 SVOCs	PCBs	TICs	VOCs	REMARKS	PARADIGM LAB SAMPLE NUMBER
2/7/18	1215		X	RI-BH-6 1-4FT	SO	1	X						09
	1245		X	RI-BH-7 2-6FT	SO	1	X						10
	1315		X	RI-BH-8 2-4FT	SO	1	X	X	X	X			11
	1410		X	RI-BH-9 1-4FT	SO	1	X						12
	1440		X	RI-BH-10 3-4FT	SO	1	X						13
	1500		X	RI-BH-11 2-4FT	SO	1	X						14
	1520		X	RI-BH-12 2-4FT	SO	1	X						15
	1520		X	RI-BH-12 4.5FT	SO	1					X		16
	1545		X	RI-BH-13 3-4.5FT	SO	1	X						17
	1600		X	RI-BH-14 2-4FT	SO	1	X						18

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	☐	None Required	☐	None Required ☐
10 day	☒	Batch QC	☐	Basic EDD ☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD ☒
Rush 2 day	☐	Category B	☒	
Rush 1 day	☐			
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed: ☐

Alex Brennen	2/7/18	Total Cost:
Sampled By	Date/Time	
[signature]	2/8/18	
Relinquished By	Date/Time	
[signature]	2/9/18	
Received By	Date/Time	P.I.F.
[signature]	2/9/18 10:07	
Received @ Lab By	Date/Time	

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

See additional page for sample conditions.

DATA USABILITY SUMMARY REPORT (DUSR)

68 Tonawanda St.
Buffalo, NY
NYSDEC BCP # C915316

SDG: 0573-01

9 soil samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

March 2018

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

Table of Contents

Tables

REVIEWER'S NARRATIVE
SDG 0573-01

The data associated with this Sample Delivery Group (SDG) 0573-01, 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: 3/28/18

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	68 Tonawanda St. Buffalo, NY
SAMPLING DATE:	February 13, 2018
SAMPLE TYPE:	9 soil samples
LABORATORY:	Paradigm Environmental Services, Inc. Rochester, NY
SDG No.:	0573-01

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 nine soil samples collected on February 13, 2018. These samples were analyzed for Part 375 Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, and Metals.

All analyses were performed by Paradigm Environmental Services, Inc., Rochester, NY and analyzed as SDG 0573-01. 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.

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.

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

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

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality 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 6-4. 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 0573-01, nine samples were analyzed and results were reported for 820 analytes. No results were rejected. Even though some results were flagged with a "J" as estimated, all results (100%) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

NOTE: 1) As noted by the laboratory, the soil samples were not collected following SW846 5035A protocol. This adds an element of uncertainty to the analytical results for volatile organic analytes (VOAs). Although not specifically indicated on the final data sheets with a "J" flag, the VOA analytical results should be considered estimated, but usable.

NOTE: 2) The data packages for this project contained no laboratory QC data for the CRDL standard for metals (Form 2B) and the Serial Dilutions of metals (Form 8). Therefore, no evaluation of the CRDL recoveries and the serial dilution results were performed by this data reviewer and no data were qualified as a result.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
none			none	

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TICs at RT 4.58 and 6.20	R detects	Detects in Method Blank Library Search	TICs are rejected
RI-TP-4 4-5FT RI-TP-4D 4-5FT	Pyrene	UJ non-detects J detects	MS/MSD < QC limit	Data may be biased low

Table 6-3 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
RI-TP3 2-4FT	All	none	Surrogate rec diluted out	No determination could be made
RI-TP-2 2-4FT RI-TP-3 2-4FT	All	J detects	No 2nd column confirmation	Detects should be considered estimated

Table 6-4 TAL Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
RI-TP-4 4-5FT RI-TP-4D 4-5FT	Mercury	UJ non-detects J detects	MS < QC limit	Data may be biased low
RI-TP-4 4-5FT RI-TP-4D 4-5FT	Lead Zinc	J detects	MS > QC limit	Data may be biased high
RI-TP-4 4-5FT RI-TP-4D 4-5FT	Arsenic Cadmium Chromium Lead Zinc	J detects	RPD Lab Dups > 35 %	Data is estimated
RI-TP-4 4-5FT RI-TP-4D 4-5FT	Arsenic Mercury	J detects	RPD Field Dups > 35 %	Data is estimated

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

Validated Analytical Results

LAB PROJECT NARRATIVE: 180573
PROJECT NAME: 68 Tonawanda St.
SDG: 0573-01
CLIENT: Panamerican Environmental Consultants

Nine Soil Samples were collected by the client on 02/13/2018 and received at the Paradigm laboratory on 02/16/2018. Container and holding times were acceptable at time of receipt; the samples were received at 4° Centigrade and were on ice. The samples were submitted for the Part 375 list for VOCs, SVOCs, PCBs, and Metals. TICs were requested on the VOCs and the SVOCs. 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

The 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.

All surrogate recoveries for the samples and associated QC samples were within acceptance limits.

Site specific QC was not requested on this analytical fraction. The Laboratory Control Sample recovered within acceptance limits.

The method blank was free from contamination within the reportable ranges.

The instrument tunes passed all criteria.

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

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.

SEMI-VOLATILES

Holding times were met for all samples.

All surrogate recoveries for the samples and the QC samples were within QC limits, except Terphenyl-d14 was out low in samples RI-TP6 4-5Ft and RI-TP2 6Ft(Native). This outlier has been flagged with an "*" on the QC Summary Table and the sample reports accordingly. Matrix Interference is suspected.

Site specific QC was requested on sample RI-TP4D 4-5Ft. Pyrene was out low and has been flagged with an "M" on the sample report and an "*" on the QC Summary Table accordingly. Matrix Interference is suspected. The Laboratory Control Sample recovered within acceptance limits.

The method blank was free from contamination within the reportable ranges, except two Unknown TICs. If these TICs were present in the associated samples, they have been flagged with a "B" accordingly.

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 Atrazine was out low in all of the CCVs, Hexachlorocyclopentadiene, 2,4-Dinitrophenol, and 4,6-Dinitro-2-methylphenol were out low in CCV 2/22, and Benzaldehyde was out high in the reference associated with this CCV. The low outliers were assessed for adequate sensitivity at the reporting limit by a 10ppm standard. This is usable for determination of "Non-Detects" only. The high outlier was usable for Non-Detects only. All of the associated samples were Non-Detect for this compound.

PCBS

Holding times were met for all samples.

The surrogate recoveries for the samples and the associated QC were within acceptable limits. Sample RI-TP3 2-4Ft required a dilution so the surrogates were diluted out, reported as a "D" on the QC Summary Form, and could not be evaluated.

Site specific QC was requested on sample RI-TP4D 4-5Ft. The Matrix Spike, Matrix Spike Duplicate, and the Laboratory Control Samples recovered within acceptance limits. The RPDs were within acceptance limits.

The extract for RI-TP2 2-4Ft. required a Copper Clean-up to address possible Sulfur interference. Additional method blanks have been analyzed and included for this reason. All method blanks were free from contamination within the reportable ranges.

All data for the initial calibrations were within acceptance limits. The internal acceptance criteria for the initial calibrations was 0.99 or better for each peak.

All continuing calibration data was within acceptable QC limits.

The Aroclor 1248 and 1260 hits were confirmed on a second column. Raw data for the confirmations is supplied after the raw data for the reported results. No further evaluation of this data has been made. As the Aroclors appear to be representative of this site, no further confirmations will be run unless sample profile changes.

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 on sample RI-TP4D 4-5Ft. Any of the requested metals that were outside QC limits for the Matrix Spike Recoveries and/or the Sample Duplicate Percent Differences 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 range.

All data for the initial calibrations was within acceptance limits.

All continuing calibrations data was within acceptance limits.

(signed) _____ (date) 3/15/2018

Bruce Hoogesteger- President

BATCH LOG

Lab Name: Paradigm Environmental Services
Lab Project #: 180573
Client Name: Panamerican Environmental Consultants
Client Project Name: 68 Tonawanda St.
Client Project #: N/A
SDG No.: 0573-01

Protocol: SW846 Report Due Date: 2/28/2018 Batch Due Date: 3/18/2018

LAB SAMPLE NO.	MATRIX	CLIENT SAMPLE ID	REQUESTED ANALYSIS	DATE SAMPLED	DATE REC'D
180573-01	Soil	RI-TP4 4-5 Ft	Pt.375 Mets, SVOA+TICs, PCB	2/13/2018	2/16/2018
180573-02	Soil	RI-TP4D 4-5 Ft	Pt.375 Mets, SVOA+TICs, PCB	2/13/2018	2/16/2018
180573-03	Soil	RI-TP5 1-4 Ft	Pt.375 Mets	2/13/2018	2/16/2018
180573-04	Soil	RI-TP5 4-5 Ft	Pt.375 VOA+TICs	2/13/2018	2/16/2018
180573-05	Soil	RI-TP6 4-5 Ft	Pt.375 VOA+TICs, SVOA+TICs	2/13/2018	2/16/2018
180573-06	Soil	RI-TP1 2-4 Ft	Pt.375 Mets, ~~SVOA+TICs, PCB~~	2/13/2018	2/16/2018
180573-07	Soil	RI-TP2 2-4 Ft	Pt.375 Mets, SVOA+TICs, PCB	2/13/2018	2/16/2018
180573-08	Soil	RI-TP2 6 Ft (Native)	Pt.375 Mets, SVOA+TICs, PCB	2/13/2018	2/16/2018
180573-09	Soil	RI-TP3 2-4 Ft	Pt.375 Mets, SVOA+TICs, PCB	2/13/2018	2/16/2018

MKD 3/27/18

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

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CHAIN OF CUSTODY

PARADIGM

REPORT TO:		INVOICE TO:		
CLIENT:	BE3 RENAISSANCE	CLIENT:		LAB PROJECT ID: 180573
ADDRESS:	1210 NIAGARA ST	ADDRESS:		
CITY:	BUFFALO STATE: NY ZIP: 14213	CITY: STATE: ZIP:		Quotation #:
PHONE:	716-308-8220	PHONE:		Email:
ATTN:	PETER J GORTON	ATTN:		

PROJECT REFERENCE: 68 TONAWANDA ST

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

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	REQUESTED ANALYSIS: 8TS Metals	SVOCs	PCBs	VOCs	TICs	REMARKS	PARADIGM LAB SAMPLE NUMBER
2-13-18	800		X	RI-TP4 4-5FT	SO	1	X	X	X		X		01
	805		X	RI-TP4D 4-5FT		1	X	X	X		X	MS/MSD	02
	950		X	RI-TP5 1-4FT		1	X						03
	955		X	RI-TP5 4-5FT		1				X	X	VOC only 1-3ppm Odor	04
	1040		X	RI-TP6 4-5FT		2		X	X	X		3-10ppm PID, Odor	05
	1120		X	RI-TP2 2-4FT		1	X						06
	1245		X	RI-TP2 2-4FT		1	X	X	X		X		07
	1247		X	RI-TP2 6FT		1	X	X	X		X	NATIVE	08
	115		X	RI-TP3 2-4FT		1	X	X	X		X		09

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☐
Rush 2 day	☐	Category B	☒		
Rush 1 day	☐	per JB email 6@ 2/16/18			
Other	☐	Other	☐	Other EDD	☐
please indicate date needed: 2/21/18		please indicate package needed:		please indicate EDD needed:	

PETER J GORTON	2-13-18 7:2	Total Cost:
Sampled By	Date/Time	
Relinquished By	2-14-18 8:00 Date/Time	
Received By	2-14-18 8:00 Date/Time	P.I.F.
Received @ Lab By	2/16/18 10:37 Date/Time	

4°C iced 2/15/18 14:34. No Custody Sal @ 2/16/18

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

See additional page for sample conditions.

DATA USABILITY SUMMARY REPORT (DUSR)

68 Tonawanda St.
Buffalo, NY
NYSDEC BCP # C915316

SDG: 0697-01

5 water samples and 1 trip blank

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

March 2018

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

Table of Contents

Tables

REVIEWER'S NARRATIVE
SDG 0697-01

The data associated with this Sample Delivery Group (SDG) 0697-01, 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: 3/30/18

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	68 Tonawanda St. Buffalo, NY
SAMPLING DATE:	February 23, 2018
SAMPLE TYPE:	5 water samples
LABORATORY:	Paradigm Environmental Services, Inc. Rochester, NY
SDG No.:	0697-01

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 five water samples collected on February 23, 2018. These samples were analyzed for Part 375 Volatile Organic Compounds, Semi-volatile Organic Compounds, PCBs, and Metals.

All analyses were performed by Paradigm Environmental Services, Inc., Rochester, NY and analyzed as SDG 0697-01. 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.

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.

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

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

The laboratory may also use various letters and symbols to flag analytical results generated when QC limits were exceeded. The meanings of these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality 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 6-4. 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 0697-01, five water samples and a trip blank were analyzed and results were reported for 836 analytes. No results were rejected. Even though some results were flagged with a "J" as estimated, all results (100%) are considered usable. See the summary table for the analyses that have been rejected and the associated QC reasons.

NOTE: 1) As noted by the laboratory, the soil samples were not collected following SW846 5035A protocol. This adds an element of uncertainty to the analytical results for volatile organic analytes (VOAs). Although not specifically indicated on the final data sheets with a "J" flag, the VOA analytical results should be considered estimated, but usable.

NOTE: 2) The data packages for this project contained no laboratory QC data for the CRDL standard for metals (Form 2B) and the Serial Dilutions of metals (Form 8). Therefore, no evaluation of the CRDL recoveries and the serial dilution results were performed by this data reviewer and no data were qualified as a result.

Table 6-1 VOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Acetone	J detects >CRQL < 10X CRQL	Detected in Trip Blank	Data > CRQL < 10X CRQL is estimated
All samples	Carbon Tetrachloride trans-1,3-Dichloropropene	UJ non-detects J detects	CCV > 20 % QC limit	Data is estimated

Table 6-2 SVOCs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	TICs at RT 19.27	R detects	Detects in Method Blank Library Search	TICs are rejected
All samples	Atrazine	UJ non-detects J detects	CCV > 40 % QC limit	Data is estimated

Table 6-3 PCBs

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
MW-3	All	J detects	No 2nd column confirmation	Detects should be considered estimated

Table 6-4 TAL Metals

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
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

Validated Analytical Results

LAB PROJECT NARRATIVE: 180697
PROJECT NAME: 68 Tonawanda St.
SDG: 0697-01
CLIENT: Panamerican Environmental Consultants

Five Groundwater Samples and One Trip Blank were collected by the client on 02/23/2018 and received at the Paradigm laboratory on 02/26/2018. Container and holding times were acceptable at time of receipt; the samples were received at 4° Centigrade and were on ice. The samples were submitted for the Part 375 list for VOCs, SVOCs, PCBs, and Metals. TICs were requested on the VOCs and the SVOCs. 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

Holding times were met for all samples.

All surrogate recoveries for the samples and associated QC samples were within acceptance limits.

Site specific QC was requested on sample MW-3. The Matrix Spike, Matrix Spike Duplicate, and the Laboratory Control Sample recovered within acceptance limits.

The method blank was free from contamination within the reportable ranges.

The instrument tunes passed all criteria.

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

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 Carbon Tetrachloride and trans-1,3-Dichloropropene were out high. All associated samples were Non-Detect for these compounds so no further action was needed.

SEMI-VOLATILES

Holding times were met for all samples.

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

Site specific QC was requested on sample MW-3 but could not be analyzed as there was insufficient sample submitted. The client was notified and gave the okay to proceed with the analyses. The Laboratory Control Sample recovered within acceptance limits.

The method blank was free from contamination within the reportable ranges, except Bis(2-ethylhexyl) phthalate had a low level "J" flagged hit of 6.65 ug/L and an Unknown Amide TIC at RT 19.27. The first mentioned compound was not present in any of the associated samples so it did not require any flagging. If the TIC was present in the associated samples, it has been flagged with a "B" accordingly.

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 Atrazine and Pentachlorophenol were out low in both of the CCVs, Hexachlorocyclopentadiene was out low in CCV 3/1 and Benzaldehyde was out high in both of the CCVs. The low outliers were assessed for adequate sensitivity at the reporting limit by a 10ppm standard. This is usable for determination of "Non-Detects" only. The high outlier was usable for Non-Detects only. All of the associated samples were Non-Detect for this compound.

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 on sample MW-3. The Matrix Spike, Matrix Spike Duplicate, and the Laboratory Control Sample recovered within acceptance limits. The RPD was within acceptance limits.

The method blank was free from contamination within the reportable ranges.

All data for the initial calibrations were within acceptance limits. The internal acceptance criteria for the initial calibrations was 0.99 or better for each peak.

All continuing calibration data was within acceptable QC limits.

The Aroclor 1260 hit was confirmed on a second column. Raw data for the confirmation is supplied after the raw data for the reported results. No further evaluation of this data has been made. As the Aroclor appears to be representative of this site, no further confirmations will be run unless sample profile changes.

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 on sample MW-3. The Matrix Spike Recoveries and the Sample Duplicate Percent Differences are within QC limits. 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 range.

All data for the initial calibrations was within acceptance limits.

All continuing calibrations data was within acceptance limits.

(signed)_____ (date) 3/21/2018

Bruce Hoogesteger- President

BATCH LOG

Lab Name: Paradigm Environmental Services
Lab Project #: 180697
Client Name: Panamerican Environmental Consultants
Client Project Name: 68 Tonawanda St.
Client Project #: N/A
SDG No.: 0697-01

Protocol: SW846 Report Due Date: 3/9/2018 Batch Due Date: 3/28/2018

LAB SAMPLE NO.	MATRIX	CLIENT SAMPLE ID	REQUESTED ANALYSIS	DATE SAMPLED	DATE REC'D
180697-01	Groundwater	MW-1	Pt.375 Mets, VOA+TICs, SVOA+TICs, PCB	2/23/2018	2/26/2018
180697-02	Groundwater	MW-2	Pt.375 Mets, VOA+TICs, SVOA+TICs, PCB	2/23/2018	2/26/2018
180697-03	Groundwater	MW-3	Pt.375 Mets, VOA+TICs, SVOA+TICs, PCB	2/23/2018	2/26/2018
180697-04	Groundwater	MW-4	Pt.375 Mets, VOA+TICs, SVOA+TICs, PCB	2/23/2018	2/26/2018
180697-05	Groundwater	20180223-FD-1	Pt.375 Mets, VOA+TICs, SVOA+TICs, PCB	2/23/2018	2/26/2018
180697-06	Water	Trip Blank	VOA+TICs	2/23/2018	2/26/2018

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

Sheet 1 of 1

1 of 2

CHAIN OF CUSTODY

180697

PARADIGM

REPORT TO:		INVOICE TO:		
CLIENT:	BE3 Corp / Panamerican	CLIENT:	Same	LAB PROJECT ID: 68 Tonawanda St.
ADDRESS:	1270 Niagara St.	ADDRESS:		Quotation #:
CITY:	Buffalo STATE: NY ZIP: 14213	CITY:	STATE: ZIP:	Email:
PHONE:	716-249-6880	PHONE:		
ATTN:		ATTN:		

PROJECT REFERENCE

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

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	375 Metals	375 SVOC	375 VOCs	375 PCBs	SVOC/Voc TICs	REMARKS	PARADIGM LAB SAMPLE NUMBER
2/23/18	1200		X	MW-1	WG	5	X	X	X	X	X	Part 375 Table	01
	1030		X	MW-2	WG								02
	1350		X	MW-3	WG							insufficient volume	03
	1545		X	MW-4	WG							for MS/MSD on SVOC	04
	—		X	20180223-FD-1	WG							ok to proceed w/out per AB	05
	1350		X	MS/MSD-MW-3	WG							SO 2/26	03
				Trip Blank	WA	1			X				06
				per Sample Label/TB method		GP 2/26/18							

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☒		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed:	☐

AB — Sampled By — 02/23/18 — Date/Time — Total Cost:

AB — Relinquished By — 02/23/18 — Date/Time — 4:30

James Atkins — Received By — 2/23/18 — Date/Time — 4:35 — P.I.F.

GP — Received @ Lab By — 2/26/18 — Date/Time — 14:53

4° Cited 2/26/18 11:40. No Custody Seal GP 2/26/18

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

See additional page for sample conditions.

DATA USABILITY SUMMARY REPORT (DUSR)

68 Tonawanda Street
Buffalo, NY
NYSDEC BCP # C915316

SDG: **C1802069**

9 air samples

Prepared for:

BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

April 2018

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

Table of Contents

Tables

REVIEWER'S NARRATIVE
SDG C1802069

The data associated with this Sample Delivery Group (SDG) C1802069, analyzed by Centek Laboratories, LLC Syracuse, 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: _____ Date: 4/3/18

Michael K. Perry
Chemist

1.0 SUMMARY

SITE:	68 Tonawanda Street Buffalo, NY
SAMPLING DATE:	February 20, 2018
SAMPLE TYPE:	9 - TO-15 air samples
LABORATORY:	Centek Laboratories, LLC. Syracuse, NY
SDG No.:	C1802069

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 9 air samples collected on February 20, 2018. These samples were analyzed for TO-15 volatile organic compounds.

All laboratory analyses were performed by Centek Laboratories, LLC, Syracuse, NY and analyzed as SDG C1802069. 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.

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

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

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

these flags may differ from those used by the independent data validator. Those used by the laboratory are provided with the analytical results.

NOTE: The assignment of data qualifiers by the data reviewer (validator) to laboratory analytical results should not necessarily be interpreted by the data user as a measure of laboratory ability or proficiency. Rather, the qualifiers are intended to provide a measure of data accuracy and precision to the data user, which, for example, may provide a level of confidence in determining whether or not standards or cleanup objectives have been met.

U The analyte was analyzed for but was not detected at or above the sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the *approximate* concentration of the analyte in the sample. (The magnitude of any ± value associated with the result is not determined by data validation).

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is *approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample result is rejected (i.e., is unusable) due to serious deficiencies in the ability to analyze the sample and meet quality 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 Table 6-1. 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 C1802069, nine samples were analyzed and results were reported for 576 analyses. Even though some results were flagged with a "J" as estimated, all results (100%) are considered usable. See the summary table for the flagged analytes and the associated QC reasons.

Table 6-1 TO-15

SAMPLES AFFECTED	ANALYTES	ACTION	QC VIOLATION	COMMENTS
All samples	Methyl Butyl Ketone	J detects	LCS >130 % and RPD > 30 %	Detected results are estimated
IA-01 IA-02	Acetone	J detects UJ non-detects	LCS < 70 %	All results are estimated
SS-01 SS-02 SS-03 SS-04 SS-05	Toluene Methyl Isobutyl Ketone Dibromochloromethane Methyl Butyl Ketone 1,2-Dibromoethane Tetrachloroethene Chlorobenzene Ethylbenzene m & p-Xylene Styrene Bromoform o-Xylene 1,1,2,2-Tetrachloroethane 4-Ethyltoluene 1,2,4-Trimethylbenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Benzyl Chloride 1,3,5-Trimethylbenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene	J detects	IS#3 area > 140 %	Detected results are estimated

SS-01 SS-05	1,1,1-Trchloroethane Cyclohexane Carbon Tetrachloride Benzene 1,4-Dioxane 2,2,4-Trimethylpentane Heptane Trichloroethene 1,2-Dichloropropane Bromodichloromethane cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane	J detects	IS#2 area > 140 %	Detected results are estimated
IA-01 IA-02	Methyl butyl Ketone	J detects UJ non-detects	CCV > 30 %	All results are estimated
All samples	Isopropyl Alcohol 2,2,4-Trimethylpentane	JN detects	Relative Intensity of characteristic ions not +/- 30 %	Compounds are tentatively identified and results are estimated
IA-01	Cyclohexane	JN detects	Relative Intensity of characteristic ions not +/- 30 %	Compound is tentatively identified and results are estimated

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

Validated Analytical Results

CENTEK LABORATORIES, LLC
143 Midler Park Drive * Syracuse, NY 13206
Phone (315) 431-9730 * Emergency 24/7 (315) 416-2752
NYSDOH ELAP Certificate No. 11830

Analytical Report

Alex Brennen
BE3/Panamerican
1270 Niagara Street
Buffalo, NY 14213

TEL: 716-821-1650
FAX
RE: 68 Tonawanda

Thursday, March 01, 2018
Order No.: C1802069

Dear Alex Brennen:

Centek Laboratories, LLC received 9 sample(s) on 2/23/2018 for the analyses presented in the following report.

I certify that this data package is in compliance with the terms and conditions of the Contract, both technically and for completeness. Release of the data contained in this hardcopy data package and/or in the computer readable data submitted has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the case narrative. All samples were received and analyzed within the EPA recommended holding times. Test results are not Method Blank (MB) corrected for contamination.

Centek Laboratories is distinctively qualified to meet your needs for precise and timely volatile organic compound analysis. We perform all analyses according to EPA, NIOSH or OSHA-approved analytical methods. Centek Laboratories is dedicated to providing quality analyses and exceptional customer service. Samples were analyzed using the methods outlined in the following references:

Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999.

Centek Laboratories SOP TS-80

Analytical results relate to samples as received at laboratory. We do our best to make our reporting format clear and understandable and hope you are thoroughly satisfied with our services.

Please contact your client service representative at (315) 431-9730 or myself, if you would like any additional information regarding this report.

CENTEK LABORATORIES, LLC

Date: *28-Mar-18*

CLIENT: BE3/Panamerican
Project: 68 Tonawanda
Lab Order: C1802069

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Centek Laboratories, LLC SOP TS-80
Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objective except as indicated in the corrective action report(s). All samples were received and analyzed within the EPA recommended holding times. Test results are not Method Blank (MB) corrected for contamination.

NYSDEC ASP samples:
Canisters should be evacuated to a reading of less than or equal to 50 millitorr prior to shipment to sampling personnel. The vacuum in the canister will be field checked prior to sampling, and must read 28" of Hg (±2", vacuum, absolute) before a sample can be collected. After the sample has been collected, the pressure of the canister will be read and recorded again, and must be 5" of Hg (±1", vacuum, absolute) for the sample to be valid. Once received at the laboratory, the canister vacuum should be confirmed to be 5" of Hg,±1". Please record and report the pressure/vacuum of received canisters on the sample receipt paperwork. A pressure/vacuum reading should also be taken just prior to the withdrawal of sample from the canister, and recorded on the sample preparation log sheet. All regulators are calibrated to meet these requirements before they leave the laboratory. However, due to environmental conditions and use of the equipment Centek can not guarantee that this criteria can always be achieved.

See Corrective Action: [3688] IS did not meet criteria.
See Corrective Action: [3689] CC did not meet criteria.

Centek Laboratories, LLC

Corrective Action Report

Date Initiated: 27-Feb-18
Initiated By: Russell Pellegrino
Corrective Action Report ID: 3688
Department: MSVOA

Corrective Action Description

CAR Summary: IS did not meet criteria.

Description of Nonconformance Root/Cause(s): IS was high and did not meet criteria for samples C1802069-001,004,005. Based on the chromatographic evidence, it appears that the contamination is from a high concentration of interfering compounds.

Description of Corrective Action w/Proposed C.A.: Samples were analyzed further as a dilution with criteria being met. Due to matrix being in a canister it is difficult to see any signs of problems. All sets of data submitted.

Performed By: Russell Pellegrino
Completion Date: 01-Mar-18

Client Notification

Client Notification Required: No
Notified By:
Comment:

Quality Assurance Review

Nonconformance Type: Deficiency

Further Action required by QA: Monitor all quality control for sample matrix interference. At this time no further corrective action taken. All sets of data submitted.

Approval and Closure

Technical Director / Deputy Tech. Dir.: William Dobbin
Close Date: 03-Mar-18

QA Officer Approval: Nick Scala
QA Date: 03-Mar-18

Last Updated BY russ **Updated:** 28-Mar-2018 11:32 AM **Reported:** 28-Mar-2018 11:32 A

Centek Laboratories, LLC

Corrective Action Report

Date Initiated: 26-Feb-18
Initiated By: Russell Pellegrino
Corrective Action Report ID: 3689
Department: MSVOA

Corrective Action Description

CAR Summary: CC did not meet criteria.

Description of Nonconformance Root/Cause(s): Continuing calibration did not meet criteria on 2/28/18 for MBK. The compound was more sensitive in the CC. The compounds in question was found in the associated samples at a trace level.

Description of Corrective Action w/Proposed C.A.: Since the compounds of interest was found in the associated sample, results should be considered bias high. If compounds remain outside criteria perform system calibration. All sets of data submitted.

Performed By: Russell Pellegrino
Completion Date: 28-Feb-18

Client Notification

Client Notification Required: No
Notified By:
Comment:

Quality Assurance Review

Nonconformance Type: Deficiency

Further Action required by QA: Recalibrate the system ASAP if compound remains outside criteria. Monitoring of all quality control remains post initial calibration. All sets of data submitted.

Approval and Closure

Technical Director / Deputy Tech. Dir.: WM Dobbin
William Dobbin
Close Date: 02-Mar-18

QA Officer Approval: Nick Scala
QA Date: 02-Mar-18

Last Updated BY russ
Updated: 28-Mar-2018 11:33 AM
Reported: 28-Mar-2018 11:33 A

Centek Labs - Chain of Custody

Centek Laboratories
143 Midler Park Drive
Syracuse, NY 13206
315-431-9730
www.CentekLabs.com
Vapor Intrusion & IAQ

Site Name: 68 Tonawanda
Project: 68 Tonawanda St
PO#:
Quote # Q-
Canister Order #: SP / 17059

Detection Limit: ☐ 5ppbv ☑ 1ug/M3 ☑ 1ug/M3 + 0.2 NYS

Report Level: ☐ Level I ☐ Level II ☒ Cat "B" Like

TAT Turnaround Time:	Check One	Rush TAT Surcharge %	Due Date:
5 Business Days	☒	0%	
4 Business Days	☐	25%	
3 Business Days	☐	50%	
2 Business Days	☐	75%	
*Next Day by 5pm	☐	100%	
*Next Day by Noon	☐	150%	
*Same Day	☐	200%	

*For Same and Next Day TAT Please Notify Lab

Company: BE3/PANAMERICAN
Report to:
Address: 1270 Niagara St
City, State, Zip: Buffalo, NY, 14213
Email: abrennan@be3corp.com
Phone: 716-249-6580

Company:
Check Here If Same: ☒
Invoice to:
Address:
City, State, Zip
Email:
Phone:

Sample ID	Date Sampled	Canister Number	Regulator Number	Analysis Request	Field Vacuum Start / Stop	Labs Vacuum** Rec'd/Analysis	Comments
SS-01	2/20/18	494	395	TO-15	-30 / -4	-4 / -4	Start time: 1256
SS-02		617	175		-30 / -3	-3 / -3	" : 1248
SS-03		644	144		-30 / -0.5	- / -1	" : 1304
SS-04		580	156		-30 / 0	- / -1	" : 1311
SS-05		542	145		-30 / -4	-4 / -4	" : 1515
IA-01		639	111		-30 / -17	-17 / -17	" : 1258
IA-02		99	146		-28 / -0.5	- / -1	" : 1307
OA-02		203	379		-28 / -10	-10 / -10	" : 1310
20180220-FD-1		1015	175		-30 / -3	-3 / -3	" : 1304
					/	/	
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					/	/	

Chain of Custody	Print Name	Signature	Date/Time	Courier: CIRCLE ONE
Sampled by:	Alex Brennan	ABrennan	2/21/18 / 1215	FedEx UPS Pickup/Dropoff
Relinquished by:				**For LAB USE ONLY
Received at Lab by:	Nick Mandarino		2-23-18	Work Order # C1802069

*** By signing Centek Labs Chain of Custody, you are accepting Centek Labs Terms and Conditions listed on the reverse side.

APPENDIX E

PHOTOGRAPHS

BE3/PANAMERICAN Photolog

Date: 2/7/18

1. Location of Boring RI-1 in south end of building facing north; note date on photos is incorrect

2. Location of RI-1 facing south

3. Hole in southern most bay floor

4. Soil cores RI-1

BE3/PANAMERICAN Photolog

Date: 2/7/18

5. Location of RI-2 facing north

6. Location of RI-2 facing southeast

7. Soil cores boring RI-3

8. Location of RI-3 facing southeast

BE3/PANAMERICAN Photolog

Date: 2/7/18

9. Location of RI-3 facing southeast

10. Soil cores RI-3

11. Location of borehole RI-4 facing north-northeast

12. Location of RI-4 facing south-southeast

BE3/PANAMERICAN Photolog

Date: 2/7/18

13. Soil cores RI-4

14. Location of borehole RI-5 facing north

15. Location of Boring RI-5 facing south-southeast

16. Soil cores RI-5

BE3/PANAMERICAN Photolog

Date: 2/7/18

17. Location of Borehole RI-6 facing south

18. Location of Boring RI-6 facing north-northeast

19. Soil cores RI-6

20. Location of Borehole RI-7 facing north-northeast

BE3/PANAMERICAN Photolog

Date: 2/7/18

21. Location of Boring RI-7 facing south

22. Soil cores RI-7

23. Location of Boring RI-8 facing south

24. Location of RI-8 facing north

BE3/PANAMERICAN Photolog

Date: 2/7/18

25. Location of Borehole BH-RI-9; northern Building end

26. Location of RI-9

27. Soil Cores RI-9

28. Location of borehole RI-10 facing east

BE3/PANAMERICAN Photolog

Date: 2/7/18

29. Location of RI-10 facing south

30. Soil cores RI-10

31. Location of Borehole RI-11 facing east

32. Location of RI-11 facing south

BE3/PANAMERICAN Photolog

Date: 2/7/18

33. Soil Cores RI-11

34. Location of borehole RI-12 facing west; located in northwest corner of property

35. Location of RI-12 facing south from adjacent northern property

36.Soil cores RI-12

BE3/PANAMERICAN Photolog

Date: 2/7/18

37.Location of borehole RI-13 facing south

38. Location of TP-13 facing east

39. Soil cores RI-13

40. View of borehole RI-14 facing south

BE3/PANAMERICAN Photolog

Date: 2/7/18 & 2/13/18

41. Location of RI-14 facing east

42. Location of test pit TP-4 facing east; southwest corner of building

43. View of TP-4 at 3-5 feet

44. View of completed TP-4

BE3/PANAMERICAN Photolog

Date: 2/13/18

45. Location of Test Pit – TP-5 facing east

46. View of location of TP-5 facing southeast

47. View of TP-5 at 5-6 feet

48. Completed TP-5

BE3/PANAMERICAN Photolog

Date: 2/13/18

49. Location of TP-6 facing southeast

50. View of completed TP-6

51. View of excavated clay-gravel interface material from TP-6

52. Location of Test Pit – TP-1 facing west; northern border of property

BE3/PANAMERICAN Photolog

Date: 2/13/18

53. View of TP-1 facing southeast

54. View of location of Test Pit- TP-1 facing north

55. View of TP-1 excavated material; wood, brick and pieces of concrete

56. View of completed TP-1

BE3/PANAMERICAN Photolog

Date: 2/13/18

57. Location TP-2 facing east

58. View of TP-2 facing south

59. Completed TP-2

60. Location of TP-3 facing southeast

BE3/PANAMERICAN Photolog

Date: 2/13/18 & 2/20/18

61. View of partially completed TP-3 and excavated materials

62. View of completed TP-3

63. Excavated materials from TP-3

64. SS-01 location facing south (Date: 2/22/18)

BE3/PANAMERICAN Photolog

Date: 2/20/18

65. SS-01 location facing facing southeast.

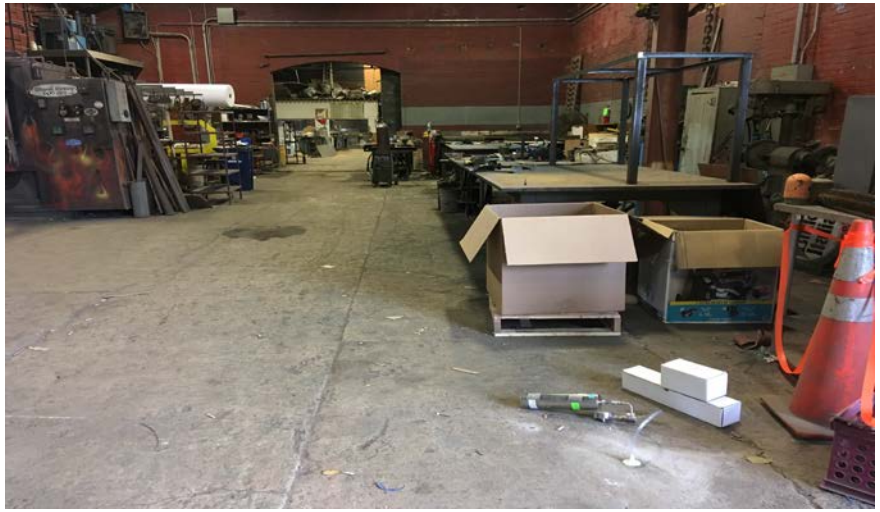
66. SS-02 and 20180222-FD-1 location facing west

67. SS-02 and 20180222-FD-1 location facing south

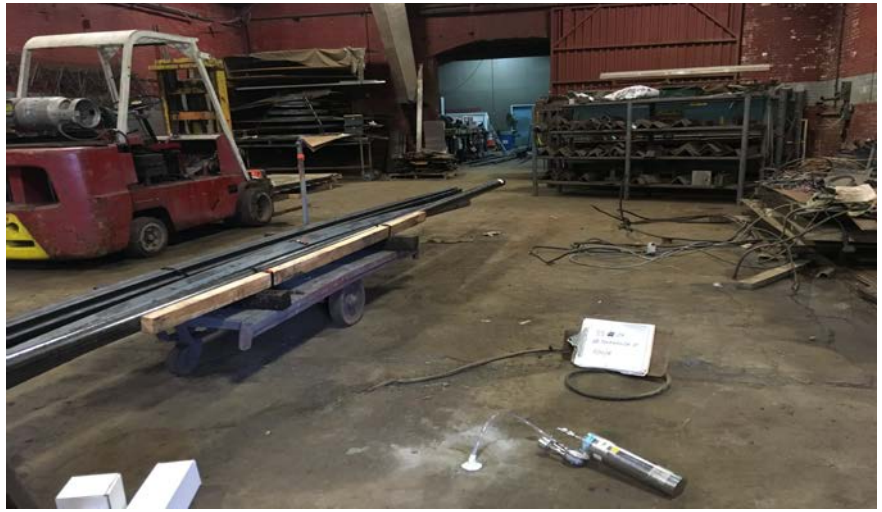
68. SS-03 location facing west

BE3/PANAMERICAN Photolog

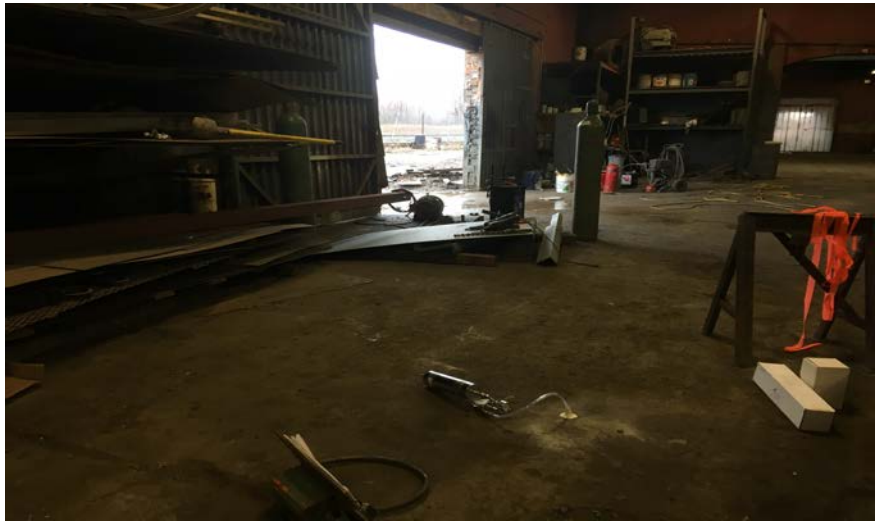
Date: 2/20/18



69. SS-03 location facing south



70. SS-04 location facing south



71. SS-04 location facing northwest

72. SS-05 location facing north

BE3/PANAMERICAN Photolog

Date: 2/20/18 & 2/23/18

73. IA-01 location in northern office, facing southeast

74. IA-02 location in southern office, facing southwest

75. OA-01 location, south end of building, facing southwest

76. MW-1 location and low flow pump sampling set up, facing south

BE3/PANAMERICAN Photolog

Date: 2/20/18

77. MW-1 location and low flow pump sampling set up, facing east

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APPENDIX F

NYSDOH VAPOR INTRUSION MATRICES

Soil Vapor/Indoor Air Matrix A

May 2017

Analytes Assigned:
Trichloroethene (TCE), *cis*-1,2-Dichloroethene (*c*12-DCE), 1,1-Dichloroethene (11-DCE), Carbon Tetrachloride

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)		
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 0.2	0.2 to < 1	1 and above
< 6	1. No further action	2. No Further Action	3. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX A

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.20 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

Soil Vapor/Indoor Air Matrix B

May 2017

Analytes Assigned:
Tetrachloroethene (PCE), 1,1,1-Trichloroethane (111-TCA), Methylene Chloride

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)		
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 3	3 to < 10	10 and above
< 100	1. No further action	2. No Further Action	3. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX B

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of soil vapor contamination, nor does it preclude remediating contaminated soil vapor or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 1 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples and dirt floor soil vapor samples, a minimum reporting limit of 1 microgram per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

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[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

Soil Vapor/Indoor Air Matrix C

May 2017

Analytes Assigned:
Vinyl Chloride

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)	
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 0.2	0.2 and above
< 6	1. No further action	2. IDENTIFY SOURCE(S) and RESAMPLE or MITIGATE
6 to < 60	3. MONITOR	4. MITIGATE
60 and above	5. MITIGATE	6. MITIGATE

No further action: No additional actions are recommended to address human exposures.

Identify Source(s) and Resample or Mitigate: We recommend that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges. For example, if an indoor or outdoor air source is identified, we recommend the appropriate party implement actions to reduce the levels. In the event that indoor or outdoor sources are not readily identified or confirmed, resampling (which might include additional sub-slab vapor and indoor air sampling locations) is recommended to demonstrate that SVI mitigation actions are not needed. Based on the information available, mitigation might also be recommended when soil vapor intrusion cannot be ruled out.

Monitor: We recommend monitoring (sampling on a recurring basis), including but not necessarily limited to sub-slab vapor, basement air and outdoor air sampling, to determine whether concentrations in the indoor air or sub-slab vapor have changed and/or to evaluate temporal influences. Monitoring might also be recommended to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined based on site-, building- and analyte-specific information, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

Mitigate: We recommend mitigation to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

These general recommendations are made with consideration being given to the additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX C

This matrix summarizes actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate analyte-specific, building-specific conditions (e.g., dirt floor in basement, crawl spaces, thick slabs, current occupancy, etc.), and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, collection of additional samples may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Mitigation might be recommended when the results of multiple contaminants indicate monitoring is recommended. Proactive actions may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action might be undertaken for reasons other than public health (e.g., seeking community acceptance, reducing costs, etc.). However, actions implemented *in lieu* of sampling will typically be expected to be captured in the final engineering report and site management plan, and might not rule out the need for post-implementation sampling (e.g., to document effectiveness or to support terminating the action).

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[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions might be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including but not limited to the following: the identified source of the volatile chemicals, the environmental remediation program, and analyte-specific, site-specific and building-specific factors.

APPENDIX G

DER-10 APPENDIX 3C FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS DECISION KEY

68 Tonawanda Street Site

Appendix 3C Fish and Wildlife Resources Impact Analysis Decision Key		If YES Go to:	If NO Go to:
1	Is the site or area of concern a discharge or spill event?	13	2
2.	Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas.	13	3
3.	Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?	4	9
4.	Does the site contain habitat of an endangered, threatened or special concern species?	Section 3.10.1	5
5.	Has the contamination gone off-site?	6	14
6.	Is there any discharge or erosion of contamination to surface water or the potential for discharge or erosion of contamination?	7	14
7.	Are the site contaminants PCBs, pesticides or other persistent, bioaccumulable substances?	Section 3.10.1	8
8.	Does contamination exist at concentrations that could exceed ecological impact SCGs or be toxic to aquatic life if discharged to surface water?	Section 3.10.1	14
9.	Does the site or any adjacent or downgradient property contain any of the following resources? i. Any endangered, threatened or special concern species or rare plants or their habitat ii. Any DEC designated significant habitats or rare NYS Ecological Communities iii. Tidal or freshwater wetlands iv Stream, creek or river v Pond, lake, lagoon vi. Drainage ditch or channel vii. Other surface water feature viii. Other marine or freshwater habitat ix. Forest x. Grassland or grassy field xi. Parkland or woodland xii. Shrubby area xiii. Urban wildlife habitat xiv Other terrestrial habitat	11	10
10.	Is the lack of resources due to the contamination?	3.10.1	14
11.	Is the contamination a localized source which has not migrated and will not migrate from the source to impact any on-site or off-site resources?	14	12
12.	Does the site have widespread surface soil contamination that is not confined under and around buildings or paved areas?	Section 3.10.1	12
13.	Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened or special concern species or other fish and wildlife resource? (See #9 for list of potential resources. Contact DEC for information regarding endangered species.)	Section 3.10.1	14
14.	No Fish and Wildlife Resources Impact Analysis needed.		✓

APPENDIX H

REMEDIAL ALTERNATIVES COST ESTIMATES

68 TONAWANDA STREET SITE
REMEDIAL ALTERNATIVE COST ESTIMATES

Assumptions:
1) - Conversion factor of cubic yards of soil/stone to tons is 1.5

ALTERNATIVE 1 - REMEDIATE TO TRACK 4 - RESTRICTED RESIDENTIAL			
Item	**Unit Cost**	**Quantity**	**Total**
Mobilization/Demobilization/Survey (LS)	$10,000.00	1	$10,000.00
Excavate/off-site disposal impacted soil/fill (tons)	$45.00	3100	$139,500.00
Placement of clean backfill- Greenspace (tons)	$25.00	1200	$30,000.00
Placement of stone base- hardscape (ton)	$25.00	1320	$33,000.00
Asphalt/Concrete hardscape- (SF)	$4.00	35600	$142,400.00
Confirmation/waste sampling (LS)	$6,000.00	1	$6,000.00
Engineering Oversight (4 weeks) (LS)	$30,000.00	1	$30,000.00
Subtotal			$390,900.00
Contingency (10%)			$39,090.00
Estimated Capital Cost Total			**$429,990.00**
Annual Inspection/Monitoring/Maintenance (per Yr.)	**$3,500.00**	1.0	**$3,500.00**
Present Worth Annual Inspection & Monitoring			
Number of Years - 30			**30**
Interest Rate - 5%			**5%**
Present Worth (PW)			**$53,800.00**
Total Present Worth: Capital Cost + Annual Costs/PW			**$487,290.00**

ALTERNATIVE 2 - REMEDIATE TO TRACK 2 - RESIDENTIAL			
Item	**Unit Cost**	**Quantity**	**Total**
Mobilization/Demobilization/Survey (LS)	$10,000.00	1	$10,000.00
Excavate/off-site disposal impacted soil/fill (tons)	$45.00	15150	$681,750.00
Placement of clean backfill (tons)	$25.00	13170	$329,250.00
Placement of stone base- hardscape (ton)	$25.00	1320	$33,000.00
Asphalt/Concrete hardscape- (SF)	$4.00	35600	$142,400.00
Confirmation/waste sampling (LS)	$20,000.00	1	$20,000.00
Engineering Oversight (4 weeks) (LS)	$60,000.00	1	$60,000.00
Subtotal			$1,276,400.00
Contingency (10%)			$127,640.00
Estimated Capital Cost Total			**$1,404,040.00**
Total Capital Cost			**$1,404,040.00**

ALTERNATIVE 2 - UNRESTRICTED USE			
Item	**Unit Cost**	**Quantity**	**Total**
Mobilization/Demobilization/Surveys (LS)	$20,000.00	1	$20,000.00
Excavate/off-site disposal impacted soil/fill (tons)	$45.00	17500	$787,500.00
Place/compact imported clean backfill (tons)	$25.00	15520	$388,000.00
Placement of stone base- hardscape (ton)	$25.00	1320	$33,000.00
Asphalt/Concrete hardscape- (SF)	$4.00	35600	$142,400.00
Confirmation sampling of imported fill (LS)	$30,000.00	1	$30,000.00
Engineering Oversight (8 weeks) (LS)	$60,000.00	1	$60,000.00
Subtotal			$1,460,900.00
Contingency (10%)			$146,090.00
Estimated Total			$1,606,990.00
Total Capital Cost			**$1,606,990.00**