ALTERNATIVES ANALYSIS REPORT AND REMEDIAL WORK PLAN

FOR

211 MAIN STREET
CITY OF NORTH TONAWANDA
NIAGARA COUNTY, NEW YORK
BCP SITE NO. C932171

Prepared by:

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

Prepared on Behalf of:

ENTERPRISE LUMBER & SILO LLC
2528 NICOLE DRIVE
WHEATFIELD, NEW YORK 14304

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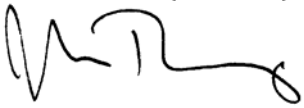
Acronym List

AA	Alternatives Analysis
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield cleanup Program
BGS	Below Ground Surface
CAMP	Community Air Monitoring Plan
DER	Department of Environmental Remediation
DUSR	Data Usability and Summary Report
EDD	Electronic Data Deliverable
ELAP	Environmental Laboratory Accreditation Program
ESA	Environmental Site Assessment
FER	Final Engineering Report
GPR	Ground Penetrating Radar
HASP	Health and Safety Plan
ISMP	Interim Site Management Plan
IRM	Interim Remedial Measures
IRM WP	Interim Remedial Measures Work Plan
MS/MSD	Matrix Spike / Matrix Spike Duplicate
MSL	Mean Sea Level
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOL	New York State Department of Labor
PAH	Polycyclic Aromatic Hydrocarbons
PPM	Parts per Million
PCB	Polychlorinated Biphenyl
PID	Photo-ionization Detector
PFAS	Per- and Polyfluoroalkyl Substances
QA/QC	Quality Assurance / Quality Control
RAO	Remedial Action Objective
REC	Recognized Environmental Condition
RI	Remedial Investigation

RIWP	Remedial Investigation Work Plan
RWP	Remedial Work Plan
SCG	Standards, Criteria, Guidance
SCO	Soil Cleanup Objective
Site	211 Main Street, North Tonawanda, New York
SMP	Site management Plan
SVOC	Semi volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic leaching Procedure
TOGS	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Service
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VOV	Volatile Organic Vapor

I, John T. Camp, certify that I am currently a NYS Registered Professional Engineer and that this Alternatives Analysis and Remedial Work Plan 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).



John T. Camp, P.E.
State of New York Professional Engineer No. 082375

March 4, 2021

1 INTRODUCTION

C&S Engineers, Inc. (C&S) has prepared this Alternatives Analysis (AA) and Remedial Work Plan (RWP) Report on behalf of the applicants for Brownfield Cleanup Program (BCP) Site No. C932171, Enterprise Lumber & Silo LLC (hereafter known as "Applicants"), for the 211 Main Street Brownfield Cleanup Program (BCP) site located at 211 Main Street, North Tonawanda, New York (the "Site"). **Figure 1** shows the location of the Site and **Figure 2** shows the Site boundaries and pertinent site features.

Enterprise Lumber & Silo LLC, acting as a BCP Volunteer, submitted a BCP Application to remediate and redevelop the property located at 211 Main Street in the City of North Tonawanda, New York on November 29, 2017. Remedial actions covered under the Brownfield Cleanup Agreement (BCA) includes the entire 0.67-acre parcel.

The Remedial Investigation Work Plan (RIWP) was subsequently approved on May 20, 2019, and the Remedial Investigation (RI) was performed between October 2019 and January 2020.

The RI report outlines the data and findings resulting from implementation of the RIWP, as well as a previous Phase II Environmental Site Assessment (Phase II ESA). Samples collected during the Phase II ESA focused primarily on surface soil / fill and subsurface fill, while samples collected during the RI focused primarily on native soil underlying the fill. The sum of both investigations constitute a complete RI of the Site. The RI consisted of:

- The advancement of 15 soil borings and collection and analysis of eight subsurface native soil samples from across the exterior of the Site;
- The advancement of four soil borings and collection and analysis of four subsurface native soil samples from beneath the building footprint;
- The installation of one additional groundwater monitoring well and performance of two rounds of groundwater sampling on three previously installed groundwater monitoring wells, along with the one additional well that was constructed during the RI; and
- The collection of quality assurance / quality control (QA / QC) samples.

The Phase II ESA investigation included:

- The advancement of ten soil borings;
- The excavation of four test pits;
- The collection and analysis of 13 subsurface fill / soil samples;
- The collection and analysis of 33 surface fill / soil samples; and
- A geophysical survey, a radiological survey, and lead-based paint testing.

Soil samples were analyzed for a combination of:

- Part 375 volatile organic compounds (VOCs)
- Part 375 semi-volatile organic compounds (SVOCs)
- Part 375 pesticides
- Poly-chlorinated biphenyls (PCBs)
- Part 375 metals
- Total mercury
- Total cyanide
- Hexavalent chromium

Groundwater samples were analyzed for a combination of:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- PCBs
- TAL metals
- Total mercury
- Total cyanide
- 1,4-Dioxane
- Per and Polyfluoroalkyl Substances (PFAS)

Contamination exceeding soil cleanup objectives (SCOs) appropriate for the proposed Site use (Unrestricted Use) was identified. The contamination is associated with the historic fill material (HFM) that underlies the majority of the Site. Although the area under the slab of the building was not investigated / sampled extensively, it is expected that HFM is present under portions of the building, requiring remediation. Constituents in the HFM at concentrations that exceed the Unrestricted Use SCOs primarily include SVOCs and metals and to a lesser degree VOCs and PCBs. Due to the isolated presence of slag within the HFM, a shallow area is present where gamma radiation levels are above the recommended value of two-times background. The RI is discussed in further detail in Section 2.5. **Figures 3, 4a, 4b, and 5** shows the locations of samples collected during the RI and Phase II ESA.

2 PROJECT BACKGROUND

2.1 Site Description

The Site is located in the City of North Tonawanda on Main Street, just south of the intersection of Main Street and Thompson Street. The Little River, Tonawanda Island, and the Niagara River are located to the west. The Erie Canal is located to the south. The Site is located near revitalized portions of Main Street and acts as a gateway to this area. The Site is 0.67 acres in size and currently consists of an approximate 17,000 square-foot, vacant, former industrial building surrounded by asphalt and gravel pavement, with a fence along the property lines.

The proposed redevelopment of the Site consists of adaptive reuse of the existing structure to accommodate Class A office space.

Figure 1 shows the location of the Site and **Figure 2** shows the Site boundaries and pertinent site features.

2.2 Geology and Hydrogeology

2.2.1 Hydrogeology

Groundwater was present at depths of approximately six to eleven feet below grade during boring advancement. During monitoring well sampling, the static water level generally ranged from three to six feet below grade. Based on surface and groundwater elevation data generated by C&S, groundwater flow is to the west towards the nearby Niagara River.

Based on a review of NYSDEC data, the Site is not underlain by any mapped principal or primary aquifers. Groundwater at and around the Site is not used for public drinking water supply. **Figure 5** presents groundwater contours at the Site.

2.2.2 Geology

The Site gently slopes to the west at an approximate elevation of 576 feet above mean sea level. The Site contains an approximate 17,000 square-foot, two-story building with asphalt and gravel surfaces, as well as some exposed soil areas.

Historic Fill Material (HFM) is present at the Site at depths ranging from just below the asphalt and gravel subbase to a maximum depth of five and a half feet bgs. HFM is defined as non-native material, historically deposited or disposed in the general area of, or on, a site to create useable land by filling water bodies, wetlands or topographic depressions, which is in no way connected with the subsequent operations at the location of the emplacement, and which was contaminated prior to emplacement. The HFM at the Site contains:

- Crushed Rock
- Sand
- Clay
- Construction Debris
- Slag
- Bricks

Native soil encountered beneath the fill consisted of clay with high plasticity and with a reddish to dark brown appearance.

The extent and depth of HFM are shown on **Figure 6.** During the RI, investigations / sampling under the building was limited to four soil borings, as well as a test pit under the roof overhang on the south side of the building. Although HFM was not identified in the soil borings, HFM was identified in the test pit. It is expected that HFM will be identified under the building, requiring the removal of the slab to perform remediation.

2.3 Site History

The land comprising the Site was first developed as a lumber mill in the 1880s. Consistent with the surrounding area, the land use at the Site was related to a lumber mill until the 1960s. Since that time, land use has been related to industrial uses and commercial uses including an automobile service station (storage, repair, maintenance and painting) and a storage warehouse. Overall, historical operations at the property included lumber planing, pallet production, industrial cutting, machinery sales, and automobile repair, storage and painting. The Site is currently vacant, and the building was condemned in 2015. A railroad has been located to the east of the Site since the property was initially developed.

Contamination at the Site appears to be from fill placement, as well as past historical uses at the property, which would have included the use of hazardous materials and petroleum products.

2.4 Previous Investigations

Environmental information exists for the Site from Phase I ESA completed by EES JV in August 2015, and a Phase II ESA completed by C&S in 2017. The following provides a summary of the Phase II report.

- C&S conducted a preliminary sampling program to characterize soil/fill conditions at the Site on behalf of Niagara County. The characterization program consisted of the advancement ten soil borings, four test pits, and the collection of 13 subsurface historic fill material (HFM) samples to characterize this material. This investigation also included the collection of 33 surface soil/HFM samples to characterize surface conditions. In addition,

a geophysical survey, a radiological survey and lead-based paint testing of the building was conducted. HFM and groundwater samples were analyzed for Target Compound List (TCL) VOCs, TCL SVOCs, PCBs, and Target Analyte List (TAL) metals.

- Surface soil/HFM, subsurface HFM, radiological, groundwater, and building impacts were identified. Based on investigations conducted to date, the known contaminants of concern in HFM include SVOC polycyclic aromatic hydrocarbons (PAHs) and metals including arsenic in the surface soil/HFM (depths of up to four inches), and subsurface HFM (depths of up to five and a half feet).

- NYSDEC Commercial Use SCOs were exceeded in 15 of the 33 surface soil/HFM sample locations within the Site boundaries. PAHs, specifically benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene, at concentrations ranging from 1.1 parts per million (ppm) to 32.4 ppm significantly exceeded Commercial Use SCOs in the southeastern portion of the Site. Metals including arsenic at concentrations ranging from 16 to 61 ppm significantly exceeded the Commercial Use SCO (16 ppm) in several samples, generally located in the eastern half of the Site. Additionally, copper slightly exceeded the Commercial Use SCO (270 ppm) at a concentration of 280 ppm. Surface fill exceedances are shown on **Figure 3**.

- NYSDEC Commercial Use SCOs were exceeded in three of the 13 subsurface HFM sample locations within the Site boundaries. Benzo(a)pyrene at concentrations of 1.1 ppm to 2.9 ppm marginally exceeded the Commercial Use SCO (1.0 ppm) in the northern and southern portions of the Site. Arsenic, at concentrations ranging from 16.2 ppm to 19.3 ppm, marginally exceeded the Commercial Use SCO (16 ppm) in the northern and southern portions of the Site. Subsurface fill exceedances are shown on **Figure 4a**.

- Radiological findings on the Site were within typical background levels, except for an approximate 600 square foot area along the southern side of the building. At this location, the gamma surface scan (0'-4') showed readings at 2.5 times background levels (4,261 cpm), while the downhole gamma reading (0"-18") was four-times background levels. These are above the recommended value of two-times background. The approximate extent of this area is shown on **Figure 4a**. One sample was collected from this area and sent to Pace Laboratories for gamma spectroscopy analysis. The results from this survey indicate the sample contained concentrations of 0.267 picocurie/gram (pCi/g) for Radium-226 and a concentration of 0.136 pCi/g for Radium-228.

- Contaminants in the groundwater at the Site are naturally occurring metals that include iron, manganese and sodium. The concentrations of the contaminants exceeded NYS Technical and Operational Guidance Series (TOGS) 1.1.1 in two of the three wells, located in the western portion of the Site. These contaminants are generally associated with water aesthetics such as taste, clarity, etc. Iron was detected at concentrations of 748 ppb (total) and 859 ppb (dissolved), exceeding the TOGS 1.1.1 standard of 300 ppb in one well. Manganese was detected at concentrations of 508 ppb (total), 510 ppb (dissolved), and 735 ppb (total) exceeding the TOGS 1.1.1 standard of 300 ppb in two wells. Sodium was detected at concentrations of 54,200 ppb (total) and 54,100 ppb (dissolved), exceeding the TOGs 1.1.1 standard of 20,000 ppb in one well.

- Additionally, based on the multiple building surveys that were conducted as part of the Phase II ESA, building materials are impacted with lead, asbestos and mold/fungi.

Summary tables of all analytical results from previous investigations can be found in **Tables 5 – 11**.

2.5 Summary of Remedial Investigation

The RI was conducted to assess the nature and extent of contamination at the Site and consisted of:

- The advancement of 15 soil borings and collection and analysis of eight subsurface native soil samples from across the exterior of the Site;
- The advancement of four soil borings and collection and analysis of four subsurface native soil samples from beneath the building footprint;
- The installation of one additional groundwater monitoring well and performance of two rounds of groundwater sampling on three previously installed groundwater monitoring wells, along with the one additional well that was constructed during the RI; and
- The collection of quality assurance / quality control (QA / QC) samples.

Soil and groundwater samples were analyzed for a combination of VOCs, SVOCs, pesticides, herbicides, PCBs, metals, and PFAS. Sample logs for each medium in the RI can be found in **Tables 1a, 1b, and 1c**.

HFM is located across the Site from just below the surface to a maximum depth of five and half feet below grounds surface (bgs). The HFM is underlain by native soil, which does not contain contaminants that exceed SCOs. Several borings were advanced through the building foundation, and HFM was not identified. However, HFM was identified in a test pit excavated under the roof overhang on the south side of the building. It is anticipated that HFM is present under other portions of the

building, which will require removal of the slab to facilitate remediation. The area of elevated gamma activity is within the HFM and is approximately 600 square feet in size along the south side of the building.

Based on the RI, the concern in the HFM include SVOCs and metals, as well as an isolated area of elevated gamma activity. The variation in analyte concentrations in the soils that contain HFM indicates that the source of contamination in soil samples containing HFM is the HFM itself and no apparent discrete source is located on-site or off-site. The gamma activity is due to the isolated deposition of slag fragments. Native soil located below the HFM and meets Unrestricted Use SCOs.

Two wells on the eastern side of the Site contain two PFAS compounds that marginally exceed NYSDEC guidance values. Groundwater is located in the overburden on the Site at depths of three to six feet bgs. The water table straddles soils that contain HFM. Groundwater flows generally in a westerly direction toward the Niagara River, therefore the presence of PFAS in the wells on the eastern portion of the Site is likely from an upgradient and offsite source.

Figures 4b and **5** as well as **Tables 2, 3,** and **4** summarize the results of the RI for each medium investigated.

Based on the RI, the following work plan is proposed:

- Soil containing HFM will be excavated and sent to an off-site solid waste disposal facility. This includes HFM from across the Site and from beneath the building. The building slab will require demolition / removal to access and remove HFM from under the building. Confirmatory soil samples will be collected to ensure that the HFM was adequately removed. Perimeter soil samples will also be collected to document soil conditions at the Site boundary.

- The area of elevated gamma activity within the HFM (along the south side of the building) will also be removed and managed at an off-site solid waste facility. The extent of the area will be verified in the field by utilizing specialized radiation detection meters.

- The Site will be backfilled with clean materials.

- Existing groundwater monitoring wells will be sampled subsequent to soil removal to verify success of the remedy.

Based on the above, the Site will achieve a Track 1 level of cleanup.

3 ALTERNATIVES ANALYSIS REPORT

3.1 Objectives

The objectives of this portion of the document, the AA Report, is to evaluate remedial alternatives to address the contamination presented in the RI Report and select remedial actions to be implemented. As defined in NYSDEC DER-10 (Section 4.0) and DER-31, remedial alternatives will be evaluated based on the following criteria.

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

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

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

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

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

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

g. Cost: This criterion evaluates the capital, operation, maintenance, and monitoring costs for the remedial alternative. The estimated costs are presented on a present worth basis.

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

i. Community Acceptance: This criterion takes into account concerns of the

community regarding the proposed remedy. Any public comments and overall public perception are addressed as part of the criterion.

j. Green Remediation: This criterion considers all environmental effects of remedy implementation and incorporates alternatives that minimize the environmental footprint of cleanup actions.

3.2 Applicable Standards, Criteria, and Guidance

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

3.2.1 Soil

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

3.2.2 Groundwater

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

3.2.3 Alternatives Analysis Guidelines

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

3.3 Remedial Action Objectives

Remedial Action Objectives (RAOs) are medium-specific objectives for the protection of public health and the environment and are developed based on contaminant-specific SCGs established by NYSDEC and / or NYSDOH. The site-specific RAOs are based on the anticipated use of the site for commercial use.

Soil RAOs

The RAOs for soil used in this AA are as follows:

- RAOs for Public Health Protection
    - Prevent ingestion/direct contact with contaminated soil.

- RAOs for Environmental Protection
    - Prevent migration of contaminants that would result in groundwater or surface water contamination.

Groundwater RAOs

The RAOs for groundwater used in this AA are as follows:

- RAOs for Public Health Protection
    - Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards; and
- RAOs for Environmental Protection
    - Restore groundwater aquifer to pre-disposal / pre-release conditions, to the extent practicable.
    - Prevent the discharge of contaminants to surface water.
    - Remove the source of ground or surface water contamination.

3.4 Future Use Evaluation

When evaluating remedial alternatives, reasonableness of the anticipated future land use should be considered. The Site's developer intends to renovate the existing 17,000 square-foot structure and redevelop the Site for Class A office space. It is anticipated that the concrete slab foundation will require removal to facilitate the removal of HFM from along and under the building. The exterior of the Site will be covered with asphalt or concrete pavement and landscaped areas. Prior to the redevelopment, remedial activities will include complete removal of HFM and import of clean fill materials.

3.5 Development of Alternatives

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

The following alternatives are discussed in the subsections below:

1. No Action – Although this alternative does not meet the DER-10 threshold criteria, is it provided to demonstrate the need to undertake some level of remedial action.

2. Track 4 Commercial Use Cover System – This alternative is a Track 4 cleanup designed to meet Commercial Use SCOs and prepare the Site for commercial redevelopment, subject to institutional controls (IC) and engineering controls (EC). The major elements of this alternative includes a cover system

and Site Management Plan (SMP).

3. Track 1 Unrestricted Use Complete Fill Removal – This alternative is a Track 1 cleanup designed to meet Unrestricted Use SCOs and prepare the Site for any type of development, and not subject to ECs / ICs. The major element of this alternative includes complete fill removal.

These remedial alternatives evaluated are summarized below:

3.5.1 No Action

The No Action Alternative is included as a procedural requirement and as a baseline to evaluate other alternatives. Under this alternative, no further remedial or monitoring activities would occur and no controls would be employed to prevent exposure to HFM and contaminated soil and groundwater. No Action does not provide protection of human health or the environment and does not comply with SCGs.

3.5.2 Track 4 (Commercial) – Cover System

3.5.2.1 Description

Under this Track 4 Cleanup Alternative, all fill soils with contaminant concentrations above proposed site use SCOs will be removed or capped to install one foot of cover in a manner consistent with the final design grades for the redevelopment.

The remediation will consist of installing impervious soil cover (asphalt or concrete surface) in and around the redeveloped building and placement of a one-foot soil cover in areas without an impervious soil cover. The remediation will achieve a Track 4 Level Cleanup for Commercial Use.

3.5.2.2 Assessment

Overall Protection of Human Health and the Environment

A portion of the excavated soil / HFM with contaminant concentrations above Commercial SCOs would be removed and disposed of off-site. The isolated area containing elevated gamma radiation would be removed and disposed off-site. Soil / HFM re-used onsite or otherwise remaining onsite will be isolated by the cover system.

Groundwater is not used for drinking water at the Site. Drinking water is obtained from the City of North Tonawanda. This water is sourced from the Niagara River, which is treated prior to use to ensure the water meets NYSDEC and USEPA standards.

Long-term human health and environmental protection and control can be managed with a Site Management Plan (SMP), environmental easement, deed restrictions, monitoring and other such IC / EC. This alternative would be protective of human health and the environment.

Compliance with SCGs

The Site has been adequately investigated to evaluate the nature and extent of contamination in excess of applicable SCGs. Contaminants of concern for Track 4 Cleanup areas consist of SVOCs/PAHs and heavy metals. As outlined in 6 NYCRR Part 375-3.8(e)(4), Track 4 soil cleanups use Site-specific information to identify Site-Specific Action Levels (SSAL) that are protective of the public health and the environment under a restricted-use scenario.

The alternative complies with the SCGs, as on-site HFM / soil with contaminant concentrations above the SCOs would either be removed and disposed of off-site or left under impervious asphalt or concrete or beneath at least one feet of a clean soil cover.

Short-term Impacts and Effectiveness

This alternative increases the short-term risks for the community and the workers implementing the alternative (i.e., through the disturbance of impacted HFM / soil) because the Site will undergo removal and grading of contaminated HFM / soil. However, these risks would be minimized through the implementation of appropriate HFM / soil handling procedures, air monitoring, and dust suppression techniques.

Long-term Effectiveness and Permanence

This alternative would be a permanent remedy to address the contaminant concentrations in the soil / HFM throughout the Site. The presence of a cover system will eliminate the potential for users of the Site to come into contact with the HFM. Removal of HFM contaminated by SVOCs and metals is anticipated to reduce groundwater concentrations in the long-term.

Reduction of Toxicity, Mobility and Volume

This alternative would result in the reduction of the volume of contaminants in the HFM / soil. However, mobility would not be well controlled by the cover system due to stormwater design requirements. The Site design requires the infiltration of all stormwater runoff into the Site subsurface, which may mobilize remaining contaminants.

Implementability

This alternative is implementable using existing construction methods and equipment. The expected duration is less than one construction season. This alternative would result in a Site suitable for redevelopment for commercial use.

Cost Effectiveness

The estimated cost of this alternative at $371,940 requires a greater investment than the No Action Alternative, but less investment than the Track 1 Cleanup Alternative. This alternative reduces the contamination concentrations in the fill at the Site through partial removal and soil cover and prepares the site for commercial redevelopment.

Table 3-1: Track 4 Summary of Remedial Costs

Category	Unit Rate	Number	Units	Estimated Cost
Site Mobilization & Control Measures	$20,000	1	LS	$20,000
Site Clearing	$2,000	1	LS	$2,000
Backfill Characterization Sampling / Testing	$750	2	Sample	$1,500
Soil Disposal Sampling / Testing	$900	3	Sample	$2,700
Contaminated Soil Excavation and Disposal	$67	450	CY	$30,150
Gamma Activity Area Disposal	$275	70	ton	$19,250
Backfill Procurement and Placement	$35	450	CY	$15,750
Impervious Cover System Elements (pavement, concrete, building slab)	$8	12,000	SF	$96,000
Site Survey	$10,000	1	LS	$10,000
Subtotal				**$247,450**
Contingency	20 percent			$49,490
Construction Subtotal				**$296,940**
Annual Certification – Present Worth	$2,500	Year	30	$75,000
TOTAL				**$371,940**

LS: Lump Sum, CY: Cubic Yard

Land Use

This alternative would allow for the use of the parcel commercial use, which conforms to the City of North Tonawanda's development plans for the area. Therefore, this alternative would allow for the best use of the land.

Community Acceptance

Based on the findings of the studies performed to date, it is anticipated that the results of this alternative would be acceptable to the community.

Green Remediation

This alternative could utilize the following green remediation options:

- Utilizing a cover system to isolate remaining HFM. This approach significantly reduces the use of fossil fuels that would be used to excavate and haul the entire volume of HFM off-site for disposal, as well as bring replacement material to the Site. This option also limits the volume of soil to be managed in a landfill.
- Clean soil and aggregate needed to construct the cover system can be sourced from local pits / quarries, thus reducing emissions for transport vehicles.

3.5.2.3 Summary

The Track 4 (Commercial Use) – Cover System Alternative would be a long-term remedy and is anticipated to be acceptable to the community. This alternative effectively reduces the toxicity and volume of impacted media through partial removal and covering of fill and replacement with clean material. However, contaminant mobility may be enhanced due to the onsite infiltration of stormwater. This alternative will facilitate remediation and redevelopment by means of a practical schedule and with reasonable remedial cost.

This alternative was designed to remediate the Site to Commercial Use SCOs, and prepare the Site for redevelopment for commercial uses. A brief summary of the remedial actions for this alternative and costs are provided above. The Track 4 Cleanup Alternative includes:

- Excavation of some HFM to accommodate proper design grade;
- The placement of backfill consisting of clean fill (crushed stone and topsoil);
- The installation of an asphalt parking lot and concrete sidewalk as the Site's impervious soil cover;
- The placement of a one-foot soil cover on areas without impervious cover (buildings, concrete slab or asphalt);
- The placement of an environmental easement on the Site; and
- The creation of a Site Management Plan (SMP) for the Site.

3.5.3 Conditional Track 1 (Unrestricted Use) Excavation Remedy

3.5.3.1 Description

Under this Unrestricted Use Alternative, all HFM would be excavated and disposed of off-site consistent with applicable regulations. All soil visually impacted by HFM will be removed. Based on the results of the RI, the estimated volume of HFM

requiring removal is 1,600 to 1,800 cubic yards. Assuming a conversion rate of 1.5 tons per cubic yard, the weight of this HFM is estimated at 2,400 to 2,700 tons, with the latter being utilized to be conservative of remedial efforts and costs. This remedy will require fill removal immediately adjacent to the building foundation. Due to the need to excavate immediately adjacent to the slab, as well as the likelihood of fill beneath the building, the slab will be removed to facilitate fill removal and to restore the building sub-base for structural considerations.

3.5.3.2 Assessment

Overall Protection of Human Health and the Environment

This alternative would be protective of human health and the environment, as all fill will be removed and disposed of off-site.

Groundwater is not used for drinking water at the Site. Drinking water is obtained from the City of North Tonawanda. This water is sourced from the Niagara River, which is treated prior to use to ensure the water meets NYSDEC and USEPA standards. Furthermore, complete removal of the fill would eliminate the Site as being a source of groundwater contamination.

Compliance with SCGs

The alternative complies with the SCGs, as all fill will be disposed of off-site. Onsite native soils do not contain contaminants at concentrations that contravene SCGs. Post-remediation groundwater sampling will be performed to confirm that Site groundwater quality meets SCGs. Confirmatory soil samples will be collected to document complete removal of HFM.

Short-term Impacts and Effectiveness

This alternative increases the short-term risks for the community and the workers implementing the alternative (i.e., through the disturbance of impacted HFM / soil), because the Site will undergo complete removal of HFM. However, these risks would be minimized through the implementation of appropriate HFM / soil handling procedures, air monitoring, and dust suppression techniques. Furthermore, this alternative would be effective in the long-term.

Long-term Effectiveness and Permanence

The Conditional Track 1 Cleanup Alternative would be a permanent remedy to address the contaminants in the HFM throughout the Site. It would also have a positive impact on groundwater quality due to complete source removal.

Reduction of Toxicity, Mobility and Volume

This alternative would result in the reduction of the toxicity, mobility, and volume of contaminants on the Site since the remedy would include the complete removal of HFM. This would also eliminate the source of any groundwater contamination. This alternative would result in a Site suitable for redevelopment for any use.

Implementability

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

Cost Effectiveness

The estimated cost of this alternative at $419,100 requires a greater investment than No Action and Track 4 Alternatives, but the alternative eliminates the contaminated fill at the Site through complete removal and prepares the Site for redevelopment for any use. Further, because the increase in cost is marginal, the cost effectiveness of this remedy is more cost effective than the track 4 remedy.

Table 3-2: Track 1 Summary of Remedial Costs

Category	Unit Rate	Number	Units	Estimated Cost
Site Mobilization & Control Measures	$20,000	1	LS	$20,000
Site Clearing	$2,000	1	LS	$2,000
Backfill Characterization Sampling / Testing	$750	2	Sample	$1,500
Beneath Building Soil Sampling	$500	5	Sample	$2,500
Soil Disposal Sampling / Testing	$900	6	Sample	$5,400
Contaminated Soil Excavation and Disposal	$67	1,800	CY	$120,600
Radioactive Area Disposal (20 ft x 30 ft)	$275	70	Ton	$19,250
Backfill Procurement and Placement	$35	1,800	CY	$63,000
Building Slab Demo and Replacement	$100,000	1	LS	$100,000
Site Survey	$10,000	1	LS	$10,000
Well Decommissioning	$5,000	1	LS	$5,000
Subtotal				**$349,250**
Contingency	20 percent			$69,850
TOTAL				**$419,100**

LS: Lump Sum, CY: Cubic yard

Land Use

This alternative would allow for the use of the parcel for any use, contingent on the requirements for zoning / land use in the City of North Tonawanda. This alternative

leaves open the possibility for different uses of the Site in the future without the need for further remediation. Therefore, this alternative would allow for the highest and best use of the land.

Community Acceptance

Based on the findings of the studies performed to date, it is anticipated that the results of this alternative would be entirely acceptable to the community.

Green Remediation

Due to the magnitude of soil removal, backfilling, and landfill disposal required for this option, local resources may be affected. The remediation will require a significant expenditure of fossil fuels to fuel trucks necessary to remove the HFM from the Site, as well as the trucks that will provide backfill materials for the Site. Green remediation alternatives will be limited to local sourcing of material.

3.5.3.3 Summary

The Conditional Track 1 Excavation Remedy Alternative would be a long-term remedy, is anticipated to be acceptable to the community, and would prepare the Site for redevelopment for any type of use. This alternative effectively reduces the toxicity, mobility, and volume of impacted media through the removal of all fill from the Site and replacement with clean material. This alternative would not require ECs / ICs, and there would be no need for site management.

The Conditional Track 1 Excavation Remedy includes:

- The excavation and off-site disposal of all HFM;
- The area of elevated gamma activity soil within the HFM (along the south side of the building) will be removed and managed at an off-site solid waste facility.
- The placement of backfill consisting of clean fill and soil.
- Post-remediation groundwater sampling to ensure the remedy achieves groundwater SCGs. The groundwater monitoring wells would subsequently be decommissioned.
- Confirmatory soil sampling to ensure complete removal of the HFM.

No environmental easements or continuing monitoring programs such as an SMP would be required.

3.6 Comparative Evaluation of Alternatives and Recommended Actions

This section of the report compares the remedial alternatives proposed for each of the impacted media and presents the recommended action for each media group.

3.6.1 No Action Alternative

The No Action Alternative will not be protective of human health and the environment and would likely not be acceptable to the community in the long term. In addition, development of the Site is anticipated to take place and, as such, impacts are likely to be encountered, which indicates a level of risk in relation to exposure to on-site workers and those working and living in the vicinity of the Site. Therefore, this alternative is not the recommended remedy for the Site.

3.6.2 Track 4 (Commercial) – Cover System

The Track 4 Commercial Cover System Alternative would be a long-term remedy and is anticipated to be acceptable to the community. This alternative reduces the toxicity and volume of impacted media through the removal of a portion of the fill and replacement with clean material while covering the remainder of the fill.

However, this alternative will require continual management to reduce exposure from subsurface contaminated material and over time, groundwater could be impacted by the HFM. In addition, contaminant mobility may be enhanced due to the onsite infiltration of stormwater.

3.6.3 Conditional Track 1 Excavation Remedy

The Conditional Track 1 Excavation Remedy would be a long-term remedy and is anticipated to be acceptable to the community. This alternative effectively reduces the toxicity, mobility, and volume of impacted media through the removal of all HFM from the Site and replacement with clean material.

3.7 Recommended Remedial Alternative

Based on the alternative analysis evaluation, the Conditional Track 1 Excavation Remedy is the recommended final remedial approach for the Site. This remedy is fully protective of human health and the environment, and is implementable in one construction season. In the short and long-term, this cleanup is effective and would be the best use of land. The recommended remedial alternative would involve:

- The excavation and off-site disposal of all HFM, including an isolated area of elevated soil gamma activity. **Figure 6** depicts the approximate required excavation depths.
- The placement of backfill consisting of clean fill and topsoil.

No environmental easements or continuing monitoring programs such as an SMP would be required.

4 REMEDIAL WORK PLAN

This section is the Remedial Work Plan (RWP) for the Site. This RWP is based on the data collected during the RI and the recommended final remedial approach for the Site proposed in the AAR. This RWP identifies the remediation of the Site and how the actions will successfully achieve Unrestricted Use SCOs.

4.1 Introduction

As summarized in Section 3.7 of the AA portion of this report, the recommended final remedial approach for the Site is the Conditional Track 1 Excavation Remedy (Unrestricted Use), which does not require engineering or institutional controls.

4.2 Site Control

Site control is an important aspect of this remedial program. In order to safeguard the health and safety of site workers and the general public, public access to the Site will be restricted. Access will be limited to construction workers, consultants, and Department employees who have proper health and safety training. Perimeter fencing will be installed to facilitate site control. Additionally, temporary construction fencing will be erected around accessible excavations and staging areas to prevent unauthorized personnel from entering these areas. Following the completion of remedial efforts, the Site will be controlled with a perimeter fence and electronically controlled gate.

4.3 Site Preparation

Site preparation activities include:

- Removal and reinstallation of perimeter fencing.
- Installation of temporary fencing to restrict access to remedial work areas.
- Site clearing including the removal of debris, shrubs, and vegetation (including root masses) using an excavator and chainsaw. Where tree roots are growing in HFM, the wood debris will be taken to an appropriate solid waste facility for disposal.
- Removal and offsite recycling of concrete pads and the building foundation.
- Milling of asphalt pavement. Installation of new pavement, sidewalks, and curbing.
- Buried utility repair, relocation, and installation.
- Protection of the existing groundwater monitoring wells for subsequent sampling.

4.4 Excavation

As discussed previously, HFM is present across the Site, as shown on **Figure 6**. The underlying native material meets Unrestricted Use SCOs.

Earthwork will be conducted consistent with the Excavation Work Plan (EWP) provided as **Appendix A**. The Health and Safety Plan (HASP) is provided as **Appendix B**. The EWP requires, but is not limited to:

- Oversight / observance of work by an environmental scientist or engineer
- Proper screening and testing of soil / HFM
- Dust and VOC controls
- Stormwater pollution prevention controls
- Soil stockpile and loading controls
- Inspections
- Good housekeeping
- Trucking permits and approved trucking routes

All HFM will be taken off-site for proper disposal in order to implement the remedy.

4.4.1 Elevated Soil Gamma Activity – Handling and Management

The contractor will follow their radiation safety manual and radiation protection program procedures to ensure work is performed in a safe manner. The Radiological Controls Technician (RCT) will perform screening measurements during lift excavation using a Ludlum 2221 ratemeter with a 44-10 probe ensuring that any elevated spoils are segregated and carefully placed into a truck for transport to the disposal facility. The RCT will use a Ludlum 12 ratemeter with a 44-9 probe to perform "frisking" on any worker who directly handles the soil and will conduct a surface contamination check for detectable residual radioactivity on the heavy equipment used for soil handling prior to demobilization. A Mirion Inspector 1000 will be onsite for Isotope verification prior to the work being conducted. Based on observed levels and planned removal methods, no other monitoring or controls are warranted. The soil will be transported and disposed of at Waste Management's Mahoning Landfill in New Springfield, Ohio.

4.5 Confirmatory and Perimeter Sampling

The depth of the fill removal will be consistent but approximate to the depths shown in **Figure 6**. An onsite scientist or engineer will determine the exact excavation extent in the field based on physical observation.

Confirmatory soil sampling will be performed to document complete removal of the HFM. The Site (including under the building) will be divided into approximate 50' by 50' grids, as shown in **Figure 7**. Following HFM removal, approximately three to

five soil samples will be collected from the footprint of each grid to create a composite sample for each grid. The soil will be collected from immediately below the terminus of the HFM.

Based on the results of the RI, as documented in the decision document (DD), the Site contaminants within the HFM include SVOCs and metals. Therefore, the samples will be analyzed for Part 375 SVOCs and Part 375 metals. If the contaminant concentrations are below Unrestricted Use SCOs, the contractor will be permitted to backfill the respective grid(s). Additional excavation will be required for any grid in which the contaminant concentrations exceed Unrestricted Use SCOs. Excavation and resampling will ensue until soil within each grid meets Unrestricted Use SCOs.

For grids along the Site boundary where HFM extends offsite, perimeter samples will be collected of HFM from the grid sidewall. HFM will be collected from three to five locations along the grid sidewall and composited to create a perimeter sample for the respective grid. The samples will be analyzed for Part SVOCs and Part 375 metals. The data will be collected for information purposes and additional excavation will not be performed based on the results.

The samples will be collected by C&S, who will report the results to the NSYDEC and the project team. The results will also be provided in the FER.

4.6 Backfilling

Excavations at the Site will be backfilled with material such as clean soil and crushed stone to an elevation to facilitate construction of the Site.

For each source of backfill that is imported to the Site, one of the following will be completed prior to importing the backfill.

a. Documentation will be provided to NYSDEC as to the source of the material and the consistency of the material in accordance with the exemption for no chemical testing listed in DER-10 Section 5.4(e)(5); **OR**

b. Chemical testing will be completed in accordance with the following table:

Table 4-1
DER-10 5.4(e)10

Recommended Number of Soil Samples for Soil Imported To or Exported From a Site			
Contaminant	**VOCs**	**SVOCs, Inorganics & PCBs/Pesticides**	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	3-5 discrete samples from different locations in the fill being provided will comprise a composite sample for analysis
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER		

Taken from DER-10 - Table 5.4(e)10

Imported fill will be tested for 1,4-dioxane and PFAS. 1,4-dioxane and shall be sampled as discrete samples per the above table. PFAS shall be sampled as composite samples per the table above.

For materials that must undergo laboratory analytical testing, the results for each new source of fill will meet the values provided in Appendix 5 of DER-10 for Unrestricted Use and will receive approval by the NYSDEC prior to being imported to the Site.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site, as necessary. The site will be re-graded to accommodate redevelopment.

4.7 Air Monitoring

When intrusive subsurface work that disturbs HFM is being performed, the Community Air Monitoring Plan (CAMP) included in **Appendix C** will be implemented.

The action threshold for VOCs established in the CAMP is 5 ppm above background. If this value is exceeded for the 15-minute average work will be halted and work may resume once instantaneous readings fall below 5 ppm work. The action level for dust is 100 ($\mu g/m^3$) over background during a 15-minute average. If this limit is exceeded, dust suppression techniques will be employed, including using water to wet the area.

4.8 Erosion and Dust Controls

As part of the remedial actions to be performed at the Site, measures will be needed to limit erosion and dust generation. Erosion control and dust suppression techniques will be employed as necessary to limit erosion and fugitive dust generated in disturbed areas during remediation and redevelopment activities. Such techniques may be employed even if the community air monitoring results indicate that particulate levels are below action levels. Techniques may include but are not limited to:

- Using silt fencing, hay bales, and / or mulching
- Applying water to Site surfaces and ingress / egress points
- Wetting equipment and excavation surfaces
- Hauling materials in tarped containers
- Limiting vehicle speed on the Site
- Limiting the size of excavations
- Covering excavated areas and materials following excavation

Effectiveness of the dust suppression measures will be evaluated based on the results of the air monitoring that will be conducted under the CAMP provided in **Appendix C**.

4.9 Groundwater Monitoring

The fill removal depths in the vicinities of the monitoring wells do not extend below the well risers, because the HFM is no deeper than three feet. Therefore, the wells will be protected during excavation and construction. The groundwater monitoring wells will be sampled by C&S subsequent to contaminated soil removal.

Based on the results of the RI, as documented in the DD, the Site contaminants within groundwater that exceed SCGs include SVOCs, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). Therefore, the wells will be sampled for SVOCs, PFOA, and PFOS only.

The results will be provided to the NSYDEC and the project team. The data will also be provided in the FER.

4.10 Track 1 Contingency

The intent of the remedy is to achieve Track 1 Unrestricted Use; therefore, no environmental easement or site management plan is anticipated. If groundwater standards and screening levels are not achieved prior to completion of the Final Engineering Report, then a Site Management Plan (SMP) and Environmental Easement (EE) will be required to address groundwater monitoring. A Track 1

cleanup can only be achieved if groundwater monitoring is no longer needed within 5 years of the date of the Certificate of Completion.

If a Track 1 Unrestricted Use remediation is not achieved, including achievement of groundwater remedial objectives, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 Residential Use cleanup. The contingent remedy will include the following:

1. Institutional Controls: Imposition of an institutional control in the form of an Environmental Easement for the controlled property that:

    a) Requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
    b) Allows the use and development of the controlled property for residential, commercial or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
    c) 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
    d) Requires compliance with the Department approved Site Management Plan.

2. Site Management Plan: A Site Management plan is required, which includes the following:

    a) An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and engineering controls remain in place and effective:

        - Institutional Controls: Environmental Easement.

    This plan includes, but may not be limited to:

        - An Excavation Plan that details the provisions for the management of future excavations in areas of remaining contamination;
        - Descriptions of the provisions of the Environmental Easement including any land use and groundwater use restrictions;
        - Provisions for the management and inspection of the identified engineering controls;
        - Maintaining site access controls and Department notification; and
        - The steps necessary for periodic reviews and certification of the institutional and engineering controls.

b) A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- Monitoring of groundwater to assess the performance and effectiveness of the remedy; and
- A schedule of monitoring and frequency of submittals to the Department.

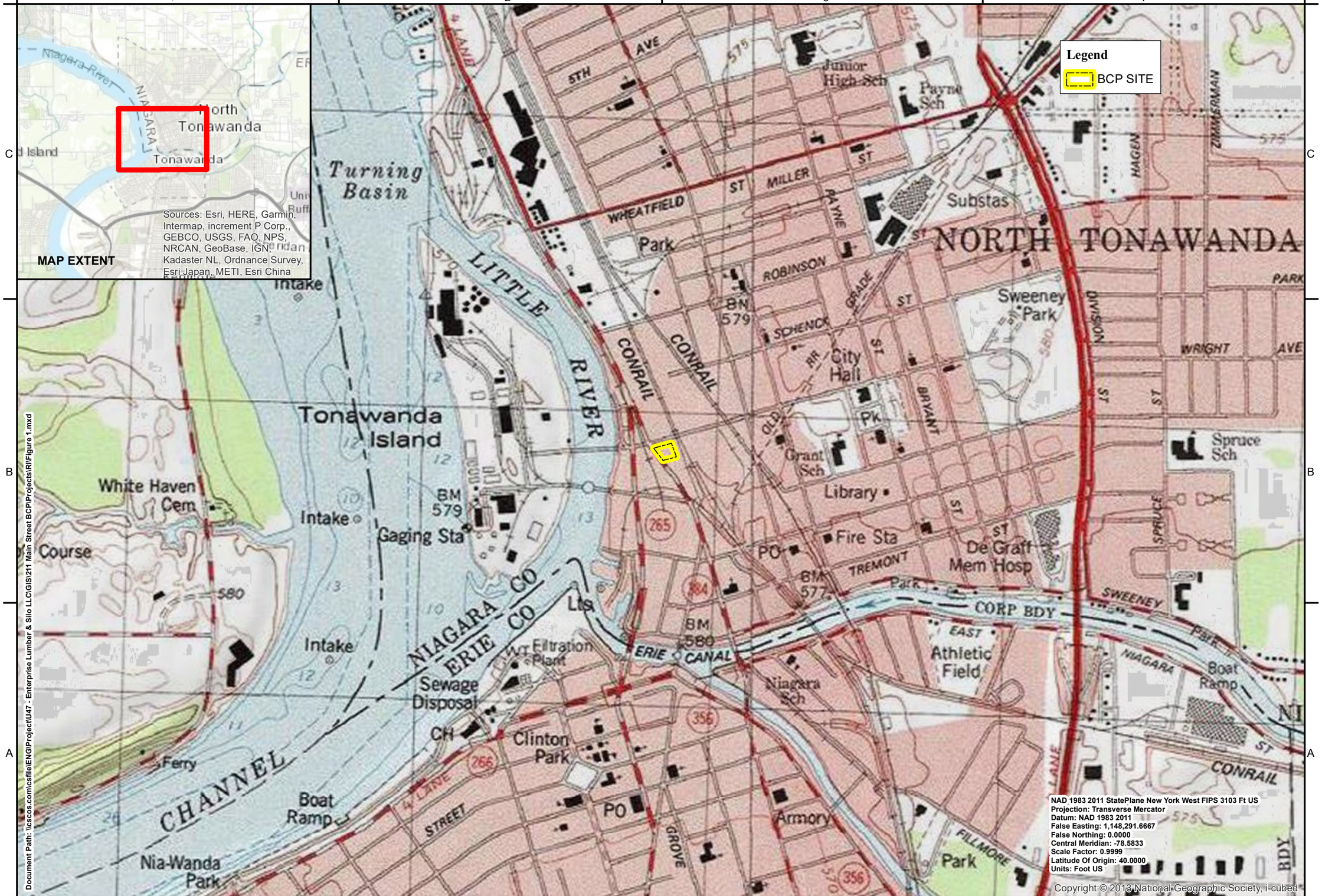
4.11 Schedule

The following is the schedule to implement the remedy and achieve a Certificate of Completion (COC):

Table 4-2: Schedule

Date	Task
Monthly by 10th day	Progress Reports
March 17, 2020	Draft RI Report Submitted to DEC
July 21,2020	Final RI Report Submitted to DEC
August 2020	Draft AAR and RWP Report Submitted to DEC
February 2021	Decision Document Finalized
March 2021	Final AAR and RWP Report Submitted to DEC
Spring 2021	Remedial Activities (30 Day Building Demolition, 60 Day Soil Excavation)
Summer 2021	Draft FER submitted to DEC
Summer / Fall 2021	Final FER Submitted to DEC
Fall 2021	Certificate of Completion Issued

Figures



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Remedial Investigation
City of North Tonawanda, NY

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SITE LOCATION

Figure 1

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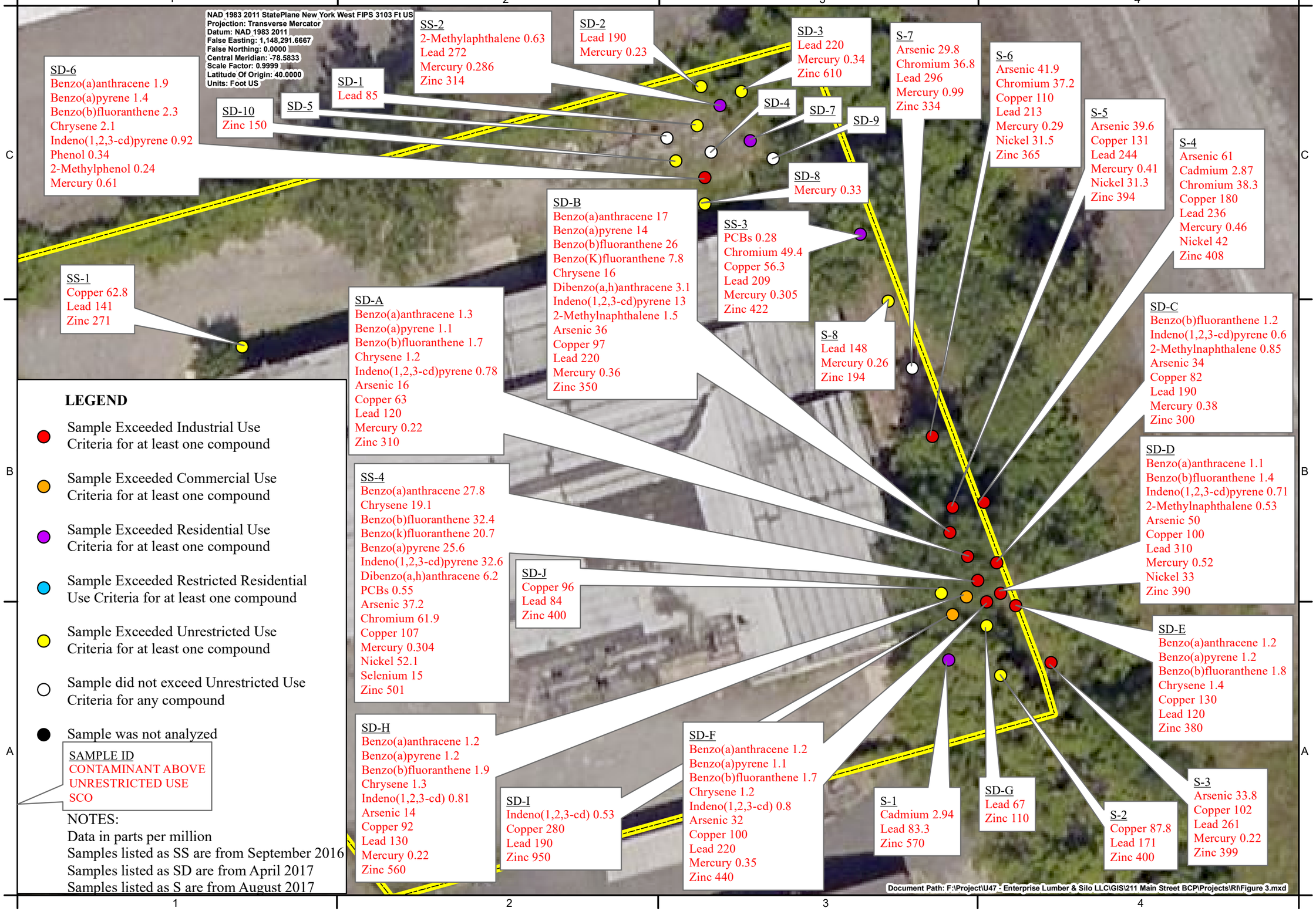
SITE MAP

Figure 2



LEGEND

- Sample Exceeded Industrial Use Criteria for at least one compound
- Sample Exceeded Commercial Use Criteria for at least one compound
- Sample Exceeded Residential Use Criteria for at least one compound
- Sample Exceeded Restricted Residential Use Criteria for at least one compound
- Sample Exceeded Unrestricted Use Criteria for at least one compound
- Sample did not exceed Unrestricted Use Criteria for any compound
- Sample was not analyzed

SAMPLE ID
CONTAMINANT ABOVE UNRESTRICTED USE SCO

NOTES:
Data in parts per million
Samples listed as SS are from September 2016
Samples listed as SD are from April 2017
Samples listed as S are from August 2017

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City of North Tonawanda, NY

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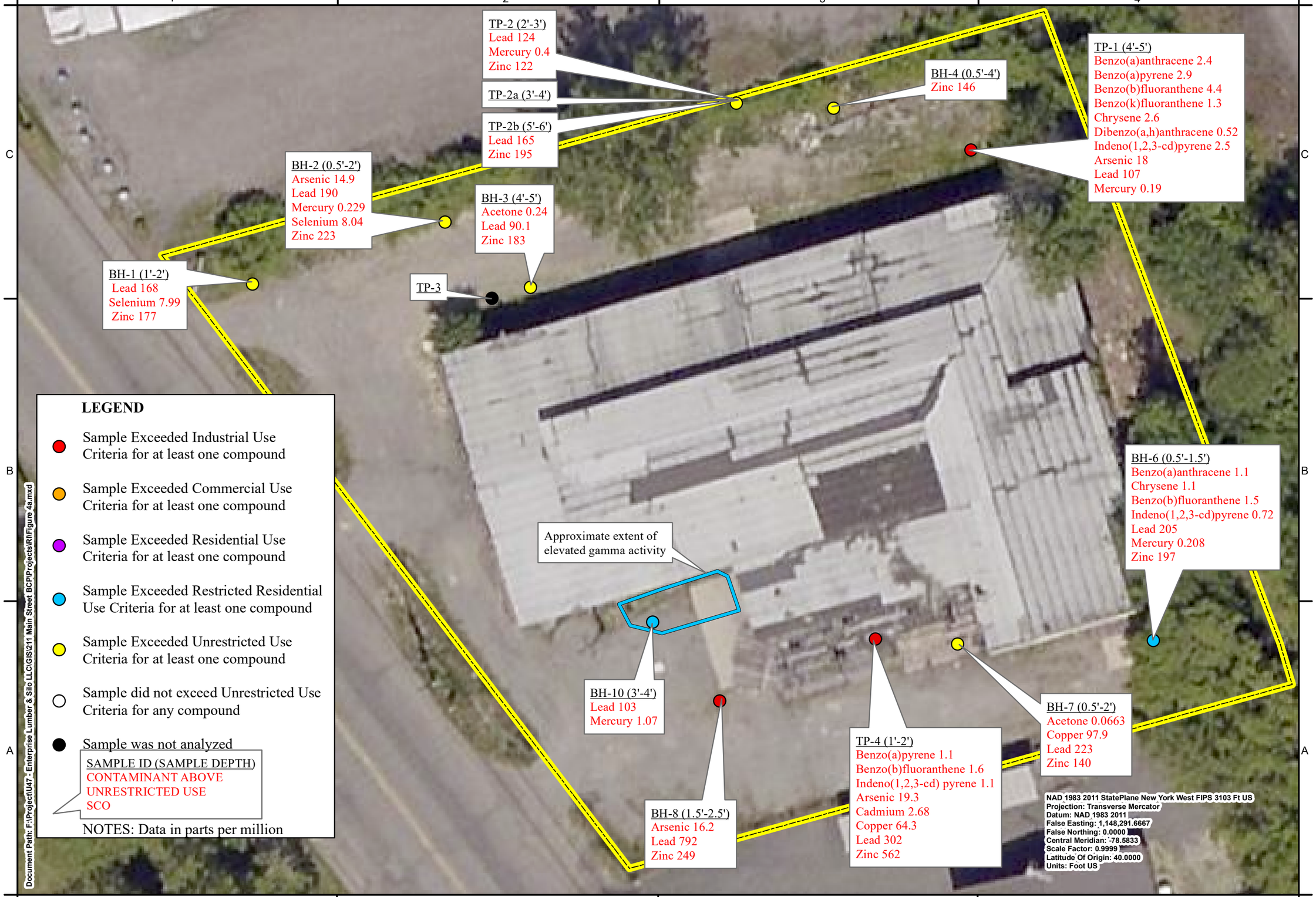
SURFACE FILL SAMPLING

Figure 3



LEGEND

- Sample Exceeded Industrial Use Criteria for at least one compound
- Sample Exceeded Commercial Use Criteria for at least one compound
- Sample Exceeded Residential Use Criteria for at least one compound
- Sample Exceeded Restricted Residential Use Criteria for at least one compound
- Sample Exceeded Unrestricted Use Criteria for at least one compound
- Sample did not exceed Unrestricted Use Criteria for any compound
- Sample was not analyzed

SAMPLE ID (SAMPLE DEPTH)
CONTAMINANT ABOVE
UNRESTRICTED USE
SCO

NOTES: Data in parts per million

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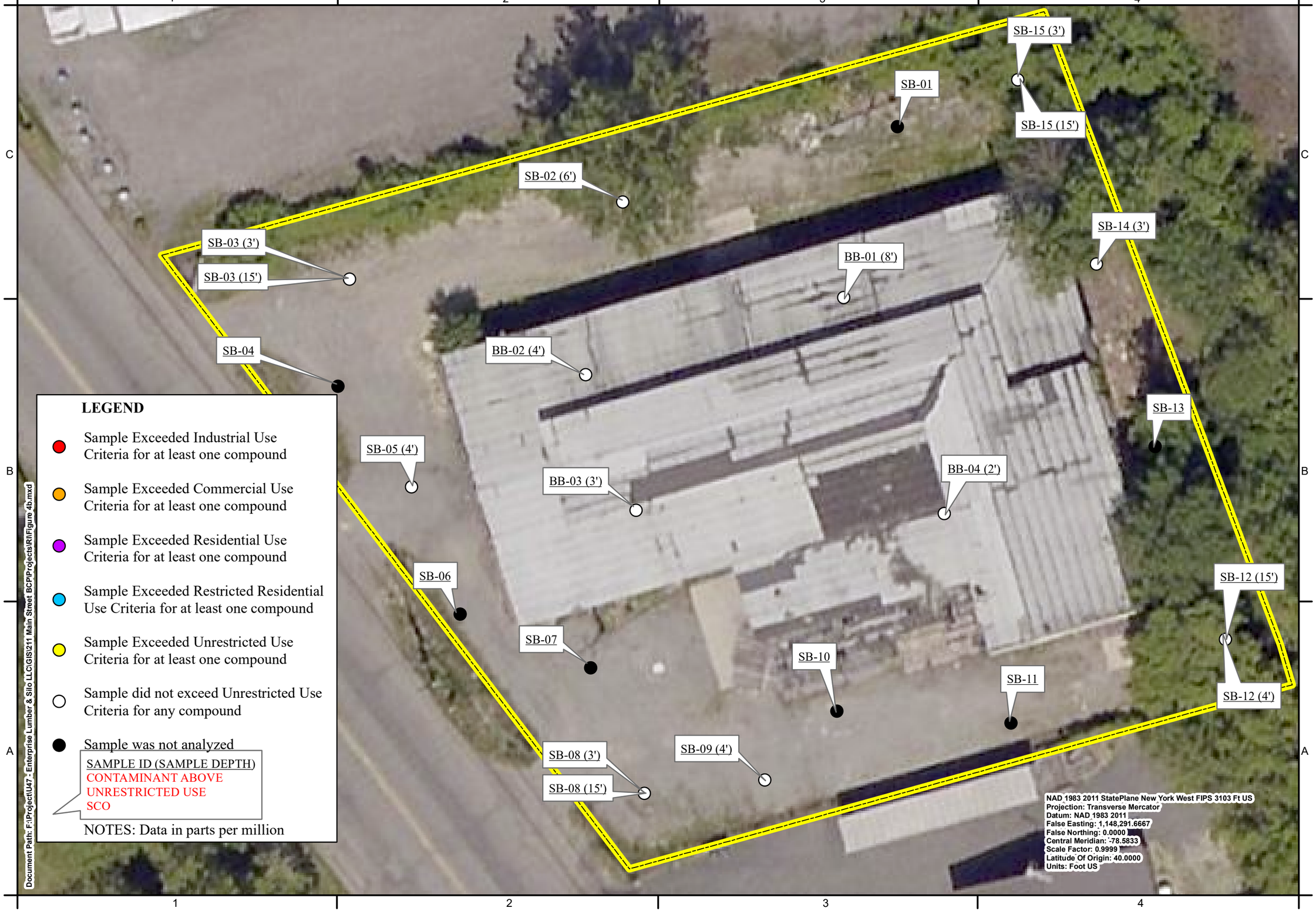
SUBSURFACE FILL SAMPLING

Figure 4a



LEGEND

- Sample Exceeded Industrial Use Criteria for at least one compound
- Sample Exceeded Commercial Use Criteria for at least one compound
- Sample Exceeded Residential Use Criteria for at least one compound
- Sample Exceeded Restricted Residential Use Criteria for at least one compound
- Sample Exceeded Unrestricted Use Criteria for at least one compound
- Sample did not exceed Unrestricted Use Criteria for any compound
- Sample was not analyzed

SAMPLE ID (SAMPLE DEPTH)
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NOTES: Data in parts per million

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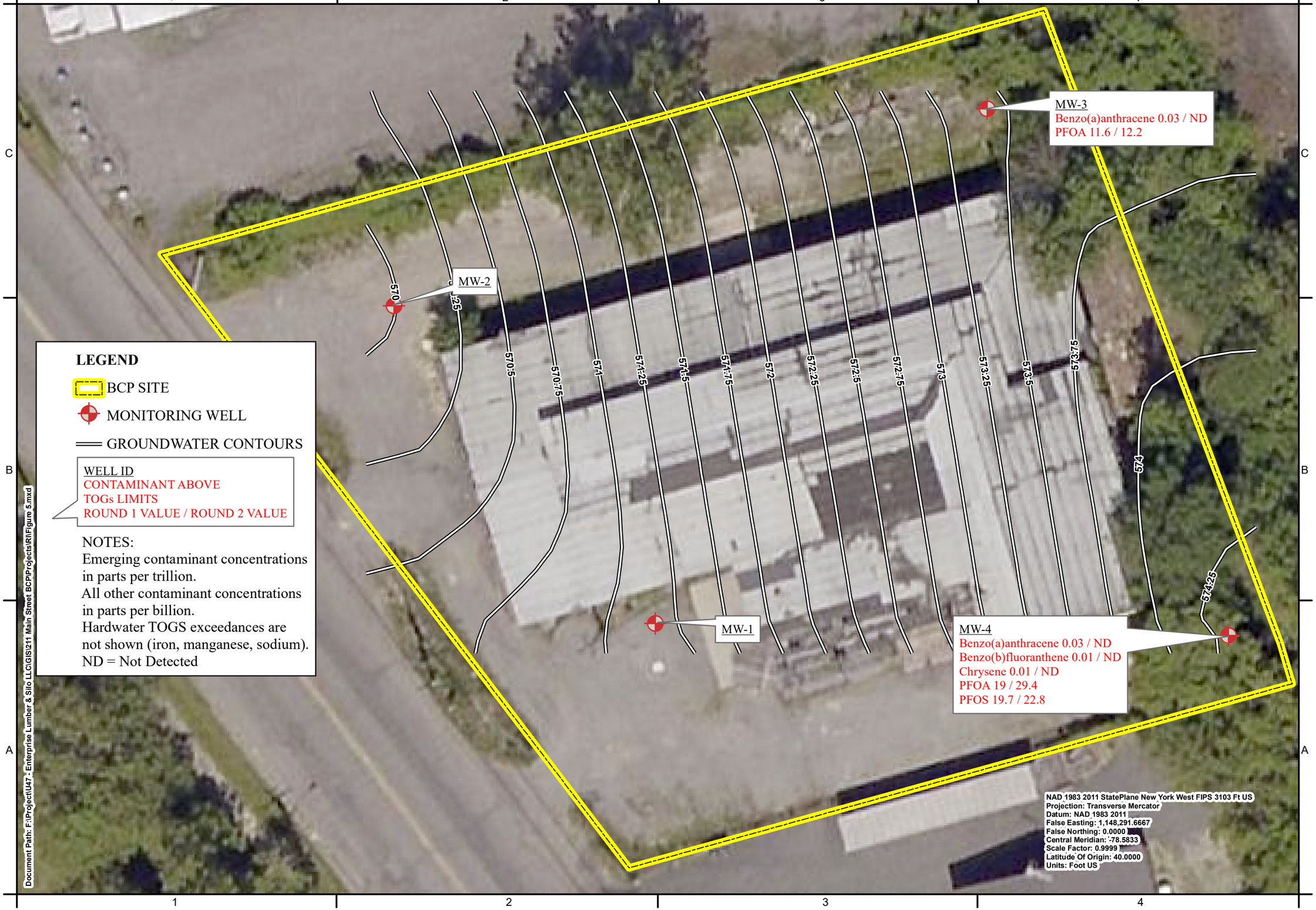
SUBSURFACE NATIVE SOIL SAMPLING

Figure 4b



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GROUNDWATER SAMPLING RESULTS

Figure 5

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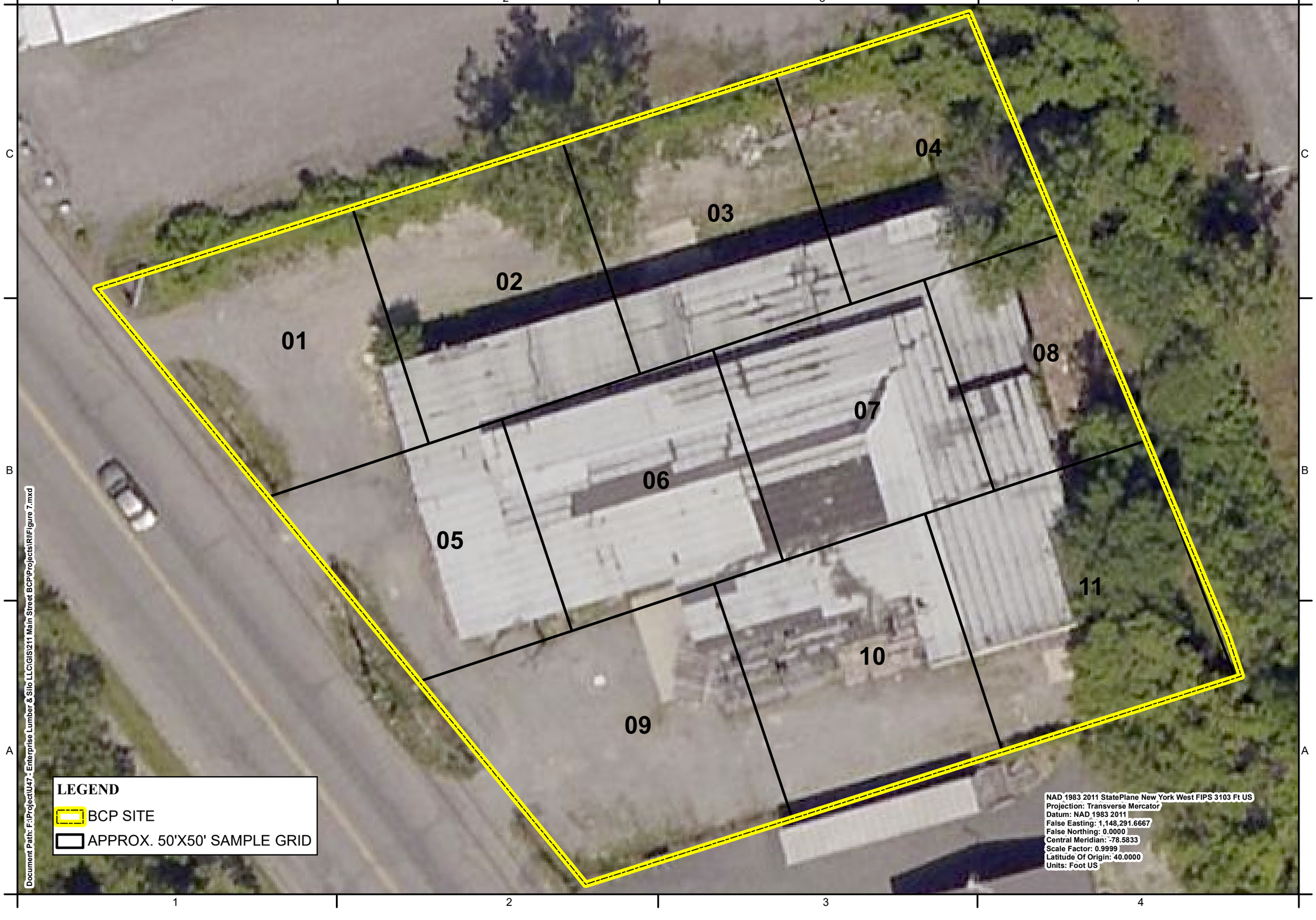
FILL DEPTH

Figure 6



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CONFIRMATORY SOIL SAMPLING

Figure 7

Tables

Table 1a
211 Main Street, North Tonawanda, NY
Site ID No. C932171
Remedial Investigation
Native Material – Subsurface Soil Sample Log

Sample ID	Date	Time	Matrix	Depth (ft)	VOC	SVOC	Pest / Herb	PCBs	Metals	Cyanide	Total Solids	Hex Chrome
SB-02-6 ft	10/1/19	0900	Native Soil	6	X	X	X	X	X	X	X	
SB-03-3 ft	10/1/19	1000	Native Soil	3	X	X	X	X	X	X	X	X
SB-03-15 ft	10/1/19	1000	Native Soil	15	X	X	X	X	X	X	X	X
SB-05-4 ft	10/1/19	1100	Native Soil	4	X	X	X	X	X	X	X	
SB-12-4 ft	10/1/19	1300	Native Soil	4	X	X	X	X	X	X	X	X
SB-12-15 ft	10/1/19	1300	Native Soil	15	X	X	X	X	X	X	X	X
SB-14-3 ft	10/1/19	1400	Native Soil	3	X	X	X	X	X	X	X	
SB-15-3 ft	10/1/19	1500	Native Soil	3	X	X	X	X	X	X	X	
SB-15-15 ft	10/1/19	1500	Native Soil	15	X	X	X	X	X	X	X	X
SB-09-4 ft	10/2/19	1000	Native Soil	4	X	X	X	X	X	X	X	
SB-08-3 ft	10/2/19	1100	Native Soil	3	X	X	X	X	X	X	X	X
SB-08-3 ft MS	10/2/19	1100	Native Soil	3	X	X	X	X	X	X	X	X
SB-08-3 ft MSD	10/2/19	1100	Native Soil	3	X	X	X	X	X	X	X	X
SB-08-15 ft	10/2/19	1100	Native Soil	15	X	X	X	X	X	X	X	X

Table 1b
211 Main Street, North Tonawanda, NY
Site ID No. C932171
Remedial Investigation
Beneath Building – Subsurface Soil Sample Log

Sample ID	Date	Time	Matrix	Depth (ft)	VOC	SVOC	Pest / Herb	PCBs	Metals	Cyanide	Total Solids	Hex Chrome
BB-04-2 ft	10/2/19	1300	Soil Beneath Building	2	X	X	X	X	X	X	X	X
BB-01-8 ft	10/2/19	1400	Soil Beneath Building	8	X	X	X	X	X	X	X	
BB-02-4 ft	10/2/19	1500	Soil Beneath Building	4	X	X	X	X	X	X	X	
BB-03-3 ft	10/3/19	1200	Soil Beneath Building	3	X	X	X	X	X	X	X	

Table 1c
211 Main Street, North Tonawanda, NY
Site ID No. C932171
Remedial Investigation
Groundwater Sample Log

Sample ID	Round	Date	Time	Matrix	VOC	SVOC	Pest / Herb	PCBs	Metals	Cyanide	PFOS / PFOA	1,4-Dioxane
MW-01	1	10/3/19	0900	Groundwater	X	X	X	X	X	X	X	X
MW-01 MS	1	10/3/19	0900	Groundwater	X	X	X	X	X	X		
MW-01 MSD	1	10/3/19	0900	Groundwater	X	X	X	X	X	X		
MW-01	2	1/28/20	1030	Groundwater					X			
MW-02	1	10/3/19	1300	Groundwater	X	X	X	X	X	X	X	X
MW-02	2	1/28/20	1300	Groundwater					X			
MW-03	1	10/3/19	1100	Groundwater	X	X	X	X	X	X	X	X
MW-03 DUP	1	10/3/19	1100	Groundwater	X	X	X	X	X	X	X	X
MW-03	2	1/28/20	1430	Groundwater		X			X		X	
Field Blank	1	10/3/19	1400	Water							X	
Trip Blank	1	10/3/19	1400	Water	X							
MW-04	1	10/29/19	1100	Groundwater	X	X	X	X	X	X	X	X
MW-04	2	1/28/20	0900	Groundwater		X			X		X	

Note: MW-04 was drilled on 10/18/19, developed on 10/25/19, sampled on 10/29/19

Table 2

SUBSURFACE SOIL RESULTS
NATIVE SOIL
211 MAIN STREET
BCP SITE #C932171

LOCATION - SAMPLE DEPTH SAMPLING DATE SAMPLE TYPE UNITS	Unrestricted Use	Residential Use	Restricted Residential Use	CP-51 Commercial	Commercial Use	Industrial Use	SB-02-6 FT 10/1/2019 SOIL mg/kg	SB-03-3 FT 10/1/2019 SOIL mg/kg	SB-03-15 FT 10/1/2019 SOIL mg/kg	SB-05-4 FT 10/1/2019 SOIL mg/kg	SB-08-3FT 10/2/2019 SOIL mg/kg	SB-08-15FT 10/2/2019 SOIL mg/kg	SB-09-4FT 10/2/2019 SOIL mg/kg	SB-12-4 FT 10/1/2019 SOIL mg/kg	SB-12-15 FT 10/1/2019 SOIL mg/kg	SB-14-3 FT 10/1/2019 SOIL mg/kg	SB-15-3 FT 10/1/2019 SOIL mg/kg	SB-15-15 FT 10/1/2019 SOIL mg/kg
VOCs																		
Methylene chloride	0.05	51	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.27	19	26		240	480	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	0.37	10	49		350	700	ND	ND	ND	ND	0.00028 J	0.00029 J	0.00027 J	ND	ND	ND	ND	ND
Carbon tetrachloride	0.76	1.4	2.4		22	44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.3	5.5	19		150	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.1	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1		30	60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.68	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.06	2.9	4.8		44	89	ND	0.00029 J	0.00029 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.7	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	30	41		390	780	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.02	0.21	0.9		13	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.33	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.19	100	100		500	1000	0.00026 J	0.00034 J	0.00027 J	0.0002 J	0.00017 J	ND	ND	0.00024 J	0.00025 J	0.00047 J	ND	ND
Trichloroethene	0.47	10	21		200	400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1.1	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2.4	17	49		280	560	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.8	9.8	13		130	250	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert butyl ether	0.93	62	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p/m-Xylene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.05	100	100		500	1000	0.026	0.032	0.0092 J	ND	ND	0.01 J	ND	ND	0.01 J	ND	ND	0.0081
Carbon disulfide							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	0.12	100	100		500	1000	ND	0.004 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	12	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	11	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	5.9	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	3.9	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8.4	47	52		190	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	3.6	47	52		190	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Acetate							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon-113							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl cyclohexane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2

SUBSURFACE SOIL RESULTS
NATIVE SOIL
211 MAIN STREET
BCP SITE #C932171

	Unrestricted Use	Residential Use	Restricted Residential Use	CP-51 Commercial	Commercial Use	Industrial Use	SB-02-6 FT 10/1/2019 SOIL mg/kg	SB-03-3 FT 10/1/2019 SOIL mg/kg	SB-03-15 FT 10/1/2019 SOIL mg/kg	SB-05-4 FT 10/1/2019 SOIL mg/kg	SB-08-3FT 10/2/2019 SOIL mg/kg	SB-08-15FT 10/2/2019 SOIL mg/kg	SB-09-4FT 10/2/2019 SOIL mg/kg	SB-12-4 FT 10/1/2019 SOIL mg/kg	SB-12-15 FT 10/1/2019 SOIL mg/kg	SB-14-3 FT 10/1/2019 SOIL mg/kg	SB-15-3 FT 10/1/2019 SOIL mg/kg	SB-15-15 FT 10/1/2019 SOIL mg/kg
SVOCs																		
Acenaphthene	20	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	0.33	0.33	1.2		6	12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl)ether							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	100	100	100		500	1000	ND	0.05 J	ND	ND	ND	ND	ND	0.1 J	ND	ND	ND	ND
4-Chlorophenyl phenyl ether							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl)ether							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy)methane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	12	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene				15			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NDPA/DPA							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodi-n-propylamine							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate							ND	ND	ND	ND	ND	ND	ND	0.076 J	ND	ND	ND	ND
Butyl benzyl phthalate							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	1	1	1		5.6	11	ND	0.026 J	ND	ND	ND	ND	ND	0.053 J	ND	ND	ND	ND
Benzo(a)pyrene	1	1	1		1	1.1	ND	ND	ND	ND	ND	ND	ND	0.049 J	ND	ND	ND	ND
Benzo(b)fluoranthene	1	1	1		5.6	11	ND	ND	ND	ND	ND	ND	ND	0.069 J	ND	ND	ND	ND
Benzo(k)fluoranthene	0.8	1	3.9		56	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	1	1	3.9		56	110	ND	ND	ND	ND	ND	ND	ND	0.051 J	ND	ND	ND	ND
Acenaphthylene	100	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	100	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	100	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	0.031 J	ND	ND	ND	ND
Fluorene	30	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	100	100	100		500	1000	ND	0.043 J	ND	ND	ND	ND	ND	0.059 J	ND	ND	ND	ND
Dibenzo(a,h)anthracene	0.33	0.33	0.33		0.56	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5		5.6	11	ND	ND	ND	ND	ND	ND	ND	0.034 J	ND	ND	ND	ND
Pyrene	100	100	100		500	1000	ND	0.036 J	ND	ND	ND	ND	ND	0.086 J	ND	ND	ND	ND
Biphenyl							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	14	59		350	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene							ND	ND	ND	ND	ND	ND	ND	0.024 J	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetophenone							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Chloro-m-cresol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.8	2.4	6.7		6.7	55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	0.33	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	0.33	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Methylphenol/4-Methylphenol	0.33	34	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Atrazine							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzaldehyde							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Caprolactam							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2

SUBSURFACE SOIL RESULTS
NATIVE SOIL
211 MAIN STREET
BCP SITE #C932171

	Unrestricted Use	Residential Use	Restricted Residential Use	CP-51 Commercial	Commercial Use	Industrial Use	SB-02-6 FT 10/1/2019 SOIL mg/kg	SB-03-3 FT 10/1/2019 SOIL mg/kg	SB-03-15 FT 10/1/2019 SOIL mg/kg	SB-05-4 FT 10/1/2019 SOIL mg/kg	SB-08-3FT 10/2/2019 SOIL mg/kg	SB-08-15FT 10/2/2019 SOIL mg/kg	SB-09-4FT 10/2/2019 SOIL mg/kg	SB-12-4 FT 10/1/2019 SOIL mg/kg	SB-12-15 FT 10/1/2019 SOIL mg/kg	SB-14-3 FT 10/1/2019 SOIL mg/kg	SB-15-3 FT 10/1/2019 SOIL mg/kg	SB-15-15 FT 10/1/2019 SOIL mg/kg
Pesticides																		
Delta-BHC	0.04	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lindane	0.1	0.28	1.3		9.2	23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-BHC	0.02	0.097	0.48		3.4	6.8	ND	ND	0.00077 JIP	ND	ND	ND	ND	0.000495 JIP	0.00114	ND	ND	ND
Beta-BHC	0.036	0.072	0.36		3	14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	0.042	0.42	2.1		15	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	0.005	0.019	0.097		0.68	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	0.014	2.2	11		89	410	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.005	0.039	0.2		1.4	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.0033	1.8	8.9		62	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	0.0033	2.6	13		92	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.0033	1.7	7.9		47	94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	2.4	4.8	24		200	920	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	2.4	4.8	24		200	920	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	2.4	4.8	24		200	920	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-Chlordane	0.094	0.91	4.2		24	47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-Chlordane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Herbicides																		
2,4-D							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-T							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TP (Silvex)	3.8	58	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs																		
Aroclor 1016	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1262	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs, Total	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals																		
Aluminum, Total							5430	7840	3000	5410	8430	14900	6380	4410	12200	11500	9050	3080
Antimony, Total							0.528 J	ND	ND	ND	1.02 J	1.28 J	1.13 J	ND	ND	ND	0.607 J	ND
Arsenic, Total	13	16	16		16	16	5.94	3.99	7.06	1.76	7.95	4.86	5.67	2.31	4.85	4.79	7.86	3.34
Barium, Total	350	350	400		400	10000	39.9	31.7	17.1	17.1	89.2	138	46.7	40.2	108	129	107	10.8
Beryllium, Total	7.2	14	72		590	2700	0.598	0.359 J	0.096 J	0.248 J	0.629	0.697	0.338 J	0.205 J	0.475 J	0.696	0.512	0.074 J
Cadmium, Total	2.5	2.5	4.3		9.3	60	0.449 J	0.359 J	0.344 J	0.133 J	ND	ND	ND	0.252 J	0.446 J	0.478 J	0.541 J	0.241 J
Calcium, Total							2910	1420	152000	1720	27500	33400	17100	65100	45600	3030	2820	67800
Chromium, Total							10.7	9.81	6.48	7.19	9.94	22.8	9.81	7.01	19.3	15.9	14.1	5.98
Chromium, Hexavalent	1	22	110		400	800	- -	ND	ND	- -	ND	ND	- -	ND	ND	- -	- -	ND
Cobalt, Total							5.03	5.1	3.32	2.95	5.05	13	4.97	3.45	10.8	8.6	10.3	4.65
Copper, Total	50	270	270		270	10000	37.8	9.65	13.6	6.87	17.1	26.8	17	12.3	20.2	15.7	25.6	12.4
Cyanide, Total	27	27	27		27	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total							19200	15600	13500	7250	20300	29900	14400	10300	24800	20200	26300	7220
Lead, Total	63	400	400		1000	3900	8.76	8.86	10.9	4.78	12.2	7.91	17.8	5.59	9	12.2	13.2	4.88
Magnesium, Total							1800	2360	50700	1450	4370	11800	4940	13800	12500	3290	3360	17000
Manganese, Total	1600	2000	2000		10000	10000	162	111	652	45.3	327	541	233	282	564	195	1020	320
Mercury, Total	0.18	0.81	0.81		2.8	5.7	ND	ND	ND	ND	ND	ND	ND	0.058 J	ND	ND	ND	ND
Nickel, Total	30	140	310		310	10000	13.8	11.5	6.43	9	11.1	28.2	11.7	8.7	23.2	17.6	24.9	8.78
Potassium, Total							169 J	979	540	332	798	1910	662	347	1730	521	399	385
Selenium, Total	3.9	36	180		1500	6800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.975 J
Silver, Total	2	36	180		1500	6800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total							40.5 J	69.2 J	165 J	61.9 J	153 J	138 J	48.9 J	112 J	166 J	41.2 J	44.8 J	112 J
Thallium, Total							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.436 J	ND
Vanadium, Total							31.3	16.8	9.81	12.4	15.2	30.1	15.8	10.7	24.7	24.6	20.9	8.2
Zinc, Total	109	2200	10000		10000	10000	36.3	46.8	58	26.5	40	62.4	40.8	29.6	53.9	52.6	50.8	30.6

Notes:
Results and soil cleanup objectives (SCO) in mg/kg
Analytical data compared to NYSDEC Part 375-6
Highlighted color indicates the respective use SCO(s) exceeded. Use type SCOs are listed from left to right from most restrictive to least restrictive.
Blank space indicates that a SCO does not exist
"J" indicates estimated concentration
"ND" indicates analyte not detected at concentration greater than laboratory detection limit

TABLE 3

SUBSURFACE SOIL RESULTS
SOIL BENEATH BUILDING
211 MAIN STREET
BCP SITE #C932171

						LOCATION - SAMPLE DEPTH	BB-01-8FT	BB-02-4FT	BB-03-3FT	BB-04-2FT
						SAMPLING DATE	10/2/2019	10/2/2019	10/3/2019	10/2/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	CP-51 Commercial Use	Commercial Use	Industrial Use				
VOCs										
Methylene chloride	0.05	51	100		500	1000	ND	ND	ND	ND
1,1-Dichloroethane	0.27	19	26		240	480	ND	ND	ND	ND
Chloroform	0.37	10	49		350	700	0.00027 J	0.00032 J	ND	0.0003 J
Carbon tetrachloride	0.76	1.4	2.4		22	44	ND	ND	ND	ND
1,2-Dichloropropane							ND	ND	ND	ND
Dibromochloromethane							ND	ND	ND	ND
1,1,2-Trichloroethane							ND	ND	ND	ND
Tetrachloroethene	1.3	5.5	19		150	300	ND	ND	ND	ND
Chlorobenzene	1.1	100	100		500	1000	ND	ND	ND	ND
Trichlorofluoromethane							ND	ND	ND	ND
1,2-Dichloroethane	0.02	2.3	3.1		30	60	ND	ND	ND	ND
1,1,1-Trichloroethane	0.68	100	100		500	1000	ND	ND	ND	ND
Bromodichloromethane							ND	ND	ND	ND
trans-1,3-Dichloropropene							ND	ND	ND	ND
cis-1,3-Dichloropropene							ND	ND	ND	ND
Bromoform							ND	ND	ND	ND
1,1,2,2-Tetrachloroethane							ND	ND	ND	ND
Benzene	0.06	2.9	4.8		44	89	ND	ND	ND	ND
Toluene	0.7	100	100		500	1000	ND	ND	ND	ND
Ethylbenzene	1	30	41		390	780	ND	ND	ND	ND
Chloromethane							ND	ND	ND	ND
Bromomethane							ND	ND	ND	ND
Vinyl chloride	0.02	0.21	0.9		13	27	ND	ND	ND	ND
Chloroethane							ND	ND	ND	ND
1,1-Dichloroethene	0.33	100	100		500	1000	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.19	100	100		500	1000	ND	ND	ND	ND
Trichloroethene	0.47	10	21		200	400	ND	ND	ND	ND
1,2-Dichlorobenzene	1.1	100	100		500	1000	ND	ND	ND	ND
1,3-Dichlorobenzene	2.4	17	49		280	560	ND	ND	ND	ND
1,4-Dichlorobenzene	1.8	9.8	13		130	250	ND	ND	ND	ND
Methyl tert butyl ether	0.93	62	100		500	1000	ND	ND	ND	ND
p/m-Xylene							ND	ND	ND	ND
o-Xylene							ND	ND	ND	ND
cis-1,2-Dichloroethene	0.25	59	100		500	1000	ND	ND	ND	ND
Styrene							ND	ND	ND	ND
Dichlorodifluoromethane							ND	ND	ND	ND
Acetone	0.05	100	100		500	1000	0.007 J	ND	0.017	0.043
Carbon disulfide							ND	ND	ND	ND
2-Butanone	0.12	100	100		500	1000	ND	ND	ND	ND
4-Methyl-2-pentanone							ND	ND	ND	ND
2-Hexanone							ND	ND	ND	ND
1,2-Dibromoethane							ND	ND	ND	ND
n-Butylbenzene	12	100	100		500	1000	ND	ND	ND	ND
sec-Butylbenzene	11	100	100		500	1000	ND	ND	ND	ND
tert-Butylbenzene	5.9	100	100		500	1000	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane							ND	ND	ND	ND
Isopropylbenzene							ND	ND	ND	ND
p-Isopropyltoluene							ND	ND	ND	ND
Naphthalene	12	100	100		500	1000	ND	ND	ND	ND
n-Propylbenzene	3.9	100	100		500	1000	ND	ND	ND	ND
1,2,4-Trichlorobenzene							ND	ND	ND	ND
1,3,5-Trimethylbenzene	8.4	47	52		190	380	ND	ND	ND	ND
1,2,4-Trimethylbenzene	3.6	47	52		190	380	ND	ND	ND	ND
Methyl Acetate							ND	ND	ND	ND
Cyclohexane							ND	ND	ND	ND
Freon-113							ND	ND	ND	ND
Methyl cyclohexane							ND	ND	ND	ND

TABLE 3

SUBSURFACE SOIL RESULTS
SOIL BENEATH BUILDING
211 MAIN STREET
BCP SITE #C932171

C&S COMPANIES®

LOCATION - SAMPLE DEPTH							BB-01-8FT	BB-02-4FT	BB-03-3FT	BB-04-2FT
SAMPLING DATE							10/2/2019	10/2/2019	10/3/2019	10/2/2019
SAMPLE TYPE							SOIL	SOIL	SOIL	SOIL
UNITS							mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	CP-51 Commercial Use	Commercial Use	Industrial Use				
SVOCs										
Acenaphthene	20	100	100		500	1000	ND	ND	0.08 J	ND
Hexachlorobenzene	0.33	0.33	1.2		6	12	ND	ND	ND	ND
Bis(2-chloroethyl)ether							ND	ND	ND	ND
2-Chloronaphthalene							ND	ND	1.1	ND
3,3'-Dichlorobenzidine							ND	ND	ND	ND
2,4-Dinitrotoluene							ND	ND	ND	ND
2,6-Dinitrotoluene							ND	ND	ND	ND
Fluoranthene	100	100	100		500	1000	0.024 J	ND	0.52	ND
4-Chlorophenyl phenyl ether							ND	ND	ND	ND
4-Bromophenyl phenyl ether							ND	ND	ND	ND
Bis(2-chloroisopropyl)ether							ND	ND	ND	ND
Bis(2-chloroethoxy)methane							ND	ND	ND	ND
Hexachlorobutadiene							ND	ND	ND	ND
Hexachlorocyclopentadiene							ND	ND	ND	ND
Hexachloroethane							ND	ND	ND	ND
Isophorone							ND	ND	ND	ND
Naphthalene	12	100	100		500	1000	ND	ND	2.2	ND
Nitrobenzene				15			ND	ND	ND	ND
NDPA/DPA							ND	ND	ND	ND
n-Nitrosodi-n-propylamine							ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate							ND	ND	ND	ND
Butyl benzyl phthalate							ND	ND	ND	ND
Di-n-butylphthalate							ND	ND	ND	ND
Di-n-octylphthalate							ND	ND	ND	ND
Diethyl phthalate							ND	ND	ND	ND
Dimethyl phthalate							ND	ND	ND	ND
Benzo(a)anthracene	1	1	1		5.6	11	ND	ND	0.41	ND
Benzo(a)pyrene	1	1	1		1	1.1	ND	ND	0.25 J	ND
Benzo(b)fluoranthene	1	1	1		5.6	11	ND	ND	0.44	ND
Benzo(k)fluoranthene	0.8	1	3.9		56	110	ND	ND	ND	ND
Chrysene	1	1	3.9		56	110	ND	ND	0.62	ND
Acenaphthylene	100	100	100		500	1000	ND	ND	0.46	ND
Anthracene	100	100	100		500	1000	ND	ND	0.18 J	ND
Benzo(ghi)perylene	100	100	100		500	1000	ND	ND	0.26 J	ND
Fluorene	30	100	100		500	1000	ND	ND	0.22 J	ND
Phenanthrene	100	100	100		500	1000	ND	ND	1.7	ND
Dibenzo(a,h)anthracene	0.33	0.33	0.33		0.56	1.1	ND	ND	0.064 J	ND
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5		5.6	11	ND	ND	0.2 J	ND
Pyrene	100	100	100		500	1000	0.02 J	ND	0.64	ND
Biphenyl							ND	ND	0.26 J	ND
4-Chloroaniline							ND	ND	ND	ND
2-Nitroaniline							ND	ND	ND	ND
3-Nitroaniline							ND	ND	ND	ND
4-Nitroaniline							ND	ND	ND	ND
Dibenzofuran	7	14	59		350	1000	ND	ND	0.47 J	ND
2-Methylnaphthalene							ND	ND	1.3	ND
1,2,4,5-Tetrachlorobenzene							ND	ND	0.17 J	ND
Acetophenone							ND	ND	ND	ND
2,4,6-Trichlorophenol							ND	ND	ND	ND
p-Chloro-m-cresol							ND	ND	ND	ND
2-Chlorophenol							ND	ND	ND	ND
2,4-Dichlorophenol							ND	ND	ND	ND
2,4-Dimethylphenol							ND	ND	ND	ND
2-Nitrophenol							ND	ND	ND	ND
4-Nitrophenol							ND	ND	ND	ND
2,4-Dinitrophenol							ND	ND	ND	ND
4,6-Dinitro-o-cresol							ND	ND	ND	ND
Pentachlorophenol	0.8	2.4	6.7		6.7	55	ND	ND	ND	ND
Phenol	0.33	100	100		500	1000	ND	ND	0.28 J	ND
2-Methylphenol	0.33	100	100		500	1000	ND	ND	0.12 J	ND
3-Methylphenol/4-Methylphenol	0.33	34	100		500	1000	ND	ND	0.2 J	ND
2,4,5-Trichlorophenol							ND	ND	ND	ND
Carbazole							ND	ND	0.087 J	ND
Atrazine							ND	ND	ND	ND
Benzaldehyde							ND	ND	1.1	ND
Caprolactam							ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol							ND	ND	ND	ND

TABLE 3

SUBSURFACE SOIL RESULTS
SOIL BENEATH BUILDING
211 MAIN STREET
BCP SITE #C932171

						LOCATION - SAMPLE DEPTH	BB-01-8FT	BB-02-4FT	BB-03-3FT	BB-04-2FT
						SAMPLING DATE	10/2/2019	10/2/2019	10/3/2019	10/2/2019
						SAMPLE TYPE	SOIL	SOIL	SOIL	SOIL
						UNITS	mg/kg	mg/kg	mg/kg	mg/kg
	Unrestricted Use	Residential Use	Restricted Residential Use	CP-51 Commercial Use	Commercial Use	Industrial Use				
Pesticides										
Delta-BHC	0.04	100	100		500	1000	ND	ND	ND	ND
Lindane	0.1	0.28	1.3		9.2	23	ND	ND	ND	ND
Alpha-BHC	0.02	0.097	0.48		3.4	6.8	ND	ND	ND	ND
Beta-BHC	0.036	0.072	0.36		3	14	ND	ND	ND	ND
Heptachlor	0.042	0.42	2.1		15	29	ND	ND	ND	ND
Aldrin	0.005	0.019	0.097		0.68	1.4	ND	ND	ND	ND
Heptachlor epoxide							ND	ND	ND	ND
Endrin	0.014	2.2	11		89	410	ND	ND	ND	ND
Endrin aldehyde							ND	ND	ND	ND
Endrin ketone							ND	ND	ND	ND
Dieldrin	0.005	0.039	0.2		1.4	2.8	ND	ND	ND	ND
4,4'-DDE	0.0033	1.8	8.9		62	120	ND	ND	ND	ND
4,4'-DDD	0.0033	2.6	13		92	180	ND	ND	ND	ND
4,4'-DDT	0.0033	1.7	7.9		47	94	ND	ND	ND	ND
Endosulfan I	2.4	4.8	24		200	920	ND	ND	ND	ND
Endosulfan II	2.4	4.8	24		200	920	ND	ND	ND	ND
Endosulfan sulfate	2.4	4.8	24		200	920	ND	ND	ND	ND
Methoxychlor							ND	ND	ND	ND
Toxaphene							ND	ND	ND	ND
cis-Chlordane	0.094	0.91	4.2		24	47	ND	ND	ND	ND
trans-Chlordane							ND	ND	ND	ND
Chlordane							ND	ND	0.0148	ND
Herbicides										
2,4-D							ND	ND	ND	ND
2,4,5-T							ND	ND	ND	ND
2,4,5-TP (Silvex)	3.8	58	100		500	1000	ND	ND	ND	ND
PCBs										
Aroclor 1016	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1221	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1232	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1242	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1248	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1254	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1260	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1262	0.1	1	1		1	25	ND	ND	ND	ND
Aroclor 1268	0.1	1	1		1	25	ND	ND	ND	ND
PCBs, Total	0.1	1	1		1	25	ND	ND	ND	ND
Metals										
Aluminum, Total							5420	7990	2620	3900
Antimony, Total							0.713 J	0.558 J	ND	ND
Arsenic, Total	13	16	16		16	16	5.69	2.91	7.38	1.27
Barium, Total	350	350	400		400	10000	57.4	53.1	85.1	24.1
Beryllium, Total	7.2	14	72		590	2700	0.332 J	0.428 J	0.346 J	0.185 J
Cadmium, Total	2.5	2.5	4.3		9.3	60	ND	ND	0.4 J	ND
Calcium, Total							31400	3580	26600	44000
Chromium, Total							11	13.3	5.36	6.8
Chromium, Hexavalent	1	22	110		400	800	- -	- -	- -	ND
Cobalt, Total							4.89	5.46	5.92	3.6
Copper, Total	50	270	270		270	10000	23	20.6	34.8	15.4
Cyanide, Total	27	27	27		27	10000	ND	ND	ND	ND
Iron, Total							12300	12500	16700	8990
Lead, Total	63	400	400		1000	3900	44.5	7.52	45.6	4.34 J
Magnesium, Total							6800	2650	9640	12200
Manganese, Total	1600	2000	2000		10000	10000	265	269	243	375
Mercury, Total	0.18	0.81	0.81		2.8	5.7	ND	ND	0.148	ND
Nickel, Total	30	140	310		310	10000	11.4	16.6	9.12	9.01
Potassium, Total							428	450	554	238
Selenium, Total	3.9	36	180		1500	6800	ND	ND	0.983 J	ND
Silver, Total	2	36	180		1500	6800	0.603 J	ND	ND	ND
Sodium, Total							138 J	44.8 J	138 J	84.2 J
Thallium, Total							ND	ND	ND	ND
Vanadium, Total							14.9	17	10.3	10.6
Zinc, Total	109	2200	10000		10000	10000	65.8	44.5	48.9	28.6

Notes:

Results and soil cleanup objectives (SCO) in mg/kg

Analytical data compared to NYSDEC Part 375-6

Highlighted color indicates the respective use SCO(s) exceeded. Use type SCOs are listed from left to right from most restrictive to least restrictive.

Blank space indicates that a SCO does not exist

"J" indicates estimated concentration

"ND" indicates analyte not detected at concentration greater than laboratory detection limit

TABLE 4

GROUNDWATER RESULTS
211 MAIN STREET
BCP SITE #C932171

		LOCATION	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3 DUP	MW-3	MW-4	MW-4
		SAMPLING DATE	10/3/2019	1/28/2020	10/3/2019	1/28/2020	10/3/2019	10/3/2019	1/28/2020	10/29/2019	1/28/2020
		SAMPLE TYPE	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
	NY-AWQS	NYSDEC EC Guidance									
VOCs											
Methylene chloride	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,1-Dichloroethane	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Chloroform	7	7	ND	- -	ND	- -	ND	ND	- -	ND	- -
Carbon tetrachloride	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2-Dichloropropane	1	1	ND	- -	ND	- -	ND	ND	- -	ND	- -
Dibromochloromethane	50	50	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,1,2-Trichloroethane	1	1	ND	- -	ND	- -	ND	ND	- -	ND	- -
Tetrachloroethene	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Chlorobenzene	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Trichlorofluoromethane	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2-Dichloroethane	0.6	0.6	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,1,1-Trichloroethane	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Bromodichloromethane	50	50	ND	- -	ND	- -	ND	ND	- -	ND	- -
trans-1,3-Dichloropropene	0.4	0.4	ND	- -	ND	- -	ND	ND	- -	ND	- -
cis-1,3-Dichloropropene	0.4	0.4	ND	- -	ND	- -	ND	ND	- -	ND	- -
Bromoform	50	50	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,1,2,2-Tetrachloroethane	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Benzene	1	1	ND	- -	ND	- -	ND	ND	- -	ND	- -
Toluene	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Ethylbenzene	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Chloromethane			ND	- -	ND	- -	ND	ND	- -	ND	- -
Bromomethane	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Vinyl chloride	2	2	ND	- -	ND	- -	ND	ND	- -	ND	- -
Chloroethane	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,1-Dichloroethene	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
trans-1,2-Dichloroethene	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
Trichloroethene	5	5	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2-Dichlorobenzene	3	3	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,3-Dichlorobenzene	3	3	ND	- -	ND	- -	ND	ND	- -	ND	- -
1,4-Dichlorobenzene	3		ND	- -	ND	- -	ND	ND	- -	ND	- -
Methyl tert butyl ether	10		ND	- -	ND	- -	ND	ND	- -	ND	- -
p/m-Xylene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
o-Xylene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
cis-1,2-Dichloroethene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Styrene	930		ND	- -	ND	- -	ND	ND	- -	ND	- -
Dichlorodifluoromethane	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Acetone	50		2.2 J	- -	ND	- -	ND	ND	- -	2.2 J	- -
Carbon disulfide	60		ND	- -	ND	- -	ND	ND	- -	ND	- -
2-Butanone	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
4-Methyl-2-pentanone			ND	- -	ND	- -	ND	ND	- -	ND	- -
2-Hexanone	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2-Dibromoethane	0.0006		ND	- -	ND	- -	ND	ND	- -	ND	- -
n-Butylbenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
sec-Butylbenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
tert-Butylbenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2-Dibromo-3-chloropropane	0.04		ND	- -	ND	- -	ND	ND	- -	ND	- -
Isopropylbenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
p-Isopropyltoluene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Naphthalene	10		ND	- -	ND	- -	ND	ND	- -	ND	- -
n-Propylbenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2,4-Trichlorobenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
1,3,5-Trimethylbenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2,4-Trimethylbenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Methyl Acetate			ND	- -	ND	- -	ND	ND	- -	ND	- -
Cyclohexane			ND	- -	ND	- -	ND	ND	- -	ND	- -
Freon-113	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Methyl cyclohexane			ND	- -	ND	- -	ND	ND	- -	ND	- -

TABLE 4

GROUNDWATER RESULTS
211 MAIN STREET
BCP SITE #C932171

		LOCATION	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3 DUP	MW-3	MW-4	MW-4
		SAMPLING DATE	10/3/2019	1/28/2020	10/3/2019	1/28/2020	10/3/2019	10/3/2019	1/28/2020	10/29/2019	1/28/2020
		SAMPLE TYPE	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
	NY-AWQS	NYSDEC EC Guidance									
SVOCs											
Bis(2-chloroethyl)ether	1		ND	- -	ND	- -	ND	ND	- -	ND	- -
3,3'-Dichlorobenzidine	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4-Dinitrotoluene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
2,6-Dinitrotoluene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
4-Chlorophenyl phenyl ether			ND	- -	ND	- -	ND	ND	- -	ND	- -
4-Bromophenyl phenyl ether			ND	- -	ND	- -	ND	ND	- -	ND	- -
Bis(2-chloroisopropyl)ether	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Bis(2-chloroethoxy)methane	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Hexachlorocyclopentadiene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Isophorone	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
Nitrobenzene	0.4		ND	- -	ND	- -	ND	ND	- -	ND	- -
NDPA/DPA	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
n-Nitrosodi-n-propylamine			ND	- -	ND	- -	ND	ND	- -	ND	- -
Bis(2-ethylhexyl)phthalate	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Butyl benzyl phthalate	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
Di-n-butylphthalate	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
Di-n-octylphthalate	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
Diethyl phthalate	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
Dimethyl phthalate	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
Biphenyl			ND	- -	ND	- -	ND	ND	- -	ND	- -
4-Chloroaniline	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
2-Nitroaniline	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
3-Nitroaniline	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
4-Nitroaniline	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Dibenzofuran			ND	- -	ND	- -	ND	ND	- -	ND	- -
1,2,4,5-Tetrachlorobenzene	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Acetophenone			ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4,6-Trichlorophenol			ND	- -	ND	- -	ND	ND	- -	ND	- -
p-Chloro-m-cresol			ND	- -	ND	- -	ND	ND	- -	ND	- -
2-Chlorophenol			ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4-Dichlorophenol	2		ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4-Dimethylphenol	2		ND	- -	ND	- -	ND	ND	- -	ND	- -
2-Nitrophenol			ND	- -	ND	- -	ND	ND	- -	ND	- -
4-Nitrophenol			ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4-Dinitrophenol	2		ND	- -	ND	- -	ND	ND	- -	ND	- -
4,6-Dinitro-o-cresol			ND	- -	ND	- -	ND	ND	- -	ND	- -
Phenol	2		ND	- -	ND	- -	ND	ND	- -	ND	- -
3-Methylphenol/4-Methylphenol			ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4,5-Trichlorophenol			ND	- -	ND	- -	ND	ND	- -	ND	- -
Carbazole			ND	- -	ND	- -	ND	ND	- -	ND	- -
Atrazine	7.5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Benzaldehyde			ND	- -	ND	- -	ND	ND	- -	ND	- -
Caprolactam			ND	- -	ND	- -	ND	ND	- -	ND	- -
2,3,4,6-Tetrachlorophenol			ND	- -	ND	- -	ND	ND	- -	ND	- -
Acenaphthene	20		ND	- -	ND	- -	ND	ND	- -	0.06 J	- -
2-Chloronaphthalene	10		ND	- -	ND	- -	ND	ND	- -	ND	- -
Fluoranthene	50		ND	- -	ND	- -	ND	ND	- -	0.04 J	- -
Hexachlorobutadiene	0.5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Naphthalene	10		0.05 J	- -	ND	- -	0.1	ND	- -	0.1	- -
Benzo(a)anthracene	0.002		ND	- -	ND	- -	0.03 J	0.02 J	ND	0.03 J	ND
Benzo(a)pyrene	0		ND	- -	ND	- -	ND	ND	- -	ND	- -
Benzo(b)fluoranthene	0.002		ND	- -	ND	- -	ND	ND	- -	0.01 J	ND
Benzo(k)fluoranthene	0.002		ND	- -	ND	- -	ND	ND	- -	ND	- -
Chrysene	0.002		ND	- -	ND	- -	ND	0.01 J	ND	0.01 J	ND
Acenaphthylene			ND	- -	ND	- -	ND	ND	- -	ND	- -
Anthracene	50		ND	- -	ND	- -	0.03 J	0.03 J	- -	0.04 J	- -
Benzo(ghi)perylene			ND	- -	ND	- -	ND	ND	- -	ND	- -
Fluorene	50		ND	- -	ND	- -	ND	0.01 J	- -	0.02 J	- -
Phenanthrene	50		0.02 J	- -	ND	- -	0.03 J	0.02 J	- -	0.1	- -
Dibenzo(a,h)anthracene			ND	- -	ND	- -	ND	ND	- -	ND	- -
Indeno(1,2,3-cd)pyrene	0.002		ND	- -	ND	- -	ND	ND	- -	ND	- -
Pyrene	50		ND	- -	ND	- -	ND	ND	- -	0.04 J	- -
2-Methylnaphthalene			ND	- -	ND	- -	ND	ND	- -	0.03 J	- -
Pentachlorophenol	2		ND	- -	ND	- -	ND	ND	- -	ND	- -
Hexachlorobenzene	0.04		ND	- -	ND	- -	ND	ND	- -	ND	- -
Hexachloroethane	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
1,4-Dioxane			ND	- -	ND	- -	ND	ND	- -	0.0396 J	- -

TABLE 4

GROUNDWATER RESULTS
211 MAIN STREET
BCP SITE #C932171

		LOCATION	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3 DUP	MW-3	MW-4	MW-4
		SAMPLING DATE	10/3/2019	1/28/2020	10/3/2019	1/28/2020	10/3/2019	10/3/2019	1/28/2020	10/29/2019	1/28/2020
		SAMPLE TYPE	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
	NY-AWQS	NYSDEC EC Guidance									
Pesticides											
Delta-BHC	0.04		ND	- -	ND	- -	ND	ND	- -	ND	- -
Lindane	0.05		ND	- -	ND	- -	ND	ND	- -	ND	- -
Alpha-BHC	0.01		ND	- -	ND	- -	ND	ND	- -	ND	- -
Beta-BHC	0.04		ND	- -	ND	- -	ND	ND	- -	ND	- -
Heptachlor	0.04		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aldrin	0		ND	- -	ND	- -	ND	ND	- -	ND	- -
Heptachlor epoxide	0.03		ND	- -	ND	- -	ND	ND	- -	ND	- -
Endrin	0		ND	- -	ND	- -	ND	ND	- -	ND	- -
Endrin aldehyde	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Endrin ketone	5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Dieldrin	0.004		ND	- -	ND	- -	ND	ND	- -	ND	- -
4,4'-DDE	0.2		ND	- -	ND	- -	ND	ND	- -	ND	- -
4,4'-DDD	0.3		ND	- -	ND	- -	ND	ND	- -	ND	- -
4,4'-DDT	0.2		ND	- -	ND	- -	ND	ND	- -	ND	- -
Endosulfan I			ND	- -	ND	- -	ND	ND	- -	ND	- -
Endosulfan II			ND	- -	ND	- -	ND	ND	- -	ND	- -
Endosulfan sulfate			ND	- -	ND	- -	ND	ND	- -	ND	- -
Methoxychlor	35		ND	- -	ND	- -	ND	ND	- -	ND	- -
Toxaphene	0.06		ND	- -	ND	- -	ND	ND	- -	ND	- -
cis-Chlordane			ND	- -	ND	- -	ND	ND	- -	ND	- -
trans-Chlordane			ND	- -	ND	- -	ND	ND	- -	ND	- -
Chlordane	0.05		ND	- -	ND	- -	ND	ND	- -	ND	- -
Herbicides											
2,4-D	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4,5-T	35		ND	- -	ND	- -	ND	ND	- -	ND	- -
2,4,5-TP (Silvex)	0.26		ND	- -	ND	- -	ND	ND	- -	ND	- -
PCBs											
Aroclor 1016	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aroclor 1221	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aroclor 1232	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aroclor 1242	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aroclor 1248	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aroclor 1254	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aroclor 1260	0.09		ND	- -	0.037 J	- -	ND	ND	- -	ND	- -
Aroclor 1262	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
Aroclor 1268	0.09		ND	- -	ND	- -	ND	ND	- -	ND	- -
PCBs, Total			ND	- -	0.037 J	- -	ND	ND	- -	ND	- -
Metals											
Aluminum, Total			413	- -	2900	1130	1240	447	- -	333	- -
Aluminum, Dissolved				- -		55			- -		- -
Antimony, Total	3		0.92 J	- -	0.64 J	- -	1.96 J	1.47 J	- -	ND	- -
Arsenic, Total	25		0.78	- -	3.44	- -	2.37	0.8	- -	3.45	- -
Barium, Total	1000		68.93	- -	76.15	- -	75.95	67.87	- -	122.2	- -
Beryllium, Total	3		ND	- -	0.21 J	- -	0.1 J	ND	- -	ND	- -
Cadmium, Total	5		ND	- -	0.08 J	- -	0.11 J	0.08 J	- -	ND	- -
Calcium, Total			73800	- -	123000	- -	139000	137000	- -	129000	- -
Chromium, Total	50		1.34	- -	4.14	- -	2.19	ND	- -	ND	- -
Cobalt, Total			0.84	- -	3.25	- -	1.08	0.53	- -	0.43 J	- -
Copper, Total	200		4.71	- -	5.09	- -	6.69	3.8	- -	1.12	- -
Cyanide, Total	400		ND	- -	ND	- -	ND	ND	- -	ND	- -
Iron, Total	300		1510	309	3730	1640	2510	540	1960	2970	1980
Iron, Dissolved	300			20.5 J		61			134		407
Lead, Total	25		1.06	- -	7.63	- -	6.34	1.37	- -	0.59 J	- -
Magnesium, Total	35000		11200	- -	16100	- -	23800	23600	- -	22800	- -
Manganese, Total	300		916.8	393.8	2843	1180	122.3	94.82	- -	667.7	744.7
Manganese, Dissolved	300			395.1		535.4			- -		747.9
Mercury, Total	0.7		ND	- -	ND	- -	ND	ND	- -	ND	- -
Nickel, Total	100		2.75	- -	5.78	- -	2.84	1.61 J	- -	0.68 J	- -
Potassium, Total			6230	- -	9840	- -	2130	2020	- -	7040	- -
Selenium, Total	10		5.94	- -	ND	- -	ND	ND	- -	ND	- -
Silver, Total	50		ND	- -	ND	- -	ND	ND	- -	ND	- -
Sodium, Total	20000		49600	- -	10800	- -	19600	19100	- -	12400	- -
Thallium, Total	0.5		ND	- -	ND	- -	ND	ND	- -	ND	- -
Vanadium, Total			2.99 J	- -	7.18	- -	4.4 J	ND	- -	ND	- -
Zinc, Total	2000		18.4	- -	70.13	- -	36.48	13.97	- -	5.1 J	- -

TABLE 4

GROUNDWATER RESULTS
211 MAIN STREET
BCP SITE #C932171

LOCATION		MW-1	MW-1	MW-2	MW-2	MW-3	MW-3 DUP	MW-3	MW-4	MW-4
SAMPLING DATE		10/3/2019	1/28/2020	10/3/2019	1/28/2020	10/3/2019	10/3/2019	1/28/2020	10/29/2019	1/28/2020
SAMPLE TYPE		WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
NY-AWQS	NYSDEC EC Guidance									
Perfluorinated Alkyl Acids										
Perfluorobutanoic Acid (PFBA)	100	0.557 J	- -	7.28	- -	7.56	6.62	- -	5.92	- -
Perfluoropentanoic Acid (PFPeA)	100	ND	- -	1.06 J	- -	0.959 J	0.886 J	- -	2.24	- -
Perfluorobutanesulfonic Acid (PFBS)	100	2.56	- -	23.4	- -	7.38	7.2	- -	6.38	- -
Perfluorohexanoic Acid (PFHxA)	100	0.504 J	- -	0.971 J	- -	1.36 J	1.24 J	- -	2.84	- -
Perfluoroheptanoic Acid (PFHpA)	100	ND	- -	0.454 J	- -	0.877 J	0.918 J	- -	2.69	- -
Perfluorohexanesulfonic Acid (PFHxS)	100	ND	- -	0.789 J	- -	2.39	ND	- -	1.03 J	- -
Perfluorooctanoic Acid (PFOA)	100	ND	- -	6.2	- -	11.6	10.9	12.2	19	29.4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluoroheptanesulfonic Acid (PFHpS)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluorononanoic Acid (PFNA)	100	ND	- -	0.345 J	- -	0.409 J	0.386 J	- -	0.609 J	- -
Perfluorooctanesulfonic Acid (PFOS)	10	2.3	- -	5.17	- -	5.88	4.86	- -	19.7	22.8
Perfluorodecanoic Acid (PFDA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluoroundecanoic Acid (PFUnA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluorodecanesulfonic Acid (PFDS)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluorooctanesulfonamide (FOSA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluorododecanoic Acid (PFDoA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluorotridecanoic Acid (PFTrDA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Perfluorotetradecanoic Acid (PFTA)	100	ND	- -	ND	- -	ND	ND	- -	ND	- -
Total PFOA/PFOS, Total	70	2.3		11.4		17.5	15.8		38.7	
Total all PFOS including PFOA and PFOS	500	5.921		45.669		38.415	33.01		60.409	

Notes:

- Except for PFOA / PFOS, analytical results compared to NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values. PFOA / PFOS compared to thresholds provided in Guidelines for Sampling and Analysis of PFAS by NYSDEC, dated January 2020.
- Emerging contaminant concentrations and guidance values in parts per trillion. All other contaminant concentrations and water quality standards in parts per billion.
- Highlighted cell indicates the respective groundwater limitation exceeded.
- Blank space indicates that a SCO does not exist.
- "- -" indicates analysis not performed.
- "J" indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- ND indicates contaminant not detected at a concentration greater than laboratory detection limits

TABLE 5 - SURFACE SOIL SAMPLE RESULTS
211 Main Street, North Tonawanda, NY

LOCATION							SS-1	SS-2	SS-3	SS-4	DUP	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8
SAMPLING DATE							9/19/2016	9/19/2016	9/19/2016	9/19/2016	9/19/2016	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI													
VOCs																			
Methyl Acetate							0.013	ND	ND	ND	ND	-	-	-	-	-	-	-	-
Methylene Chloride	0.05	51	100		500	1000	0.0022	0.0041	ND	0.0073	0.0047	-	-	-	-	-	-	-	-
SVOCs																			
COMPOUND												-	-	-	-	-	-	-	-
Naphthalene	12	100	100		500	1000	ND	0.62	ND	ND	ND	-	-	-	-	-	-	-	-
2-Methylnaphthalene		0.41					ND	0.63	ND	ND	ND	-	-	-	-	-	-	-	-
Dimethylphthalate		100					0.83	0.98	19.1	16.8	22.5	-	-	-	-	-	-	-	-
Acenaphthylene	100	100	100		500	1000	ND	ND	ND	5.7	8.4	-	-	-	-	-	-	-	-
Diethylphthalate		100					ND	0.8	ND	ND	ND	-	-	-	-	-	-	-	-
Fluorene	30	100	100		500	1000	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-
Phenanthrene	100	100	100		500	1000	ND	2.3	ND	5.1	6.4	-	-	-	-	-	-	-	-
Anthracene	100	100	100		500	1000	ND	0.54	ND	4.8	7.2	-	-	-	-	-	-	-	-
Carbazole							ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-
Di-n-butylphthalate		100					ND	0.68	ND	3.1	3.4	-	-	-	-	-	-	-	-
Fluoranthene	100	100	100		500	1000	0.3	2	ND	25.6	34.1	-	-	-	-	-	-	-	-
Pyrene	100	100	100		500	1000	0.19	1.2	ND	28.5	33.2	-	-	-	-	-	-	-	-
Butylbenzylphthalate		100					ND	ND	34.7	21.1	31.2	-	-	-	-	-	-	-	-
Benzo(a)anthracene	1	1	1		5.6	11	ND	0.74	ND	27.8	34.3	-	-	-	-	-	-	-	-
Chrysene	1	1	3.9		56	110	ND	0.8	ND	19.1	27.6	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate		50					0.21	1.8	ND	22.4	24.5	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	1	1	1		5.6	11	0.2	0.92	ND	32.4	50.5	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	0.8	1	3.9		56	110	ND	ND	ND	20.7	15.4	-	-	-	-	-	-	-	-
Benzo(a)pyrene	1	1	1		1	1.1	ND	0.67	ND	25.6	30.9	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5		5.6	11	ND	0.5	ND	32.6	36	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	0.33	0.33	0.33		0.56	1.1	ND	ND	ND	6.2	6.9	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	100	100	100		500	1000	ND	0.46	ND	27.2	26.4	-	-	-	-	-	-	-	-
PCBs																			
Aroclor-1254	0.1	1	1		1	25	ND	ND	0.11	0.17	ND	-	-	-	-	-	-	-	-
Aroclor-1260	0.1	1	1		1	25	0.0444	0.0905	0.17	0.38	0.28	-	-	-	-	-	-	-	-

NOTES:
All concentrations in mg/kg
Analytical Data compared to Part 375 Standards and DER-10
ND - The compound was not detected at the indicated concentration.
NY-RESC: Commercial Criteria, New York Restricted use current as of 5/2007
NY-RESI: Industrial Criteria, New York Restricted use current as of 5/2007
NY-RESR: Residential Criteria, New York Restricted use current as of 5/2007
NY-RESRR: Restricted-Residential Criteria, New York Restricted use current as of 5/2007
NY-UNRES: New York Unrestricted use Criteria current as of 5/2007
"-" indicates that sample was not analyzed for that parameter.
Blank space indicates that SCO does not exist.

TABLE 5 - SURFACE SOIL SAMPLE RESULTS
211 Main Street, North Tonawanda, NY

LOCATION ID							SS-1	SS-2	SS-3	SS-4	DUP	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8
SAMPLING DATE							9/19/2016	9/19/2016	9/19/2016	9/19/2016	9/19/2016	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI													
TAL Metals																			
Aluminum							6460	8790	4850	5130	5370	1560	4880	3360	7660	3520	5500	4710	2380
Antimony							ND	1.27	5.89	4.3	3.58	0.696	1.88	7.97	7.38	7.28	5.11	3.79	1.73
Arsenic	13	16	16		16	16	5.47	11.2	9.64	37.2	30.2	5.82	12.4	33.8	61	39.6	41.9	29.8	3.18
Barium	350	350	400		400	10000	57.4	232	178	154	204	36.7	122	97.5	130	97.2	86.1	127	90.5
Beryllium	7.2	14	72		590	2700	0.394	1.31	0.18	0.566	0.522	0.198	0.544	0.533	1.36	0.549	0.475	0.617	0.112
Cadmium	2.5	2.5	4.3		9.3	60	1.33	1.43	0.814	ND	2.07	2.94	2.01	2.01	2.87	2.2	2.05	1.92	0.576
Calcium							58400	47100	16400	12100	18300	152000	39200	12800	33900	11800	12900	22400	31400
Chromium	30	36	180		1500	6800	15.2	13.1	49.4	61.9	63.9	8.43	31	20.1	38.3	28.4	37.2	36.8	33.8
Cobalt		30					7.55	7.78	5.56	13.2	15.4	3.01	6.13	6.96	9.21	7.97	6.89	6.33	3.12
Copper	50	270	270		270	10000	62.8	40.3	56.3	107	128	49.7	87.8	102	180	131	110	76	24.5
Iron		2000					16700	21800	12000	65400	41500	8760	21300	33000	52100	33100	31100	31600	6060
Lead	63	400	400		1000	3900	141	272	209	328	308	83.3	171	261	236	244	213	296	148
Magnesium							28200	17900	6760	3140	4700	59100	12300	3000	8810	2140	3520	5040	7920
Manganese	1600	2000	2000		10000	10000	338	989	205	517	504	440	440	518	1190	490	493	594	125
Mercury	0.18	0.81	0.81		2.8	5.7	0.083	0.286	0.305	0.304	0.276	0.12	0.18	0.22	0.46	0.41	0.29	0.99	0.26
Nickel	30	140	310		310	10000	15.8	24	29.7	52.1	38	8.3	18.6	29	42	31.3	31.5	28.5	16.5
Potassium							538	1020	558	634	744	366	623	453	912	412	452	468	308
Selenium	3.9	36	180		1500	6800	ND	1.15	1.79	15	10	0.301	0.632	0.617	1.32	1.34	1.07	1.62	3.2
Sodium							134	328	114	163	145	176	134	106	272	96.1	94.5	130	82.1
Thallium							0.322	0.978		0.783	0.846	0.472	0.49	0.716	1.38	0.597	3.39	2.87	3.2
Vanadium							13.7	11.9	38.5	17.9	21.1	5.9	13.1	11.7	25.7	14.3	16.5	26.3	23.2
Zinc	109	2200	10000		10000	10000	271	314	422	501	618	570	400	399	408	394	365	334	194

NOTES:
All concentrations in mg/kg
Analytical Data compared to Part 375 Standards and DER-10
ND - The compound was not detected at the indicated concentration.
NY-RESC: Commercial Criteria, New York Restricted use current as of 5/2007
NY-RESI: Industrial Criteria, New York Restricted use current as of 5/2007
NY-RESR: Residential Criteria, New York Restricted use current as of 5/2007
NY-RESRR: Restricted-Residential Criteria, New York Restricted use current as of 5/2007
NY-UNRES: New York Unrestricted use Criteria current as of 5/2007
"-" indicates that sample was not analyzed for that parameter.
Blank space indicates that SCO does not exist.

TABLE 6 - SS-2 DELINEATION RESULTS
211 Main Steet, North Tonawanda, NY

LOCATION							SD-1	SD-2	SD-3	SD-4	SD-5	SD-6	SD-7	SD-8	SD-9	SD-10
SAMPLING DATE							4/10/2017	4/10/2017	4/10/2017	4/10/2017	4/10/2017	4/10/2017	4/10/2017	4/10/2017	4/10/2017	4/10/2017
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI										
Semivolatile Organics by GC/MS																
Acenaphthene	20	100	100		500	1000	ND	0.031 J	0.099 J	ND	ND	0.31	ND	ND	ND	ND
Naphthalene	12	100	100		500	1000	0.032 J	0.12 J	0.21	ND	ND	0.053 J	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate		50					0.61	1.8	1.4	ND	ND	3	ND	ND	ND	ND J
Butyl benzyl phthalate		100					0.2	0.23 J	0.3	ND	ND	0.24	ND	ND	ND	ND
Di-n-butylphthalate		100					0.093 J	0.26 J	0.2 J	ND	ND	0.24	ND	ND	ND	ND
Benzo(a)anthracene	1	1	1		5.6	11	0.095 J	0.55	0.33	0.19	ND	1.9	ND	ND	ND	0.16
Benzo(a)pyrene	1	1	1		1	1.1	0.08 J	0.39	0.22	0.2	ND	1.4	ND	ND	ND	0.16
Benzo(b)fluoranthene	1	1	1		5.6	11	0.12	0.66	0.34	0.31	ND	2.3	ND	ND	ND	0.27
Benzo(k)fluoranthene	0.8	1	3.9		56	110	0.041 J	0.22	0.11 J	0.094 J	ND	0.66	ND	ND J	ND	0.086 J
Chrysene	1	1	3.9		56	110	0.11	0.6	0.36	0.24	ND	2.1	ND	ND	ND	0.21
Acenaphthylene	100	100	100		500	1000	ND	0.056 J	ND	ND	ND	0.057 J	ND	ND	ND	ND
Anthracene	100	100	100		500	1000	ND	0.11 J	0.17	ND	ND	0.82	ND	ND	ND	ND
Benzo(ghi)perylene	100	100	100		500	1000	0.068 J	0.24	0.15 J	0.13 J	ND	0.78	ND	ND J	ND	0.11 J
Fluorene	30	100	100		500	1000	ND	0.04 J	0.087 J	ND	ND	0.37	ND	ND	ND	ND
Phenanthrene	100	100	100		500	1000	0.09 J	0.69	0.79	0.24	ND	4.8	ND	ND	ND	0.18
Dibenzo(a,h)anthracene	0.33	0.33	0.33		0.56	1.1	ND	0.067 J	0.044 J	0.035 J	ND	0.2	ND	ND J	ND	0.026 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5		5.6	11	0.059 J	0.27	0.14 J	0.15 J	ND	0.92	ND	ND J	ND	0.12 J
Pyrene	100	100	100		500	1000	0.16	1	0.61	0.38	ND	4.1	ND	ND	ND	0.3
Dibenzofuran	7	14	59		350	1000	ND	0.05 J	0.1 J	ND	ND	0.19 J	ND	ND	ND	ND
2-Methylnaphthalene		0.41					0.034 J	0.13 J	0.21 J	ND	ND	0.093 J	ND	ND	ND	ND
Acetophenone							ND	0.035 J	0.034 J	ND	ND	0.24	ND	ND	ND	ND
Phenol	0.33	100	100		500	1000	ND	ND	ND	ND	ND	0.34	ND	ND	ND	ND
Carbazole							ND	0.083 J	0.1 J	0.038 J	ND	0.62	ND	ND J	ND	0.028 J
Benzaldehyde							ND	0.19 J	0.063 J	ND	ND	0.081 J	ND	ND	ND	ND
Total Metals																
Aluminum, Total							2700	5100	6900	6100	1300	5600	2200	4500	1500	6000
Antimony, Total							0.61 J	ND	0.64 J	ND	ND	5.7	ND	ND	ND	ND
Arsenic, Total	13	16	16		16	16	4.8	8.9	7.9	5.1	3.5	3.7	2	3.1	1.7	3.9
Barium, Total	350	350	400		400	10000	50	79	130	47	16	44	17	35	12	51
Beryllium, Total	7.2	14	72		590	2700	0.15 J	0.33 J	0.79	0.27 J	ND	0.23 J	0.06 J	0.18 J	0.04 J	0.27 J
Cadmium, Total	2.5	2.5	4.3		9.3	60	0.77 J	1.1 J	1.6	0.43 J	0.4 J	0.52 J	0.16 J	0.51 J	0.16 J	0.66 J
Calcium, Total							130000	12000	69000	25000	170000	8900	35000	9800	32000	31000
Chromium, Total							11	14	15	16	3.8	17	4.9	18	3.5	20
Cobalt, Total		30					3.2	8.4	4.3	4.2	1.5 J	3.1	1.9	2.5	1.4 J	4.2
Copper, Total	50	270	270		270	10000	28	42	50	18	7.3	13	7.9	10	5.6	24
Iron, Total		2000					9300	12000	13000	11000	5400	8500	5600	7100	4000	12000
Lead, Total	63	400	400		1000	3900	85	190	220	36	37	32	9.8	30	6.6	45
Magnesium, Total							57000	4800	30000	11000	79000	3600	14000	4100	14000	11000
Manganese, Total	1600	2000	2000		10000	10000	820	230	930	380	740	240	180	140	130	430
Mercury, Total	0.18	0.81	0.81		2.8	5.7	0.15	0.23	0.34	0.07 J	0.02 J	0.61	0.02 J	0.33	0.02 J	0.1
Nickel, Total	30	140	310		310	10000	7.4	18	13	12	2.7	8.7	4.6	7.2	3.6	11
Potassium, Total							510	710	820	720	450	470	290	470	220	740
Selenium, Total	3.9	36	180		1500	6800	ND	0.55 J	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total							210	71 J	280	67 J	270	44 J	66 J	40 J	58 J	69 J
Vanadium, Total		100					6.3	12	9.9	15	3.3	12	7.8	9.9	5.6	15
Zinc, Total	109	2200	10000		10000	10000	140	260	610	95	68	61	64	54	69	150

ND - The compound was not detected at the indicated concentration.

J - Estimated Value

NY-RESC: Commercial Criteria, New York Restricted use current as of 5/2007

NY-RESI: Industrial Criteria, New York Restricted use current as of 5/2007

NY-RESR: Residential Criteria, New York Restricted use current as of 5/2007

NY-RESRR: Restricted-Residential Criteria, New York Restricted use current as of 5/2007

NY-UNRES: New York Unrestricted use Criteria current as of 5/2007

TABLE 7 - SS-4 DELINEATION RESULTS
211 Main Street, North Tonawanda, NY

LOCATION							SD-A		SD-B		SD-C		SD-D		SD-E		SD-F		SD-G		SD-H		SD-I		SD-J	
SAMPLING DATE							4/10/2017		4/10/2017		4/10/2017		4/10/2017		4/10/2017		4/10/2017		4/10/2017		4/10/2017		4/10/2017		4/10/2017	
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI																				
SVOCS																										
Acenaphthene	20	100	100		500	1000	ND		0.35		ND		0.054	J	0.086	J	0.08	J	ND		0.068	J	0.035	J	ND	
Fluoranthene	100	100	100		500	1000	2.6		24	E	1.4		2		3.3		2.8		0.46		2.4		1.2		0.54	
Naphthalene	12	100	100		500	1000	0.23	J	1.5		0.92		0.57		0.24	J	0.18	J	ND		0.16	J	0.12	J	0.044	J
Bis(2-ethylhexyl)phthalate		50					1.1		8.6		3		4.1		1.5		1.7		0.29		2.1		7.5		1	
Butyl benzyl phthalate		100					2.4		2.3		0.49		2		1.6		1.3		0.25		5		3		2.7	
Di-n-butylphthalate		100					ND		1.2		0.51		0.53		ND		ND		ND		ND		3.9		ND	
Benzo(a)anthracene	1	1	1		5.6	11	1.3		17	E	0.77		1.1		1.2		1.2		0.19		1.2		0.66		0.29	
Benzo(a)pyrene	1	1	1		1	1.1	1.1		14	E	0.76		0.95		1.2		1.1		0.21		1.2		0.73		0.33	
Benzo(b)fluoranthene	1	1	1		5.6	11	1.7		26	E	1.2		1.4		1.8		1.7		0.31		1.9		0.95		0.55	
Benzo(k)fluoranthene	0.8	1	3.9		56	110	0.57		7.8		0.35		0.53		0.63		0.59		0.11	J	0.65		0.29		0.17	
Chrysene	1	1	3.9		56	110	1.2		16	E	0.79		1		1.4		1.2		0.23		1.3		0.66		0.33	
Acenaphthylene	100	100	100		500	1000	0.33		7.2		0.37		0.36		0.16	J	0.26		ND		0.34		0.18	J	0.083	J
Anthracene	100	100	100		500	1000	0.32		3.9		0.31		0.3		0.3		0.38		ND		0.34		0.17		0.078	J
Benzo(ghi)perylene	100	100	100		500	1000	0.73		9.9		0.54		0.6		0.84		0.69		0.15	J	0.67		0.53		0.23	
Fluorene	30	100	100		500	1000	0.059	J	0.49		0.088	J	0.098	J	0.12	J	0.11	J	ND		0.083	J	0.044	J	ND	
Phenanthrene	100	100	100		500	1000	0.56		4.7		0.84		0.98		1.8		1.2		0.19		0.94		0.56		0.25	
Dibenzo(a,h)anthracene	0.33	0.33	0.33		0.56	1.1	0.2		3.1		0.14		0.18		0.22		0.18		0.038	J	0.18	J	0.11	J	0.061	J
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5		5.6	11	0.78		13		0.6		0.71		0.9		0.8		0.17	J	0.81		0.53		0.25	
Pyrene	100	100	100		500	1000	2.2		21	E	1.3		1.7		2.4		2.2		0.36		2		1.2		0.48	
Biphenyl							ND		0.18	J	0.1	J	ND		ND		ND		ND		ND		ND	U	ND	
Dibenzofuran	7	14	59		350	1000	0.07	J	0.64		0.26		0.17	J	0.12	J	0.083	J	ND		0.07	J	0.036	J	ND	
2-Methylnaphthalene		0.41					0.18	J	1.5		0.85		0.53		0.22	J	0.15	J	ND		0.12	J	0.083	J	0.034	J
Acetophenone							ND		ND		ND	U	ND		ND		ND		ND		ND		ND		ND	
Phenol	0.33	100	100		500	1000	0.083	J	ND		ND	U	ND		ND		ND		ND		ND		1.7		ND	
3-Methylphenol/4-Methylp	0.33	34	100		500	1000	ND		0.25	J	0.074	J	0.087	J	ND		ND		ND		ND		0.041	J	0.33	
Carbazole							0.098	J	1.1		0.13	J	0.15	J	0.28		0.13	J	0.033	J	0.15	J	0.053	J	0.048	J
Benzaldehyde							0.13	J	ND		ND	U	ND		ND		0.64		ND		ND		ND		ND	
TAL Metals																										
Aluminum, Total							5600		3500		3000		3600		4700		3600		6800		4600		6700		6200	
Antimony, Total							8		1.9	J	1.6	J	4.2	J	ND		1.1	J	ND		ND		ND		ND	
Arsenic, Total	13	16	16		16	16	16		36		34		50		9.8		32		7.3		14		9.4		6.6	
Barium, Total	350	350	400		400	10000	93		91		69		100		91		110		59		110		180		110	
Beryllium, Total	7.2	14	72		590	2700	0.34	J	0.39	J	0.32	J	0.41	J	0.34	J	0.39	J	0.3	J	0.33	J	0.42	J	0.31	J
Cadmium, Total	2.5	2.5	4.3		9.3	60	0.83	J	1.7		1.2		1.8		1.2		1.9		0.51	J	1.5		2.2		0.77	J
Calcium, Total							21000		19000		12000		18000		29000		17000		13000		25000		48000		64000	
Chromium, Total							24		25		20		38		27		30		15		22		42		20	
Cobalt, Total		30					7.1		6.3		5.5		8.5		40		7.4		4.7		9.2		42		7.2	
Copper, Total	50	270	270		270	10000	63		97		82		100		130		100		29		92		280		96	
Iron, Total		2000					18000		27000		23000		36000		14000		28000		11000		16000		26000		13000	
Lead, Total	63	400	400		1000	3900	120		220		190		310		120		220		67		130		190		84	
Magnesium, Total							6400		5400		3600		7400		9600		4300		5600		7400		14000		7600	
Manganese, Total	1600	2000	2000		10000	10000	400		430		340		520		280		550		230		320		500		320	
Mercury, Total	0.18	0.81	0.81		2.8	5.7	0.22		0.36		0.38		0.52		0.18		0.35		0.13		0.22		0.14		0.08	J
Nickel, Total	30	140	310		310	10000	22		26		21		33		17		25		13		20		26		19	
Potassium, Total							830		550		470		520		710		820		970		900		1200		740	
Selenium, Total	3.9	36	180		1500	6800	ND		1.5	J	0.63	J	1.1	J	0.63	J	0.92	J	ND		0.59	J	0.43	J	0.56	J
Silver, Total	2	36	180		1500	6800	ND		ND		1		1.4		ND		ND		ND		ND		1.5		ND	
Sodium, Total							120	J	96	J	85	J	110	J	90	J	130	J	64	J	110	J	290		120	J
Vanadium, Total		100					17		18		11		14		11		13		14		13		15		16	
Zinc, Total	109	2200	10000		10000	10000	310		350		300		390		380		440		110		560		950		400	

All concentrations in mg/kg

Analytical Data compared to Part 375 Standards and DER-10

ND - The compound was not detected at the indicated concentration.

J - Estimated Value

NY-RESC: Commercial Criteria, New York Restricted use current as of 5/2007

NY-RESI: Industrial Criteria, New York Restricted use current as of 5/2007

NY-RESR: Residential Criteria, New York Restricted use current as of 5/2007

NY-RESRR: Restricted-Residential Criteria, New York Restricted use current as of 5/2007

NY-UNRES: New York Unrestricted use Criteria current as of 5/2007

TABLE 8 - SUBSURFACE SOIL SAMPLE RESULTS - SOIL BORINGS
211 Main Street, North Tonawanda, NY

LOCATION ID							BH-1	BH-2	BH-3	BH-4	BH-6	BH-7	DUP	BH-8	BH-10
SAMPLING DATE							9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI									
VOCs															
Acetone	0.05	100	100		500	1000	ND	ND	0.24	0.0308	ND	0.0663	0.0738	ND	ND
Carbon Disulfide		100					ND	ND	0.0035	0.0032	ND	ND	ND	ND	0.0021
Methyl Acetate							ND	ND	0.0353	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.05	51	100		500	1000	ND	ND	0.0049	0.0027	0.0077	0.0041	0.0046	0.0035	0.0047
Cyclohexane							ND	ND	0.0024	0.0016	ND	ND	ND	ND	0.0063
2-Butanone	0.12	100	100		500	1000	ND	ND	0.0352	ND	ND	ND	ND	ND	ND
Methylcyclohexane							ND	ND	0.005	0.0032	ND	ND	ND	ND	0.0094
Benzene	0.06	2.9	4.8		44	89	ND	ND	ND	ND	ND	ND	ND	ND	0.0016
Toluene	0.7	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	0.0039
Ethyl Benzene	1	30	41		390	780	ND	ND	ND	ND	ND	ND	ND	ND	0.0016
m/p-Xylenes							ND	ND	ND	ND	ND	ND	ND	ND	0.0064
o-Xylene	0.26	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	0.0057
Isopropylbenzene		100					ND	ND	ND	ND	ND	ND	ND	ND	0.003
SVOCs															
Naphthalene	12	100	100		500	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene		0.41					ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphthalate		100					1	1.1	0.71	1.1	1	0.95	0.94	15.3	1.2
Acenaphthylene	100	100	100		500	1000	ND	ND	ND	ND	0.19	ND	ND	ND	ND
Diethylphthalate		100					ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	30	100	100		500	1000	ND	ND	ND	0.0953	0.18	ND	ND	ND	ND
Phenanthrene	100	100	100		500	1000	0.49	0.27	0.41	0.83	1.8	0.25	0.32	ND	0.39
Anthracene	100	100	100		500	1000	0.12	ND	ND	0.23	0.39	ND	ND	ND	0.11
Carbazole							ND	ND	ND	ND	0.19	ND	ND	ND	ND
Di-n-butylphthalate		100					ND	ND	ND	ND	0.55	ND	ND	ND	ND
Fluoranthene	100	100	100		500	1000	0.88	0.37	0.34	1	2.2	0.59	0.58	ND	0.5
Pyrene	100	100	100		500	1000	0.8	0.35	0.32	1.1	1.7	0.47	0.37	ND	0.42
Butylbenzylphthalate		100					ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	1	1	1		5.6	11	0.44	0.21	0.19	0.67	1.1	0.31	0.26	ND	0.28
Chrysene	1	1	3.9		56	110	0.37	0.18	ND	0.53	1.1	0.28	0.24	ND	0.22
Bis(2-ethylhexyl)phthalate		50					ND	ND	ND	ND	0.27	ND	ND	4	ND
Benzo(b)fluoranthene	1	1	1		5.6	11	0.49	0.24	0.23	0.65	1.5	0.34	0.32	ND	0.28
Benzo(k)fluoranthene	0.8	1	3.9		56	110	0.21	0.1	ND	0.3	0.36	0.2	0.19	ND	0.12
Benzo(a)pyrene	1	1	1		1	1.1	0.39	0.19	0.18	0.57	0.99	0.27	0.24	ND	0.23
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5		5.6	11	0.31	0.14	ND	0.47	0.72	0.16	ND	ND	0.24
Dibenzo(a,h)anthracene	0.33	0.33	0.33		0.56	1.1	ND	ND	ND	0.0978	0.17	ND	ND	ND	ND
Benzo(g,h,i)perylene	100	100	100		500	1000	0.36	0.18	0.19	0.45	0.69	0.18	0.19	ND	0.21
PCBs															
Aroclor-1254	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1260	0.1	1	1		1	25	ND	ND	ND	ND	ND	ND	ND	0.0407	ND

TABLE 8 - SUBSURFACE SOIL SAMPLE RESULTS - SOIL BORINGS
211 Main Street, North Tonawanda, NY

LOCATION ID							BH-1	BH-2	BH-3	BH-4	BH-6	BH-7	DUP	BH-8	BH-10
SAMPLING DATE							9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI									
TAL Metals															
Aluminum							7770	6390	7300	6700	10900	6350	8580	6060	9880
Antimony							0.687	1.61	ND	0.817	0.65	0.623	1.43	0.937	ND
Arsenic	13	16	16		16	16	6.4	14.9	7.47	4.58	8.28	8.31	10.8	16.2	5.46
Barium	350	350	400		400	10000	96.5	123	111	64.6	114	104	135	185	108
Beryllium	7.2	14	72		590	2700	0.594	2.44	0.483	0.462	1.07	0.436	0.711	0.561	0.414
Cadmium	2.5	2.5	4.3		9.3	60	0.359	0.469	0.306	0.221	0.993	0.785	0.811	0.785	0.1
Calcium							17200	16800	26200	26600	40200	75100	45300	55300	14300
Chromium							6.4	6.41	65	8.98	9.59	16.1	11.2	10.1	11.2
Cobalt		30					6.76	8.87	6.49	4.95	5.38	10.4	9	5.75	8.37
Copper	50	270	270		270	10000	7.92	32.1	33.8	9.45	14.5	97.9	40.7	26.3	17
Iron							32600	31900	23700	18600	21800	15800	18000	20900	17200
Lead	63	400	400		1000	3900	168	190	90.1	36.2	205	223	376	792	103
Magnesium							4730	1820	7660	12700	9870	23600	10600	16600	6530
Manganese	1600	2000	2000		10000	10000	318	350	398	269	513	466	524	467	364
Mercury	0.18	0.81	0.81		2.8	5.7	0.159	0.229	0.103	0.03	0.208	0.074	0.117	0.142	1.07
Nickel	30	140	310		310	10000	14.6	16.8	26.5	12.9	16.5	13.9	16.4	17.1	14.3
Potassium							798	588	695	792	775	908	1150	662	1370
Selenium	3.9	36	180		1500	6800	7.99	8.04	3.74	2.14	2.12	ND	ND	ND	3.71
Sodium							130	186	150	123	375	376	550	332	163
Thallium							0.58	0.591	0.458	0.335	0.392	0.384	0.602	0.477	0.499
Vanadium							12	14.3	16.2	14.9	13.7	14.1	17.8	12.1	17.6
Zinc	109	2200	10000		10000	10000	177	223	183	146	197	140	211	249	87.8

NOTES:

All concentrations in mg/kg

Analytical Data compared to Part 375 Standards and DER-10

ND - The compound was not detected at the indicated concentration.

NY-RESC: Commercial Criteria, New York Restricted use current as of 5/2007

NY-RESI: Industrial Criteria, New York Restricted use current as of 5/2007

NY-RESR: Residential Criteria, New York Restricted use current as of 5/2007

NY-RESRR: Restricted-Residential Criteria, New York Restricted use current as of 5/2007

NY-UNRES: New York Unrestricted use Criteria current as of 5/2007

Blank space indicates that SCO does not exist.

TABLE 9 - SUBSURFACE SOIL SAMPLE RESULTS - TEST PITS
211 Main Street, North Tonwanda, NY

LOCATION							TP-1	TP-2	TP-2A	TP-2B	TP-4
SAMPLING DATE							8/18/2017	8/18/2017	8/18/2017	8/18/2017	8/18/2017
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI					
Semivolatile Organics											
Acenaphthene	20	100	100		500	1000	0.14 J	-	-	ND	ND
Fluoranthene	100	100	100		500	1000	4.1	-	-	0.46 J	1.4
Naphthalene	12	100	100		500	1000	0.76	-	-	ND	ND
Bis(2-ethylhexyl)phthalate		50					4.7	-	-	0.6 J	2.4
Butyl benzyl phthalate		100					ND	-	-	ND	0.5 J
Di-n-butylphthalate		100					0.65	-	-	ND	0.33 J
Benzo(a)anthracene	1	1	1		5.6	11	2.4	-	-	0.25 J	0.88
Benzo(a)pyrene	1	1	1		1	1.1	2.9	-	-	0.22 J	1.1
Benzo(b)fluoranthene	1	1	1		5.6	11	4.4	-	-	0.3 J	1.6
Benzo(k)fluoranthene	0.8	1	3.9		56	110	1.3	-	-	ND	0.55 J
Chrysene	1	1	3.9		56	110	2.6	-	-	0.2 J	0.87
Acenaphthylene	100	100	100		500	1000	0.74	-	-	ND	ND
Anthracene	100	100	100		500	1000	0.77	-	-	ND	ND
Benzo(ghi)perylene	100	100	100		500	1000	2.4	-	-	0.18 J	1.2
Fluorene	30	100	100		500	1000	0.24	-	-	ND	ND
Phenanthrene	100	100	100		500	1000	2.3	-	-	0.28 J	0.57 J
Dibenzo(a,h)anthracene	0.33	0.33	0.33		0.56	1.1	0.52	-	-	ND	0.17 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5		5.6	11	2.5	-	-	0.19 J	1.1
Pyrene	100	100	100		500	1000	3.5	-	-	0.39 J	1.3
Biphenyl							0.059 J	-	-	ND	ND
Dibenzofuran	7	14	59		350	1000	0.2	-	-	ND	ND
2-Methylnaphthalene		0.41					0.25	-	-	ND	ND
Phenol	0.33	100	100		500	1000	0.15 J	-	-	ND	ND
3-Methylphenol/4-Methylph	0.33	34	100		500	1000	0.06 J	-	-	ND	ND
Carbazole							0.45	-	-	ND	ND
Total Metals											
Aluminum, Total							12000	6140	8870	3790	5640
Antimony, Total							2.22 J	1.37 J	ND	0.826 J	2.91 J
Arsenic, Total	13	16	16		16	16	18	6.6	4.06	5.51	19.3
Barium, Total	350	350	400		400	10000	333	89.2	131	79	253
Beryllium, Total	7.2	14	72		590	2700	2.64	0.91	0.544 J	0.551	0.389 J
Cadmium, Total	2.5	2.5	4.3		9.3	60	0.687 J	0.583 J	0.532 J	1.1	2.68
Calcium, Total							40500	43400	6460	53600	63100
Chromium, Total		36	180		1500	6800	6.55	5.76	11.6	7.19	27.2
Cobalt, Total		30					2.69	3.11	3.1	2.29	6.96
Copper, Total	50	270	270		270	10000	23.5	22.9	16.7	19.4	64.3
Iron, Total		2000					12700	14800	15100	9860	32800
Lead, Total	63	400	400		1000	3900	107	124	15.1	165	302
Magnesium, Total							5430	11700	2250	22100	7780
Manganese, Total	1600	2000	2000		10000	10000	848	416	113	558	476
Mercury, Total	0.18	0.81	0.81		2.8	5.7	0.19	0.4	0.07 J	0.11	0.16
Nickel, Total	30	140	310		310	10000	8.14	7.57	10.4	6.24	20.6
Potassium, Total							1600	488	723	340	962
Selenium, Total	3.9	36	180		1500	6800	0.762 J	0.704 J	ND	0.826 J	ND
Sodium, Total							414	174 J	48.6 J	134 J	273
Thallium, Total							0.743 J	ND	ND	0.381 J	0.578 J
Vanadium, Total		100					11.4	9.84	15.3	7.58	19.2
Zinc, Total	109	2200	10000		10000	10000	107	122	49.6	195	562
Volatile Organics											
Methylene chloride	0.05	51	100		500	1000	0.003 J	-	-	ND	ND
Tetrachloroethene	1.3	5.5	19		150	300	ND	-	-	0.0019	ND
Acetone	0.05	100	100		500	1000	0.0049 J	-	-	0.003 J	0.0033 J

NOTES:
All concentrations in mg/kg
Analytical Data compared to Part 375 Standards and DER-10
ND - The compound was not detected at the indicated concentration.
J - Estimated Value
Blank space indicates that SCO does not exist.

NY-RESC: Commercial Criteria, New York Restricted use current as of 5/2007
NY-RESI: Industrial Criteria, New York Restricted use current as of 5/2007
NY-RESR: Residential Criteria, New York Restricted use current as of 5/2007
NY-RESRR: Restricted-Residential Criteria, New York Restricted use current as of 5/2007
NY-UNRES: New York Unrestricted use Criteria current as of 5/2007
"-" indicates that sample was not analyzed for that parameter.

TABLE 10 - GROUNDWATER SAMPLE RESULTS
211 Main Street, North Tonawanda, NY

LOCATION	NY TOGS	MW-1-092116 (total)	MW-1-092116 (dissolved)	MW-2-092116	MW-3-092116	DUP (MW-2)
SAMPLING DATE		**9/21/2016**	**9/21/2016**	**9/21/2016**	**9/21/2016**	**9/21/2016**
VOCs						
Methyl tert-butyl Ether	10	ND	ND	0.36 J	ND	ND
TAL Metals						
Aluminum		1060 N*	1240 N*	92.6 N*	256 N*	151 N*
Arsenic	25	ND	ND	2.77 J	ND	ND
Barium	1000	45.4 J	45.9 J	21.9 J	41.1 J	21.9 J
Calcium		81900	81700	83200	64900	82900
Iron	300	748	859	148	274	181
Magnesium		11600	11800	14000	13300	14000
Manganese	300	508	510	735	130	727
Potassium		4660	4680	1910	1350	1930
Sodium	20000	54200	54100	10900	6170	10900
Zinc		ND	5.64 J	ND	ND	ND
SVOCs						
Dimethylphthalate		3.1 J	ND	ND	2.3 J	ND

NOTES:

All concentrations in ug/l

Class GA GW Standards (NYSDEC 6/2004)

ND - The compound was not detected at the indicated concentration.

J - Estimated Value

N - Presumptive Evidence of a Compound

* - Values outside of QC limits

Shading - Sample concentration exceeds standard

TABLE 11 - WOODEN PIER SAMPLING RESULTS
211 Main Street, North Tonawanda, NY

LOCATION							W-1	W-2	W-3	W-4	W-5	W-6
SAMPLING DATE							4/6/2017	4/6/2017	4/6/2017	4/6/2017	4/6/2017	4/6/2017
	NY-UNRES	NY-RESR	NY-RESRR	CP-51 COMM	NY-RESC	NY-RESI						
Arsenic, Total	13	16	16		16	16	0.72	0.52	3.2	0.96	1.4	0.4

NOTES:
All concentrations in mg/kg
Analytical Data compared to Part 375 Standards and DER-10
ND - The compound was not detected at the indicated concentration.
*NY-RESC: Commercial Criteria, New York Restricted use current as of 5/2007
*NY-RESI: Industrial Criteria, New York Restricted use current as of 5/2007
*NY-RESR: Residential Criteria, New York Restricted use current as of 5/2007
*NY-RESRR: Restricted-Residential Criteria, New York Restricted use current as of 5/2007
*NY-UNRES: New York Unrestricted use Criteria current as of 5/2007

Appendix A
Excavation Work Plan

APPENDIX A – EXCAVATION WORK PLAN (EWP)

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. **Table 1** includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information.

Table 1: Notifications*

NYSDEC Project Manager Glenn May	(716) 851-7220 glenn.may@dec.ny.gov
NYSDEC Regional HW Engineer Chad Staniszewski	(716) 851-7220 chad.staniszewski@dec.ny.gov
NYSDOH Project Manager Gregory Rys	(315) 866-6879 gregory.rys@health.ny.gov
NYSDEC Site Control Kelly Lewandowski	(518) 402-9547 kelly.lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in **Appendix B**;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal. Further discussion of off-site disposal of materials is provided in **Section 6** of this Appendix.

A-3 SOIL STAGING METHODS

Potentially contaminated soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under Plan is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes are as follows: trucks will exit the Site and turn right onto Main Street. Trucks will continue onto River Road and take River Road until they reach Williams Road, where they turn right. Once on Williams Road, trucks will make a left onto the LaSalle Expressway. Trucks will continue on LaSalle Expressway until they reach Interstate 190 North where they will merge onto. Trucks will then immediately exit onto Niagara Falls Boulevard West. Republic Services Landfill will be located to the right. All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled consistent with 6NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State C&D debris recovery facility (6NYCRR Subpart 361-5 registered or permitted facility).

A-7 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-8 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this Plan prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and

submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill quality standards established in 6NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-9 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-10 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction,

excavation activities will be suspended until sufficient equipment is mobilized to address the condition.
Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

A-11 COMMUNITY AIR MONITORING PLAN

Air sampling locations are to be determined. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and downwind monitoring stations. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers. A complete Community Air Monitoring Plan (CAMP) can be found in **Appendix C**.

A-12 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis is not anticipated to be necessary. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include:

(a) Limiting the area of open excavations and size of soil stockpiles;
(b) Shrouding open excavations with tarps and other covers; and
(c) Using foams to cover exposed odorous soils.

If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include:

(d) Direct load-out of soils to trucks for off-site disposal;
(e) Use of chemical odorants in spray or misting systems; and
(f) Use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

A-13 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

A-14 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

Appendix B
Health & Safety Plan

Health and Safety Plan for Brownfield Site Cleanup Remedial Investigation

211 Main Street
North Tonawanda
Niagara County, New York

Site ID # C932171

Prepared by

C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203

March 2018

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FIGURES

ATTACHMENTS

APPENDICES

SECTION 1 – GENERAL INFORMATION

The Health and Safety Plan (HASP) described in this document will address health and safety considerations for all those activities that personnel employed by C&S Engineers, Inc., may be engaged in during site investigation and remediation work at the 211 Main Street Brownfield Site located at 211 Main Street, North Tonawanda, Niagara County, New York (Site). Figure 1 shows the approximate location of the Site in the City of North Tonawanda, New York. This HASP will be implemented by the Health and Safety Officer (HSO) during site work.

Compliance with this HASP is required of all C&S personnel who enter this Site. The content of the HASP may change or undergo revision based upon additional information made available to the health, safety, and training (H&S) committee, monitoring results or changes in the technical scope of work. Any changes proposed must be reviewed by the H&S committee.

Responsibilities

Project Manager…….	Daniel E. Riker, P.G. Phone: (716) 847-1630 Cell: (716) 572-5312
Site Health and Safety Officer……..	Alayna DeMarchi Phone: (716) 847-1630 Secondary: (716)955-3022
Emergency Coordinator…….	Alayna DeMarchi Phone: (716) 847-1630 Secondary: (716)955-3022
Health and Safety Manager……	Alayna DeMarchi Phone: (716) 847-1630 Secondary: (716)955-3022

Emergency Phone Numbers

Emergency Medical Service	911
Police: City of North Tonawanda Police Department	911
Hospital: Kenmore Mercy Hospital	(716) 447-6100
Fire: City of North Tonawanda Fire Department	911
National Response Center	(800) 424-8802
Poison Control Center	(800) 222-1222
Center for Disease Control	(800) 311-3435

NYSDEC Region 9 (Buffalo, New York) ..... (716) 851-7220
C&S Engineers ..... (716) 847-1630
Site Superintendent ..... TBD
Project Field Office Trailer ..... TBD

SECTION 2 - HEALTH AND SAFETY PERSONNEL

2.0 Health and Safety Personnel Designations

The following information briefly describes the health and safety designations and general responsibilities for this Site.

2.1 Project Manager (PM)

The PM is responsible for the overall project including the implementation of the HASP. Specifically, this includes allocating adequate manpower, equipment, and time resources to conduct Site activities safely.

2.2 Health and Safety Manager

- Has the overall responsibility for coordinating and reporting all health and safety activities and the health and safety of Site Workers.
- Must have completed, at a minimum, the OSHA 30-Hour Construction Safety Training, and either the 24-Hour training course for the Occasional Hazardous Waste Site Worker or the 40-Hour training course for the Hazardous Waste Operations Worker that meets OHSA 29 CFR 1910.
- Must have completed the 8-Hour Site supervisor/manager's course for supervisors and managers having responsibilities for hazardous waste Site operations and management.
- Directs and coordinates health and safety monitoring activities.
- Ensures that field teams utilize proper personal protective equipment (PPE).
- Conducts initial on-site specific training prior to Site Workers commencing work.
- Conducts and documents daily and periodic safety briefings.
- Ensures that field team members comply with this HASP.

- Immediately notifies the Construction Manager (CM), Project Manager and Superintendent of all accident/incidents.
- Determines upgrading or downgrading of PPE based on Site conditions and/or real time monitoring results.
- Ensures that monitoring instruments are calibrated daily or as the manufacturer's instructions determine.
- Reports to the CM Project Manager and Superintendent to provide summaries of field operations and progress.
- Submits and maintains all documentation required in this HASP and any other pertinent health and safety documentation.

2.3 Health and Safety Officer (HSO)

- Must be designated to the Health and Safety Manager by each Subcontractor as a Competent Person having, at a minimum, the OSHA 30-Hour Construction Safety Training
- Must schedule and attend a Pre-Construction Safety Meeting with the Health and Safety Manager to discuss the Subcontractor Safety Requirements and must attend the Weekly Subcontractor Coordination Meeting.
- Responsible for ensuring that their lower tier contractors comply with project safety requirements.
- Must make frequent and regular inspections of their work areas and activities and ensure hazards that are under their control are corrected immediately and all other hazards are reported to the Construction Manager's Project Manager and Health and Safety Manager.
- Must report all work related injuries, regardless of severity, to the Construction Manager's Project Manager and the Health and Safety Manager within 24 hours after they occur.

2.4 Emergency Coordinator

- The Emergency Coordinator or his on-site designee will, in coordination with Enterprise Lumber & Silo, LLC, implement the emergency response procedures whenever conditions at the Site warrant such action.

- The Emergency Coordinator or his on-site designee will be responsible for assuring the evacuation, emergency treatment, emergency transport of C&S personnel as necessary, and notification of emergency response units (refer to phone listing in the beginning of this HASP) and the appropriate management staff.

2.5 Site Workers

- Report any unsafe or potentially hazardous conditions to the Health and Safety Manager.
- Maintain knowledge of the information, instructions, and emergency response actions contained in the HASP.
- Comply with rules, regulations, and procedures as set forth in this HASP, including any revisions that are instituted.
- Prevent unauthorized personnel from entering work Site.

SECTION 3 - PERTINENT SITE INFORMATION

3.1 Site Location and General History

211 Main Street BCP Site is located at 211 Main Street, North Tonawanda, Niagara County, New York. The Site is approximately 0.67 acres. The Site is within a formerly industrial section of the City of North Tonawanda. Further information concerning the Site is presented below. Figure 1 presents the Site's location.

Site Description

The Site is located in the City of North Tonawanda on Main Street, just south of the intersection of Main Street and Thompson Street. The Little River, Tonawanda Island, and the Niagara River are all located to the west. The Erie Canal is located to the south. The Site is located near revitalized portions of Main Street and acts as a gateway to this area. The Site currently consists of an approximately 11,000 square feet, vacant, former industrial building surrounded by asphalt and gravel pavement with a fence at the property lines.

Site History

The land comprising the Site was first developed as a lumber mill in the 1880s. Consistent with the surrounding area, the land use at the Site had been related to a lumber mill until the 1960s. Since that time, land use has been related to industrial uses and commercial uses including an automobile service station

(storage, repair, maintenance and painting), and a storage warehouse. Historical operations at the property included lumber planing, pallet production, industrial cutting, machinery sales, and automobile repair, storage and painting. The Site is currently vacant, and the building was deemed unfit for occupancy in 2015. The rail line has been located to the west of the Site since the property was developed. Contamination at the Site appears to be from past historical uses at the property, which would have included the use of hazardous materials and petroleum products.

The Site generally slopes to the west at an approximate elevation of 573 feet above mean sea level. The Site contains an approximately 11,000-square-foot, two-story building with asphalt and gravel surfaces, as well as some exposed soil areas.

Urban fill is present at the Site at depths ranging from just below the asphalt and gravel subbase to two to six feet below grade. Urban fill is defined as material coming from anthropogenic sources of the material re-worked to build a site to a defined grade. The urban fill material at the Site contains:

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

Native soil encountered beneath the fill consisted of clay with high plasticity and with a reddish brown appearance.

Groundwater was present at depths of approximately nine to eleven feet below grade. During monitoring well sampling, the static water level generally ranged from five to seven feet below grade. Groundwater is expected to flow generally to the west. Based on a review of NYSDEC data, the Site is not underlain by any mapped principal or primary aquifers. Groundwater at and around the Site is not used for public drinking water supply.

Surface soil, subsurface soil, radiological, groundwater and building impacts on the Site were identified during the Phase II ESA. Based on investigations conducted to date, the known contaminants of concern in the soil include polycyclic aromatic hydrocarbons (PAHs) and metals including arsenic in the surface soil

(depths of up to four inches), and subsurface soil (depths of up to five feet).

All radiological findings on the Site were within typical background levels, except for a 20-foot by 30-foot area around the building roof overhang on the southern portion of the building. At this location, the gamma surface scan showed readings at 2.5 times background levels, while the downhole gamma reading was four-times background levels. These are above the recommended value of two-times background.One sample was collected from this area and sent to Pace Laboratories for gamma spectroscopy analysis. The results from this survey indicate the sample contained concentrations of 0.267 pico curie/gram (pCi/g) for Radium-226 and a concentration of 0.136 pCi/g for Radium-228; both of which were below the guidance levels.

The known contaminants in the groundwater at the Site include iron, manganese and sodium. The concentrations of the contaminants exceeded NYS Technical and Operational Guidance Series (TOGS) 1.1.1 in two of the three wells, located in the western portion of the Site. These contaminants are generally associated with water aesthetics such as taste, clarity, etc.

Additionally, based on the multiple building surveys that were conducted as part of the Phase II, building materials are impacted with lead, asbestos and mold/fungi issues.

Exposure pathway concerns with these contaminates are generally through skin absorption, ingestion and inhalation of airborne dust particles. Following guidelines described in this HASP will reduce exposure.

SECTION 4 - HAZARD ASSESSMENT AND HAZARD COMMUNICATION

Hazards to workers during a site work include typical construction-related hazards such as slip-trip-fall, equipment malfunction, faulty electrical grounding, and heat/cold/excessive noise exposure. In addition to those typical construction-related hazards, there is also the potential for chemical exposures associated with environmental conditions. The most likely routes of chemical exposure during site work tasks include skin adsorption and inhalation of airborne dust particles.

It is difficult to draw a correlation between the concentrations of contaminants found in one media and the potential for exposure to these contaminants to site workers. However, their potential presence indicates that the potential for exposure to these compounds exist, and the requirements for protective measures and monitoring of exposure is based on this potential.

SECTION 5 - TRAINING

5.1 Site-specific Training

Training will be provided that specifically addresses the activities, procedures, monitoring, and equipment for the Site operations prior to going on site. Training will include familiarization with Site and facility layout, known and potential hazards, and emergency services at the Site, and details all provisions contained within this HASP. This training will also allow Site Workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity.

5.2 Safety Briefings

C&S project personnel will be given briefings by the HSO on a daily or as needed basis to further assist Site Workers in conducting their activities safely. Pertinent information will be provided when new operations are to be conducted. Changes in work practices must be implemented due to new information made available, or if Site or environmental conditions change. Briefings will also be given to facilitate conformance with prescribed safety practices. When conformance with these practices is not occurring or if deficiencies are identified during safety audits, the project manager will be notified.

SECTION 6 - ZONES

Four types of Site activity zones are identified for the Brownfield investigation activities, including the Exclusion Zone, Contamination Reduction Zone, Remediation Zone and the Support Zone. Prior to commencement of field work a further definition of where these zones will be set up will be established.

6.1 Exclusion Zone

The area where the unexpected condition is discovered would be considered the Exclusion Zone (EZ). All excavation and handling of contaminated materials generated as a result of the discovery of an unexpected condition would take place within the EZ. This zone will be clearly delineated by hay bales, jersey barriers, and/or similar methods. Safety tape may be used as secondary delineation within the EZ. The zone delineation markings may be opened in areas for varying lengths of time to accommodate equipment operation or specific construction activities. The Site Safety Manager/Director may establish more than one EZ where different levels of protection may be employed or where different hazards exist. Site Workers will not be allowed in the EZ without:

- A buddy (co-worker);

- Appropriate PPE in accordance with OSHA regulations;
- Medical authorization; and
- Training certification in accordance with 29 CFR 1910.120.

6.2 Contamination Reduction Zone

A Contamination Reduction Zone (CRZ) will be established between the EZ and the property limits. The CRZ contains the Contamination Reduction Corridor (CRC) and provides an area for decontamination of Site equipment. The CRZ will be used for general Site entry and egress, in addition to access for heavy equipment and emergency support services. Site Workers will not be allowed in the CRZ without:

- A buddy (co-worker);
- Appropriate PPE in accordance with OSHA regulations;
- Medical authorization; and
- Training certification in accordance with 29 CFR 1910.120.

In addition, the CRZ will include a Site Worker Cleaning Area that will include a field wash station for Site Workers, equipment, and PPE to allow Site Workers to wash their hands, arms, neck, and face after exiting areas of grossly contaminated soil or hazardous materials. All Site Workers will be required to pass through the Site Worker Cleaning Area and wash their hands and remove any loose fill and soils from their clothing and boots prior to exiting the CRZ.

6.3 Remediation Zone

A Remediated Zone (RZ) will be established in portions of the Site where the remediation has been completed and only general construction work will be performed. Setup of the RZ will consist of implementing several measures designed to reduce the risk of workers' exposure and prevent non-trained workers from entering the non-remediated zone. Non-trained workers will work only in areas where the potential for exposure has been minimized by removal of all hazardous materials. The remediated zone will then be separated from the non-remediated zone by installing and maintaining temporary plywood or other construction fences along the boundary between the two zones. If potentially impacted material is uncovered in the RZ, all non-trained workers will be removed and the Site Safety Manager/Director will assess the potential risks. If, at any other time, the risk of exposure increases while non-trained workers are present in the RZ, the non-trained workers will be removed. At all times, when non- trained workers

are present in the RZ, air monitoring for the presence of VOCs will be conducted in the RZ, as well as at the fence line of the non-remediated zone.

6.4 Support Zone

The Support Zone (SZ) will be an uncontaminated area that will be the field support area for the Site operations. The SZ will contain the temporary project trailers and provide for field team communications and staging for emergency response. Appropriate sanitary facilities and safety equipment will be located in this zone. Potentially contaminated equipment or materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples. Meteorological conditions will be observed and noted from this zone, as well as those factors pertinent to heat and cold.

SECTION 7 - PERSONAL PROTECTIVE EQUIPMENT

7.1 General

The level of protection to be worn by field personnel will be defined and controlled by the HSO. Depending upon the type and levels of material present or anticipated at the site, varying degrees of protective equipment will be needed. If the possible hazards are unknown, a reasonable level of protection will be taken until sampling and monitoring results can ascertain potential risks. The levels of protection listed below are based on USEPA Guidelines. A list of the appropriate clothing for each level is also provided.

Level A protection must be worn when a reasonable determination has been made that the highest available level of respiratory, skin, eye, and mucous membrane protection is needed. It should be noted that while Level A provides maximum available protection, it does not protect against all possible hazards. Consideration of the heat stress that can arise from wearing Level A protection should also enter into the decision making process. Level A protection includes:

- Open circuit, pressure-demand self-contained breathing apparatus (SCBA)
- Totally encapsulated chemical resistant suit
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level B protection must be used when the highest level of respiratory protection is needed, but hazardous material exposure to the few unprotected areas of the body (e.g., the back of the neck) is unlikely. Level B protection includes:

- Open circuit, pressure-demand SCBA or pressure airline with escape air bottle

- Chemical protective clothing: Overalls and long sleeved jacket; disposal chemical resistant coveralls; coveralls; one or two piece chemical splash suit with hood
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level C must be used when the required level of respiratory protection is known, or reasonably assumed to be, not greater than the level of protection afforded by air purifying respirators; and hazardous materials exposure to the few unprotected areas of the body (e.g.., the back of the neck) is unlikely. Level C protection includes:

- Full or half face air-purifying respirator
- Chemical protective clothing: Overalls and long-sleeve jacket; disposable chemical resistant coveralls; coveralls; one or two piece chemical splash suit
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level D is the basic work uniform. It cannot be worn on any site where respiratory or skin hazards exist. Level D protection includes:

- Safety boots/shoes
- Safety glasses
- Hard hat with optional face shield

Note that the use of SCBA and airline equipment is contingent upon the user receiving special training in the proper use and maintenance of such equipment.

7.2 Personal Protective Equipment – Site Specific

Level D with some modification will be required when working in the work zone on this Site. In addition to the basic work uniform specified by Level D protection, Nitrile gloves will be required when contact with soil or ground water is likely. Hearing protection will be worn when power equipment is used to perform subsurface investigation work. An upgrade to a higher level (Level C) of protection may occur if determined necessary by the HSO.

SECTION 8 - MONITORING PROCEDURES

8.1 Monitoring During Site Operations

All Site environmental monitoring should be accompanied by periodic meteorological monitoring of appropriate climatic conditions.

8.1.1 Drilling Operations (Monitoring Well Installation and Subsurface Borings)

Monitoring will be performed by the HSO or drilling observer during the conduct of work. A photoionization detector (PID) equipped with a 10.6 eV lamp will be utilized to monitor for the presence of volatile organic vapors within the breathing zone, the borehole, and subsurface samples upon their retrieval. Drill cuttings and excavation spoils will also be monitored by use of the PID. The PID will be field checked for calibration accuracy three times per day (morning, lunch, and end of day. If subsurface conditions warrant, a combustible gas indicator (CGI) with oxygen alarm may also be used to monitor the borehole for the presence of combustible gases. Similar monitoring of fluids produced during well development will also be conducted.

8.1.2 Interim Remedial Measures

If future Interim Remedial Measures (IRM) occurs, monitoring will be performed during excavation and sampling operations when C&S personnel are within the work zone. Although historical information previously obtained at the Site indicates no volatile organic vapors and compounds, a photoionization detector (PID) will be used during subsurface activities. If an IRM is performed, the, the remedial contractor will be required to employ dust control practices during work.

8.2 Action Levels

If readings on the PID exceed 10 ppm for more than fifteen minutes consecutively, then personal protective equipment should be upgraded to Level C. The air purifying respirator used with Level C protective equipment must be equipped with organic vapor cartridges. If readings on the explosive gas meter are within a range of 10%-25% of the LEL then continuous monitoring will be implemented. Readings above 25% of the LEL indicate the potential for an explosive condition. Sources of ignition should be removed and the Site should be evacuated.

8.3 Personal Monitoring Procedures

Personal monitoring shall be performed as a contingency measure in the event that VOC concentrations are consistently above the 10 ppm action level as detected by the PID. If the concentration of VOCs is above this action level, then amendments to the HASP must be made before work can continue at the Site.

SECTION 9 - COMMUNICATIONS

A phone will be located on Site to be utilized by personnel conducting remedial investigation and IRM efforts. Cell phones will be the primary means of communicating with emergency support services/facilities.

SECTION 10 - SAFETY CONSIDERATIONS FOR SITE OPERATIONS

10.1 General

Standard safe work practices that will be followed include:

- Do not climb over/under drums, or other obstacles.
- Do not enter the work zone alone.
- Practice contamination avoidance, on and off-site.
- Plan activities ahead of time, use caution when conducting concurrently running activities.
- No eating, drinking, chewing or smoking is permitted in work zones.
- Due to the unknown nature of waste placement at the Site, extreme caution should be practiced during excavation activities.
- Apply immediate first aid to any and all cuts, scratches, abrasions, etc.
- Be alert to your own physical condition. Watch your buddy for signs of fatigue, exposure, etc.
- A work/rest regimen will be initiated when ambient temperatures and protective clothing create a potential heat stress situation.
- No work will be conducted without adequate natural light or without appropriate supervision.
- Task safety briefings will be held prior to onset of task work.
- Ignition of flammable liquids within or through improvised heating devices (barrels, etc.) or space heaters is forbidden.
- Entry into areas of spaces where toxic or explosive concentrations of gases or dust may exist without proper equipment is prohibited.
- Any injury or unusual health effect must be reported to the Site health and safety officer.
- Prevent splashing or spilling of potentially contaminated materials.
- Use of contact lenses is prohibited while on site.
- Beards and other facial hair that would impair the effectiveness of respiratory protection are prohibited if respiratory protection is necessary.
- Field crew members should be familiar with the physical characteristics of investigations, including:
    - Wind direction in relation to potential sources
    - Accessibility to co-workers, equipment, and vehicles

- Communication
- Hot zones (areas of known or suspected contamination)
- Site access
- Nearest water sources

- The number of personnel and equipment in potentially contaminated areas should be minimized consistent with site operations.

10.2 Field Operations

10.2.1 Intrusive Operations

The HSO or designee will be present on-site during all intrusive work, e.g., drilling operations, excavations, trenching, and will provide monitoring to oversee that appropriate levels of protection and safety procedures are utilized by C&S Engineers, Inc., personnel. The use of salamanders or other equipment with an open flame is prohibited and the use of protective clothing, especially hard hats and boots, will be required during drilling or other heavy equipment operations.

10.2.2 Excavations and Excavation Trenching

Guidance relating to safe work practices for C&S employees regarding excavations and excavating/trenching operation is presented in Appendix A of this HASP.

SECTION 11 - DECONTAMINATION PROCEDURES

Decontamination involves physically removing contaminants and/or converting them chemically into innocuous substances. Only general guidance can be given on methods and techniques for decontamination. Decontamination procedures are designed to:

- Remove contaminant(s).
- Avoid spreading the contamination from the work zone.
- Avoid exposing unprotected personnel outside of the work zone to contaminants.

Contamination avoidance is the first and best method for preventing spread of contamination from a hazardous site. Each person involved in site operations must practice the basic methods of contamination avoidance listed below. Additional precautions may be required in the HASP.

- Know the limitations of all protective equipment being used.
- Do not enter a contaminated area unless it is necessary to carry out a specific objective.
- When in a contaminated area, avoid touching anything unnecessarily.
- Walk around pools of liquids, discolored areas, or any area that shows evidence of possible contamination.

- Walk upwind of contamination, if possible.
- Do not sit or lean against anything in a contaminated area. If you must kneel (e.g., to take samples), use a plastic ground sheet.
- If at all possible, do not set sampling equipment directly on contaminated areas. Place equipment on a protective cover such as a ground cloth.
- Use the proper tools necessary to safely conduct the work.

Specific methods that may reduce the chance of contamination are:

- Use of remote sampling techniques.
- Opening containers by non-manual means.
- Bagging monitoring instruments.
- Use of drum grapplers.
- Watering down dusty areas.

Equipment which will need to be decontaminated includes tools, monitoring equipment, and personal protective equipment. Items to be decontaminated will be brushed off, rinsed, and dropped into a plastic container supplied for that purpose. They will then be washed with a detergent solution and rinsed with clean water. Monitoring instruments may be wrapped in plastic bags prior to entering the field in order to reduce the potential for contamination. Instrumentation that is contaminated during field operations will be carefully wiped down. Heavy equipment, if utilized for operations where it may be contaminated, will have prescribed decontamination procedures to prevent contaminant materials from potentially leaving the Site. On-site contractors, such as drillers or backhoe operators, will be responsible for decontaminating all construction equipment prior to demobilization.

SECTION 12 – DISPOSAL PROCEDURES

All discarded materials, waste materials, or other objects shall be handled in such a way as to reduce or eliminate the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left on-site. All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary and segregated for proper disposal. All contaminated waste materials shall be disposed of as required by the provisions included in the contract and consistent with regulatory provisions. All non-contaminated materials shall be collected and bagged for appropriate disposal. Investigation derived waste will be managed consistent with the work plan for this Site and DER-10 Technical Guidance for Site Investigation and Remediation dated May 2010.

SECTION 13 - EMERGENCY RESPONSE PROCEDURES

As a result of the hazards at the Site, and the conditions under which operations are conducted, there is the possibility of emergency situations. This section establishes procedures for the implementation of an emergency plan.

13.1 Emergency Coordinator

Emergency Coordinator: ..... Alayna DeMarchi .....Work Phone: (716) 847-1630

The Emergency Coordinator or his on-site designee will, in concert with Enterprise Lumber & Silo, LLC, implement the emergency response procedures whenever conditions at the Site warrant such action. The Emergency Coordinator or his on-site designee will be responsible for assuring the evacuation, emergency treatment, emergency transport of C&S personnel as necessary, and notification of emergency response units (refer to phone listing in the beginning of this HASP) and the appropriate management staff.

13.2 Evacuation

In the event of an emergency situation, such as fire, explosion, significant release of toxic gases, etc., all personnel will evacuate and assemble in a designated assembly area. The Emergency Coordinator or his on-site designee will have authority to contact outside services as required. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The Emergency Coordinator or his on-site designee must see that access for emergency equipment is provided and that all ignition sources have been shut down once the emergency situation is established. Once the safety of all personnel is established, the Fire Department and other emergency response groups will be notified by telephone of the emergency.

13.3 Potential or Actual Fire or Explosion

Immediately evacuate the Site and notify local fire and police departments, and other appropriate emergency response groups, if LEL values are above 25% in the work zone or if an actual fire or explosion has taken place.

13.4 Environmental Incident (spread or release of contamination)

Control or stop the spread of contamination if possible. Notify the Emergency Coordinator and the Project Manager. Other appropriate response groups will be notified as appropriate.

13.5 Personnel Injury

Emergency first aid shall be applied on-site as necessary. Then, decontaminate (en route if necessary) and transport the individual to nearest medical facility if needed. The ambulance/rescue squad shall be contacted for transport as necessary in an emergency. The directions to the hospital are shown in Section 1 of this HASP and a map is shown in Attachment A.

13.6 Personnel Exposure

- *Skin Contact*: Use copious amounts of soap and water. Wash/rinse affected area thoroughly, and then provide appropriate medical attention. Eyes should be thoroughly rinsed with water for at least 15 minutes.
- *Inhalation*: Move to fresh air and/or, if necessary, decontaminate and transport to emergency medical facility.
- *Ingestion*: Decontaminate and transport to emergency medical facility.
- *Puncture Wound/Laceration*: Decontaminate, if possible, and transport to emergency medical facility.

13.7 Adverse Weather Conditions

In the event of adverse weather conditions, the HSO will determine if work can continue without sacrificing the health and safety of field workers.

13.8 Incident Investigation and Reporting

In the event of an incident, procedures discussed in the Medical Emergency/Incident Response Protocol, presented in Appendix B of this HASP, shall be followed.

SECTION 14 - COMMUNITY RELATIONS

14.1 Community Health and Safety Plan

14.1.1 Community Health and Safety Monitoring

As part of the site work, three general types of efforts are scheduled, including, non-intrusive reconnaissance tasks, sampling or monitoring tasks (monitoring point sampling), and intrusive tasks (test trenching, subsurface borings, monitoring well installation). During completion of general reconnaissance and sampling or monitoring tasks, potential for health and safety risks to off-site landowners or the local community are not anticipated.

During completion of intrusive efforts at or adjacent to the Site, health and safety monitoring efforts will be concentrated on the area or areas in which intrusive efforts are being completed. Since the air pathway is the most available and likely avenue for the release of potential contaminants to the atmosphere at or near the Site, in addition to limiting public or community access to the areas in which intrusive efforts are completed, health and safety measures will primarily consist of monitoring the air pathway for worker exposure.

14.1.2 Community Air Monitoring Plan

Efforts will be taken to complete field work in a manner which will minimize the creation of airborne dust or particulates. Under dry conditions, work areas may be wetted to control dust. During periods of extreme wind, intrusive field work may be halted until such time as the potential for creating airborne dust or particulate matter as a result of investigation activities is limited. Periodic monitoring following the guidelines of the site's Community Air Monitoring Plan (see Appendix C of the RI WP) will be implemented during all non-intrusive Site investigation activities, including surface soil and sediment sampling, and collection of groundwater samples from groundwater monitoring wells.

During completion of Site investigation, a community air monitoring plan meeting the requirements of the site's Community Air Monitoring Plan (see Appendix C of the RI WP) will be implemented for the duration of intrusive activities. These additional air monitoring activities will include establishment of background conditions and periodic monitoring for volatile organic compounds, recording of monitoring data, and institution and documentation of Response Levels and appropriate actions in accordance with NYSDOH guidance.

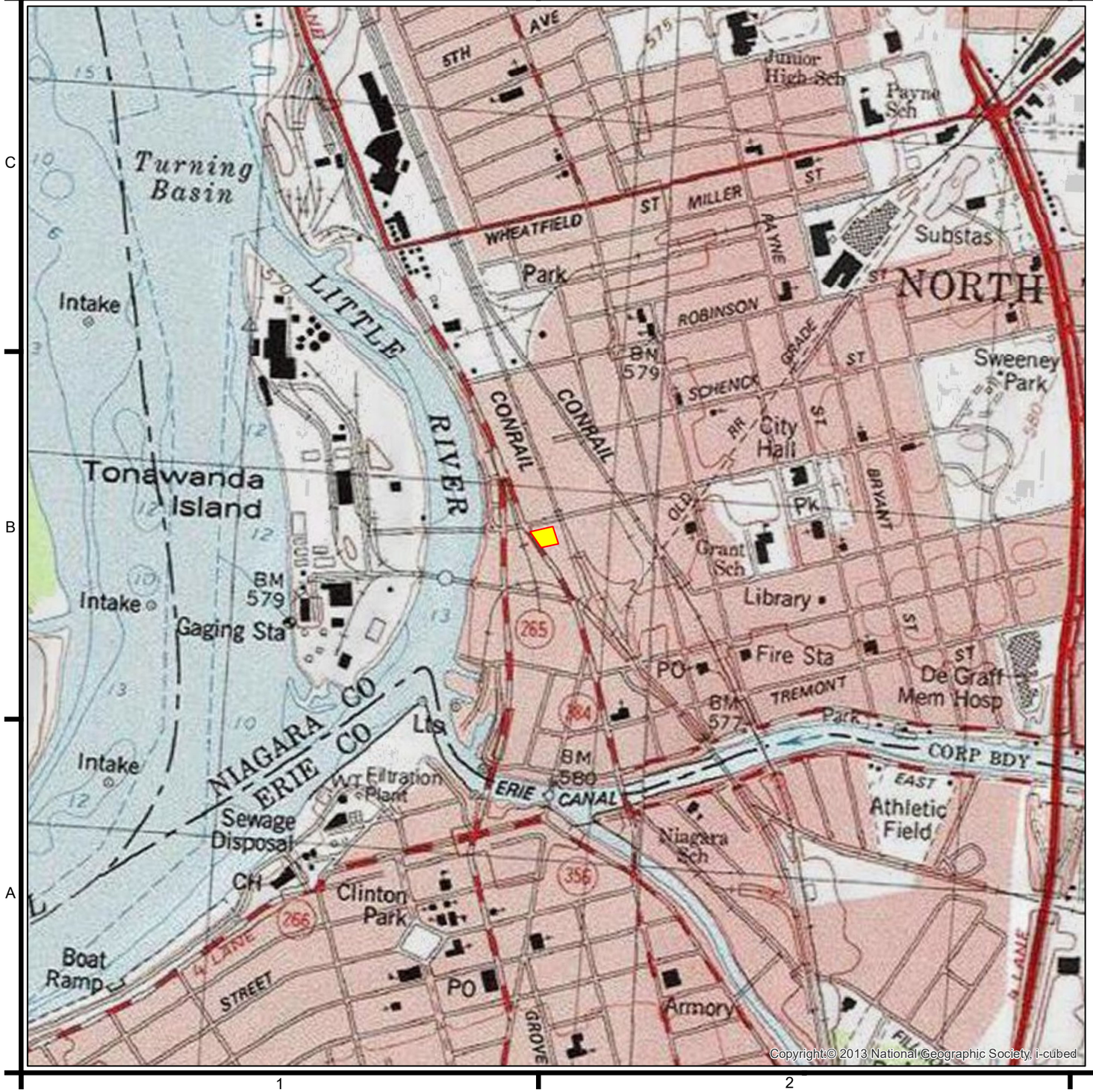
SECTION 15 - AUTHORIZATIONS

Personnel authorized to enter the Site while operations are being conducted must be approved by the HSO. Authorization will involve completion of appropriate training courses, medical examination requirements, and review and sign-off of this HASP. No C&S personnel should enter the work zone alone. Each site visitor should check in with the HSO or Project Manager prior to entering the work zones.

FIGURE 1

SITE LOCATION MAP

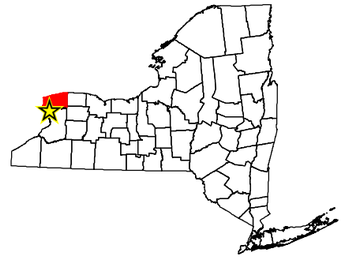
C&S ENGINEERS



LEGEND

BCP SITE

LOCATION MAP



NOTES

1) BASE LAYER IS USGS 7.5 MINUTE QUADRANGLE PROVIDED BY ESRI.

2) COORDINATE SYSTEM: NAD 1983 STATEPLANE NY
WEST FIPS 3103
PROJECTION: TRANSVERSE MERCATOR
DATUM: NORTH AMERICAN 1983
UNITS: FOOT US

0 500 1,000 2,000
Feet

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

N

211 MAIN STREET
BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION WORK
PLAN
CITY OF NORTH TONAWANDA, NY

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	U47.001.001
DATE:	MARCH 8 2018
DRAWN BY:	A DeMARCHI
DESIGNED BY:	A. DeMARCHI
CHECKED BY:	D.RIKER

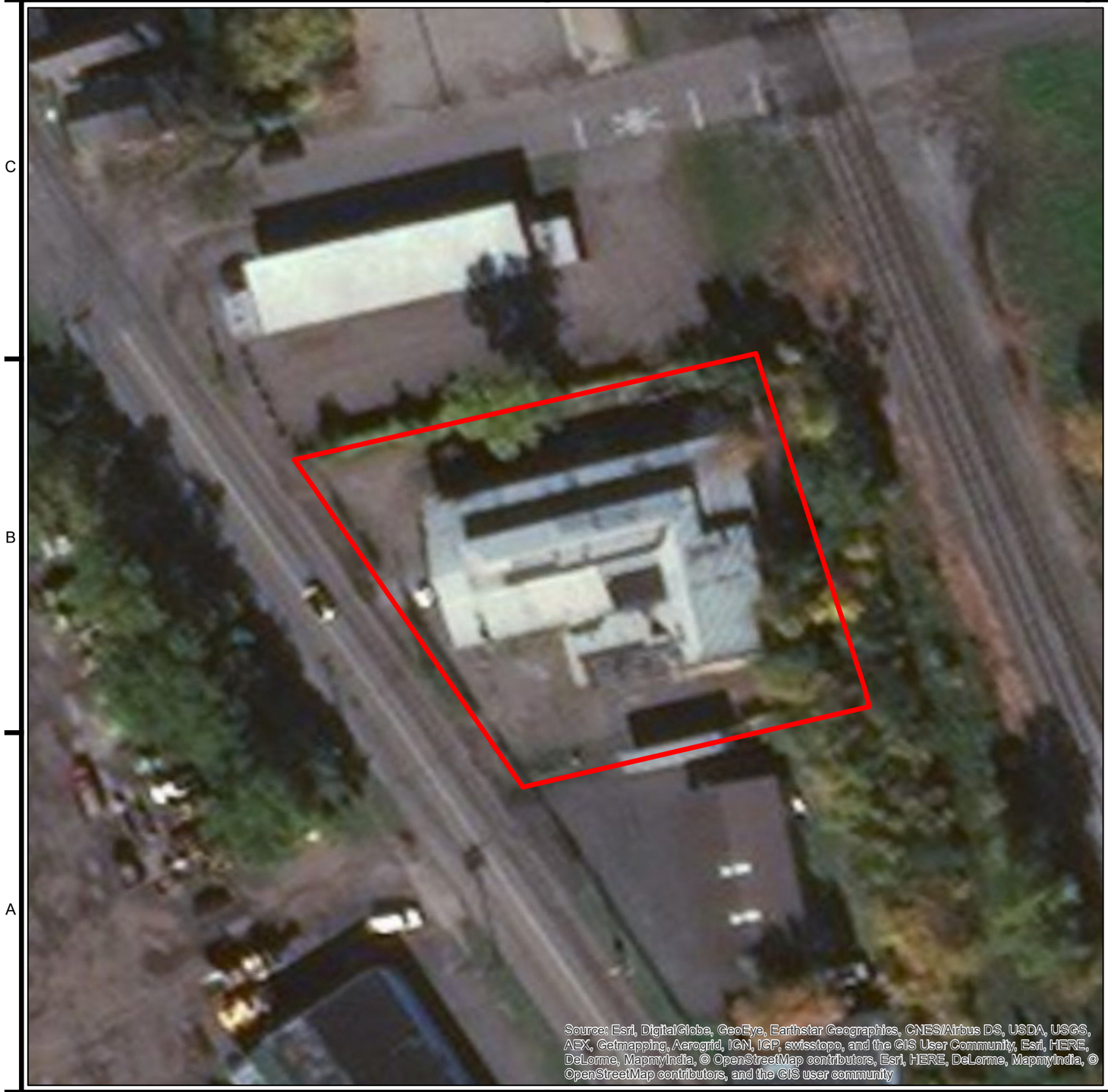
SITE LOCATION

FIGURE 1

FIGURE 2

SITE AERIAL PHOTO

C&S ENGINEERS



LEGEND

BCP BOUNDARY

NOTES

1) COORDINATE SYSTEM: NAD 1983 STATEPLANE NY WEST FIPS 3103
PROJECTION: TRANSVERSE MERCATOR
DATUM: NORTH AMERICAN 1983
UNITS: FOOT US

0 25 50 100 Feet

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

211 MAIN STREET
BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION
WORK PLAN
CITY OF NORTH TONAWANDA, NY

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	U47.001.001
DATE:	MARCH 8 2018
DRAWN BY:	A DeMARCHI
DESIGNED BY:	A. DeMARCHI
CHECKED BY:	D.RIKER

SITE MAP

FIGURE 2

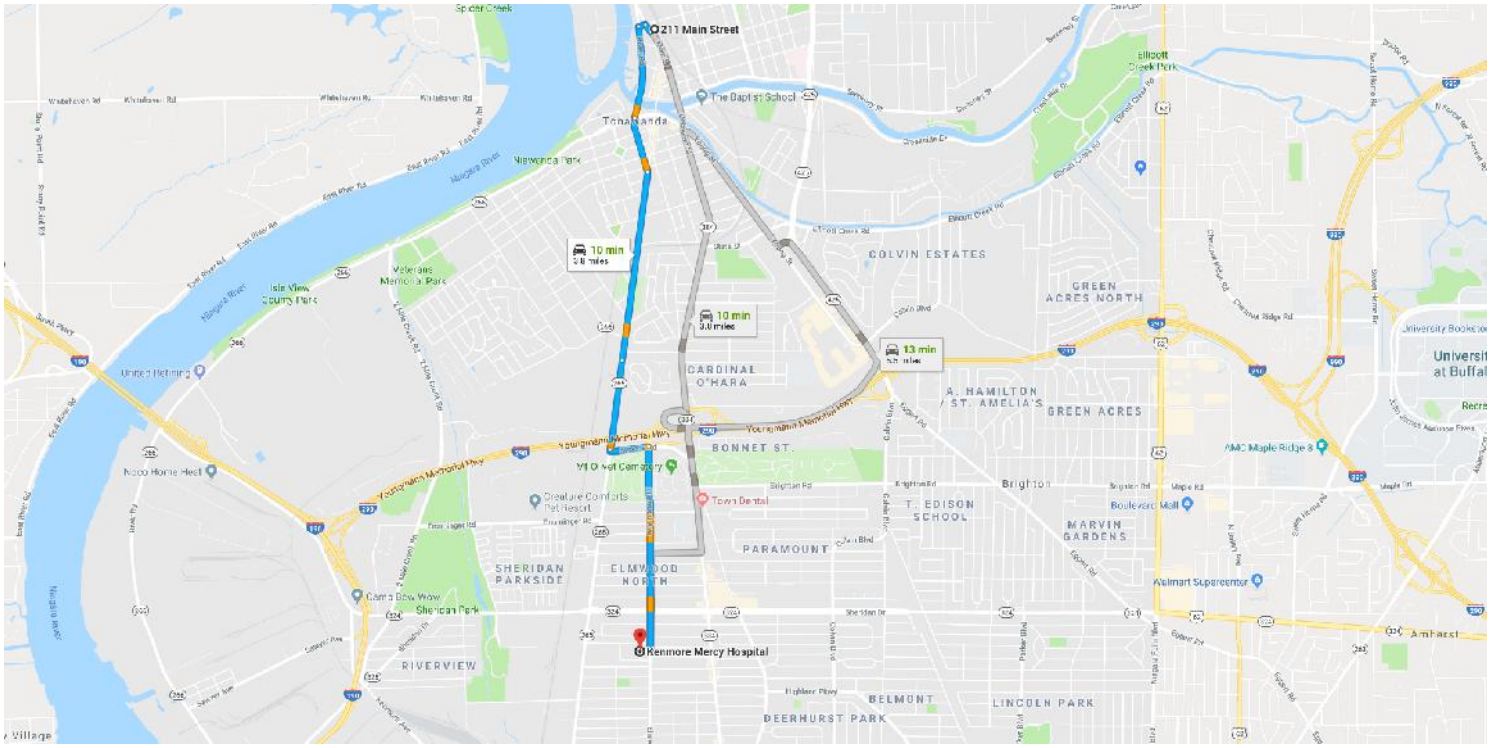
ATTACHMENT A

MAP TO HOSPITAL

C&S ENGINEERS

211 Main St, North Tonawanda, NY 14120 to Kenmore Mercy Hospital

Drive 3.8 miles, 10 min



Map data ©2018 Google 2000 ft

211 Main St

North Tonawanda, NY 14120

1. Head northwest on Main St toward Thompson St

269 ft

2. Turn left onto Thompson St

203 ft

3. Turn left at the 1st cross street onto River Rd

0.5 mi

4. Continue onto Seymour St

0.3 mi

5. Continue onto Main St

1.1 mi

6. Continue onto Military Rd

0.5 mi

7. Turn left onto Knoche Rd

0.2 mi

8. Turn right onto Elmwood Ave

Destination will be on the right

1.1 mi

Kenmore Mercy Hospital

2950 Elmwood Ave, Buffalo, NY 14217

Appendix A

EXCAVATION/TRENCHING GUIDELINE

C&S ENGINEERS

C&S ENGINEERS, INC. HEALTH & SAFETY GUIDELINE #14
EXCAVATION/TRENCHING OPERATIONS

TABLE OF CONTENTS

C&S ENGINEERS, INC.
EXCAVATION/TRENCHING OPERATIONS

1.0 PURPOSE

To establish safe operating procedures for excavation/trenching operations at C&S work sites.

2.0 SCOPE

Applies to all C&S activity where excavation or trenching operations take place.

3.0 DEFINITIONS

Excavation — Any manmade cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation.

Trench — A narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet.

4.0 RESPONSIBILITY EMPLOYEES

Employees — All employees must understand and follow the procedures outlined in this guideline during all excavation and trenching operations.

Health and Safety Coordinator/Officer (HSC/HSO) - The HSC/HSO is responsible for ensuring that these procedures are implemented at each work site.

5.0 GUIDELINES

5.1 Hazards Associated With Excavation/Trenching

The principal hazards associated with excavation/trenching are:

- Suffocation, crushing, or other injury from falling material.
- Damage/failure of installed underground services and consequent hazards.
- Tripping, slipping, or falling.
- Possibility of explosive, flammable, toxic, or oxygen-deficient atmosphere in excavation.

5.2 Procedures Prior to Excavation

1. Underground Utilities

   - Determine the presence and location of any underground chemical or utility pipes, electrical, telephone, or instrument wire or cables.
   - If the local DigSafely NY is unable to locate private/domestic or plant utilities, then an independent utility locating service must be contacted and mobilized to the site.
   - Identify the location of underground services by stakes, markers or paint.
   - Arrange to de-energize or isolate underground services during excavation. If not possible, or if location is not definite, method of excavation shall be established to minimize hazards by such means as:

     a) Use of hand tools in area of underground services.
     b) Insulating personnel and equipment from possible electrical contact.
     c) Use of tools or equipment that will reduce possibility of damage to underground services and hazard to worker.

2. Identify Excavation Area — Areas to be excavated shall be identified and segregated by means of barricades, ropes, and/or signs to prevent access of unauthorized personnel and equipment. Suitable means shall be provided to make barriers visible at all times.
3. Surface Water Provide means of diverting surface water from excavation.
4. Shoring/Bracing — Shoring or bracing that may be required for installed equipment adjacent to the excavation shall be designed by a competent person.
5. Structural Ramps — Structural ramps that are used solely by employees as a means of access to or egress from the excavation shall be designed by a competent person.

5.3 Procedures For Doing The Excavation

1. **Determine the need for shoring/sloping** — the type of soil will establish the need for shoring, slope of the excavation, support systems, and equipment to be used. The soil condition may change as the excavation proceeds. Appendices A, B, C, D, E, and F of the OSHA Excavation Regulation, 29 CFR 1926 Subpart P, are to be used in defining shoring and sloping requirements.

2. **Mobile equipment** — For safe use of mobile industrial equipment in or near the excavation, the load carrying capacity of soil shall be established and suitable protection against collapse of soil provided by the use of mats, barricades, restricting the location of equipment, or shoring.

3. Excavated material (spoil) shall be stored at least two (2) feet from the edge of the excavation.

4. All trench (vertical sides) excavations greater than five (5) feet deep shall be shored.

5. The excavation shall be inspected daily for changes in conditions, including the presence of ground water, change in soil condition, or effects of weather such as rain or freeze. A safe means of continuing the work shall be established based on changes in condition. Typically test trench excavations made as part of an environmental subsurface nvestigation are made and backfilled the same day.

6. Appropriate monitoring for gas, toxic, or flammable materials will be conducted to establish the need for respiratory equipment, ventilation, or other measures required to continue the excavation safely.

7. Adequate means of dewatering the excavation shall be provided by the contractor as required.

8. A signal person shall be provided to direct powered equipment if working in the excavation with other personnel.

9. A signal person shall be provided when backfilling excavations to direct powered equipment working in the excavation with other personnel.

10. Warning vests will be worn when employees are exposed to public vehicular traffic.

11. Employees shall stand away from vehicles being loaded or unloaded, and shall not be permitted underneath loads handled by lifting or dragging equipment.

12. Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available if hazardous atmospheric conditions exist or may be expected to develop. The specifics will be determined by the HSC/HSM.

13. Walkways or bridges with standard guardrail shall be provided where employees or equipment are required or permitted to cross over excavations.

5.4 Entering the Excavation

No C&S Engineers, Inc., employee shall enter an excavation which fails to meet the requirements of Section 5.3 of this guideline.

6.0 REFERENCES

29 CFR 1926, Subpart P - Excavations

7.0 ATTACHMENTS

29 CFR 1926 Subpart P - Appendices A, B, F

• **Part Number:**	1926
• **Part Title:**	Safety and Health Regulations for Construction
• **Subpart:**	P
• **Subpart Title:**	Excavations
• **Standard Number:**	1926 Subpart P App A
• **Title:**	Soil Classification

(a) Scope and application - (1) Scope. This appendix describes a method of classifying soil and rock deposits based on site and environmental conditions, and on the structure and composition of the earth deposits. The appendix contains definitions, sets for requirements, and describes acceptable visual and manual tests for use in classifying soils.

(2) Application. This appendix applies when a sloping or benching system is designed in accordance with the requirements set fo 1926.652(b)(2) as a method of protection for employees from cave-ins. This appendix also applies when timber shoring for excav designed as a method of protection from cave-ins in accordance with appendix C to subpart P of part 1926, and when aluminum shoring is designed in accordance with appendix D. This Appendix also applies if other protective systems are designed and selec from data prepared in accordance with the requirements set forth in 1926.652(c), and the use of the data is predicated on the us classification system set forth in this appendix.

(b) Definitions. The definitions and examples given below are based on, in whole or in part, the following; American Society for T Materials (ASTM) Standards D653-85 and D2488; The Unified Soils Classification System; The U.S. Department of Agriculture (US Textural Classification Scheme; and The National Bureau of Standards Report BSS-121.

"Cemented soil" means a soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand-size sample cannot be crushed into powder or individual soil particles by finger pressure.

"Cohesive soil" means clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical sideslopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits significant cohesion when submerged. Cohesive soils include clayey silt, sandy clay, silty clay, clay and organic clay.

"Dry soil" means soil that does not exhibit visible signs of moisture content.

"Fissured" means a soil material that has a tendency to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface.

"Granular soil" means gravel, sand, or silt (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

"Layered system" means two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

"Moist soil" means a condition in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles.

"Plastic" means a property of a soil which allows the soil to be

deformed or molded without cracking, or appreciable volume change.
"Saturated soil" means a soil in which the voids are filled with water. Saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or sheer vane.
"Soil classification system" means, for the purpose of this subpart, a method of categorizing soil and rock deposits in a hierarchy of Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and the characteristics of the deposits and the environmental conditions of exposure.
"Stable rock" means natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.
"Submerged soil" means soil which is underwater or is free seeping.
"Type A" means cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if:
(i) The soil is fissured; or
(ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or
(iii) The soil has been previously disturbed; or
(iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
(v) The material is subject to other factors that would require it to be classified as a less stable material.
"Type B" means:
(i) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or
(ii) Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.
(iii) Previously disturbed soils except those which would otherwise be classed as Type C soil.
(iv) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or
(v) Dry rock that is not stable; or
(vi) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.
"Type C" means:
(i) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or
(ii) Granular soils including gravel, sand, and loamy sand; or
(iii) Submerged soil or soil from which water is freely seeping; or
(iv) Submerged rock that is not stable, or
(v) Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.
"Unconfined compressive strength" means the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods.
"Wet soil" means soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet.

(c) Requirements - (1) Classification of soil and rock deposits. Each soil and rock deposit shall be classified by a competent perso Rock, Type A, Type B, or Type C in accordance with the definitions set forth in paragraph (b) of this appendix.

(2) Basis of classification. The classification of the deposits shall be made based on the results of at least one visual and at least analysis. Such analyses shall be conducted by a competent person using tests described in paragraph (d) below, or in other reco methods of soil classification and testing such as those adopted by the American Society for Testing Materials, or the U.S. Depart Agriculture textural classification system.

(3) Visual and manual analyses. The visual and manual analyses, such as those noted as being acceptable in paragraph (d) of thi shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify prc properties, factors, and conditions affecting the classification of the deposits.

(4) Layered systems. In a layered system, the system shall be classified in accordance with its weakest layer. However, each laye classified individually where a more stable layer lies under a less stable layer.

(5) Reclassification. If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any w changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumst

(d) Acceptable visual and manual tests. - (1) Visual tests. Visual analysis is conducted to determine qualitative information regarc excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil take samples from excavated material.

(i) Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the amounts of the particle sizes. Soil that is primarily composed of fine-grained material material is cohesive material. Soil composec of coarse-grained sand or gravel is granular material.

(ii) Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does nc clumps is granular.

(iii) Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tens could indicate fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of m ground and are indications of potentially hazardous situations.

(iv) Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground s and to identify previously disturbed soil.

(v) Observed the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slop the excavation. Estimate the degree of slope of the layers.

(vi) Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water see the sides of the excavation, or the location of the level of the water table.

(vii) Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the s the excavation face.

(2) Manual tests. Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil a provide more information in order to classify soil properly.

(i) Plasticity. Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. Cohe material can be successfully rolled into threads without crumbling. For example, if at least a two inch (50 mm) length of 1/8-inch be held on one end without tearing, the soil is cohesive.

(ii) Dry strength. If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is g combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clu only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps wh break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the s considered unfissured.

(iii) Thumb penetration. The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive so test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard designatior "Standard Recommended Practice for Description of Soils (Visual - Manual Procedure).") Type A soils with an unconfined compre strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great eff soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molde finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicat excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influe flooding), the classification of the soil must be changed accordingly.

(iv) Other strength tests. Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetron using a hand-operated shearvane.

(v) Drying test. The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesi and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one inch thick (2.5 six inches (15.24 cm) in diameter until it is thoroughly dry:

(A) If the sample develops cracks as it dries, significant fissures are indicated.

(B) Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil ha cohesive material content. The soil can be classified as an unfissured cohesive material and the unconfined compressive strength determined.

(C) If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between the t pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cc fissures. If they pulverize easily into very small fragments, the material is granular.

Next Standard (1926 Subpart P App B)

Regulations (Standards - 29 CFR) - Table of Contents

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www.OSHA.gov

• **Part Number:**	1926
• **Part Title:**	Safety and Health Regulations for Construction
• **Subpart:**	P
• **Subpart Title:**	Excavations
• **Standard Number:**	1926 Subpart P App B
• **Title:**	Sloping and Benching

(a) ***Scope and application***. This appendix contains specifications for sloping and benching when used as methods of protecting working in excavations from cave-ins. The requirements of this appendix apply when the design of sloping and benching protectiv is to be performed in accordance with the requirements set forth in § 1926.652(b)(2).

(b) ***Definitions***.

Actual slope means the slope to which an excavation face is excavated.

Distress means that the soil is in a condition where a cave-in is imminent or is likely to occur. Distress is evidenced by such phen the development of fissures in the face of or adjacent to an open excavation; the subsidence of the edge of an excavation; the slu material from the face or the bulging or heaving of material from the bottom of an excavation; the spalling of material from the fa excavation; and ravelling, i.e., small amounts of material such as pebbles or little clumps of material suddenly separating from the excavation and trickling or rolling down into the excavation.

Maximum allowable slope means the steepest incline of an excavation face that is acceptable for the most favorable site condi protection against cave-ins, and is expressed as the ratio of horizontal distance to vertical rise (H:V).

Short term exposure means a period of time less than or equal to 24 hours that an excavation is open.

(c) ***Requirements*** -- (1) ***Soil classification***. Soil and rock deposits shall be classified in accordance with appendix A to subpart I 1926.

(2) ***Maximum allowable slope***. The maximum allowable slope for a soil or rock deposit shall be determined from Table B-1 of tl appendix.

(3) ***Actual slope***. (i) The actual slope shall not be steeper than the maximum allowable slope.

(ii) The actual slope shall be less steep than the maximum allowable slope, when there are signs of distress. If that situation occur slope shall be cut back to an actual slope which is at least ½ horizontal to one vertical (½H:1V) less steep than the maximum allo slope.

(iii) When surcharge loads from stored material or equipment, operating equipment, or traffic are present, a competent person sh determine the degree to which the actual slope must be reduced below the maximum allowable slope, and shall assure that such achieved. Surcharge loads from adjacent structures shall be evaluated in accordance with § 1926.651(i).

(4) ***Configurations***. Configurations of sloping and benching systems shall be in accordance with Figure B-1.

TABLE B-1
MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK	VERTICAL (90°)
TYPE A (2)	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 ½:1 (34°)

Footnote(1) Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angle rounded off.

Footnote(2) A short-term maximum allowable slope of 1/2H:1V (63°) is allowed in excavations in Type A soil that are 12 feed (3.67 m) or l depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53°).

Footnote(3) Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

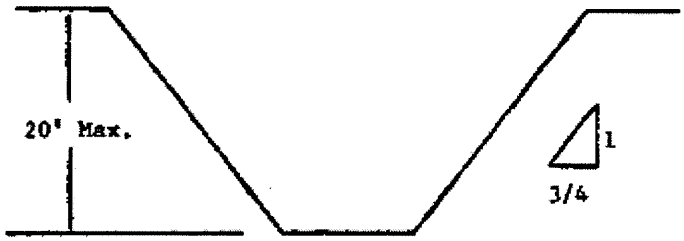
Figure B-1

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

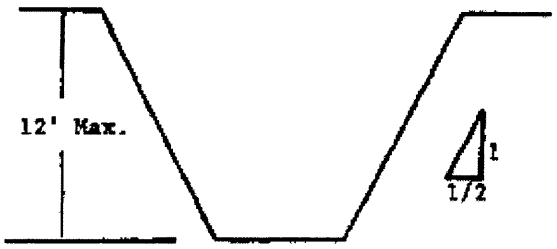
B-1.1 Excavations made in Type A soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.



SIMPLE SLOPE -- GENERAL

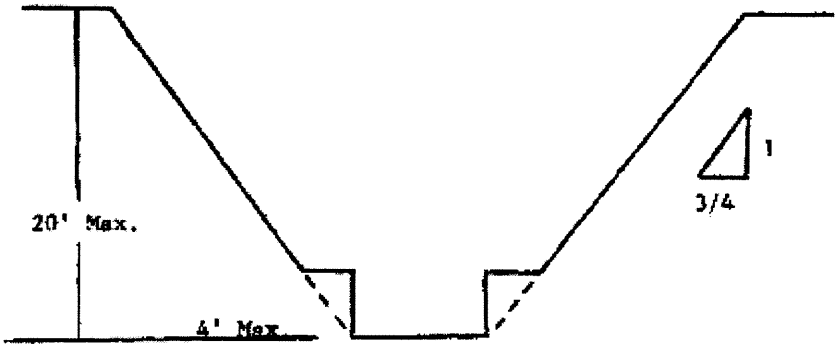
Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have maximum allowable slope of ½:1.



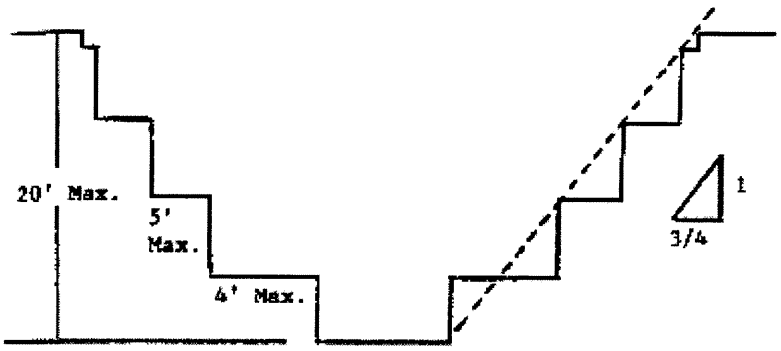
SIMPLE SLOPE -- SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 3/4 to 1 and maximum bench dimens

follows:

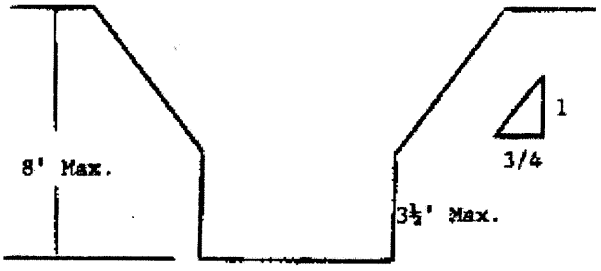


SIMPLE BENCH



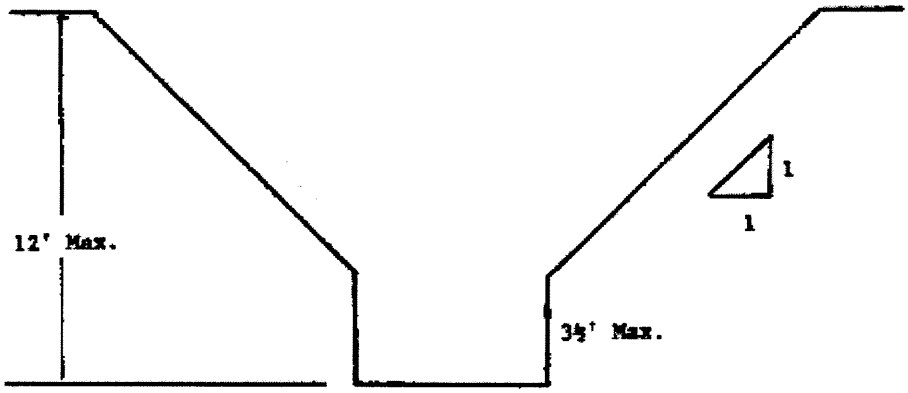
MULTIPLE BENCH

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical sid feet.



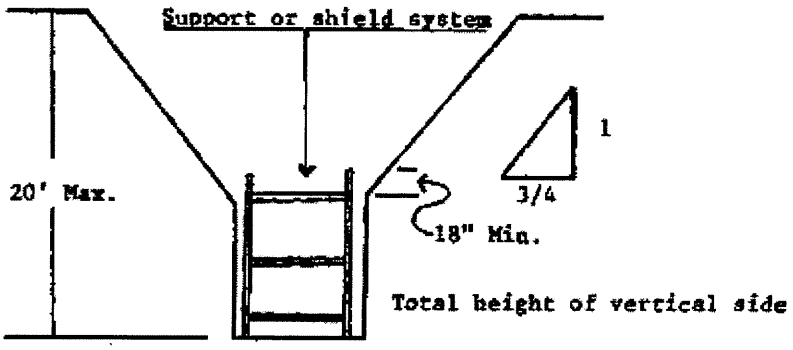
UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 8 FEET IN DEPTH)

All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a r allowable slope of 1:1 and a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 12 FEET IN DEPTH)

All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maxi allowable slope of ¾:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

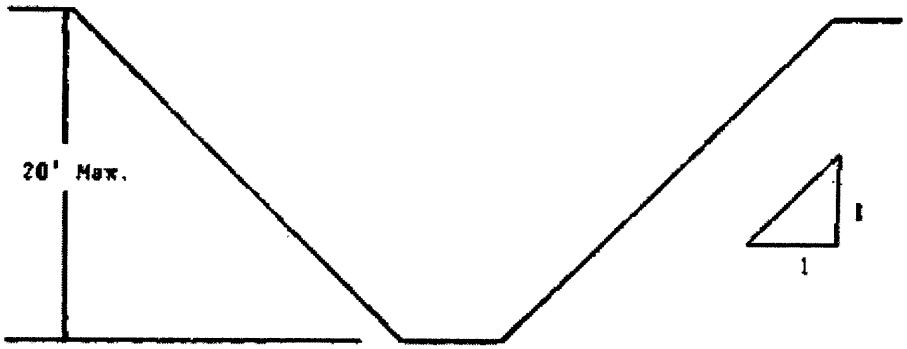


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other opt permitted under § 1926.652(b).

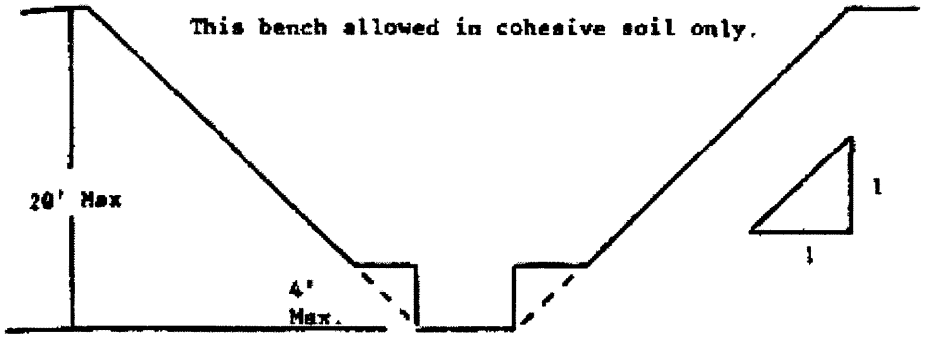
B-1.2 Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

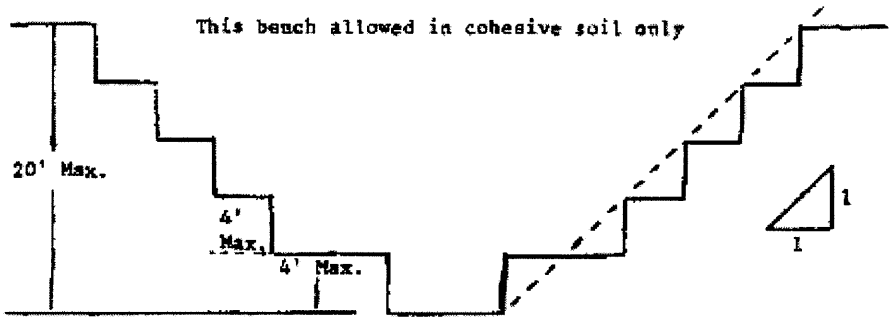


SIMPLE SLOPE

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions

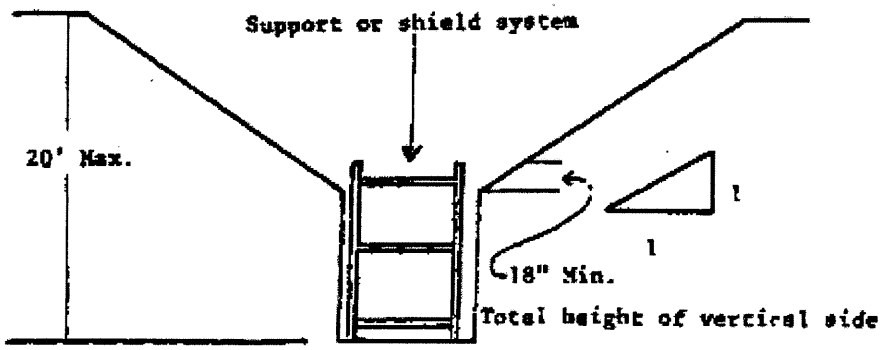


SINGLE BENCH



MULTIPLE BENCH

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at le inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

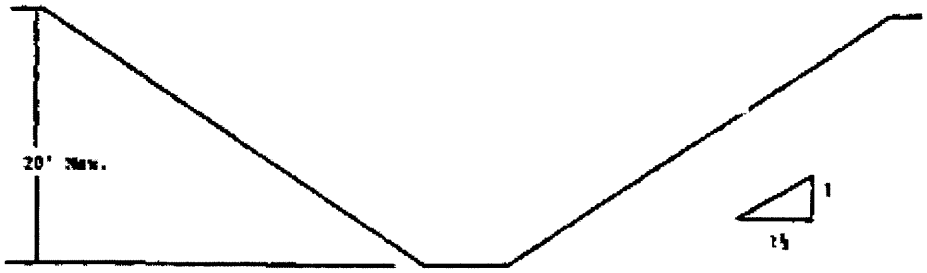


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

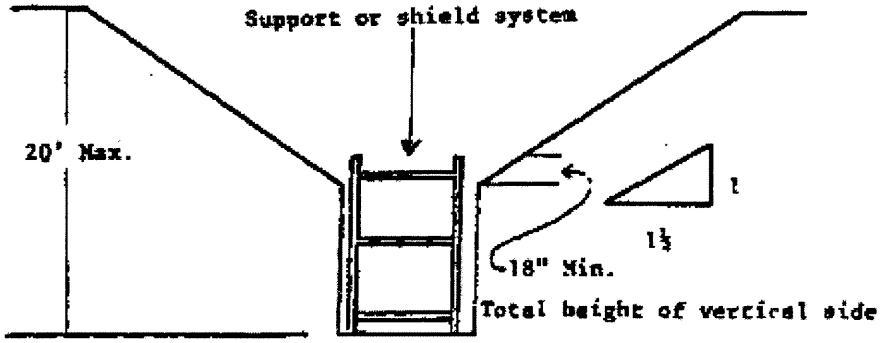
B-1.3 Excavations Made in Type C Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at le inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

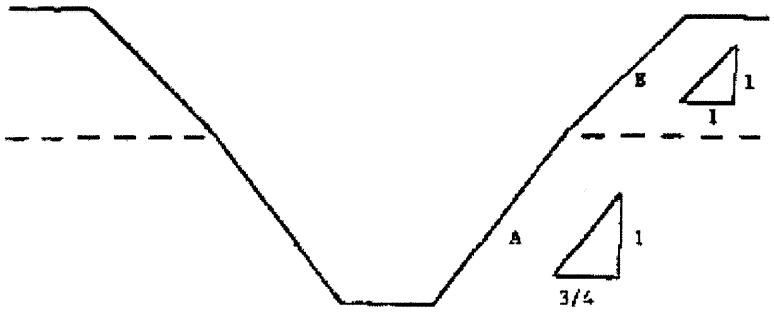


VERTICAL SIDED LOWER PORTION

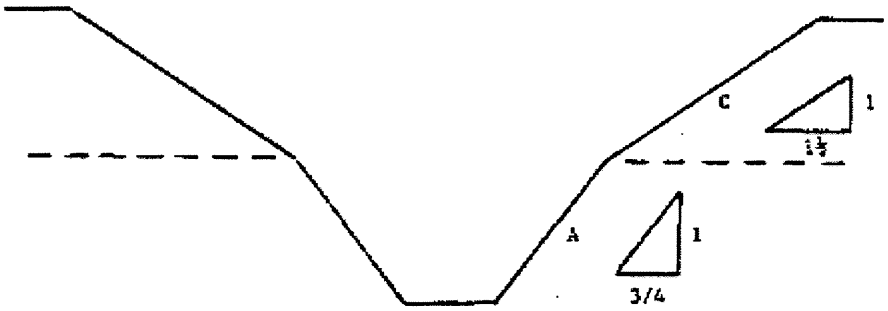
3. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

B-1.4 Excavations Made in Layered Soils

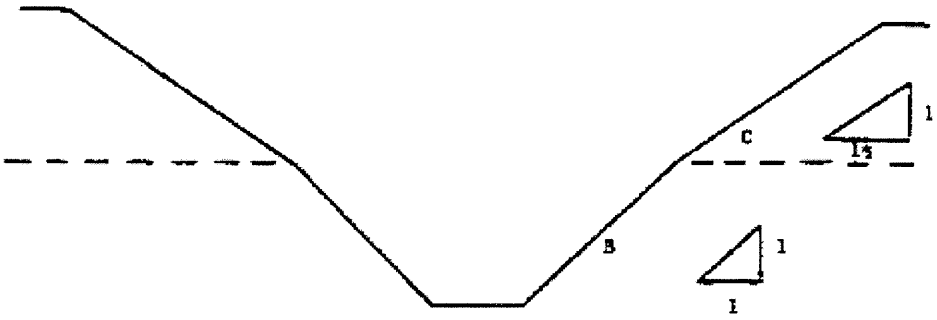
1. All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth b



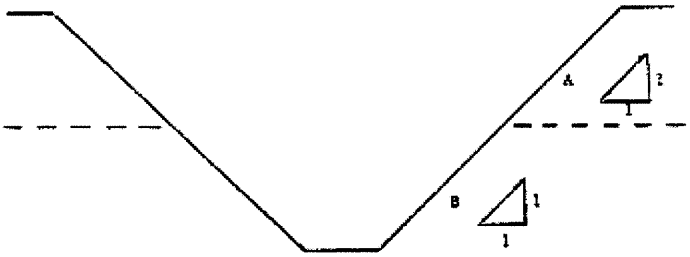
B OVER A



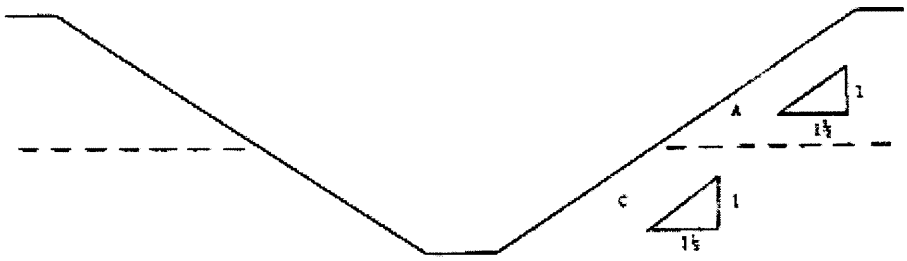
C OVER A



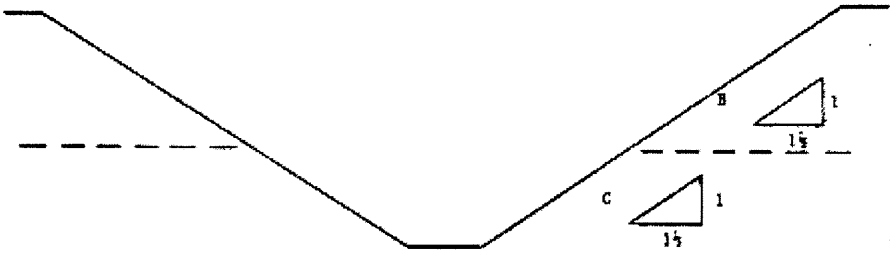
C OVER B



A OVER B



A OVER C



B OVER C

2. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

Next Standard (1926 Subpart P App C)

Regulations (Standards - 29 CFR) - Table of Contents

• **Part Number:**	1926
• **Part Title:**	Safety and Health Regulations for Construction
• **Subpart:**	P
• **Subpart Title:**	Excavations
• **Standard Number:**	1926 Subpart P App F
• **Title:**	Selection of Protective Systems

The following figures are a graphic summary of the requirements contained in subpart P for excavations 20 feet or less in depth. Prc systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer in accordance wit 1926.652(b) and (c).

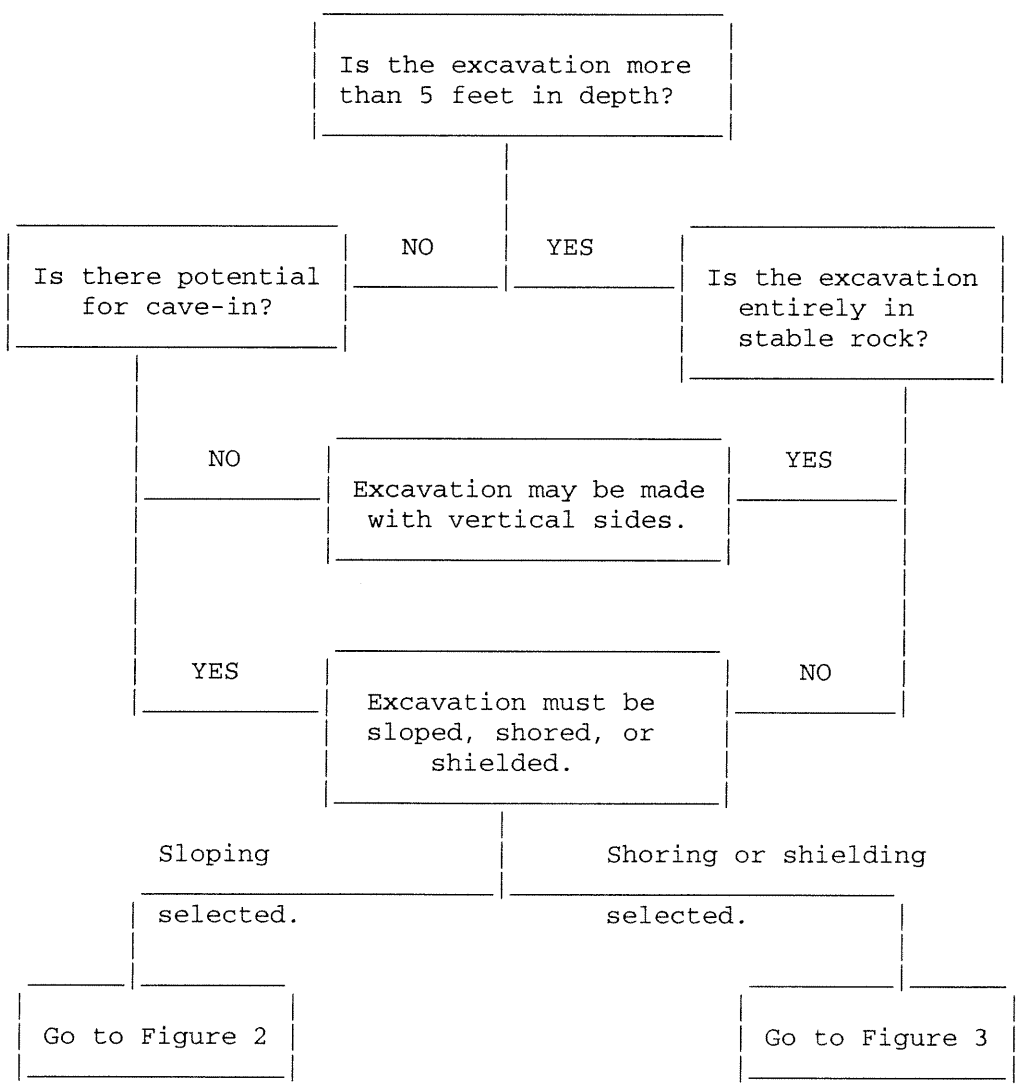


FIGURE 1 - PRELIMINARY DECISIONS

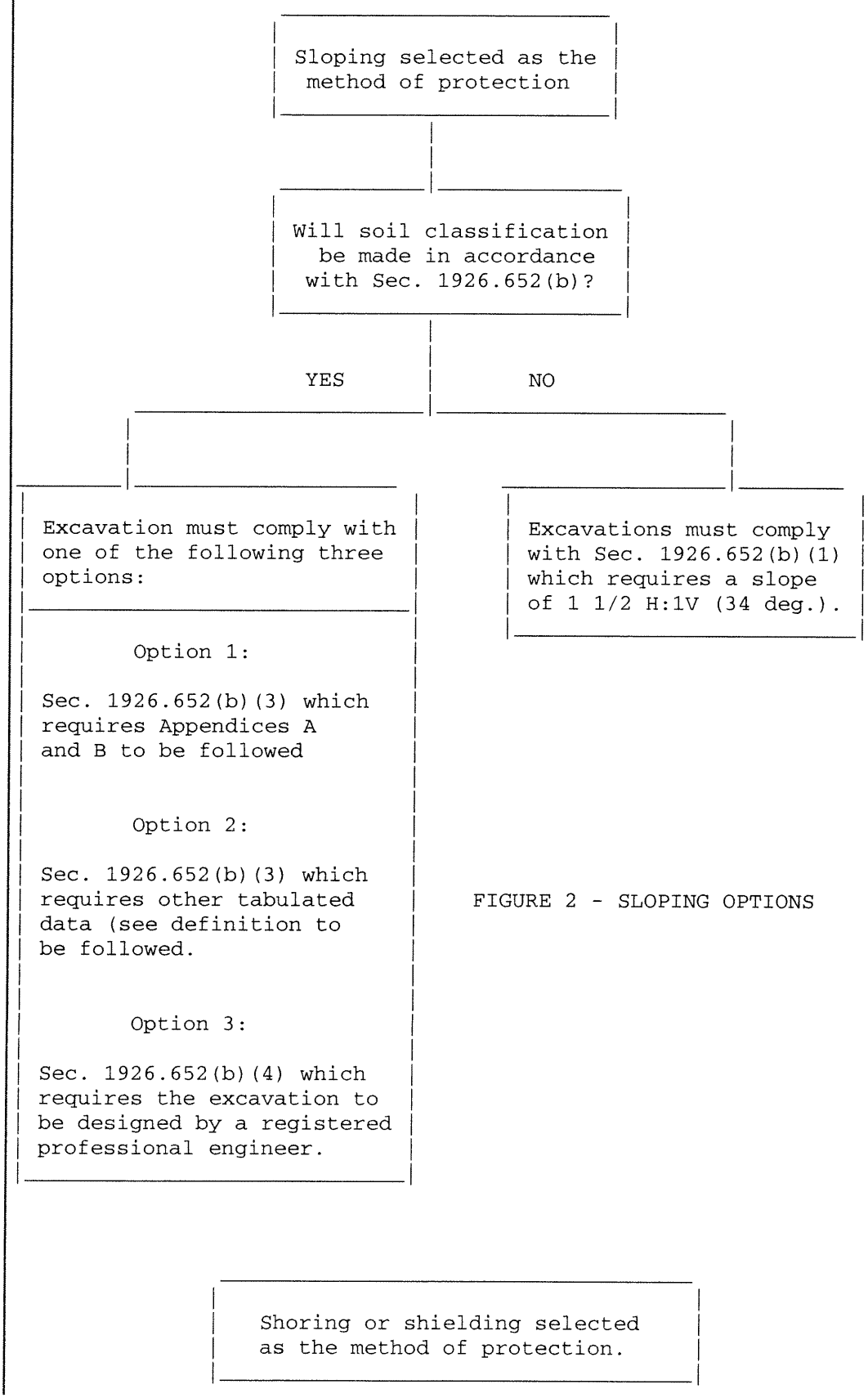


FIGURE 2 - SLOPING OPTIONS

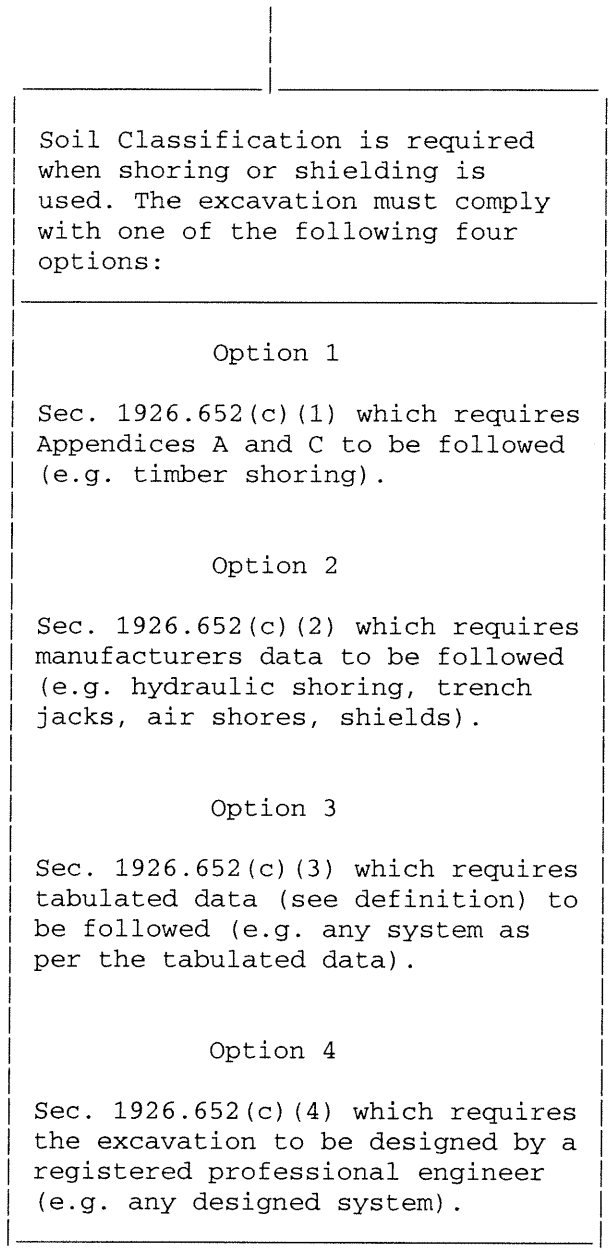


FIGURE 3 - SHORING AND SHIELDING OPTIONS

Next Standard (1926 Subpart Q)

Regulations (Standards - 29 CFR) - Table of Contents

Appendix B

GUIDANCE ON INCIDENT INVESTIGATION

AND REPORTING

C&S ENGINEERS

MEDICAL EMERGENCY/INCIDENT RESPONSE PROTOCOL

1.0 PURPOSE

From time to time employees of C & S Engineers, Inc. will sustain an injury while working on the job. While every effort is being made to prevent this, in the event of an injury or illness on the job, the following procedures will be implemented. This format may also be utilized in the event of a property damage incident.

2.0 SCOPE

This guideline applies to all C & S Engineers, Inc. job sites and employees.

3.0 GUIDELINES

Upon notification or awareness of an incident/accident with injuries or illness the Emergency Coordinator or his On-Site Designee will:

1. Ensure that the injured employee is receiving immediate first aid and medical care.
2. Notify Emergency Services (911) if injuries are severe.
3. Stabilize the work area; ensure that no one else can be injured.
4. Notify the Project Manager at the earliest possible convenience**.**
5. Notify the Owner/Client at the earliest possible convenience.

To assist the Health and Safety Manager in the root cause analysis, the Emergency Coordinator or his On-Site Designee will also make an attempt to:

1. Obtain the names and phone numbers of witnesses.
2. Preserve the accident scene if possible for analysis.

Injury Management

1. If the patient is stable with non-life threatening injuries, the foreman will ensure the employee is transported to Mount St. Mary's Hospital of Niagara Falls.

   At no time will an injured employee drive themselves to medical care.

2. If the patient has serious or life threatening injuries, the emergency coordinator or his on-site designee will notify the emergency services for the area for treatment and transport to a hospital or emergency room. Serious injuries can be considered but not limited to head injuries, loss of consciousness, severe laceration or amputation, fractured bones, burns and eye injuries.

3. Following the treatment and care of the injured employee, the emergency coordinator or his on-site designee and the project manager will initiate the completion of the first injury report. The Health & Safety Manager will assist.

Project Manager

1. Upon notification of a personal injury or illness on the job site, will notify C & S Engineers, Inc, President and Corporate Legal and C&S Companies Health and Safety Manager.
2. Will report to the worksite to initiate the first injury report.
3. Will report to the treatment facility to check on the well being of the injured employee. The project manager will ensure that the treatment facility is aware that this is a workers compensation case.
4. Will assist the Health and Safety Manager in the analysis of the incident.

Health & Safety Manager

1. Upon notification of the personal injury will determined if it is necessary to report to the treatment facility or the accident site, depending on the nature of the injuries and the circumstances of the accident.
2. Will report to the worksite to begin a root cause analysis investigation of the accident. The investigation may include interview of witnesses, field crew , and project manager, the photographing of the scene, reconstruction of the accident scene, using test instruments and taking measurements. The Health and Safety Manager may draw diagrams from the information learned.
3. The Health and Safety Manager will work with the owner/client as necessary to investigate the accident.
4. The Health & Safety manager will ensure that the site is safe to resume work.
5. The Health & Safety Manager shall initiate the New York State Compensation form requirements (C-2) and forward a copy of the C-2 to the C & S Engineers, Inc. controller for transmittal to the Compensation Carrier within 8 hrs of notification of the incident or by the end of the next business day.
6. The Health and Safety manager, upon completion of the investigation, will provide the Project Manager with a written investigative report (copy to the President)
7. The accident will be reviewed at the next Project Managers meeting with the intent to prevent further or similar events on other projects.
8. The Health & Safety Manager will assess the incident to determine OSHA record ability and make record if necessary on the OSHA 300 form, within five working days.

Incident Response

1.0 PURPOSE

To prevent the occurrence of accidents on C&S Engineers, Inc., work sites and to establish a procedure for investigation and reporting of incidents occurring in, or related to C&S work activities.

2.0 SCOPE

Applies to all incidents related to C&S Engineers, Inc. work activities.

3.0 DEFINITIONS

Accident - An undesired event resulting in personal injury and/or property damage, and/or equipment failure.

Fatality - An injury or illness resulting in death of the individual.

Incident - Any occurrence which results in, or could potentially result in, the need for medical care or property damage. Such incidents shall include lost time accidents or illness, medical treatment cases, unplanned exposure to toxic materials or any other significant occurrence resulting in property damage or in "near misses."

Incidence Rate - the number of injuries, illnesses, or lost workdays related to a common exposure base of 100 full-time workers. The rate is calculated as:

N/EH x 200,000

N = number of injuries and illnesses or lost workday cases; EH = total hours worked by all associates during calendar year. 200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

Injury - An injury such as a cut, fracture, sprain, amputation, etc. which results from a work accident or from a single instantaneous event in the work environment.

Lost Workday Case - A lost workday case occurs when an injured or ill employee experiences days away from work beginning with the next scheduled work day. Lost workday cases do not occur unless the employee is effected beyond the day of injury or onset of illness.

Recordable Illness - An illness that results from the course of employment and must be entered on the OSHA 300 Log and Summary of Occupational Injuries and Illnesses. These illnesses require medical treatment and evaluation of work related injury. For example, dermatitis, bronchitis, irritation of eyes, nose, and throat can result from work and non-work related incidents.

Recordable Injury - An injury that results from the course of employment and must be entered on the OSHA 300 Log and Summary of Occupational Injuries and Illnesses. These injuries require medical treatment; may involve loss of consciousness; may result in restriction of work or motion or transfer to another job; or result in a fatality.

Near Miss - An incident which, if occurring at a different time or in a different personnel or equipment configuration, would have resulted in an incident.

4.0 RESPONSIBILITIES

Employees - It shall be the responsibility of all C&S Engineers, Inc. employees to report all incidents as soon as possible to the HSC, regardless of the severity.

Human Resources - has overall responsibility for maintaining accident/ incident reporting and investigations according to current regulations and recording injuries/ illness on the OSHA 300 log, and posting the OSHA 300 log.

Emergency Coordinator - It is the responsibility of the Emergency Coordinator to investigate and prepare an appropriate report of all accidents, illnesses, and incidents occurring on or related to C&S Engineers, Inc. work. The Emergency Coordinator shall complete Attachment A within 24 hours of the incident occurrence.

Health and Safety Manager (HSM) - It is the responsibility of the HSM to investigate and prepare an appropriate report of all lost time injuries and illnesses and significant incidents occurring on or related to C&S Companies. The HSM shall maintain the OSHA 300 form.

Project Managers (PM) - It shall be the PM's responsibility to promptly correct any deficiencies in personnel, training, actions, or any site or equipment deficiencies that were determined to cause or contribute to the incident investigated.

5.0 GUIDELINES

5.1 Incident Investigation

The Project Manager will immediately investigate the circumstances surrounding the incident and will make recommendations to prevent recurrence. The HSM shall be immediately notified by telephone if a serious accident/ incident occurs. The incident shall be evaluated to determine whether it is OSHA recordable. If the incident is determined to be OSHA 300 recordable, it shall be entered on the OSHA 300 form.

The Project Manager with assistance from the HSM must submit to the office an incident report form pertaining to any incident resulting in injury or property damage.

5.2 Incident Report

The completed incident report must be completed by the Project Manager within 12 hours of the incident and distributed to the HSM, and Human Resources. This form shall be maintained by Human Resources for at least five years for all OSHA recordable cases. This form serves as an equivalent to the OSHA 101 form.

5.3 Incident Follow-up Report

The Incident Follow-Up Report (Attachment B) shall be distributed with the Incident Report within one week of the incident. Delay in filing this report shall be explained in a brief memorandum.

5.4 Reporting of Fatalities or Multiple Hospitalization Accidents

Fatalities or accidents resulting in the hospitalization of three or more employees must be reported to OSHA verbally or in writing within 8 hours. The report must contain 1) circumstances surrounding the accident(s), 2) the number of fatalities, and 3) the extent of any injuries.

5.5 OSHA 300A Summary Form

Recordable cases must be entered on the log within six workdays of receipt of the information that a recordable case has occurred. The OSHA log must be kept updated to within 45 calendar days.
OSHA 300 forms must be updated during the 5 year retention period, if there is a change in the extent or outcome of an injury or illness which affects an entry on a log. If a change is necessary, the original entry should be lined out and a corrected entry made on that log. New entries should be made for previously unrecorded cases that are discovered or for cases that initially weren't recorded but were found to be recordable after the end of the year. Log totals should also be modified to reflect these changes.

5.5.1 Posting

The log must be summarized at the end of the calendar year and the summary must be posted from February 1 through May 31.

5.6 OSHA 300A

Facilities selected by the Bureau of Labor Statistics (BLS) to participate in surveys of occupational injuries and illnesses will receive the OSHA 300A. The data from the annual summary on the OSHA 300 log should be transferred to the OSHA 300A, other requested information provided and the form returned as instructed by the BLS.

5.7 Access to OSHA Records

All OSHA records (accident reporting forms and OSHA 300 logs) should be available for inspection and copying by authorized Federal and State government officials.

Employees, former employees, and their representatives must be given access for inspection and copying to only the log, OSHA No. 300, for the establishment in which the employee currently works or formerly worked.

6.0 REFERENCES

29 CFR Part 1904

7.0 ATTACHMENTS

Attachment A - Incident Investigation Form
Attachment B - Incident Follow-Up Report
Attachment C - Establishing Recordability

ATTACHMENT A

INCIDENT INVESTIGATION FORM

Accident investigation should include:

Location: _____

Time of Day: _____

Accident Type: _____

Victim: _____

Nature of Injury: _____

Released Injury: _____

Hazardous Material: _____

Unsafe Acts: _____

Unsafe Conditions: _____

Policies, Decisions: _____

_____

Personal Factors: _____

_____

Environmental Factors: _____

_____

_____

ATTACHMENT B

Date _____

Foreman: _____

INCIDENT FOLLOW-UP REPORT

Date of Incident: _____

Site: _____

Brief description of incident: _____

_____

_____

_____

_____

Outcome of incident: _____

_____

_____

_____

Physician's recommendations: _____

_____

_____

_____

Date the injured returned to work: _____

Project Manager Signature: _____

Date: _____

ATTACH ANY ADDITIONAL INFORMATION TO THIS FORM

ATTACHMENT C

ESTABLISHING RECORDABILITY

1. Deciding whether to record a case and how to classify the case.

   Determine whether a fatality, injury or illness is recordable.

   A fatality is recordable if:

   - Results from employment

   An injury is recordable if:

   - Results from employment and
   - It requires medical treatment beyond first aid or
   - Results in restricted work activity or job transfer, or
   - Results in lost work day or
   - Results in loss of consciousness

   An illness is recordable if:

   - It results from employment

2. Definition of "Resulting from Employment"

   Resulting from employment is when the injury or illness results from an event or exposure in the work environment. The work environment is primarily composed of: 1) The employer's premises, and 2) other locations where associates are engaged in work-related activities or are present as a condition of their employment.

   The employer's premises include company rest rooms, hallways, cafeterias, sidewalks and parking lots. Injuries occurring in these places are generally considered work related.

   The employer's premises EXCLUDES employer controlled ball fields, tennis courts, golf courses, parks, swimming pools, gyms, and other similar recreational facilities, used by associates on a voluntary basis for their own benefit, primarily during off work hours.

   Ordinary and customary commute, is not generally considered work related.

   Employees injured or taken ill while engaged in consuming food, as part of a normal break or activity is not considered work related. Employees injured or taken ill as the result of smoking, consuming illegal drugs, alcohol or applying make up are generally not considered work related. Employee injured by un authorized horseplay is generally not considered work related, however, an employee injured as a result of a fight or other workplace violence act, may be considered work related.

Associates who travel on company business are considered to be engaged in work related activities all the time they spend in the interest of the company. This includes travel to and from customer contacts, and entertaining or being entertained for purpose of promoting or discussing business. Incidents occurring during normal living activities (eating, sleeping, recreation) or if the associate deviates from a reasonably direct route of travel are not considered OSHA recordable.

3. Distinction between Medical Treatment and First Aid.

First aid is defined as any one-time treatment, and any follow up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, etc., which do not ordinarily require medical care. Such one time treatment, and follow up visit for the purpose of observation, is considered first aid even though provided by a physician or registered professional personnel.

Medical Treatment (recordable)

a) They must be treated only by a physician or licensed medical personnel.

b) They impair bodily function (i.e. normal use of senses, limbs, etc.).

c) They result in damage to physical structure of a non superficial nature (fractures).

d) They involve complications requiring follow up medical treatment.

Appendix C
Community Air Monitoring Plan

Community Air Monitoring Plan

for

211 Main Street
City of North Tonawanda, Niagara County, New York

Site No. C932171

July 2020

Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

<u>VOC Monitoring, Response Levels and Actions</u>

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate

surrogate, such as isobutylene. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust

suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number;
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;

(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50$_o$ C (14 to 122$_o$ F); and
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record-keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM-10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.