Covanta Niagara Rail-to-Truck Intermodal Facility Site

NIAGARA COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: C932160

Prepared for:
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Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

DECEMBER 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at the Covanta Niagara Rail-to-Truck Intermodal Facility Site (hereinafter referred to as the "Site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# C3932160-03-13, Site # C932160, which was executed on April 10, 2013 and subsequently amended on July 7, 2015.

1.1.1 General

Covanta Niagara I, LLC entered into a BCA with the NYSDEC to remediate a 15-acre property located in the City of Niagara Falls, New York. This BCA required the Remedial Party, Covanta Niagara I, LLC, to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of this 15-acre site is provided in Figure 1. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement.

After completion of the remedial work described in the Remedial Action Work Plan, some contamination was left in the subsurface at this site, which is hereafter referred to as 'remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by LaBella Associates D.P.C., on behalf of Covanta Niagara I, LLC, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Niagara County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index # C3932160-03-13; Site # C3932160) for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The site is located in the City of Niagara Falls, County of Niagara, New York and is identified as Section-Block-Lot (SBL) #160.09-1-21 on the Niagara Tax Map. The site is an approximately 15-acre area bounded by vacant property to the north, beyond which lies Niagara Falls Boulevard, active railroad tracks to the south and to the east, and the Covanta energy-from-waste facility and vacant property to the west (see Figure 1). The boundaries of the site are more fully described within Appendix A – Environmental Easement (Schedule A-Metes and Bounds).

1.2.2 Site History

The site, formerly part of a larger industrial complex, was owned and operated by the Union Carbide Corporation Metals Division, which first developed the complex in the early 1900's. The plant reportedly produced special alloys, tungsten, ferroalloys, calcium carbide and ferrovanadium ferrotungsten. Processes used at the plant included submerged arc, open arc, and globar electric furnaces, as well as exothermic and induction furnaces. Wastes generated by the plant included furnace slag (ferroalloys), hydrated lime and miscellaneous plant waste, which were reportedly disposed of at Union Carbide's former disposal site at 56th Street and Pine Avenue in Niagara Falls.

In 1942, the Atomic Energy Commission (AEC) and Manhattan Engineer District (MED) contracted for the construction and operation of a facility on the Union Carbide plant property that came to be known as Electromet. The Electromet facility produced uranium metal from uranium tetrafluoride by reacting it with magnesium in induction furnaces. The uranium metal was recast into ingots that were shipped off-site for testing or rolling. Process residue, including dolomite slag, uranium chips and crucible dross, was shipped to other sites for uranium recovery, storage or disposal. Electromet also recast scrap metal, supplied calcium metal to other facilities and conducted research and development activities. In 1948, Electromet became a subsidiary of the Union Carbide Metals Division called the Electro Metallurgical Company, and the last casting of uranium was conducted in 1949. The facility was reactivated in 1950 for casting zirconium metal sponge into ingots. During the early 1950s, portions of the facility were used under contract to the AEC for research and development activities that may have involved uranium, as well as titanium processing. The MED/AEC operations took place in one building that was demolished in 1957. This building was formerly located approximately 1,250 feet to the west of the site.

Union Carbide's Linde Division also operated a welding flux manufacturing facility on the plant property. Waste from this operation included sludge from a rotary air filter, which was reportedly disposed of off-site.

In February 2013, the site was acquired by Covanta from Praxair, Inc., a corporate successor to Union Carbide's Linde Division. Other industrial operators on the Praxair property have included ESAB, L-Tech, Stratcor, Inc., US Vanadium and UMETCO.

From the time of the initial development of the Union Carbide plant, the site was primarily utilized for rail facilities that serviced the plant and other adjacent industries. A portion of the welding flux manufacturing facility that was operated by Union Carbide's Linde Division and later by ESAB/L-TEC, however, was located on the western portion of the site.

At the time of acquisition by Covanta, the site was occupied by an inactive rail yard, concrete floor slabs representing remnants of the former industrial complex, and a 13,700 square foot building that was formerly utilized for locomotive maintenance and repair.

Historical reports detailing previous assessments, investigations and remedial activities on the Union Carbide complex that contained the site are summarized and referenced in the RI Report.

1.2.3 Geologic Conditions

The site geology can be divided into five significant units, which are described in descending order as follows: fill material, alluvial deposits, glaciolacustrine deposits, glacial till, and dolostone bedrock. The fill material was encountered across the project site and was observed from the ground surface to a maximum depth of eight feet below ground surface (bgs), with an average thickness of approximately four feet. The fill material consisted of a mixture of brown to black granular material, angular gravel, slag, railroad materials (i.e., ballast, buried railroad ties) and wood, metal and concrete debris. The slag that was encountered across the project site varied in color and structure, ranging from crushed to bolder-sized. The color of the slag ranged from light gray to black with purple, orange and blue iridescence. Low permeability alluvial and glacial deposits underlie the fill and extend to the apparent top of bedrock, which was encountered at depths ranging from 15.2 to 21.7 feet bgs. Geologic cross-sections of the Site are shown in Figure 2.

Precipitation that falls on the project site appears to infiltrate the ground surface. No surface water drainage was observed on the project site. The on-site drainage and wastewater systems are reportedly abandoned and capped, and no surface water bodies exist on or adjacent to the project site. Localized perched groundwater was encountered in the permeable fill and alluvial deposits; however saturated conditions were not consistently observed in these units. Therefore, the upper-most water bearing zone defined on the project site occurs within the underlying glacial deposits. Groundwater on site was generally encountered at depths of 8-12 feet below ground surface.

A review of the groundwater elevations recorded on-site indicates that the gradient of the groundwater potentiometric surface across the central and northern portions of the site is relatively flat. The elevation of the groundwater in the southern portion of the site, however, is several feet higher. The cause of this variation is not currently known, but this difference does indicate the likelihood of localized variations in groundwater flow and gradient on the project site.

A groundwater potentiometric surface map for the upper-most water bearing zone has not been generated because the impact of the groundwater pumping system currently in operation on the adjacent Occidental Chemical Corporation site to the south has not been sufficiently defined to enable reliable modeling and interpretation of the groundwater elevations recorded on the project site. Both overburden and bedrock groundwater zones on the Occidental site are hydraulically controlled by groundwater extraction wells on this adjacent site. Furthermore, the

presence of the Fall Street Tunnel, which is situated to the west of the project site near Royal Avenue, likely influences local groundwater flow. The combined impact of these groundwater "sinks", coupled with the presence of active and abandoned utility lines and foundation walls across the project site further complicates the interpretation of the groundwater data from the site.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following report:

- Remedial Investigation Report – March 2013, LaBella Associates, D.P.C.

Generally, the RI determined that a number of contaminants of concern were present within the fill material and perched groundwater at the Site at concentrations above the applicable standards and/or cleanup objectives. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in the sections below, while the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are listed in Table 1.

The contaminant(s) of concern were present in surface soil/fill, subsurface soil/fill, and perched groundwater at concentrations that exceeded the applicable SCGs as summarized in Table 1. No contaminants of concern were detected in overburden groundwater at the site at levels exceeding the applicable SCGs.

Below is a summary of site conditions when the RI was performed in 2012:

<u>Soil/Fill</u>

As summarized in Tables 2 and 3, contaminants were detected in the surface and subsurface soil/fill samples collected from across the Site during the RI. The following sections describe the results:

Surface Soil/Fill

Surface soil/fill throughout the site contains SVOCs and metals at levels that exceed the Industrial Use SCOs. Pesticides were also encountered in the surface soil/fill in the vicinity of the inactive rail yard at concentrations exceeding these SCOs.

Slag material exhibiting gamma radiation levels greater than two times the background level is intermingled with surface fill on the project site. This slag is commonly referred to as Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) slag. At the surface, the TENORM slag was primarily encountered in a handful of radiological hot spots located in the northern portion of the site, although sporadic occurrences of this material were noted in other areas of the site.

Subsurface Soil/Fill Material

Contaminants of concern in the subsurface soil/fill include SVOCs and metals. Elevated concentrations of arsenic and manganese that are likely related to the deposition of slag, off-specification welding materials and other byproducts of former manufacturing operations, were detected in the fill material across the site.

Petroleum impacted fill displaying nuisance characteristics (e.g., staining, odor, etc.) was also encountered in the vicinity of the locomotive house and former UST area.

Additionally, TENORM slag was found to be interspersed with shallow subsurface fill across the site. Gamma radiation levels detected in this slag were greater than two times the background level.

Site-Related Groundwater

Metals, including arsenic, manganese and chromium, were detected in the perched water contained in the fill across the site at levels that exceeded the groundwater standards. Low concentrations of aromatic hydrocarbons were also encountered in the perched water occurring within the fill in the vicinity of the former UST area near the locomotive house. Table 4 summarizes the contaminant concentrations in the groundwater samples collected during the RI.

Groundwater encountered within the upper-most water bearing zone, which occurs within the glaciolacustrine and glacial till deposits that underlie the fill, contained low levels of aromatic hydrocarbons and PAHs, none of which exceeded the applicable SCGs. Inorganic

parameters detected above the groundwater standards in the samples from this hydrostratigraphic unit were limited to naturally occurring metals, including aluminum, iron, magnesium and sodium.

The constituents detected above the groundwater standards in the overburden groundwater unit were those commonly encountered in uncontaminated, natural environments and do not appear to be associated with the contaminated fill on the project site. No other contraventions of the applicable water quality standards were detected in the overburden groundwater. For these reasons, the remedy for the site did not include groundwater remediation and/or long-term groundwater monitoring.

Site-Related Soil Vapor Intrusion

During the performance of the RI, the former locomotive house was the only building that remained on-site. However, the building was open to the atmosphere and was slated for demolition. Therefore, a soil vapor intrusion study was not performed at the Site.

Pits and Sumps

Water and sediment/scale occurring in the pit within the locomotive house was determined to be non-hazardous. Low concentrations of VOCs commonly associated with solvents and degreasers were detected in the water within the pit.

SVOCs were detected in the liquid within the sewer system discovered around the perimeter of the locomotive house. Liquid phase hydrocarbon globules were also observed on the surface of the liquid in the manhole closest to the former UST area, and petroleum sheen and odor were also observed in all manholes when the sediment was disturbed. The integrity and extent of this abandoned sewer system were not known, although no flow was observed within the system during the RI field program.

Regulated Building Material

Non-friable asbestos containing material (ACM) and limited quantities of friable ACM, lead-based paint and mercury-containing light fixtures were found in the locomotive house.

Underground Storage Tanks

Two USTs were formerly located near the southeast corner of the locomotive house. As part of the RI, this area was investigated via a geophysical survey, test probes, monitoring well installation, and soil and groundwater sampling. The RI confirmed that the USTs were no longer located on the Site. However, impacts to soil consisting of petroleum staining and odors were noted in the vicinity of the former USTs. Although some contaminants were detected in wells proximal to the former USTs, the results indicated that impacts to groundwater were not significant.

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the NYSDEC-approved Remedial Action Work Plan dated March, 2013.

The following is a summary of the Remedial Actions performed at the site:

1. Removal and off-site disposal of all fill material excavated in conjunction with site grading and the construction of intermodal facility infrastructure (e.g., utilities, storm water management system, building/scale foundations, asphalt roadways, concrete slabs, etc.);

2. Removal and off-site disposal of TENORM slag excavated during site grading and intermodal facility infrastructure construction;

3. The in-place closure or removal of subsurface vaults, sumps and manholes encountered during site grading and intermodal facility construction, including the removal and disposal of fluids and sediment from these structures;

4. Excavation and off-site disposal of the grossly contaminated fill impacted with petroleum nuisance characteristics in the vicinity of the former USTs previously located near the Locomotive House;

5. Removal and off-site disposal of contaminated water and sediment contained within pits and sumps located within the Locomotive House and removal of these structures;

6. Removal and off-site disposal of contaminated water and sludge contained within the Historic Sewer in the vicinity of the Locomotive House and closure of this sewer;

7. Removal and off-site disposal of Regulated Building Materials (e.g., asbestos, light ballasts, etc.) from the Locomotive House and demolition of the structure;

8. The proper closure of on-site groundwater monitoring wells;

9. Construction and maintenance of a soil cover system consisting of a minimum of 12 inches of clean quarry stone (e.g., crushed stone, stone rip rap and railroad sub-ballast and ballast), asphalt, concrete, and/or clean top soil to prevent human exposure to remaining contaminated soil/fill remaining at the site;

10. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site.

11. Imposition of an institutional control in the form of an environmental easement for the Site that:

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

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

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

    - Requires compliance with the NYSDEC-approved Site Management Plan.

12. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

Remedial activities were completed at the site in October 2015.

1.4.1 Removal of Contaminated Materials from the Site

The following summarizes the type, volume and location of contaminated materials removed from the site for off-site disposal. A list of the soil cleanup objectives (SCOs) for the primary contaminants of concern (COCs) and applicable land use for this site is provided in Table 5.

Non-Radiological Industrial Fill without Petroleum Nuisance Characteristics

All fill material exhibiting gamma radiation levels below 10,000 CPM and absent petroleum nuisance characteristics that was excavated in conjunction with site grading and the construction of intermodal facility infrastructure was removed from the site for disposal in an appropriately permitted landfill. The total amount of this material that was removed from the site is identified in the Final Engineering Report (FER). This material was generated primarily from site-wide grading activities and the excavations associated with the construction of the storm water management system, utilities (e.g., sanitary sewer, gas, electric, water) and foundations for the RTIF Building and truck scale. This material also originated from miscellaneous excavations for light poles, bollards, fence posts, etc., and included deteriorated railroad ties. Figure 3 shows as-built drawing(s) that reflect the location and extent of site grading and utility excavations from which this material was removed.

Non-Radiological Industrial Fill with Petroleum Nuisance Characteristics

All fill material exhibiting gamma radiation levels below 10,000 CPM and petroleum nuisance characteristics that was excavated during remedial activities and RTIF construction was removed from the site for disposal in an appropriately permitted landfill. The total amount of this material that was removed from the site is identified in the FER. This material was generated primarily from the excavation of grossly contaminated fill in the area of the former USTs near the locomotive house. Relatively minor volumes of material within this category were also generated during site-wide grading activities and the excavations associated with the construction of the intermodal facility infrastructure. Figure 4 show the location of the former UST area excavation as well as other locations from which this material was removed.

Radiological Fill

All fill material exhibiting gamma radiation levels above 10,000 CPM and absent petroleum nuisance characteristics that was excavated in conjunction with site grading and the construction of intermodal facility infrastructure was removed from the site for disposal in an

appropriately permitted landfill. The total amount of this material that was removed from the site is identified within the FER. This material was generated primarily from site-wide grading activities and the excavations associated with the construction of intermodal facility infrastructure. Figure 5 show as-built drawings that reflect the location and extent on site grading and utility excavations from which this material was removed.

Railroad Ties

Intact, wooden railroad ties excavated in conjunction with site grading and the construction of intermodal facility infrastructure were removed from the site for processing and combustion in an appropriately permitted off-site waste-to-energy facility or disposed in an appropriately permitted landfill. Deteriorated railroad ties were included in the non-radiological industrial fill discussed above. The total amounts of intact ties removed from the site for energy recovery or landfill disposal are identified in the FER. Figure 1 shows the former rail lines on the site from which a majority of the railroad ties were removed.

Surplus Uncontaminated Native Overburden from Storm Water Management System Construction

Uncontaminated native overburden excavated during the construction of the storm water management system for the intermodal facility that could not be utilized for on-site berm construction was removed for the site and utilized as daily cover at an off-site landfill. The amount of surplus native overburden used off-site as daily landfill cover is identified within the FER. The location of the excavation from which this material was removed is shown in Figure 6.

Uncontaminated Concrete from Locomotive House Demolition

Concrete floor slabs and foundations associated with the locomotive house that did not exhibit field evidence of contamination (e.g., staining, gamma radiation above 10,000 CPM) were demolished and processed on-site using a mobile crushing plant. The resulting crushed concrete was characterized via chemical analysis and determined by the NYSDEC to be suitable for use on industrially zoned property that abuts the site, is owned by Covanta and functions as a construction staging area. The total amount of concrete generated from the locomotive house demolition that was crushed and placed off-site on the adjacent Covanta construction staging area is identified in the FER. Figure 7 shows the former locomotive house footprint and the adjacent Covanta construction staging area where this material was placed.

Fluid/Sediment from Historic Sewer, Sumps, Pits and Vaults

Fluid and sediment present within the historical sewer proximate the former locomotive

house; sumps and pits within the locomotive house; and various sumps, pits and vaults encountered during site grading and intermodal facility infrastructure construction were removed from the site in conjunction with the closure or removal of these structures. Sediment removed from these structures was disposed of in an appropriately permitted off-site facility, while fluids removed from these structures were managed via one of the following methods:

1. Incineration at the adjacent Covanta energy-from-waste facility per NYSDEC approval; or
2. Discharge to the Niagara Falls Water Board (NFWB) John Avenue sewer for treatment per NFWB approval.

The total amount of fluid removed from these structures is identified in the FER. The sediment removed from these structures was disposed of in appropriately permitted off-site facilities. The quantity of sediment that was disposed of in off-site landfills is incorporated in the totals for non-radiological industrial fill materials presented above. A small amount of sediment was incinerated at the adjacent Covanta energy-from-waste facility per NYSDEC approval. Figure 8 shows the location of the historical sewer system and various subsurface structures encountered throughout the site.

Regulated Building Materials from Locomotive House Demolition

Asbestos Containing Materials (ACMs) and mercury vapor bulbs present within the locomotive house were removed from the site for proper off-site disposal in conjunction with the demolition of this structure. The total amount of such materials removed is identified in the FER. The ACMs removed from the locomotive house included roofing materials, door and window caulk, light and electrical panel gaskets and foundation packing material. The mercury vapor bulbs were removed from interior light fixtures.

Demolition Debris from Locomotive House Demolition

Brick, wood and other non-masonry building materials generated as a result of the locomotive house demolition were removed from the site for proper off-site disposal. The total amount of demolition debris removed from the site is identified in the FER.

1.4.2 Site-Related Treatment Systems

No long-term treatment systems were installed as part of the site remedy.

1.4.3 Remaining Contamination

Residual contamination exhibiting concentrations that exceed the SCOs remains on the site below the cover system in areas where industrial fill material is present. The fill material that remains under the cover system contains TENORM slag with gamma radiation emissions that are greater than two times background levels, as well as SVOCs, arsenic and manganese levels that exceed the industrial use SCOs. Additionally, perched groundwater that occurs within this fill has been shown to exhibit elevated pH levels. Although the drainage system constructed on the site will likely eliminate much of the perched groundwater on the site, some pockets of perched groundwater with elevated pH levels may be present in the fill.

The following sections describe the various cover system regions within the site, including the depth at which the remaining contaminated fill will be encountered and the characteristics of the transition zone and/or demarcation layer between the cover system within each region and the underlying contaminated fill. The description for each region below also applies to active subsurface utilities occurring therein.

Earthen Berms at Northern and Western Site Perimeters

The earthen berms that are present along portions of the northern and western site perimeters were constructed of unimpacted, native silty clay overburden that were placed directly over contaminated industrial fill material. The thickness of the native overburden in the berms is shown in Figure 9. The berms were covered with 4 inches of clean topsoil that was placed directly over the native overburden. Within the footprints of the berms, a notable transition zone between the brown topsoil and red-brown silty clay overburden exists, as does a notable transition zone from the latter to the underlying dark brown to black industrial fill.

Rail Yard

The rail yard was constructed on clean crushed stone fill that was placed directly over contaminated industrial fill. The cover system in this region consists of a minimum of 6 inches of clean stone sub-ballast overlain by 11 inches of clean stone ballast, the upper 7 inches of which is intermixed with wooden railroad ties. The thickness of the clean stone fill placed in this region varies below the sub-ballast. The depth at which the top of the contaminated industrial fill occurs is shown on Figure 10. Notable transition zones between the railroad ballast and clean stone, and the latter and the underlying brown to black industrial fill exists in this region.

Exterior Concrete Slabs and Asphalt Areas

The region of the site that is occupied by exterior concrete slabs and asphalt was

constructed on clean crushed stone fill. The cover system in this region consists of a minimum of 12 inches of crushed stone sub-base overlain by a minimum of 8-inches of concrete or a minimum of 7 inches of asphalt. The thickness of the clean stone fill placed in this region varies below the asphalt and concrete. The depth at which the top of the contaminated industrial fill occurs is shown on Figure 10. A polypropylene tri-axial geo-grid material was placed at the base of the cover system in this region. A notable transition zone between the clean stone fill and underlying brown-black industrial fill also exists in this region.

Storm Water Overflow Basin

The storm water overflow basin was excavated below grade into the industrial fill. A non-woven geotextile was placed directly on the industrial fill and below the cover system in this region, which consists of at least 12 inches of clean stone rip rap. The depth at which the top of the contaminated fill occurs within the footprint of the overflow basin is shown in Figure 10. The geotextile serves as a demarcation layer in this region, below which contaminated fill material exists. A notable transition zone between the clean stone rip rap and underlying brown-black industrial fill also exists in this region.

RTIF Building Footprint

The majority of the area on which the RTIF Building was constructed was excavated down to native overburden to remove petroleum impacted soil/fill. However, some industrial fill areas underlie the western perimeter of the building. Therefore, with the exception of the western building perimeter, no industrial fill containing residual contamination remains below the building footprint. Clean crushed stone was placed directly over the native overburden to backfill the excavation. The thickness of the clean stone backfill in this area exceeds 5 feet and is shown in Figure 4. A concrete slab with a thickness ranging from 6 inches in the office area to 9 inches in the remaining interior areas of the building; and perimeter concrete foundations overlie the clean stone backfill within the building footprint. Along the western building perimeter and at the periphery of the building, a notable transition between the clean stone fill and the underlying brown-black industrial fill exists.

Eastern Perimeter Stone Fill Area

Clean stone fill was placed directly over contaminated industrial fill in the area between the rail yard and the eastern site boundary. The cover system in this region consists of a minimum of 12 inches of clean stone fill. The thickness of the clean stone fill placed in this region varies. The depth at which the top of the contaminated industrial fill occurs is shown on Figure 10. A notable transition zones exists between the clean stone fill and the underlying

brown to black industrial fill exists in this region.

In areas of the site where contaminated fill material remains below the cover system (see Figure 10), the thickness of the remaining contaminated fill generally ranges from approximately 2-4 feet. This is based on subsurface data compiled during the RI and subsequent geotechnical investigations that indicated pre-remedial fill thicknesses ranging from 2-6'. Post-remedial sample collection and chemical analysis was not required for this site due to the installation of the cover system across the entire site. Therefore, no post-remedial data concerning contaminant concentrations within the remaining industrial fill is available. However, the data contained in the RI Report that characterized subsurface soil/fill on the site are considered representative of the fill material that remains at the site. These data are compared with the Track 1 (unrestricted) SCOs in Tables 2 and 3, which indicate that none of the fill samples analyzed met the SCOs for unrestricted use.

1.4.4 Materials Used On-site for Intermodal Facility Construction

Uncontaminated Concrete from Floor Slab and Foundation Remnants

Concrete floor slab and foundation remnants encountered during site grading and intermodal facility infrastructure construction that did not exhibit field evidence of contamination (e.g., staining, gamma radiation above 10,000 CPM) was transported to an off-site crushing plant for processing. This material was crushed off-site, returned to the site and utilized below the cover system as backfill within on-site utility trenches. The total amount of crushed concrete that was generated from grading and infrastructure construction is included within the FER. Figure 11 shows the location of the former floor slabs and foundation remnants removed from the site.

Uncontaminated Native Overburden from Storm Water Management System Construction

Uncontaminated native overburden excavated during the construction of the storm water management system for the intermodal facility was utilized to construct earthen berms along portions of the northern and western site boundaries. The amount of native overburden used to construct these berms is included within the FER. The location of these berms, which were covered with clean top soil, seeded and fertilized, is shown in Figure 9.

2.0 Engineering and institutional control plan

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil/fill exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Soil Cover

Exposure to remaining contamination in soil/fill at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 12 inches of clean soil and/or clean stone fill, asphalt pavement, exterior concrete slabs and concrete building slabs. The Excavation Work Plan that appears in Appendix B outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 4 of this SMP.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered complete when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

The cover system is a permanent control and the quality and integrity of the system will be inspected at defined, regular intervals in perpetuity.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to industrial uses only. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;

- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP; and
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted, residential, restricted residential, or commercial use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;
- Vegetable gardens and farming on the property are prohibited; and
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

The site has been remediated for restricted industrial use. Residual contamination consisting of industrial fill material that includes Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) in the form of slag, remains below the engineering controls constructed at the site. Any future intrusive work that will penetrate the soil cover or cap, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix B to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) (Appendix C) and Community Air Monitoring Plan (CAMP) (Appendix D) prepared for the site. The HASP attached as Appendix C to this SMP is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or engineering control that reduces or has the potential to reduce the effectiveness of an Engineering Control and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice within 24 hours of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public. Verbal notifications due on weekends or holidays shall be made on the next business day.
- Follow-up status reports on actions taken to respond to any emergency event requiring

ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Brownfield Cleanup Agreement (BCA) and all approved work plans and reports, including this SMP
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to LaBella Associates. These emergency contact lists must be maintained in an easily accessible location at the site.

Table 7: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Table 8: Contact Numbers

Robert Napieralski LaBella Associates, P.C. Qualified Environmental Professional	716-551-6281
Kevin O'Neil Covanta Niagara I, LLC Site Contact	716-278-8548
Greg Sutton NYSDEC Agency Contact	716-851-7220

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 139 47th Street, Niagara Falls, New York 14301

Nearest Hospital Name: Niagara Falls Memorial Hospital

Hospital Location: 621 10th Street, Niagara Falls, New York

Hospital Telephone: 716-278-4569

Directions to the Hospital:

1. Head north on 47th Street

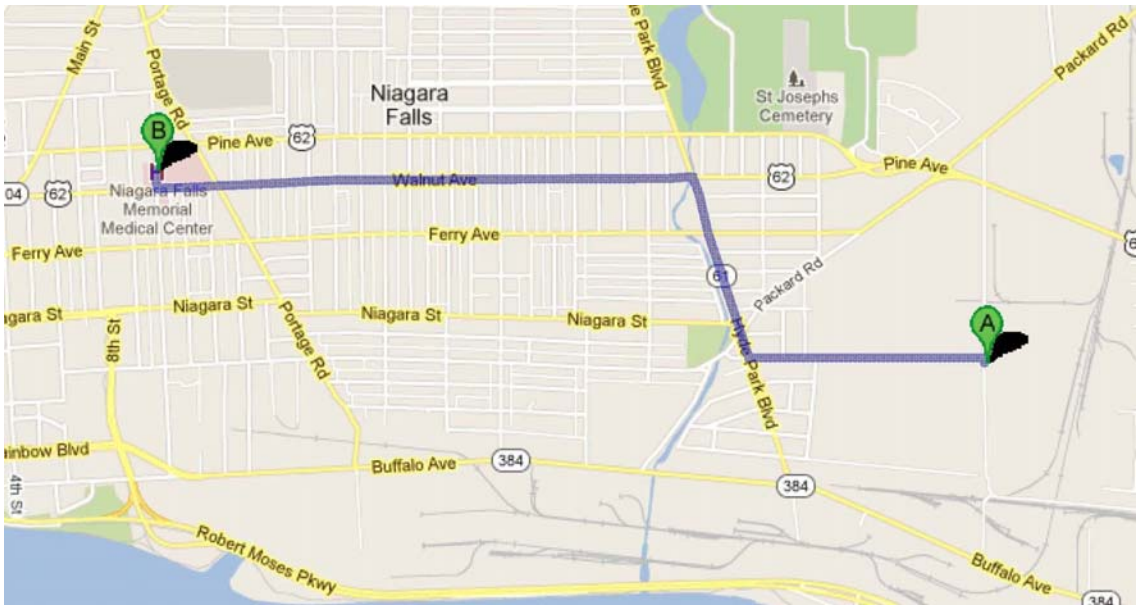
2. Turn left onto Royal Avenue
3. Turn right (north) onto Hyde Park Boulevard
4. Turn left onto Walnut Avenue (Route 62)
5. Turn right onto 10th Street
6. Hospital is on the right

Total Distance: 2.79 miles

Total Estimated Time: 8 minutes

Figure 12

Map Showing Route from the site to the Hospital:



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 7). The list will also be posted prominently at the site and made readily available to all personnel at all times.

Emergency response procedures and contingency measures will be implemented in accordance with the Covanta Facility 6 NYCRR Part 360 Contingency Plan. This Plan specifies contingency and response procedures that apply to both the facility and the RTIF operation.

2.5.3.1 Spill Procedures

Any spills should be immediately and properly contained, if possible, and the Owner should be contacted. The Owner will determine which agencies, if any, should be notified and who will make these notifications.

2.5.3.2 Evacuation Plan

In the event that an emergency alarm sounds at the facility, Site personnel will comply with the Covanta facility-specific emergency evacuation procedures.

2.5.3.3 Management of Change – Contingency Plan

Should the contingency plan need to be modified, the modifications will be submitted to the NYSDEC.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the soil cover system, and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

As described previously, the final remedy for the Site includes the placement of a cover system over the entire Site, which eliminates potential exposure routes to contaminated fill material except during invasive activities. Monitoring and sampling during these invasive activities is addressed in the Excavation Work Plan (Appendix B). In addition, the RI determined that ground water quality restoration is not required at the Site. For these reasons, no routine media monitoring is required. However, routine inspection shall be performed to ensure that the cover system integrity is maintained; all ICs remain in place; and the SMP is being implemented as required.

This Monitoring Plan describes the methods to be used for:

- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Reporting requirements; and
- Annual inspection and periodic certification.

Annual monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for the first five years. The frequency thereafter will become bi-annual unless determined otherwise by NYSDEC. Monitoring programs are summarized in Table 9 and outlined in detail in Sections 3.2 and 3.3 below.

Table 9: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Cover System	Annual	Fill	Not Applicable

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 COVER SYSTEM MONITORING

The cover system at the Site is designed to prevent contact between Site visitors/workers and the remaining contaminants in the Site fill. The cover system consists of clean soil and stone fill; asphalt and concrete pavement; and concrete building slabs, as depicted on Figure 13. The following sections describe the monitoring necessary to evaluate the various components of the cover system.

3.2.1 Asphalt/Concrete Cover System Monitoring

The asphalt and concrete cover systems are intended to be generally low-maintenance covers. Assessment of the severity of deterioration or damage to asphalt pavement or concrete is subjective, and inspection personnel must use professional judgment in assessing what type and extent of deterioration/damage warrants repair or maintenance. As a guideline, areas of asphalt pavement or concrete will be repaired when the pavement is deteriorated/damaged to the extent that a significant amount of sub-base material is observable.

Deteriorated or damaged asphalt pavement or concrete surfaces will be evaluated and

repaired using one or more appropriate methods selected based on the type and extent of deterioration or damage with consideration for future functionality and durability. Such methods may include:

- Patching with cold mix asphalt
- Patching with hot mix asphalt or bituminous material
- Saw cutting and removing the damaged concrete and replacement with new concrete
- Use of low-slump concrete
- Replacement using one foot of clean quarry stone

For cases where concrete material is used to make the repairs, the use of reinforcing mesh or re-bar and bonding agents may be used.

3.2.2 Clean Stone Fill Monitoring

The cover system includes a number of clean stone fill products including railroad ballast, rip rap and crushed stone. Assessment of the severity of deterioration or damage to these clean stone fill cover system components will include the identification of any areas in which the underlying industrial fill has been exposed, as well as areas where the stone has been substantially eroded or displaced. Repair will consist of placement of additional stone material over the area to restore the cover thickness to one foot.

3.2.3 Soil Cover System Monitoring

Clean soil cover was placed on the earthen berms located along portion of the northern and western site perimeters. Assessment of the severity of deterioration or damage to the soil cover will include the identification of any areas in which the native overburden is visible. Repair will consist of placement and seeding of clean soil material over the area to restore the cover thickness to one foot.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may

affect Engineering Controls. During these inspections, a site-wide inspection form will be completed (Appendix E). The form will compile sufficient information to assess the following:

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

3.4 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. The report will include, at a minimum:

- Date of event;
- Personnel conducting monitoring;
- Description of the activities performed;
- Copies of all field forms completed (e.g., field documentation, etc.);
- Discussion of any maintenance/repair activities, including:
    - Date of work
    - Name, company, and position of person(s) conducting maintenance/repair activities
    - Maintenance/repair activities conducted
    - Where appropriate, color photographs or sketches showing the approximate location of maintenance/repair
    - Other documentation such as copies of invoices for maintenance/repair work, receipts for replacement cover material, etc.
- Any observations, conclusions, or recommendations

A summary of the monitoring program deliverables are summarized in Table 10 below.

Table 10: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Cover System Inspection	Annual
Site Use Inspection	Annual

*The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

The site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/ soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

5. INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms which are contained in Appendix E. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a qualified environmental professional will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business

address], am certifying as [Owner or Owner's Designated Site Representative] for the site.

The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning fifteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A (Environmental Easement, Schedule A-Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Region 9 Office, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

LaBella Associates, D.P.C.
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Buffalo, New York 14202

Tables

Table 1

Analytical Parameters	Surface Fill/Soil[1]	Subsurface Fill/Soil[1]	Groundwater[2]	
			Perched	Overburden
Volatile Organic Compounds (VOCs)				
Acetone		X[3]		X
n-Propylbenzene			X	
Semi-Volatile Organic Compounds (SVOCs)				
Benzo(a)anthracene	X			
Benzo(b)flouranthene	X			
Benzo(a)pyrene	X	X		
Indeno(1,2,3-cd)pyrene	X			
Dibenzo(a,h)anthracene	X			
Pesticides and PCBs				
Alpha-BHC	X			
Delta-BHC	X			
Dieldrin	X			
Metals				
Arsenic	X	X	X	
Aluminum			X	X
Barium			X	
Chromium			X	
Iron			X	X
Magnesium			X	X
Manganese	X	X	X	
Sodium			X	X
Vanadium			X	
Other				
Gamma Radiation	X[4]	X[4]		

[1] Exceedance of NYCRR Part 375-6.8(b) Industrial Soil Cleanup Objectives

[2] Exceedance of NYSDEC TOGS 1.1.1 Groundwater Standards

[3] Exceedance of NYSDEC CP-51 Soil Cleanup Levels for Gasoline Contaminated Soils

[4] Exceedance of background level

Table 2

Surface Soil

Detected Concentrations Exceeding Unrestricted SCOs	Concentration Range Detected (ppm)[a]	Unrestricted SCO (ppm)	Frequency Exceeding Unrestricted SCO	Industrial Use SCO (ppm)	Frequency Exceeding Industrial SCO
VOCs					
SVOCs					
Benzo(a)anthracene	ND-15.6	1	1/6	11	1/6
Chrysene	0.21-18.9	1	2/6	110	0/6
Benzo(b)fluoranthene	0.29-26.3	1	2/6	11	1/6
Benzo(k)fluoranthene	0.19-12.7	0.8	2/6	110	0/6
Benzo(a)pyrene	0.22-21.6	1	2/6	1.1	1/6
Indeno(1,2,3-cd)pyrene	0.24-23.1	0.5	4/6	11	1/6
Dibenzo(a,h)anthracene	ND-3.93	0.33	1/6	1.1	1/6
Inorganics					
Arsenic	ND-39.2	13	2/6	16	2/6
Barium	156-2140	350	4/6	10000	0/6
Cadmium	1.49-3.1	2.5	2/6	60	0/6
Chromium (trivalent)	63.7-426	30	5/5	6800	0/5
Copper	28.8-92.3	50	5/6	10000	0/5
Lead	95-253	63	6/6	3900	0/6
Manganese	4390-107000	1600	6/6	10000	4/6
Mercury	0.03-0.702	0.18	3/6	5.7	0/6
Nickel	19.8-231	30	5/6	10000	0/6
Selenium	ND-26	3.9	4/6	6800	0/6
Silver	2.23-21	2	6/6	6800	0/6
Zinc	153-326	109	6/6	10000	0/6
Pesticides/PCBs					
alpha-BHC	ND-14.1	0.02	1/6	6.8	1/6
beta-BHC	ND-8.04	0.036	1/6	14	0/6
gamma-BHC (Lindane)	ND-5.52	0.1	2/6	23	0/6
Heptachlor	ND-14	0.042	1/6	29	0/6
Endosulfan I	ND-74.4	2.4	2/6	920	0/6
Dieldrin	ND-3.08	0.005	1/6	2.8	1/6
Endosulfan II	ND-9.65	2.4	2/6	920	0/6
4,4'DDD	ND-11.3	0.0033	1/6	180	1/6
Endosulfan Sulfate	ND-4.04	2.4	1/6	920	1/6
4,4'DDT	ND-13	0.0033	3/5	94	0/5
PCBs	ND-0.4930	0.1	1/6	25	0/6

Table 3

Sub-Surface Soil

Detected Concentrations Exceeding Unrestricted SCOs	Concentration Range Detected (ppm)	Unrestricted SCO (ppm)	Frequency Exceeding Unrestricted SCO	Industrial Use SCO (ppm)	Frequency Exceeding Industrial SCO
VOCs					
Acetone	ND-0.4	0.05	9/35	1000	0/35
SVOCs					
Benzo(a)anthracene	ND-4.45	1	1/35	11	0/35
Chrysene	ND-4.05	1	1/35	110	0/35
Benzo(b)fluoranthene	ND-3.54	1	1/35	11	0/35
Benzo(k)fluoranthene	ND-2.43	0.8	1/35	110	0/35
Benzo(a)pyrene	ND-2.74	1	1/35	1.1	1/35
Indeno(1,2,3-cd)pyrene	ND-2.26	0.5	2/35	11	0/35
Inorganics					
Arsenic	1.7-74.6	13	3/20	16	3/20
Barium	22.2-2210	350	4/20	10000	0/20
Chromium (trivalent)	9.0-2230	30	13/20	6800	0/20
Copper	2.5-1400	50	3/20	10000	0/20
Lead	2.9-722	63	6/20	3900	0/20
Manganese	51.7-343000	1600	6/20	10000	3/20
Nickel	5.8-136	30	7/20	10000	0/20
Selenium	ND-127	3.9	3/20	6800	0/20
Silver	ND-57.5	2	2/20	6800	0/20
Zinc	27.2-170	109	3/20	10000	0/20
Pesticides/PCBs					
4,4’DDT	ND-0.01	0.0033	1/6	94	0/6

Table 4

Groundwater

Detected Concentrations Exceeding Groundwater Standard	Concentration Range Detected (mg/l)	Groundwater Standard (mg/l)	Frequency Exceeding Groundwater Standard
VOCs			
Acetone	ND-0.16	0.005	1/10
n-Propylbenzene	ND-0.007	0.005	1/10
SVOCs			
Inorganics			
Aluminum	ND-10.3	0.1	6/7
Arsenic	ND-0.05	0.025	1/7
Barium	ND-1.37	1.0	1/7
Chromium	ND-0.12	0.05	1/7
Iron	ND-53.5	0.30	5/7
Magnesium	ND-124	35	5/7
Manganese	0.11-30.7	0.30	1/7
Sodium	34-305	20	7/7
Vanadium	ND-0.22	0.014	2/7
Pesticides/PCBs			

Table 5

375-6.8 Soil cleanup objective tables.

(a) Unrestricted use soil cleanup objectives.

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
Metals		
Arsenic	7440-38-2	13 [c]
Barium	7440-39-3	350 [c]
Beryllium	7440-41-7	7.2
Cadmium	7440-43-9	2.5 [c]
Chromium, hexavalent [e]	18540-29-9	1[b]
Chromium, trivalent [e]	16065-83-1	30 [c]
Copper	7440-50-8	50
Total Cyanide [e, f]		27
Lead	7439-92-1	63 [c]
Manganese	7439-96-5	1600 [c]
Total Mercury		0.18 [c]
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9[c]
Silver	7440-22-4	2
Zinc	7440-66-6	109 [c]
PCBs/Pesticides		
2,4,5-TP Acid (Silvex) [f]	93-72-1	3.8
4,4'-DDE	72-55-9	0.0033 [b]
4,4'-DDT	50-29-3	0.0033 [b]
4,4'-DDD	72-54-8	0.0033 [b]
Aldrin	309-00-2	0.005 [c]
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.036
Chlordane (alpha)	5103-71-9	0.094

Table 5-con't.

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
delta-BHC [g]	319-86-8	0.04
Dibenzofuran [f]	132-64-9	7
Dieldrin	60-57-1	0.005 [c]
Endosulfan I [d, f]	959-98-8	2.4
Endosulfan II [d, f]	33213-65-9	2.4
Endosulfan sulfate [d, f]	1031-07-8	2.4
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.042
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	0.1
Semivolatile organic compounds		
Acenaphthene	83-32-9	20
Acenapthylene [f]	208-96-8	100 [a]
Anthracene [f]	120-12-7	100 [a]
Benz(a)anthracene [f]	56-55-3	1 [c]
Benzo(a)pyrene	50-32-8	1 [c]
Benzo(b)fluoranthene [f]	205-99-2	1 [c]
Benzo(g,h,i)perylene [f]	191-24-2	100
Benzo(k)fluoranthene [f]	207-08-9	0.8 [c]
Chrysene [f]	218-01-9	1 [c]
Dibenz(a,h)anthracene [f]	53-70-3	0.33 [b]
Fluoranthene [f]	206-44-0	100 [a]
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene [f]	193-39-5	0.5 [c]
m-Cresol [f]	108-39-4	0.33 [b]
Naphthalene [f]	91-20-3	12
o-Cresol [f]	95-48-7	0.33 [b]

Table 5-con't.

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
p-Cresol [f]	106-44-5	0.33 [b]
Pentachlorophenol	87-86-5	0.8 [b]
Phenanthrene [f]	85-01-8	100
Phenol	108-95-2	0.33 [b]
Pyrene [f]	129-00-0	100
Volatile organic compounds		
1,1,1-Trichloroethane [f]	71-55-6	0.68
1,1-Dichloroethane [f]	75-34-3	0.27
1,1-Dichloroethene [f]	75-35-4	0.33
1,2-Dichlorobenzene [f]	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 [c]
cis -1,2-Dichloroethene [f]	156-59-2	0.25
trans-1,2-Dichloroethene [f]	156-60-5	0.19
1,3-Dichlorobenzene [f]	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1 [b]
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene [f]	104-51-8	12
Carbon tetrachloride [f]	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene [f]	100-41-4	1
Hexachlorobenzene [f]	118-74-1	0.33[b]
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether [f]	1634-04-4	0.93
Methylene chloride	75-09-2	0.05

Table 5-con't.

Table 375-6.8(a):Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
n - Propylbenzene [f]	103-65-1	3.9
sec-Butylbenzene [f]	135-98-8	11
tert-Butylbenzene [f]	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene [f]	95-63-6	3.6
1,3,5-Trimethylbenzene[f]	108-67-8	8.4
Vinyl chloride[f]	75-01-4	0.02
Xylene (mixed)	1330-20-7	0.26

All soil cleanup objectives (SCOs) are in parts per million (ppm).

Footnotes

[a] The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

[b] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

[c] For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

[d] SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[f] Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with “NS”. Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

(b) Restricted use soil cleanup objectives.

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Metals							
Arsenic	7440-38-2	16[f]	16[f]	16[f]	16[f]	13[f]	16[f]
Barium	7440-39-3	350[f]	400	400	10,000 [d]	433	820
Beryllium	7440-41-7	14	72	590	2,700	10	47
Cadmium	7440-43-9	2.5[f]	4.3	9.3	60	4	7.5
Chromium, hexavalent [h]	18540-29-9	22	110	400	800	1[e]	19
Chromium, trivalent [h]	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50-8	270	270	270	10,000 [d]	50	1,720
Total Cyanide [h]		27	27	27	10,000 [d]	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63[f]	450
Manganese	7439-96-5	2,000[f]	2,000[f]	10,000 [d]	10,000 [d]	1600[f]	2,000[f]
Total Mercury		0.81[j]	0.81[j]	2.8[j]	5.7[j]	0.18[f]	0.73
Nickel	7440-02-0	140	310	310	10,000 [d]	30	130
Selenium	7782-49-2	36	180	1,500	6,800	3.9[f]	4[f]
Silver	7440-22-4	36	180	1,500	6,800	2	8.3
Zinc	7440-66-6	2200	10,000 [d]	10,000 [d]	10,000 [d]	109[f]	2,480
PCBs/Pesticides							
2,4,5-TP Acid (Silvex)	93-72-1	58	100[a]	500[b]	1,000[c]	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 [e]	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 [e]	136
4,4'- DDD	72-54-8	2.6	13	92	180	0.0033 [e]	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04[g]	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71-9	0.91	4.2	24	47	1.3	2.9

Table 5-con't.

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
delta-BHC	319-86-8	100[a]	100[a]	500[b]	1,000[c]	0.04[g]	0.25
Dibenzofuran	132-64-9	14	59	350	1,000[c]	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan II	33213-65-9	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan sulfate	1031-07-8	4.8[i]	24[i]	200[i]	920[i]	NS	1,000[c]
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
Semivolatiles							
Acenaphthene	83-32-9	100[a]	100[a]	500[b]	1,000[c]	20	98
Acenapthylene	208-96-8	100[a]	100[a]	500[b]	1,000[c]	NS	107
Anthracene	120-12-7	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benz(a)anthracene	56-55-3	1[f]	1[f]	5.6	11	NS	1[f]
Benzo(a)pyrene	50-32-8	1[f]	1[f]	1[f]	1.1	2.6	22
Benzo(b)fluoranthene	205-99-2	1[f]	1[f]	5.6	11	NS	1.7
Benzo(g,h,i)perylene	191-24-2	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benzo(k)fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1[f]	3.9	56	110	NS	1[f]
Dibenz(a,h)anthracene	53-70-3	0.33[e]	0.33[e]	0.56	1.1	NS	1,000[c]
Fluoranthene	206-44-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Fluorene	86-73-7	100[a]	100[a]	500[b]	1,000[c]	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5[f]	0.5[f]	5.6	11	NS	8.2
m-Cresol	108-39-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
Naphthalene	91-20-3	100[a]	100[a]	500[b]	1,000[c]	NS	12

Table 5-con't.

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
o-Cresol	95-48-7	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
p-Cresol	106-44-5	34	100[a]	500[b]	1,000[c]	NS	0.33[e]
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8[e]	0.8[e]
Phenanthrene	85-01-8	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Phenol	108-95-2	100[a]	100[a]	500[b]	1,000[c]	30	0.33[e]
Pyrene	129-00-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Volatiles							
1,1,1-Trichloroethane	71-55-6	100[a]	100[a]	500[b]	1,000[c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33
1,2-Dichlorobenzene	95-50-1	100[a]	100[a]	500[b]	1,000[c]	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02[f]
cis-1,2-Dichloroethene	156-59-2	59	100[a]	500[b]	1,000[c]	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100[a]	100[a]	500[b]	1,000[c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1[e]	0.1[e]
Acetone	67-64-1	100[a]	100[b]	500[b]	1,000[c]	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100[a]	100[a]	500[b]	1,000[c]	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100[a]	100[a]	500[b]	1,000[c]	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33[e]	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100[a]	100[a]	500[b]	1,000[c]	100[a]	0.12

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Methyl tert-butyl ether	1634-04-4	62	100[a]	500[b]	1,000[c]	NS	0.93
Methylene chloride	75-09-2	51	100[a]	500[b]	1,000[c]	12	0.05
n-Propylbenzene	103-65-1	100[a]	100[a]	500[b]	1,000[c]	NS	3.9
sec-Butylbenzene	135-98-8	100[a]	100[a]	500[b]	1,000[c]	NS	11
tert-Butylbenzene	98-06-6	100[a]	100[a]	500[b]	1,000[c]	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100[a]	100[a]	500[b]	1,000[c]	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5- Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20-7	100[a]	100[a]	500[b]	1,000[c]	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm).
NS=Not specified. See Technical Support Document (TSD).

Footnotes

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

[f] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

[g] This SCO is derived from data on mixed isomers of BHC.

[h] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[i] This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

Table 6

Allowable Constituent Levels for Imported Fill or Soil
Subdivision 5.4(e)

Source: This table is derived from soil cleanup objective (SCO) tables in 6 NYCRR 375. Table 375-6.8(a) is the source for unrestricted use and Table 375-6.8(b) is the source for restricted use.

Note: For constituents not included in this table, refer to the contaminant for supplemental soil cleanup objectives (SSCOs) in the Commissioner Policy on *Soil Cleanup Guidance*. If an SSCO is not provided for a constituent, contact the DER PM to determine a site-specific level.

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Metals					
Arsenic	13	16	16	16	13
Barium	350	350	400	400	433
Beryllium	7.2	14	47	47	10
Cadmium	2.5	2.5	4.3	7.5	4
Chromium, Hexavalent[1]	1 [3]	19	19	19	1 [3]
Chromium, Trivalent[1]	30	36	180	1500	41
Copper	50	270	270	270	50
Cyanide	27	27	27	27	NS
Lead	63	400	400	450	63
Manganese	1600	2000	2000	2000	1600
Mercury (total)	0.18	0.73	0.73	0.73	0.18
Nickel	30	130	130	130	30
Selenium	3.9	4	4	4	3.9
Silver	2	8.3	8.3	8.3	2
Zinc	109	2200	2480	2480	109
PCBs/Pesticides					
2,4,5-TP Acid (Silvex)	3.8	3.8	3.8	3.8	NS
4,4'-DDE	0.0033 [3]	1.8	8.9	17	0.0033 [3]
4,4'-DDT	0.0033 [3]	1.7	7.9	47	0.0033 [3]
4,4'-DDD	0.0033 [3]	2.6	13	14	0.0033 [3]
Aldrin	0.005	0.019	0.097	0.19	0.14
Alpha-BHC	0.02	0.02	0.02	0.02	0.04 [4]
Beta-BHC	0.036	0.072	0.09	0.09	0.6
Chlordane (alpha)	0.094	0.91	2.9	2.9	1.3
Delta-BHC	0.04	0.25	0.25	0.25	0.04 [4]
Dibenzofuran	7	14	59	210	NS
Dieldrin	0.005	0.039	0.1	0.1	0.006
Endosulfan I	2.4[2]	4.8	24	102	NS
Endosulfan II	2.4[2]	4.8	24	102	NS
Endosulfan sulfate	2.4[2]	4.8	24	200	NS
Endrin	0.014	0.06	0.06	0.06	0.014
Heptachlor	0.042	0.38	0.38	0.38	0.14
Lindane	0.1	0.1	0.1	0.1	6
Polychlorinated biphenyls	0.1	1	1	1	1

Table 6-con't.

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Semi-volatile Organic Compounds					
Acenaphthene	20	98	98	98	20
Acenaphthylene	100	100	100	107	NS
Anthracene	100	100	100	500	NS
Benzo(a)anthracene	1	1	1	1	NS
Benzo(a)pyrene	1	1	1	1	2.6
Benzo(b)fluoranthene	1	1	1	1.7	NS
Benzo(g,h,i)perylene	100	100	100	500	NS
Benzo(k)fluoranthene	0.8	1	1.7	1.7	NS
Chrysene	1	1	1	1	NS
Dibenz(a,h)anthracene	0.33 [3]	0.33 [3]	0.33 [3]	0.56	NS
Fluoranthene	100	100	100	500	NS
Fluorene	30	100	100	386	30
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	5.6	NS
m-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
Naphthalene	12	12	12	12	NS
o-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
p-Cresol(s)	0.33	0.33	0.33	0.33	NS
Pentachlorophenol	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]
Phenanthrene	100	100	100	500	NS
Phenol	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	30
Pyrene	100	100	100	500	NS
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.68	0.68	0.68	0.68	NS
1,1-Dichloroethane	0.27	0.27	0.27	0.27	NS
1,1-Dichloroethene	0.33	0.33	0.33	0.33	NS
1,2-Dichlorobenzene	1.1	1.1	1.1	1.1	NS
1,2-Dichloroethane	0.02	0.02	0.02	0.02	10
1,2-Dichloroethene(cis)	0.25	0.25	0.25	0.25	NS
1,2-Dichloroethene(trans)	0.19	0.19	0.19	0.19	NS
1,3-Dichlorobenzene	2.4	2.4	2.4	2.4	NS
1,4-Dichlorobenzene	1.8	1.8	1.8	1.8	20
1,4-Dioxane	0.1 [3]	0.1 [3]	0.1 [3]	0.1 [3]	0.1
Acetone	0.05	0.05	0.05	0.05	2.2
Benzene	0.06	0.06	0.06	0.06	70
Butylbenzene	12	12	12	12	NS
Carbon tetrachloride	0.76	0.76	0.76	0.76	NS
Chlorobenzene	1.1	1.1	1.1	1.1	40
Chloroform	0.37	0.37	0.37	0.37	12
Ethylbenzene	1	1	1	1	NS
Hexachlorobenzene	0.33 [3]	0.33 [3]	1.2	3.2	NS
Methyl ethyl ketone	0.12	0.12	0.12	0.12	100
Methyl tert-butyl ether	0.93	0.93	0.93	0.93	NS
Methylene chloride	0.05	0.05	0.05	0.05	12

Table 6-con't.

Volatile Organic Compounds (continued)					
Propylbenzene-n	3.9	3.9	3.9	3.9	NS
Sec-Butylbenzene	11	11	11	11	NS
Tert-Butylbenzene	5.9	5.9	5.9	5.9	NS
Tetrachloroethene	1.3	1.3	1.3	1.3	2
Toluene	0.7	0.7	0.7	0.7	36
Trichloroethene	0.47	0.47	0.47	0.47	2
Trimethylbenzene-1,2,4	3.6	3.6	3.6	3.6	NS
Trimethylbenzene-1,3,5	8.4	8.4	8.4	8.4	NS
Vinyl chloride	0.02	0.02	0.02	0.02	NS
Xylene (mixed)	0.26	1.6	1.6	1.6	0.26

All concentrations are in parts per million (ppm)
NS = Not Specified

Footnotes:
[1] The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.
[2] The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.
[3] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.
[4] This SCO is derived from data on mixed isomers of BHC.

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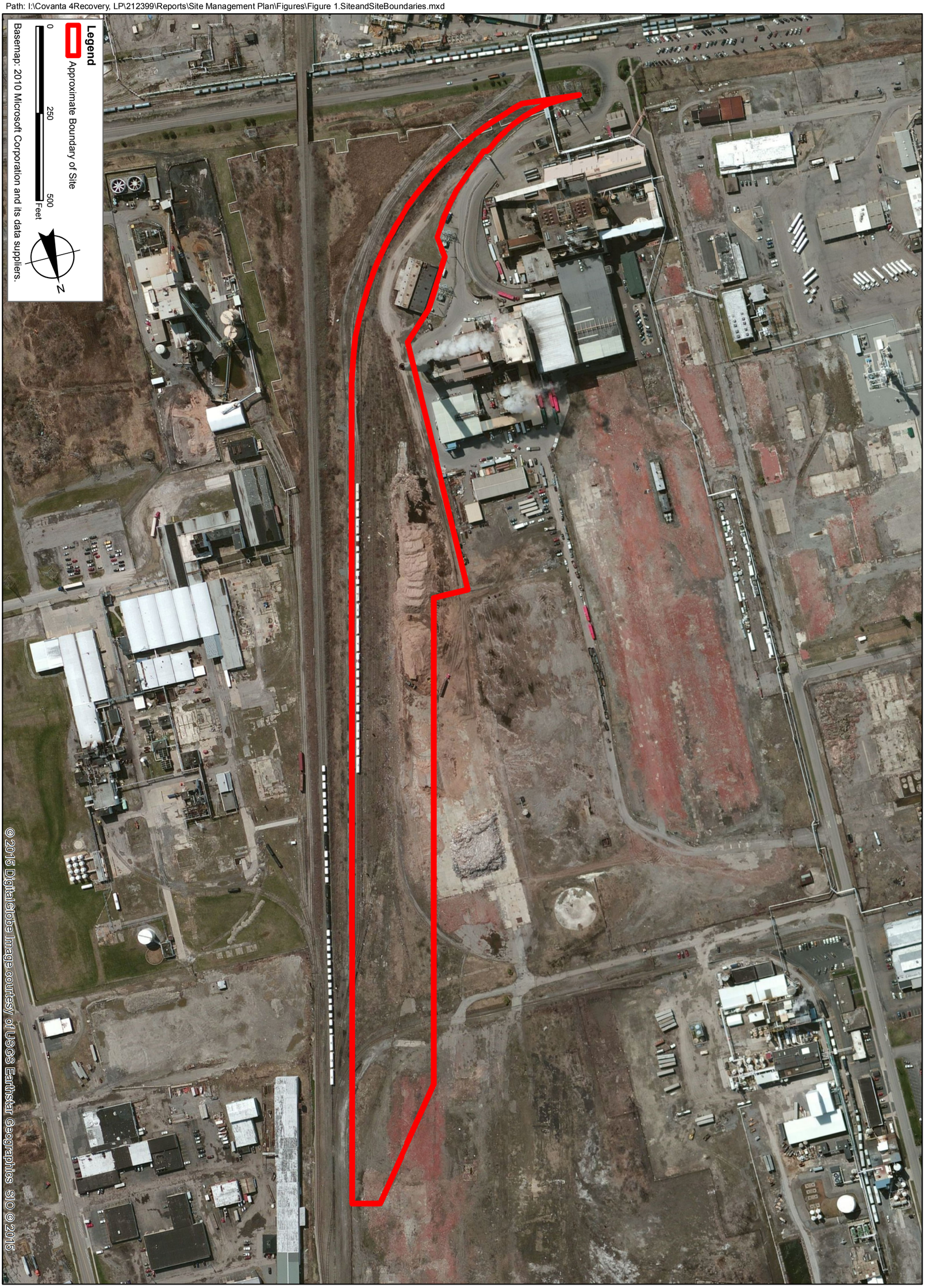
Figures

Path: I:\Covanta 4Recovery, LP\212399\Reports\Site Management Plan\Figures\Figure 1.SiteandSiteBoundaries.mxd



PROJECT/DRAWING NUMBER

212399

FIGURE 1

DRAWING TITLE

SITE BOUNDARY

ISSUED FOR: REVIEW

DATE: NOVEMBER 2015

DESIGNED BY: RCN

DRAWN BY: KMN

REVIEWED BY: RCN

PROJECT/CLIENT

SITE MANAGEMENT PLAN

NIAGARA RTIF
139 47TH ST,
NIAGARA FALLS, NY

COVANTA NIAGARA I, LLC

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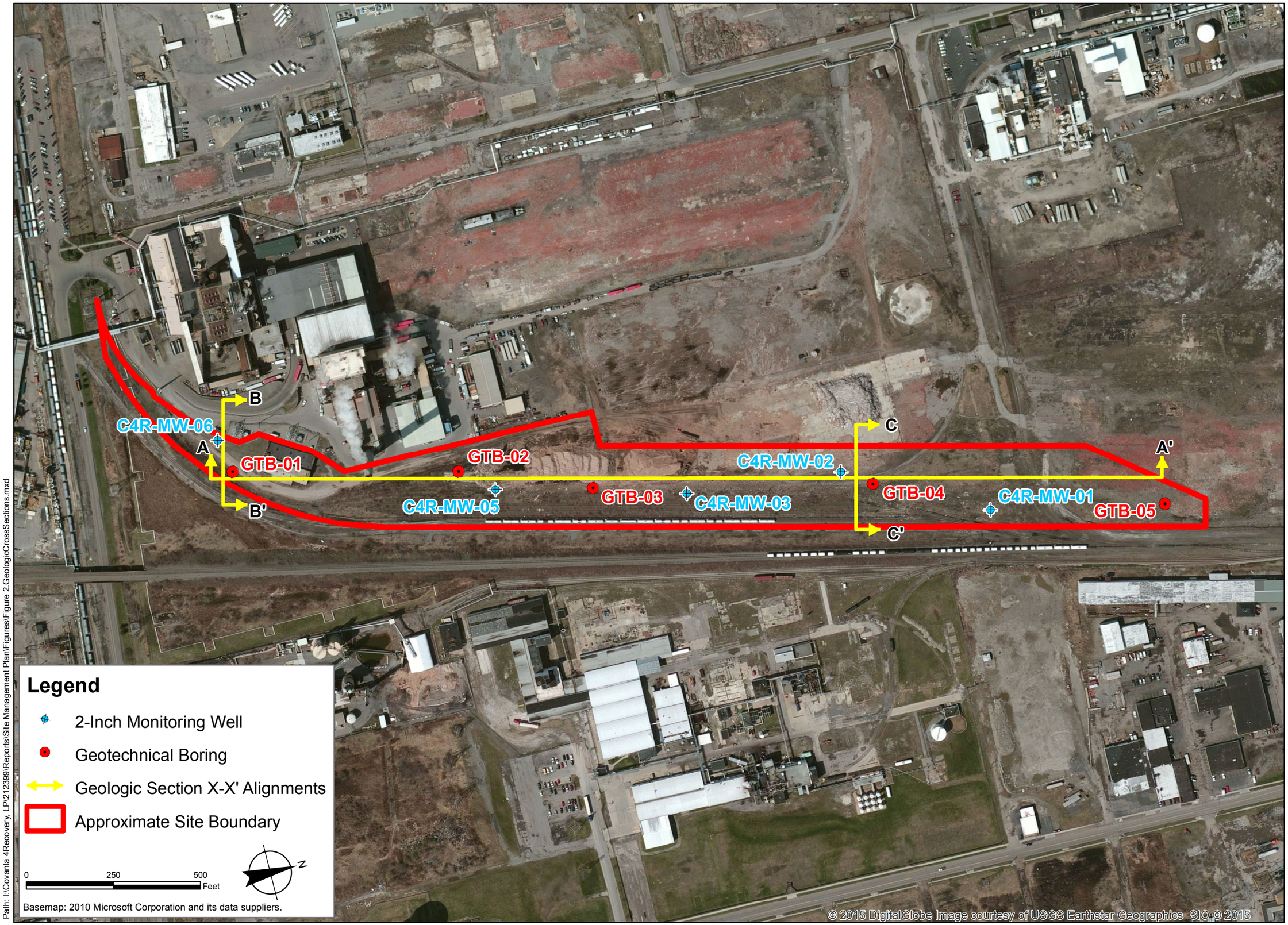

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PROJECT/CLIENT

SITE MANAGEMENT PLAN
NIAGARA RTIF
139 47TH ST,
NIAGARA FALLS, NY
COVANTA NIAGARA I, LLC

DRAWING TITLE

GEOLOGIC CROSS SECTIONS

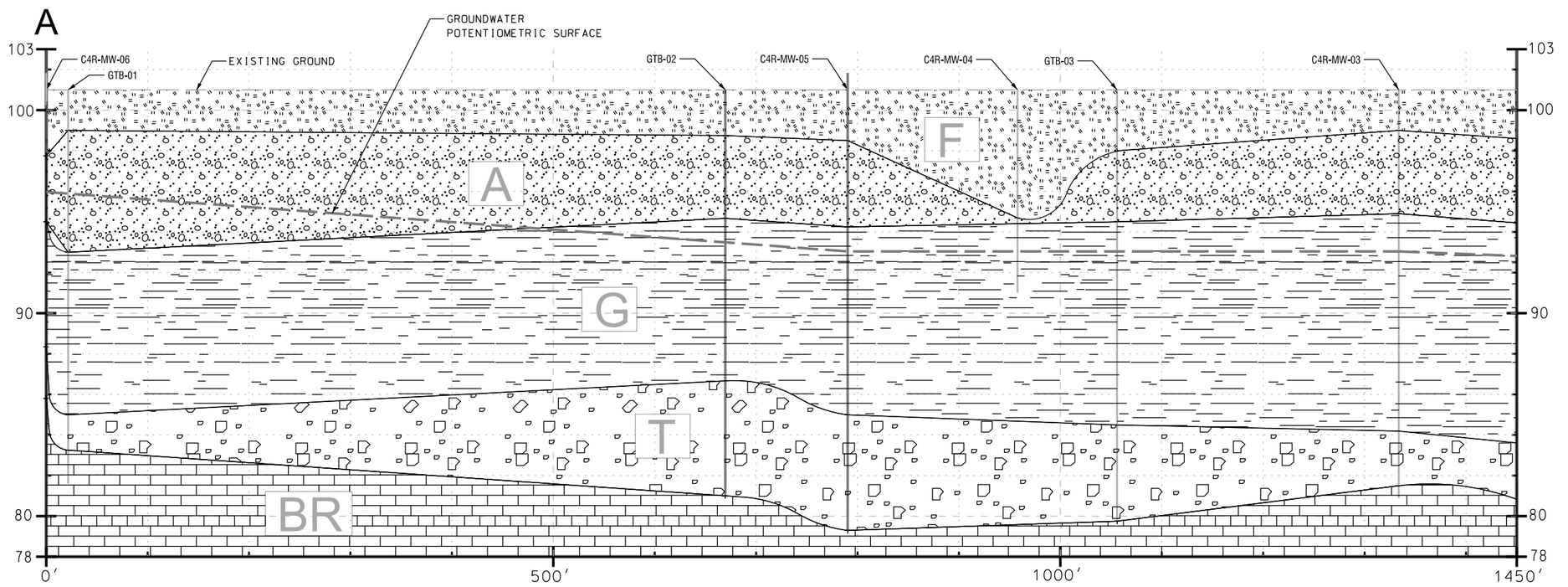
ISSUED FOR: REVIEW
DESIGNED BY: ETF
DRAWN BY: KMN
REVIEWED BY: RRN
DATE: NOVEMBER 2015

PROJECT/DRAWING NUMBER

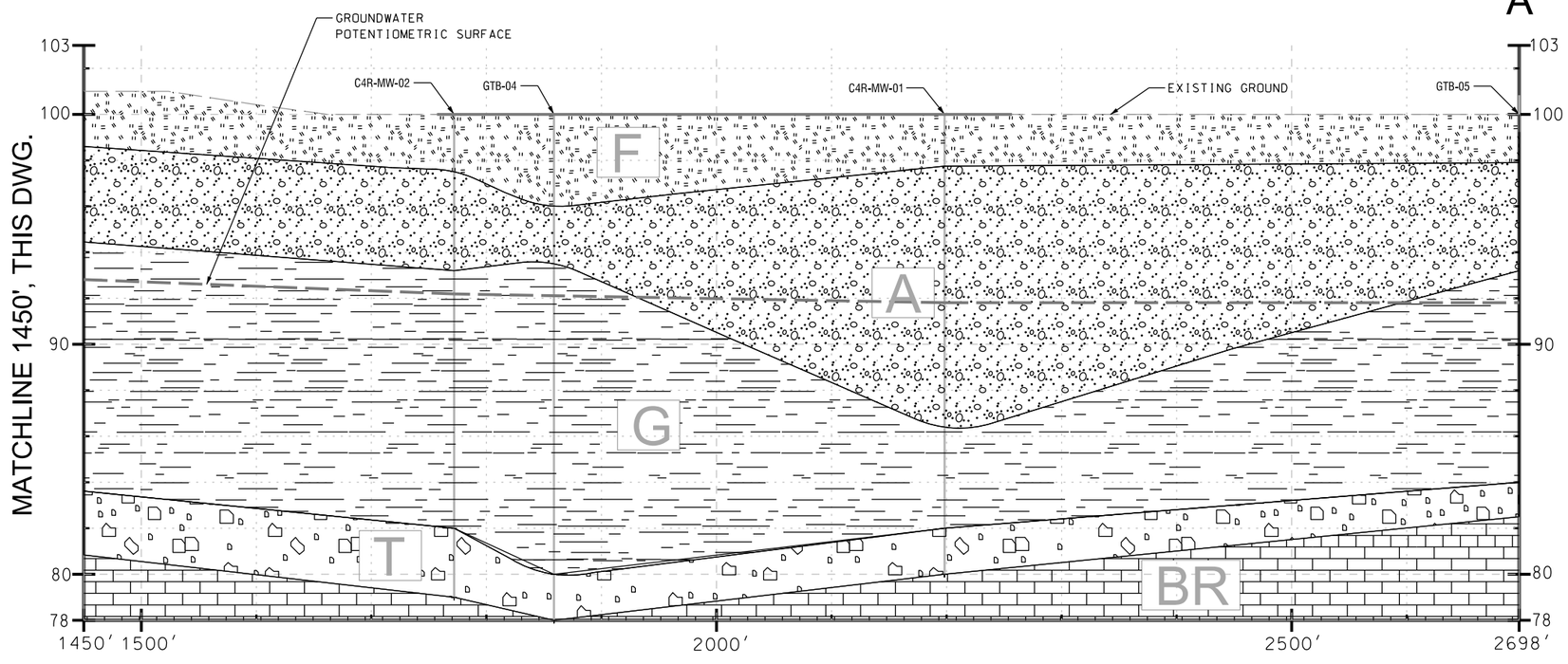
212399

FIGURE 2A

Path: I:\Covanta 4Recovery, LP\212399\Reports\Site Management Plan\Figures\Figure 2.GeologicCrossSections.mxd



SECTION A-A'



SECTION A-A'

F - FILL

A - ALLUVIAL DEPOSITS

G - GLACIOLACUSTRINE DEPOSITS

T - GLACIAL TILL

BR - BEDROCK

0 50' 100' 200'

VERTICAL EXAGGERATION X 20

24"X36" PLOT SHEET

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INTERMODAL FACILITY (RTIF)
NIAGARA FALLS, NY

PROJECT NUMBER
212399

NO.	DATE	REVISION
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DRAWN BY:

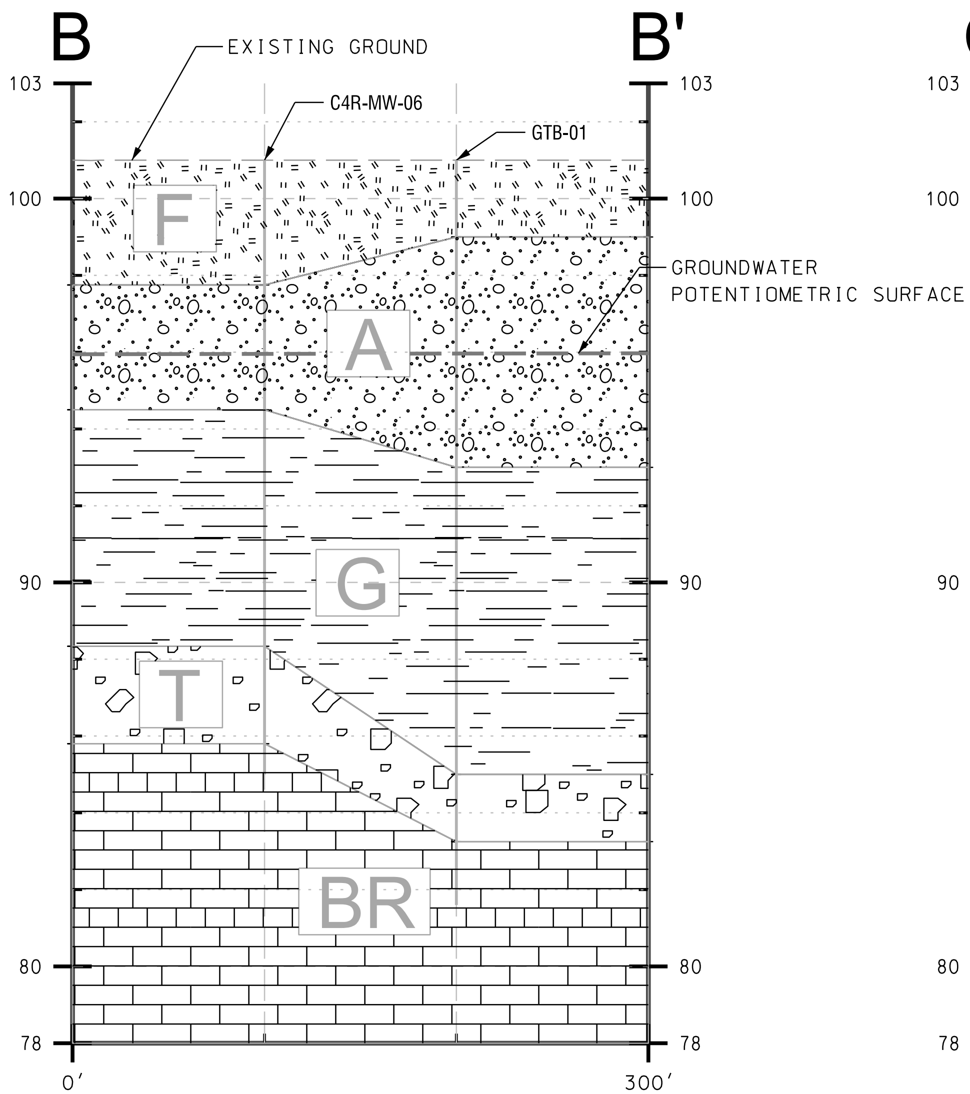
APPROVED BY:

ISSUED FOR
SITE MANAGEMENT PLAN

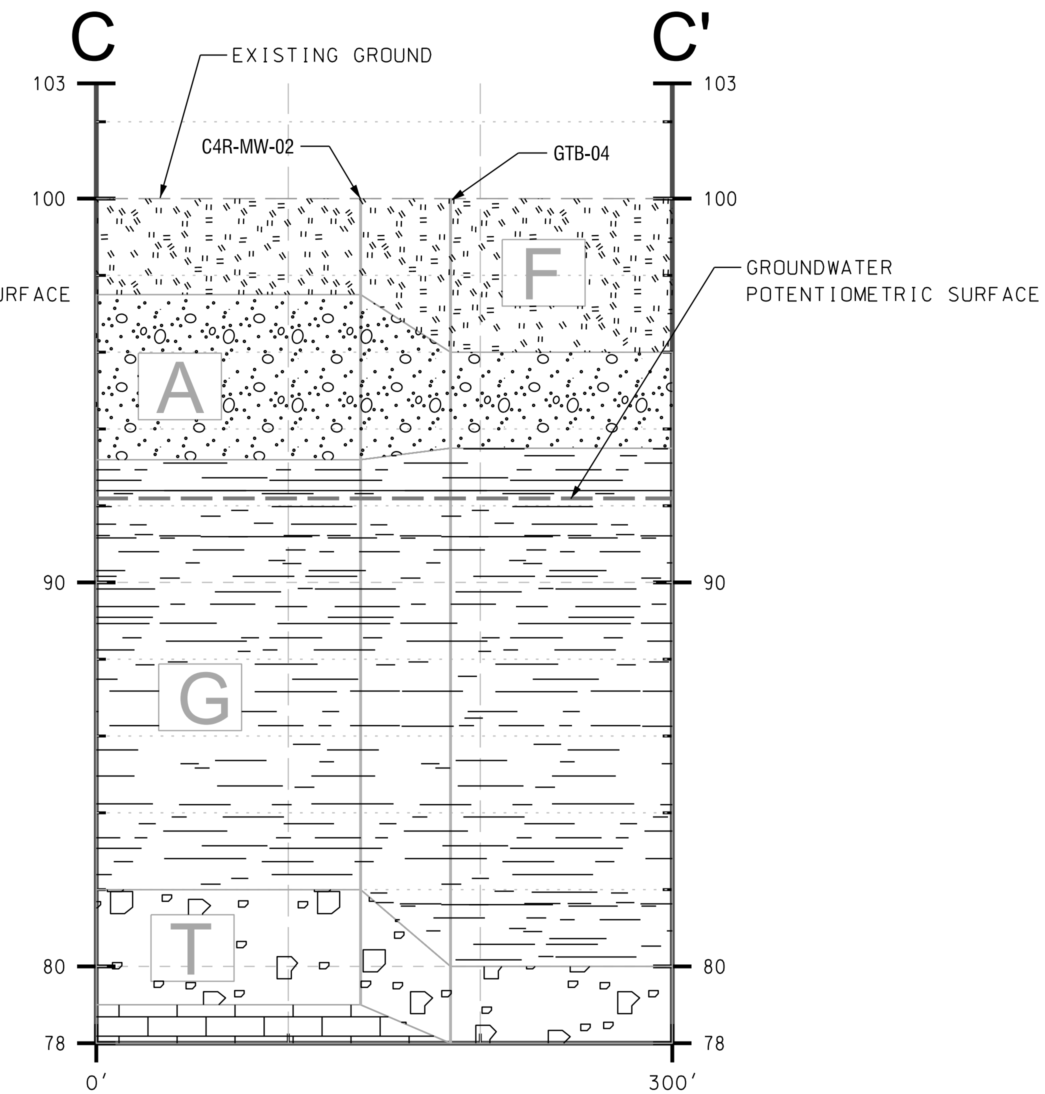
DATE: NOVEMBER 2015

GEOLOGIC SECTIONS

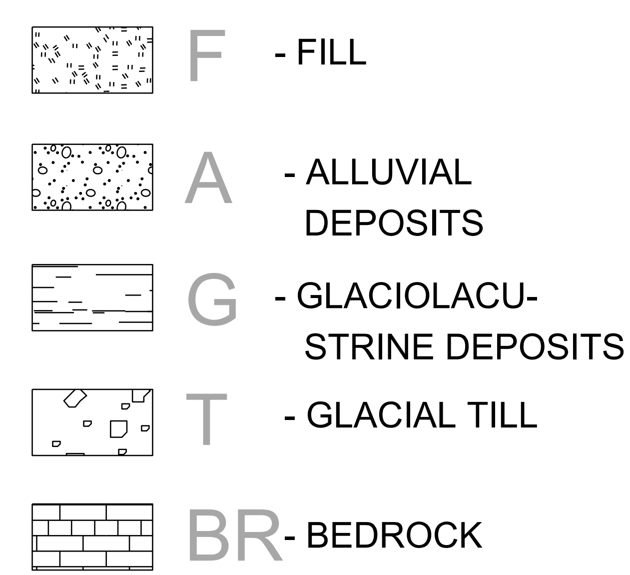
FIGURE 2B

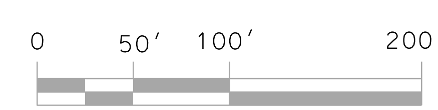


SECTION B-B'



SECTION C-C'





VERTICAL EXAGGERATION X 20

24"X36" PLOT SHEET
DATE/TIME: Wednesday, February 13, 2013 AT 11:02 AM
PLOT STYLE: LaBella.ctb
FILENAME: I:\Covanta 4Recovery, LP\212399\Drawings\Civil\AutoCAD\C1.01 DEMO PLAN.dwg

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NIAGARA FALLS, NY

PROJECT NUMBER
212399

NO.	DATE	REVISION
–	–	–
–	–	–
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–	–	–

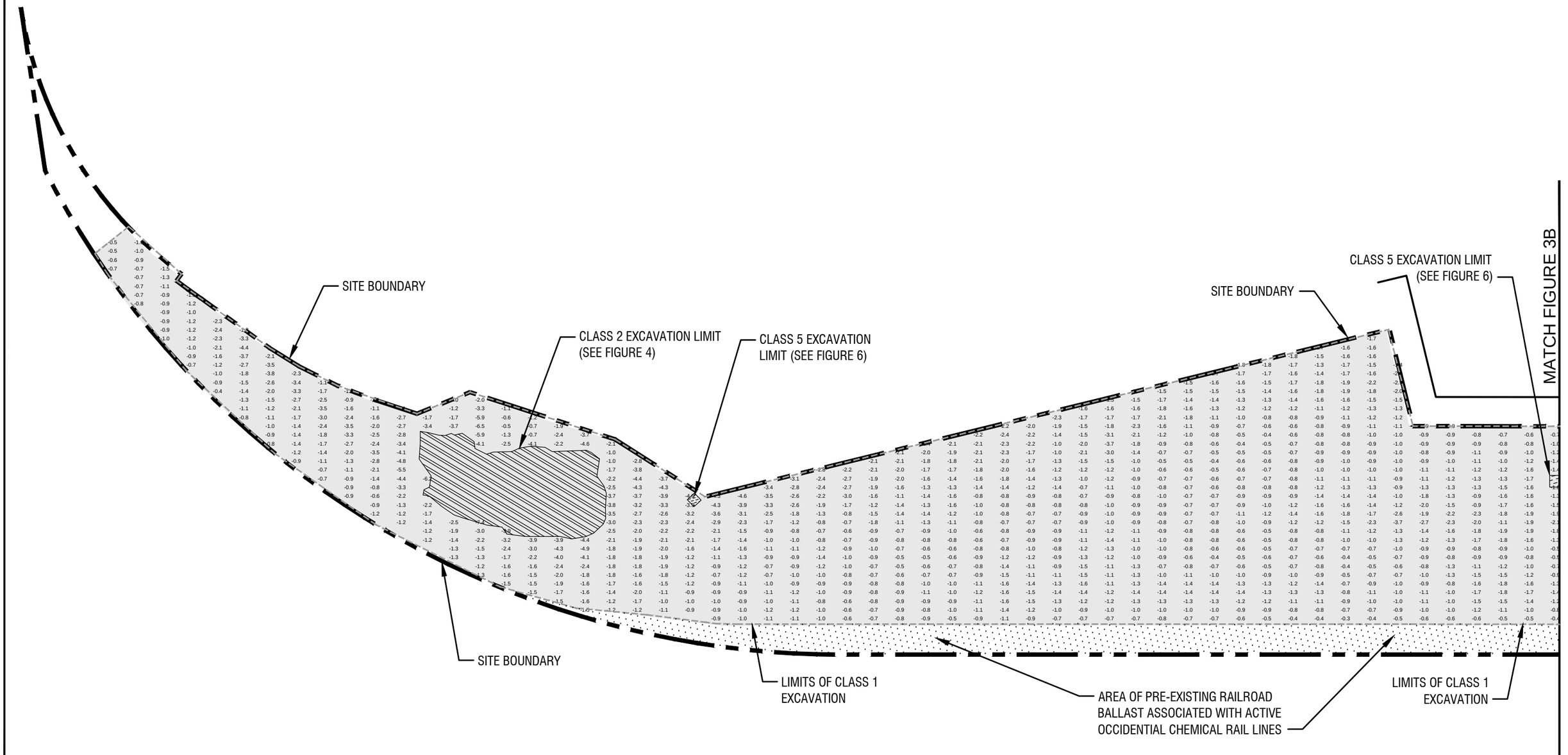
DRAWN BY:
APPROVED BY:

ISSUED FOR
SITE MANAGEMENT PLAN

DATE: NOVEMBER 2015

GEOLOGIC SECTIONS

FIGURE 2C



DEPTH OF CLASS 1 EXCAVATION -X.X FEET

SITE EXCAVATION LEGEND:

- CLASS 1 EXCAVATION
- CLASS 2 EXCAVATION
- CLASS 5 EXCAVATION
- PRE-EXISTING STONE RAILROAD BALLAST

NOTE:
RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.

N

0 100' 200'

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REVISIONS:

DRAWING NAME: **CLASS 1 EXCAVATION**

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NIAGARA FALLS, NEW YORK

ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 3A**

MATCH FIGURE 3A

CLASS 5 EXCAVATION LIMIT
(SEE FIGURE 6)

SITE BOUNDARY

CLASS 5 EXCAVATION LIMIT
(SEE FIGURE 6)

RADIOLOGICAL HOTSPOT
EXCAVATION LIMIT (SEE FIGURE 5)

RADIOLOGICAL HOTSPOT
EXCAVATION LIMIT(SEE FIGURE 5)

HOTSPOT 3

HOTSPOT 1

HOTSPOT 5

HOTSPOT 4

HOTSPOT 2

LIMITS OF CLASS 1
EXCAVATION

CLASS 5 EXCAVATION LIMIT
(SEE FIGURE 6)

AREA OF PRE-EXISTING RAILROAD BALLAST ASSOCIATED
WITH ACTIVE OCCIDENTIAL CHEMICAL RAIL LINES

SITE BOUNDARY

LIMITS OF CLASS 1
EXCAVATION

RADIOLOGICAL HOTSPOT
EXCAVATION LIMIT(SEE FIGURE 5)

SITE BOUNDARY

DEPTH OF CLASS 1 EXCAVATION -X.X FEET

SITE EXCAVATION LEGEND:

- CLASS 1 EXCAVATION
- RADIOLOGICAL HOTSPOT EXCAVATION
- CLASS 5 EXCAVATION
- PRE-EXISTING STONE RAILROAD BALLAST

NOTE:
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N

0 100' 200'

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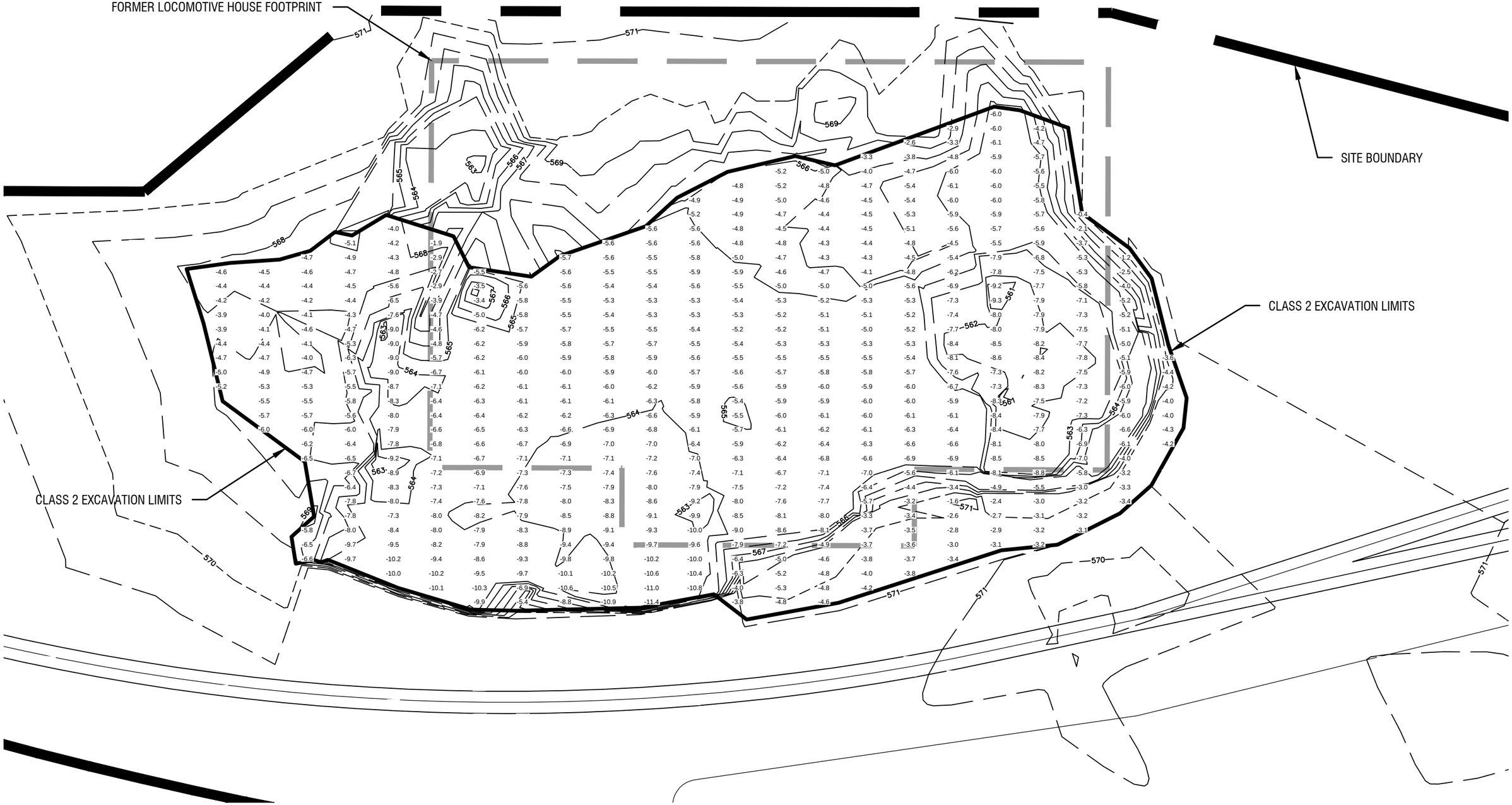
ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 3B**



DEPTH OF EXCAVATION -X.X FEET

NOTE:
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0 20' 40'

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DRAWN BY: ATB

DATE: NOVEMBER 2015

PROJECT NO: 212399

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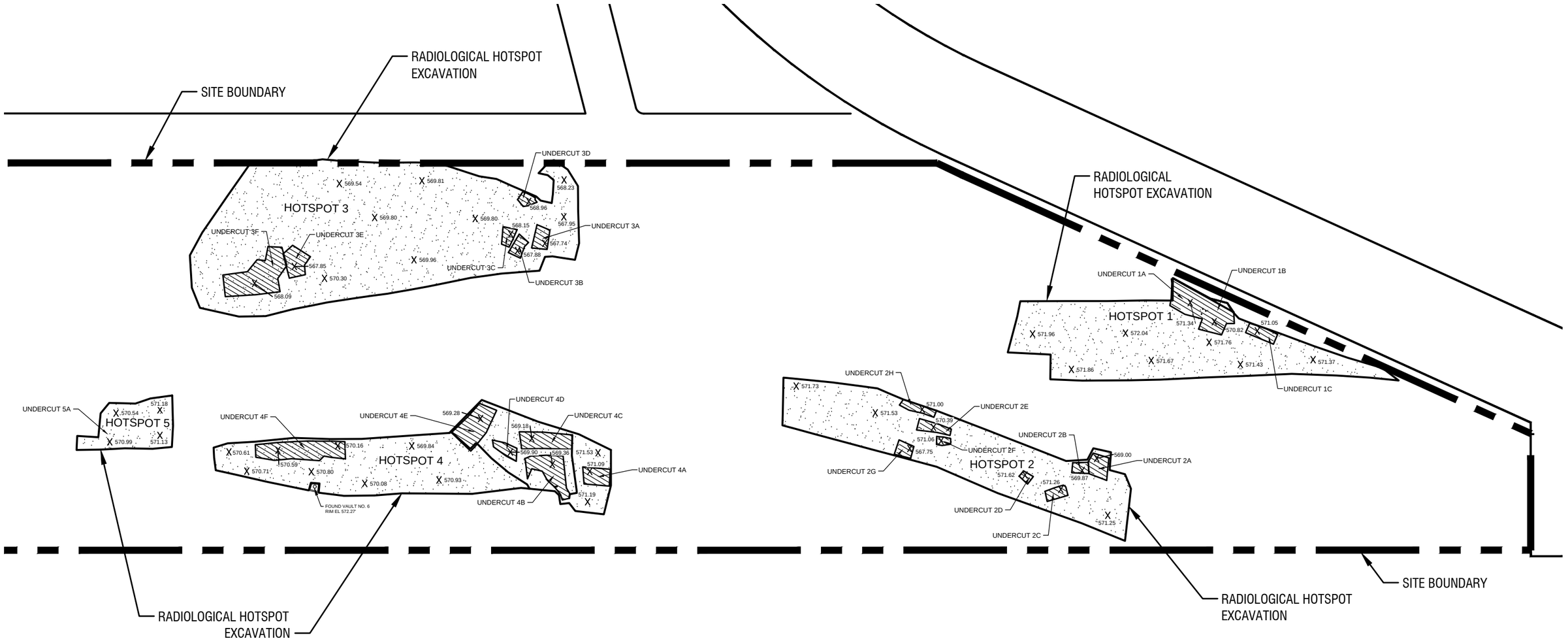
NIAGARA FALLS, NEW YORK

ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 4**



LEGEND

- AERIAL EXTENT OF HOTSPOT EXCAVATION
- AERIAL EXTENT OF GEOTECHNICALLY UNSUITABLE SOIL UNDERCUT WITHIN HOTSPOT EXCAVATIONS
- X xxx.xx SPOT ELEVATION AT BOTTOM OF EXCAVATION

NOTE:
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0 60' 120'

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DRAWING NAME: **RADIOLOGICAL HOTSPOT (CLASS 3/4) EXCAVATIONS**

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PROJECT NAME: **COVANTA NIAGARA I, LLC**
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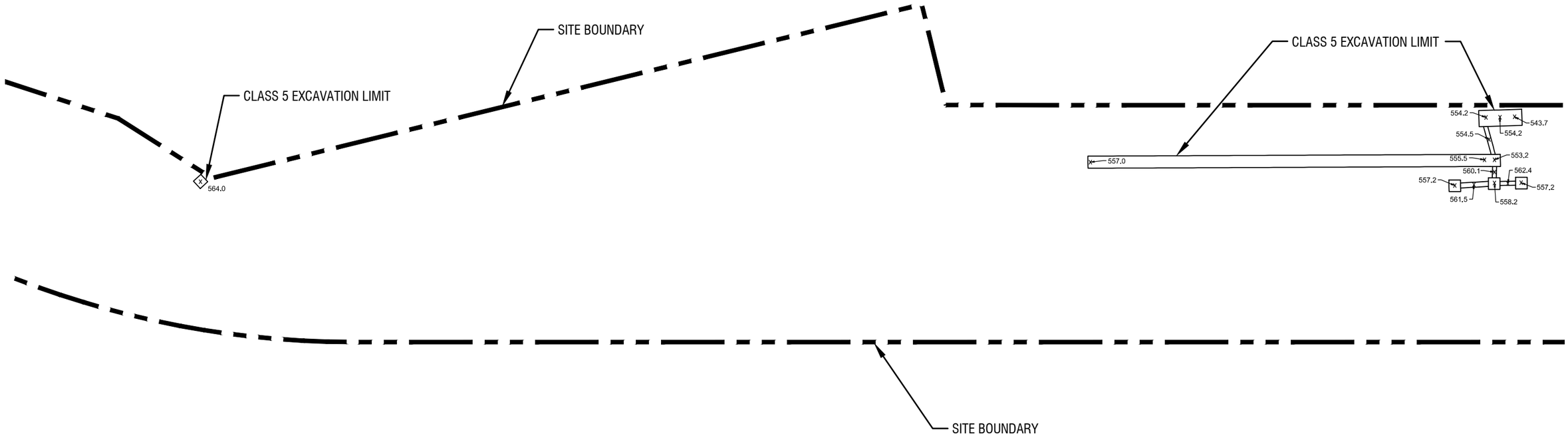
ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 5**



x XXX.X EXCAVATION BOTTOM SPOT ELEVATION (FEET)

NOTE:
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0 100' 200'

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DRAWING NAME: **CLASS 5 EXCAVATION**

DRAWN BY: ATB

DATE: NOVEMBER 2015

PROJECT NO: 212399

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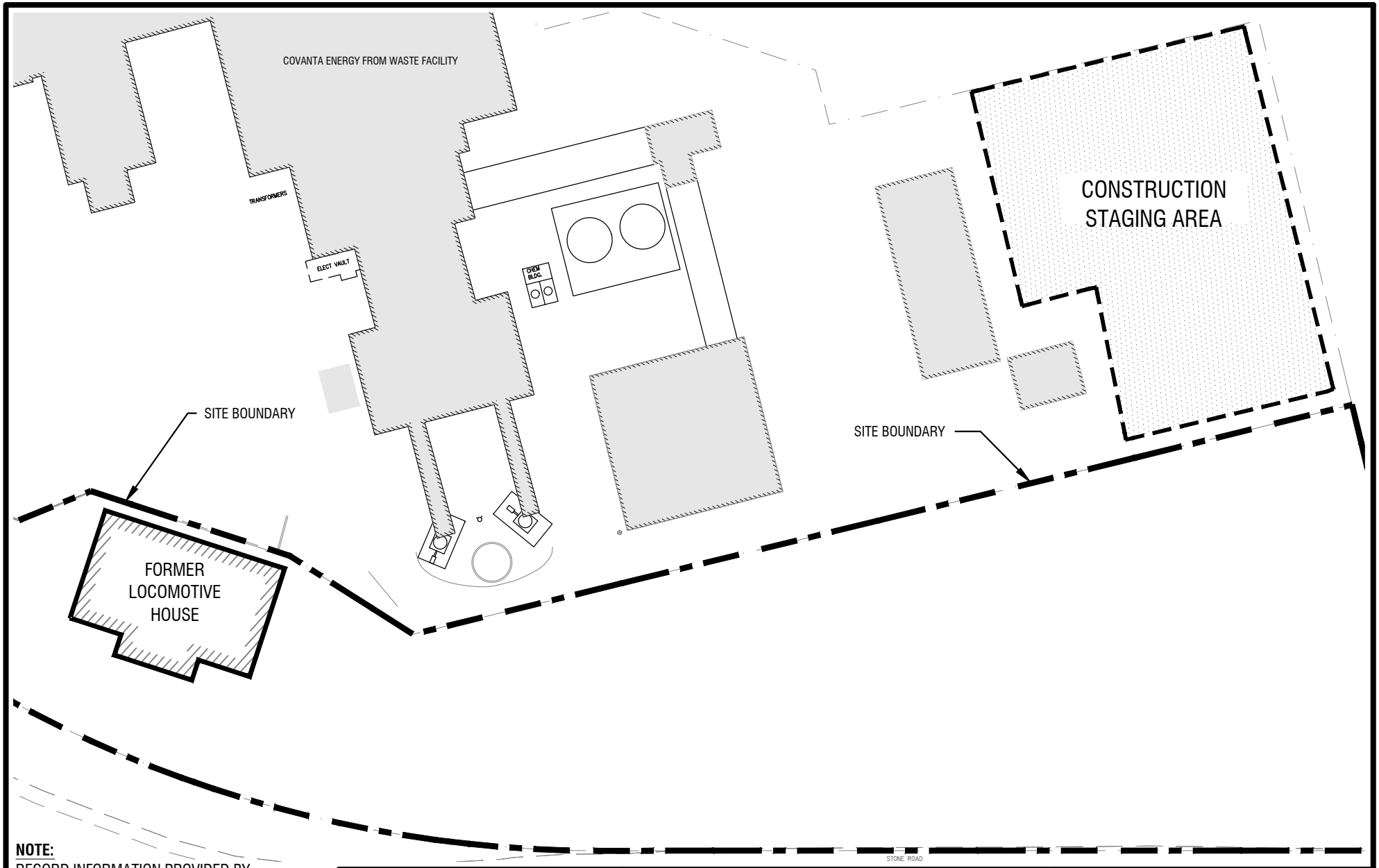
ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 6**



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N

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REVISION:

DRAWING TITLE: **FORMER LOCOMOTIVE HOUSE AND CONSTRUCTION STAGING AREA**

DRAWN BY: ATB

DATE: NOVEMBER 2015

PROJECT NUMBER: 212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
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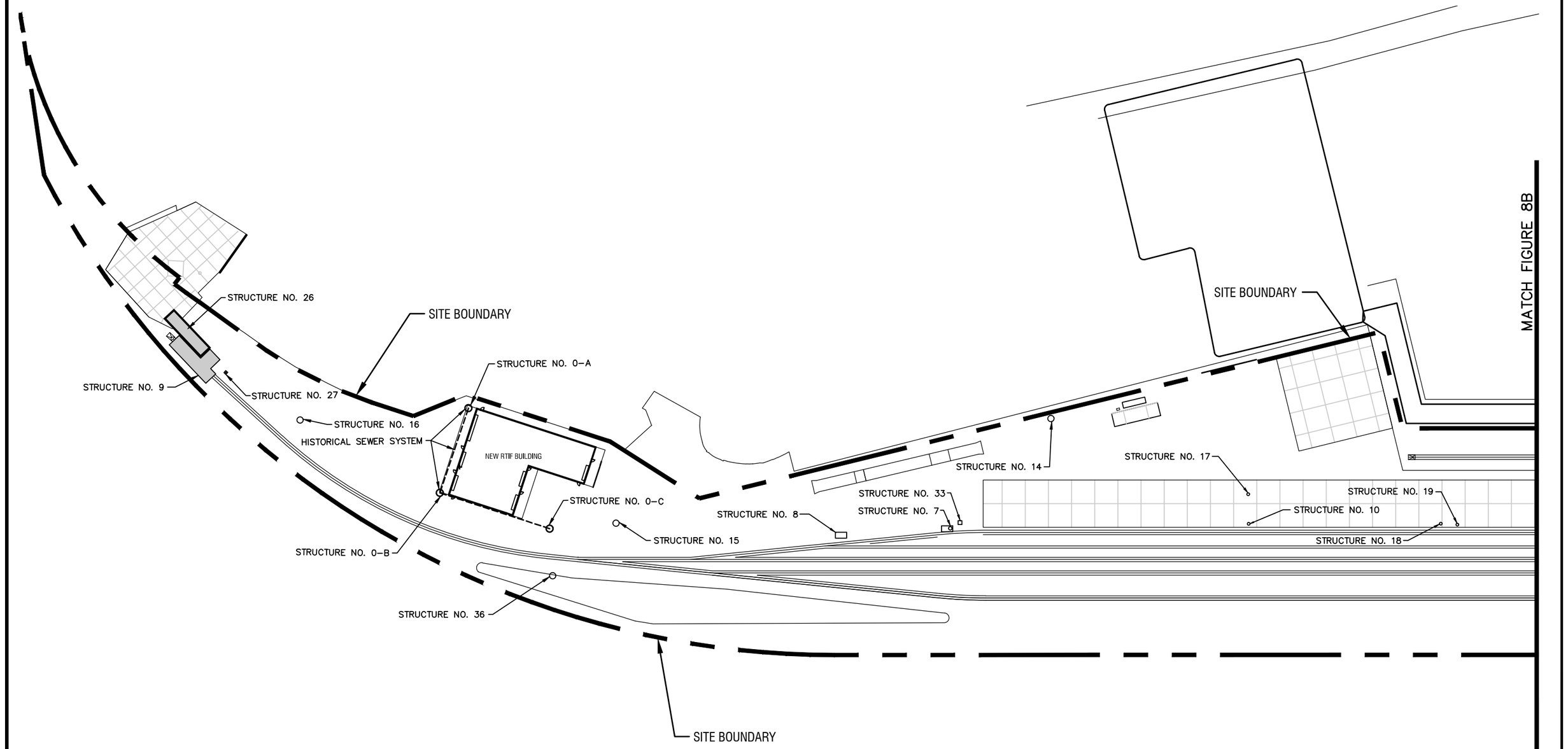
ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NUMBER: **FIGURE 7**



NOTE:
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N

0 100' 200'

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ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 8A**

MATCH FIGURE 8A

SITE BOUNDARY

STRUCTURE NO. 20

STRUCTURE NO. 11

STRUCTURE NO. 13

STRUCTURE NO. 11

STRUCTURE NO. 35

STRUCTURE NO. 12

SITE BOUNDARY

STRUCTURE NO. 1

STRUCTURE NO. 30

STRUCTURE NO. 31

STRUCTURE NO. 23

STRUCTURE NO. 25

STRUCTURE NO. 3

STRUCTURE NO. 29

STRUCTURE NO. 34

STRUCTURE NO. 5

STRUCTURE NO. 2

STRUCTURE NO. 4

STRUCTURE NO. 24

STRUCTURE NO. 32

STRUCTURE NO. 6

STRUCTURE NO. 21

STRUCTURE NO. 22

STRUCTURE NO. 28

SITE BOUNDARY

NOTE:
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N

0 100' 200'

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DRAWN BY: ATB

DATE: NOVEMBER 2015

PROJECT NO: 212399

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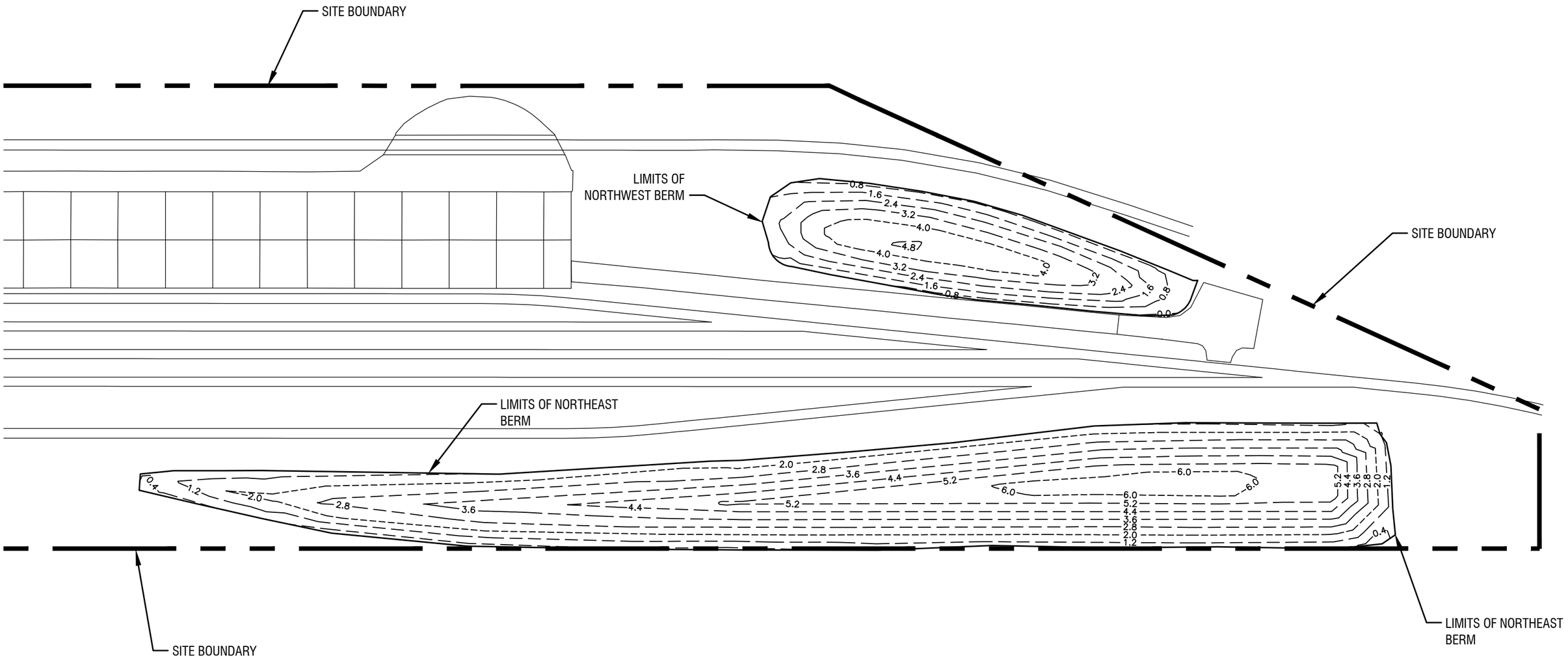
SHEET NO. **FIGURE 8B**



ISOPACH LINE DEPICTING THICKNESS OF EARTHEN BERM IN FEET

NOTE:
RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.

0 50' 100'

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DRAWING NAME: **EARTHEN BERMS**

DRAWN BY:	DATE:	PROJECT NO:
ATB	NOVEMBER 2015	212399

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ISSUED FOR:	SHEET NO.
SITE MANAGEMENT PLAN	**FIGURE 9**

-X.X FEET DEPTH TO TOP OF CONTAMINATED INDUSTRIAL FILL

AREAS WHERE CONTAMINATED INDUSTRIAL FILL IS NO LONGER PRESENT

NOTE:

1. RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.
2. DEPTH IN ASPHALT AREA DOES NOT ACCOUNT FOR A 1.5 INCH TOP COURSE THICKNESS

0 100' 200'

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DRAWING NAME: **DEPTH TO TOP OF CONTAMINATED INDUSTRIAL FILL**

DRAWN BY: ATB

DATE: NOVEMBER 2015

PROJECT NO: 212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
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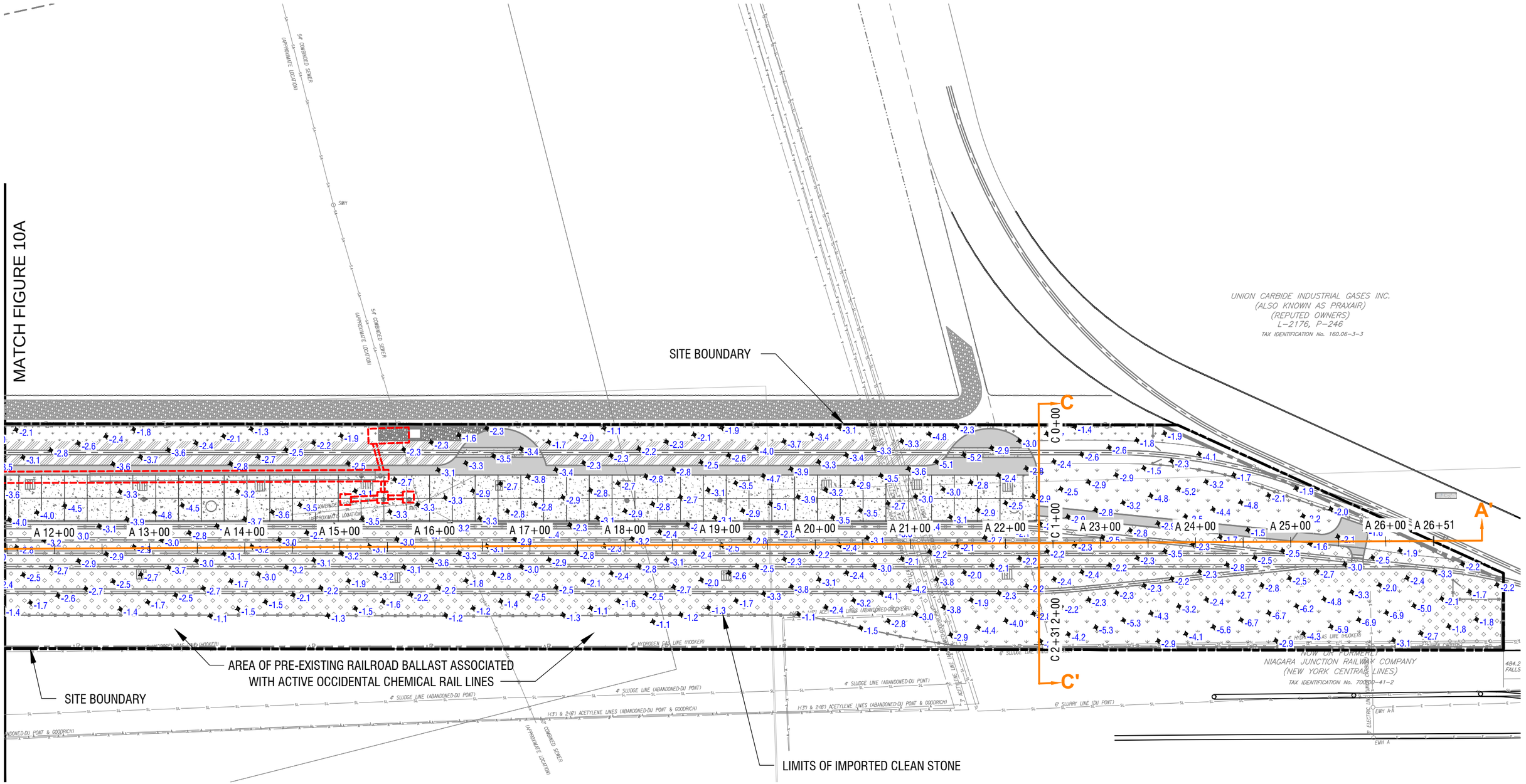
NIAGARA FALLS, NEW YORK

ISSUED FOR: **SITE MANAGEMENT REPORT**

SHEET NO. **FIGURE 10A**

MATCH FIGURE 10A



-X.X FEET DEPTH TO TOP OF CONTAMINATED INDUSTRIAL FILL

AREAS WHERE CONTAMINATED INDUSTRIAL FILL IS NO LONGER PRESENT

NOTE:

1. RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.
2. DEPTH IN ASPHALT AREA DOES NOT ACCOUNT FOR A 1.5 INCH TOP COURSE THICKNESS

N

0 100' 200'

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DRAWING NAME: **DEPTH TO TOP OF CONTAMINATED INDUSTRIAL FILL**

DRAWN BY: ATB

DATE: NOVEMBER 2015

PROJECT NO: 212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
NIAGARA RAIL TO TRUCK INTERMODAL FACILITY (RTIF)
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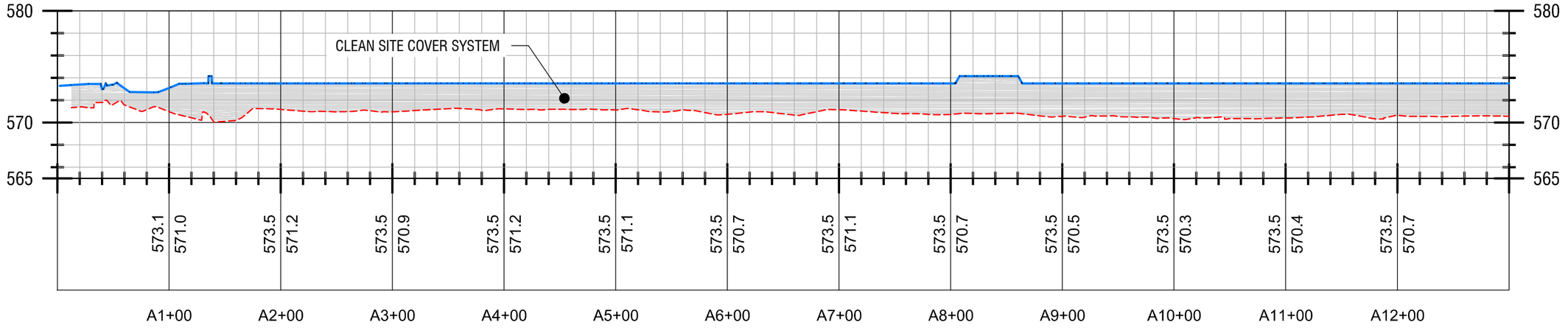
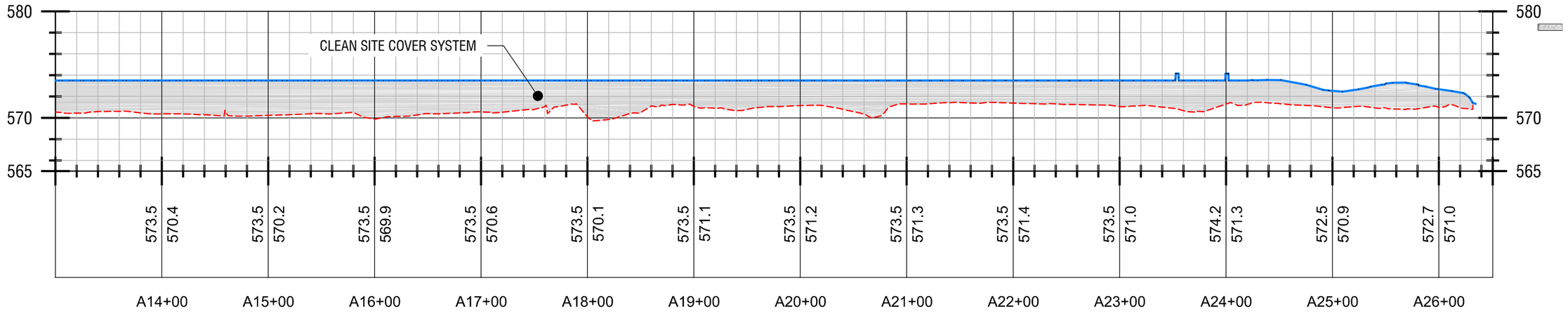
ISSUED FOR: **SITE MANAGEMENT REPORT**

SHEET NO. **FIGURE 10B**



SECTION A - A' PROFILE



SECTION A - A' PROFILE CONTINUED

TOP OF RECORD SURFACE (SEE NOTE 2)

TOP OF CONTAMINATED INDUSTRIAL FILL

NOTE:
1. RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.
2. DEPTH IN ASPHALT AREA DOES NOT ACCOUNT FOR A 1.5 INCH TOP COURSE THICKNESS

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DRAWING NAME: **DEPTH TO TOP OF CONTAMINATED INDUSTRIAL FILL**

DRAWN BY:	DATE:	PROJECT NO:
ATB	NOVEMBER 2015	212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
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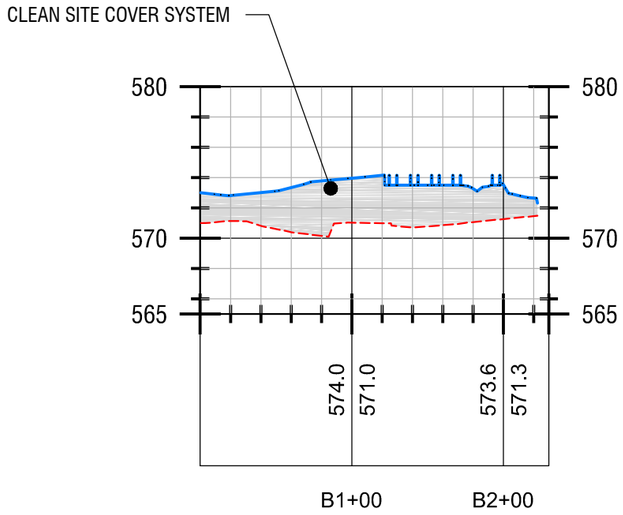
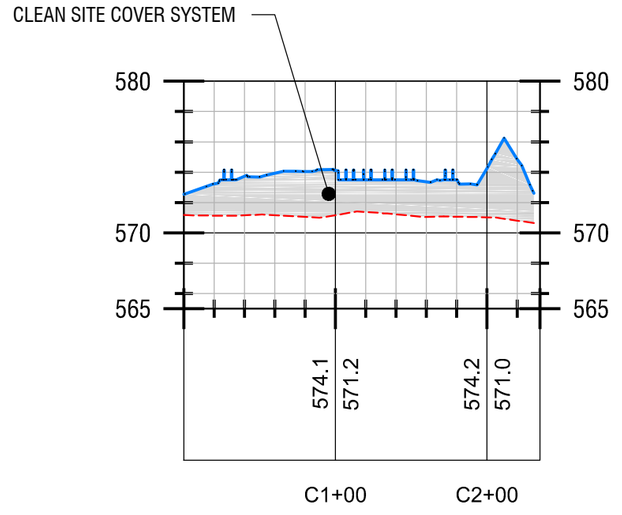
ISSUED FOR: **SITE MANAGEMENT REPORT**

SHEET NO. **FIGURE 10C**



SECTION B - B' PROFILE



SECTION C - C' PROFILE

TOP OF RECORD SURFACE (SEE NOTE 2)

TOP OF CONTAMINATED INDUSTRIAL FILL

NOTE:
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Planning

REVISONS:

DRAWING NAME: **DEPTH TO TOP OF CONTAMINATED INDUSTRIAL FILL**

DRAWN BY: ATB

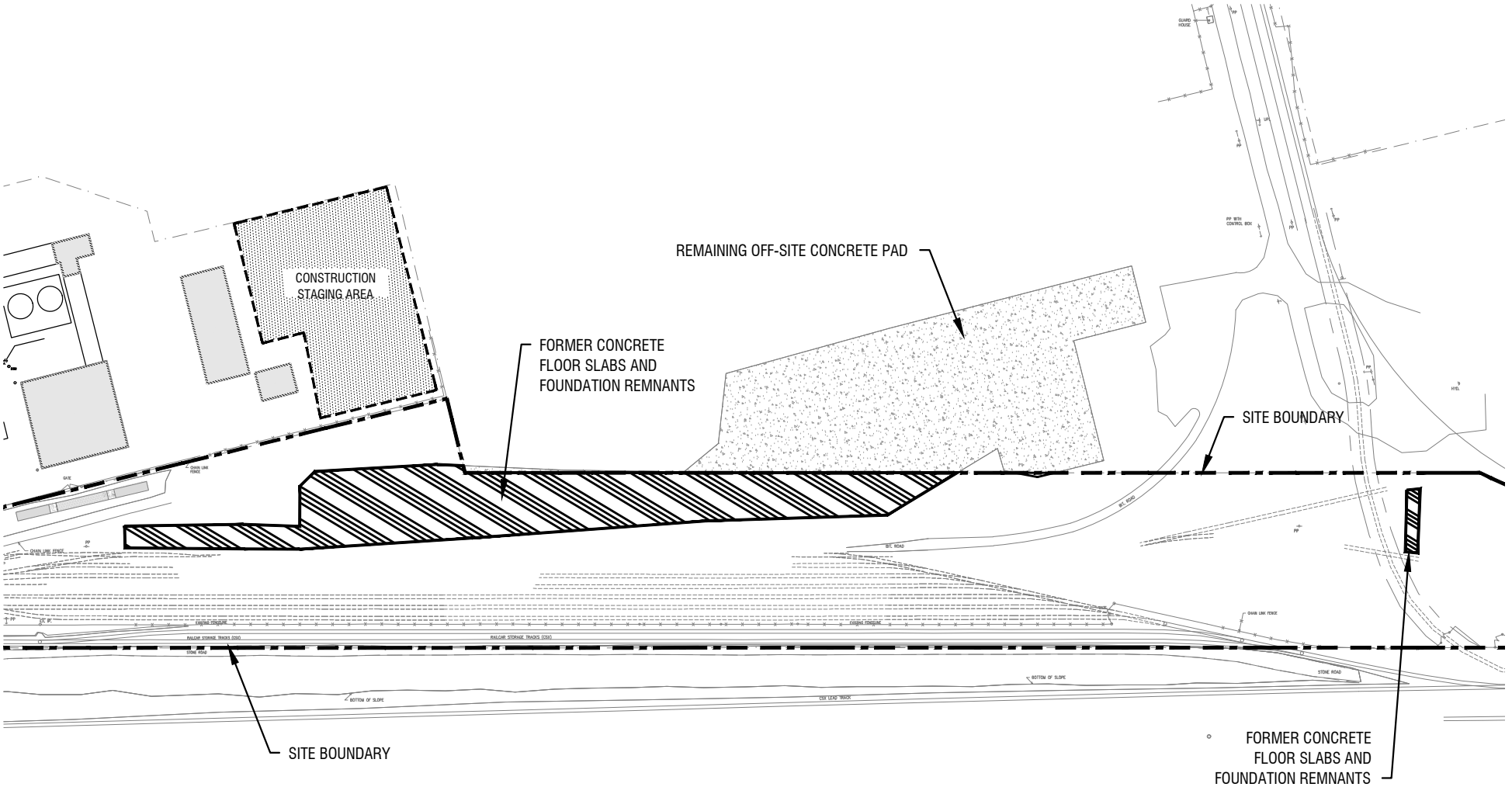
DATE: NOVEMBER 2015

PROJECT NO: 212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
NIAGARA RAIL TO TRUCK INTERMODAL FACILITY (RTIF)
NIAGARA FALLS, NEW YORK

ISSUED FOR: **SITE MANAGEMENT REPORT**

SHEET NO. **FIGURE 10D**



NOTE:
RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.

N

0 200' 400'

LABELLA Associates, D.P.C.
300 PEARL STREET, SUITE 130
BUFFALO, NY 14202
P: (716) 551-6281
F: (716) 551-6282
www.labellapc.com
Engineering
Architecture
Environmental
Planning

REVISION:

DRAWING TITLE: **FORMER CONCRETE FLOOR SLABS AND FOUNDATION REMNANTS**

DRAWN BY: ATB

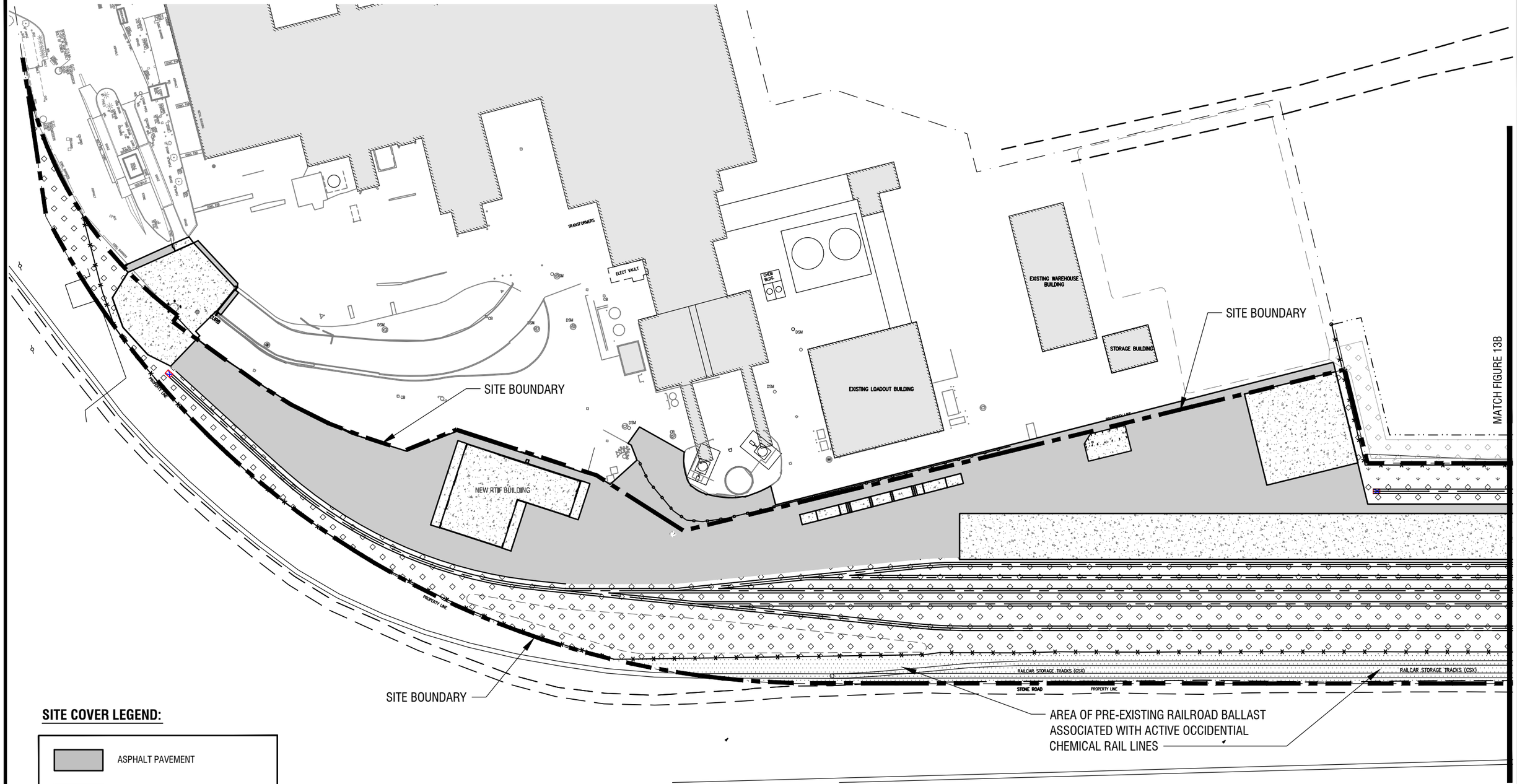
DATE: NOVEMBER 2015

PROJECT NUMBER: 212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
NIAGARA RAIL TO TRUCK INTERMODAL FACILITY (RTIF)
NIAGARA FALLS, NEW YORK

ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NUMBER: **FIGURE 11**



SITE COVER LEGEND:

- ASPHALT PAVEMENT
- CLEAN SOIL
- CONCRETE SLABS
- CLEAN STONE
- PRE-EXISTING STONE BALLAST COVER

NOTE:
RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.

0 100' 200'

LABELLA Associates, D.P.C.
300 PEARL STREET, SUITE 130
BUFFALO, NY 14202
P: (716) 551-6281
F: (716) 551-6282
www.labellapc.com
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Architecture
Environmental
Planning

REVISONS:

DRAWING NAME: **SITE COVER SYSTEM**

DRAWN BY:	DATE:	PROJECT NO:
ATB	NOVEMBER 2015	212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
NIAGARA RAIL TO TRUCK INTERMODAL FACILITY (RTIF)
NIAGARA FALLS, NEW YORK

ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 13A**

MATCH FIGURE 13A

SITE BOUNDARY

SITE BOUNDARY

SITE BOUNDARY

PROPERTY LINE

PROPERTY LINE

PROPERTY LINE

PROPERTY LINE

HYD.

HYD.

STONE ROAD

AREA OF PRE-EXISTING RAILROAD BALLAST ASSOCIATED WITH ACTIVE OCCIDENTIAL CHEMICAL RAILLINES

SITE COVER LEGEND:

- ASPHALT PAVEMENT
- CLEAN SOIL
- CONCRETE SLABS
- CLEAN STONE
- PRE-EXISTING STONE BALLAST COVER

NOTE:
RECORD INFORMATION PROVIDED BY PINTO CONSTRUCTION SERVICES.

0 100' 200'

LABELLA Associates, D.P.C.
300 PEARL STREET, SUITE 130
BUFFALO, NY 14202
P: (716) 551-6281
F: (716) 551-6282
www.labellapc.com
Engineering
Architecture
Environmental
Planning

REVISONS:

DRAWING NAME: **SITE COVER SYSTEM**

DRAWN BY:	DATE:	PROJECT NO:
ATB	NOVEMBER 2015	212399

PROJECT NAME: **COVANTA NIAGARA I, LLC**
NIAGARA RAIL TO TRUCK INTERMODAL FACILITY (RTIF)
NIAGARA FALLS, NEW YORK

ISSUED FOR: **SITE MANAGEMENT PLAN**

SHEET NO. **FIGURE 13B**

LaBella Associates, D.P.C.
300 Pearl Street, Suite 130
Buffalo, New York 14202

Appendix A

Environmental Easement
(Including Metes & Bounds)

Jaeckle | FLEISCHMANN & MUGEL, LLP
Attorneys at Law

Vincent O. Hanley
Partner
Direct: 716.843.3847
vhanley@jaeckle.com

Avant Building | Suite 900
200 Delaware Avenue
Buffalo, NY 14202-2107
Tel: 716.856.0600
Fax: 716.856.0432

July 21, 2014

Via Certified Mail, Return Receipt Requested

Environmental Easement Attorney
Office of General Counsel, 14th Floor
New York State Dept. of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7023

Re: Environmental Easement Granted Pursuant to Article 71, Title 36 of the New York State Environmental Conservation Law by Covanta Niagara, L.P. to The People of the State of New York, Affecting Premises Commonly Known as 139 47th Street (Rear) in the City of Niagara Falls, County of Niagara, and State of New York, Designated as Tax Parcel No. 160.09-1-21, Recorded in the Niagara County Clerk's Office on July 18, 2014 as Instrument No. 2014-11633

Ladies and Gentlemen:

Enclosed are the following materials related to the Environmental Easement referred to above:

1. Copy of Environmental Easement with Niagara County Clerk's recording receipt dated July 18, 2014;

2. Copy of Notice of Environmental Easement with cover letter dated July 21, 2014 forwarding the Notice of Environmental Easement to the affected local governments and parties having an interest in the subject real property by virtue of recorded instruments; and

3. Affidavit of Service of the Notice of Environmental Easement by Certified Mail, Return Receipt Requested.

If any additional information is required, please let me know.

Thank you.

Very truly yours,

JAECKLE FLEISCHMANN & MUGEL, LLP

By: Vincent O. Hanley

Vincent O. Hanley

VOH/dmr

Enc.

cc (w/encs. via e-mail): Covanta Niagara, L.P.

LaBella Associates
Attn: Mr. Robert Napieralski

1102062

Jaeckle | FLEISCHMANN & MUGEL, LLP
Attorneys at Law

Vincent O. Hanley
Partner
Direct: 716.843.3847
vhanley@jaeckle.com

Avant Building | Suite 900
200 Delaware Avenue
Buffalo, NY 14202-2107
Tel: 716.856.0600
Fax: 716.856.0432

July 21, 2014

Via Certified Mail, Return Receipt Requested

National Grid (successor to The Niagara Falls Power Company
and Niagara Mohawk Power Corporation)
300 Erie Boulevard West
Syracuse, NY 13202

Union Carbide Company
1254 Enclave Parkway
Houston, TX 77077

City of Niagara Falls
City Hall
745 Main Street
Niagara Falls, NY 14302
Attn: Office of Corporation Counsel

Occidental Chemical Corp. (successor to Hooker Energy Corporation)
4700 Buffalo Avenue
Niagara Falls, NY 14304

County of Niagara
Courthouse
175 Hawley Street
Lockport, NY 14094
Attn: Niagara County Attorney

Niagara County Industrial Development Agency
6311 Inducon Corporate Dr., Suite One
Sanborn, NY 14132
Attn: Executive Director

Mark J. Gabriele, Esq.
Gabriele & Berrigan, P.C.
800 Main Street
Niagara Falls, NY 14031

Re: Environmental Easement Granted Pursuant to Article 71, Title 36 of the New York State Environmental Conservation Law by Covanta Niagara, L.P. to The People of the State of New York, Affecting Premises Commonly Known as 139 47th Street (Rear) in the City of Niagara Falls, County of Niagara, and State of New York, Designated as Tax Parcel No. 160.09-1-21, Recorded in the Niagara County Clerk's Office on July 18, 2014 as Instrument No. 2014-11633

Ladies and Gentlemen:

On behalf of my client, Covanta Niagara, L.P., I enclose a Notice of Environmental Easement and copy of the Environmental Easement referred to above.

Please feel free to contact me if you have any questions.

Thank you.

Very truly yours,

JAECKLE FLEISCHMANN & MUGEL, LLP

By: Vincent O. Hanley
Vincent O. Hanley

VOH/dmr

Enc.

cc (w/encs. via e-mail): Covanta Niagara, L.P.

LaBella Associates
Attn: Mr. Robert Napieralski

1102058

NIAGARA COUNTY CLERK
WAYNE F. JAGOW

RECEIPT

Receipt Date: 07/18/2014 10:38:54 AM
RECEIPT # 2014205367

Recording Clerk: TH
Cash Drawer: CASH2
Rec'd Frm: JAN - STEWART
Rec'd In Person

Instr#: 2014-11633
DOC: EASEMENT
DEED STAMP: 5066
OR Party: COVANTA NIAGARA LP
EE Party: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Recording Fees	
Cover Page	$8.00
Recording Fee	$35.00
Cultural Ed	$14.25
Records Management - County	$1.00
Records Management - State	$4.75
TP584	$5.00

Transfer Tax	
Transfer Tax	$0.00

DOCUMENT TOTAL: ----> $68.00

Receipt Summary	
TOTAL RECEIPT: ---->	$68.00
TOTAL RECEIVED: ---->	$68.00
CASH BACK: ---->	$0.00

PAYMENTS
Check # 55269 -> $68.00
JAECKLE FLEISCHMANN & MUGEL LLP

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

THIS INDENTURE made this 26th day of June, 2014, between Owner **COVANTA NIAGARA, L.P.**, a Delaware limited partnership having an office at 100 Energy Boulevard, Niagara Falls, NY 14304, County of Niagara, State of New York (the "Grantor"), and **The People of the State of New York** (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of **139 47th Street (Rear) in the City of Niagara Falls, County of Niagara and State of New York,** known and designated on the tax map of the County Clerk of Niagara as Tax Map Parcel Number: **Section 160.09. Block 1 Lot 21**, being the same as that property conveyed to Grantor by deed dated February 11, 2013 and recorded in the Niagara County Clerk's Office as Instrument No. 2013147524. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 15.04 +/- acres, and is hereinafter more fully

described in the Land Title Survey dated April 30, 2013 prepared by Wendel, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as **Schedule A**; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Number **C932160**, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

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

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

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

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

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

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

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

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

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

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

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

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

B. The Controlled Property shall not be used for residential or commercial purposes, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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

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

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

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

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

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

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

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

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

(i) are in-place;

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

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

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

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

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

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

(7) the information presented is accurate and complete.

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

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

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

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

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

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

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

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

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

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

Parties shall address correspondence to:

Site Number: C932160
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

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

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

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

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

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the

Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

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

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

COVANTA NIAGARA, L.P.

By: Its General Partner,
COVANTA NIAGARA LLC

By: Seth Myones

Print Name: Seth Myones

Title: Chief Operating Officer Date: May 15, 2013

Grantor's Acknowledgment

STATE OF NEW JERSEY)
) ss:
COUNTY OF MORRIS)

On the 15th day of May in the year 2013, before me, the undersigned, personally appeared **Seth Myones**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Jane Gross

Notary Public - State of New Jersey
Jane Gross
Notary Public, State of New Jersey
Passaic County
Notary No. 2097574
My Commission Expires Feb. 25, 2017

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

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 26th day of June, in the year 2014 before me, the undersigned, personally appeared Robert Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

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

SCHEDULE "A" PROPERTY DESCRIPTION

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lots 48 and 49 of the Mile Reserve, being part of lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at page 246, and more particularly described as follows:

Commencing at the intersection of the east line of lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at page 246, also being the west line of lands conveyed to now or formerly Niagara Junction Railway Company, with the south line of Niagara Falls Boulevard, width varies;

Thence, S 14°-15'-14" W, along the easterly line of said lands conveyed to Union Carbide Industrial Gases Inc., a distance of 484.22 feet to the point of beginning;

Thence, S 14°-15'-14" W, along the easterly line of said lands conveyed to Union Carbide Industrial Gases Inc., a distance of 2311.52 feet to a point of curvature;

Thence, southwesterly along a circular curve to the right having a radius of 922.37 feet, an arc length of 1007.57 feet, a chord bearing S 45°-32'-36" W, at a distance of 958.22 feet, to a point in the north line of lands now or formerly owned by Frontier Electric Railway;

Thence, N 84°-27'-12" W, along the north line of said Frontier Electric Railway, a distance of 169.94 feet to a point of curvature and the westerly line of said lands convey to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at page 246;

Thence, northeasterly along a circular curve to the left having a radius of 420.24 feet, an arc length of 328.36 feet, a chord bearing N 73°-05'-58" E, at a distance of 320.07 feet, to the point of tangency;

Thence, S 39°-11'-47" E, along the westerly line of said lands conveyed to Union Carbide Industrial Gases Inc., a distance of 8.60 feet to a point of curvature;

Thence, northeasterly along a circular curve to the left having a radius of 426.97 feet, an arc length of 30.89 feet, a chord bearing N 50°-01'-23" E, at a distance of 30.88 feet, to the point of tangency and a point in the easterly line of lands conveyed to Niagara County Industrial Development Agency by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at page 240;

Thence, continuing along the easterly line of said lands conveyed to Niagara County Industrial Development Agency by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at page 240, the following 9 courses:

1. N 50°-01'-26" E, a distance of 86.84 feet to a point;
2. N 46°-17'-44" E, a distance of 35.62 feet to a point;

3. N 40°-48'-15" E, a distance of 45.22 feet to a point;
4. N 35°-04'-05" E, a distance of 40.59 feet to a point;
5. N 32°-18'-54" E, a distance of 45.86 feet to a point;
6. N 07°-53'-23" W, a distance of 58.93 feet to a point;
7. N 32°-12'-37" E, a distance of 157.00 feet to a point;
8. N 46°-40'-56" E, a distance of 109.73 feet to a point;
9. N 00°-27'-28" E, a distance of 725.28 feet to the northeasterly corner of said lands conveyed to Niagara County Industrial Development Agency by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at page 240;

Thence, S 89°-26'-25" E, on an extension of the north line of said lands conveyed to Niagara County Industrial Development Agency by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at page 240, a distance of 102.61 feet to a point, being 236.50 feet west of the east line of lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at page 246, measured at right angles therefrom;

Thence, N 14°-15'-14" E, parallel with the east line of said lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at page 246, a distance of 1379.86 feet to a point;

Thence, N 38°-39'-55" E, along a line, a distance of 376.41 feet to a point;

Thence, S 75°-48'-56" E, along a line, a distance of 80.93 feet to the point of beginning, containing 15.04 acres of land, more or less.

TOGETHER WITH the benefits of a railroad easement, electrical duct easement, water supply line and outfall sewer easement and service water line easement as reserved and set forth in Deed made by Union Carbide Corporation to Hooker Energy Corporation dated March 31, 1978 and recorded April 6, 1978 in Liber 1614 of Deeds at page 517, as amended by Release and Termination of Easement made by Praxair, Inc. and The ESAB Group Inc. to American Ref-Fuel Company of Niagara, L.P. dated September 13, 1994 and recorded September 16, 1994 in Liber 2537 of Deeds at page 289.

ALSO TOGETHER WITH the benefits of an easement for an underground water supply line and an outfall line as set forth in Easement Agreement made between American Ref-Fuel Company of Niagara, L.P. and Praxair, Inc. dated June 30, 1997 and recorded December 1, 1998 in Liber 2882 of Deeds at page 241.

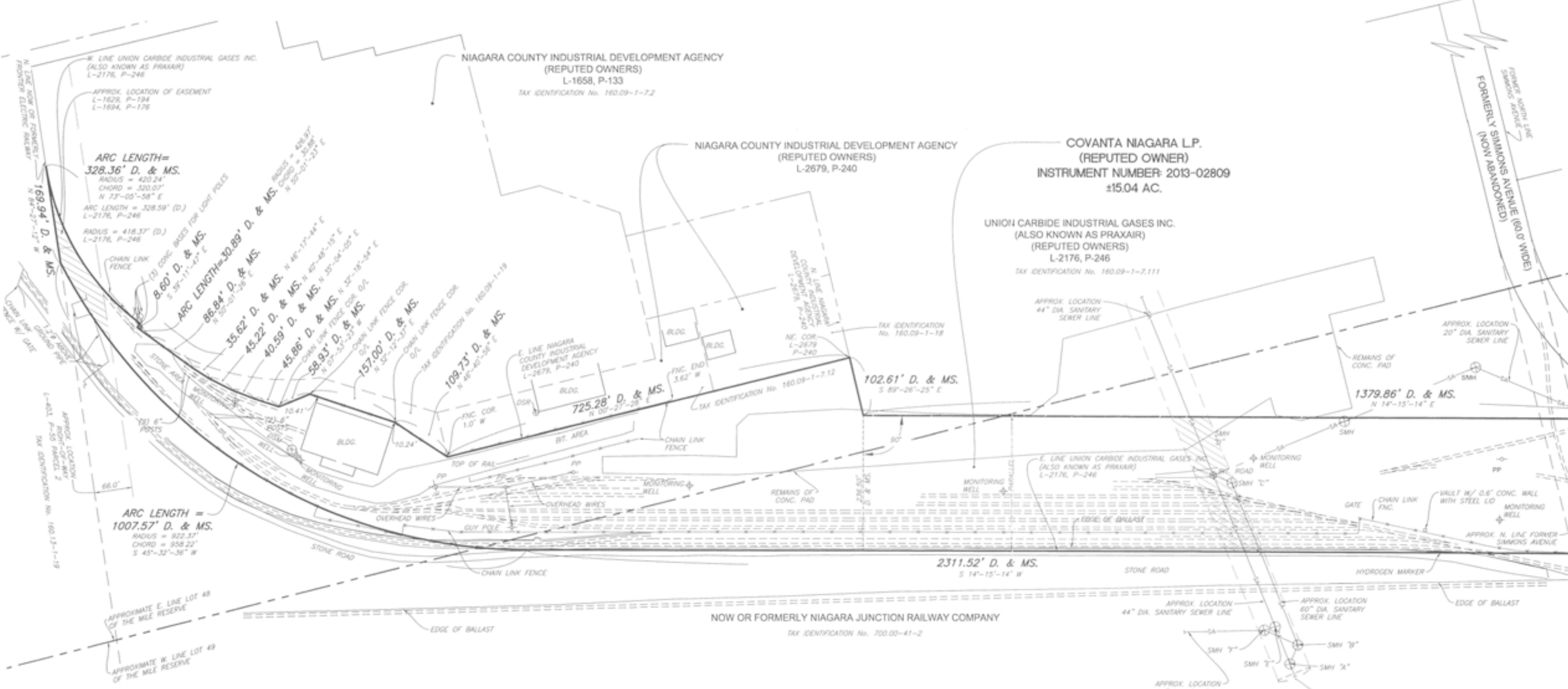
1077924

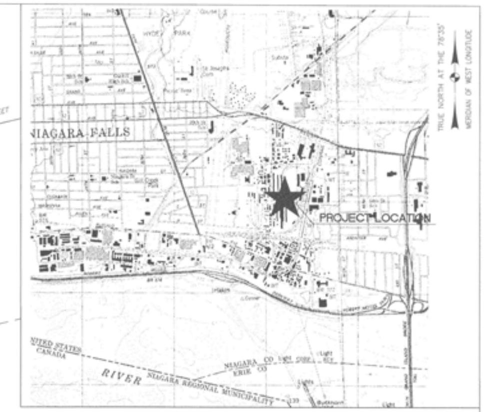
EASEMENT NOTE:

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NEW YORK, 12233 OR AT DERWEB@GW.DEC.STATE.NY.US

GENERAL NOTES:

1. BEARINGS SHOWN ON THIS MAP ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), NEW YORK STATE PLANE COORDINATE SYSTEM, WESTERN ZONE, U.S. SURVEY FEET. (MAPPING GRADE)
2. UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN IN THEIR APPROXIMATE LOCATION AND MAY NOT BE SHOWN IN THEIR ENTIRETY.
3. THE PROPERTY IS NOT LOCATED IN A 100-YEAR FLOOD PLAIN AS REFLECTED BY THE CITY OF NIAGARA FALLS FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 360506, MAP NUMBER 36063C0309E, PANEL#309 OF 430 WITH AN EFFECTIVE DATE OF SEPTEMBER 17, 2010.
4. THIS SURVEY HAS BEEN PREPARED WITH THE BENEFIT OF ABSTRACT SEARCH No. 11-161516 AS PREPARED BY STEWART TITLE INSURANCE COMPANY, DATED MARCH 15, 2013 AND AMENDED TITLE REPORT COMMITMENT No. 10-162167, DATED APRIL 30, 2013.





PROJECT LOCATION
NIAGARA FALLS QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPHIC)
TONAWANDA WEST QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPHIC)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (DEC) SITE #C932160 ENVIRONMENTAL EASEMENT DESCRIPTION FOR COVANTA NIAGARA, L.P.

Schedule "A"

All that Tract or Parcel of Land situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lots 48 and 49 of the Mile Reserve, being part of lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at Page 246, and more particularly described as follows:

Commencing at the intersection of the east line of lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at Page 246, also being the west line of lands conveyed to now or formerly Niagara Junction Railway Company with the south line of Niagara Falls Boulevard, width varies;

Thence, S 14°-15'-14" W, along the easterly line of said lands conveyed to Union Carbide Industrial Gases Inc., a distance of 484.22 feet to the point of beginning;

Thence, S 14°-15'-14" W, along the easterly line of said lands conveyed to Union Carbide Industrial Gases Inc., a distance of 2311.52 feet to a point of curvature;

Thence, southwesterly along a circular curve to the right having a radius of 922.37 feet, an arc length of 1007.57 feet, a chord bearing S 45°-32'-36" W, at a distance of 958.22 feet, to a point in the north line of lands now or formerly owned by Frontier Electric Railway;

Thence, N 84°-27'-12" W, along the north line of said Frontier Electric Railway, a distance of 169.94 feet to a point of curvature and the westerly line of said lands convey to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at Page 246.;

Thence, northeasterly along a circular curve to the left having a radius of 420.24 feet, an arc length of 328.36 feet, a chord bearing N 73°-05'-58" E, at a distance of 320.07 feet, to the point of tangency;

Thence, S 39°-11'-47" E, along the westerly line of said lands conveyed to Union Carbide Industrial Gases Inc., a distance of 8.60 feet to a point of curvature;

Thence, northeasterly along a circular curve to the left having a radius of 426.97 feet, an arc length of 30.89 feet, a chord bearing N 50°-01'-23" E, at a distance of 30.88 feet, to the point of tangency and a point in the easterly line of lands conveyed to Niagara County Industrial Development Agency by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at Page 240;

Thence, continuing along the easterly line of said lands conveyed to Niagara County Industrial Development Agency by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at Page 240, the following 9 courses:

1. N 50°-01'-26" E, a distance of 86.84 feet to a point;
2. N 46°-17'-44" E, a distance of 35.62 feet to a point;
3. N 40°-48'-15" E, a distance of 45.22 feet to a point;
4. N 35°-04'-05" E, a distance of 40.59 feet to a point;
5. N 32°-18'-54" E, a distance of 45.86 feet to a point;
6. N 07°-53'-23" W, a distance of 58.93feet to a point;
7. N 32°-12'-37" E, a distance of 157.00 feet to a point;
8. N 46°-40'-56" E, a distance of 109.73 feet to a point;
9. N 00°-27'-28" E, a distance of 725.28 feet to the northeasterly corner of said lands conveyed to Niagara County Industrial Development Agency by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at Page 240;

Thence S 89°-26'-25" E, on an extension of the north line of said lands conveyed to Niagara County Industrial Development Agency, by deed recorded in the Niagara County Clerk's Office in Liber 2679 of Deeds at Page 240, a distance of 102.61 feet to a point, being 236.50 feet west of the east line of lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at Page 246, measured at right angles therefrom;

Thence, N 14°-15'-14" E, parallel with the east line of said lands conveyed to Union Carbide Industrial Gases Inc. by deed recorded in the Niagara County Clerk's Office in Liber 2176 of Deeds at Page 246 a distance of 1379.86 feet to a point;

Thence, N 38°-39'-55" E, along a line, a distance of 376.41 feet to a point;

Thence, S 75°-48'-56" E, along a line, a distance of 80.93 feet to the point of beginning, Containing 15.04 acres of land, more or less.

TOGETHER WITH the benefits of a railroad easement, electrical duct easement, water supply line and outfall sewer easement and service water line easement as reserved and set forth in Deed made by Union Carbide Corporation to Hooker Energy Corporation dated March 31, 1978 and recorded April 6, 1978 in Liber 1614 of Deeds at page 517, as amended by Release and Termination of Easement made by Praxair, Inc. and The ESAB Group, Inc. to American Ref-Fuel Company of Niagara, L.P. dated September 13, 1994 and recorded September 16, 1994 in Liber 2537 of Deeds at page 289.

ALSO TOGETHER WITH the benefits of an easement for an underground water supply line and an outfall line as set forth in Easement Agreement made between American Ref-fuel Company of Niagara, L.P. and Praxair, Inc. dated June 30, 1997 and recorded December 1, 1998 in Liber 2882 of Deeds at page 241.

SCHEDULE "B": STEWART TITLE INSURANCE COMPANY COMMITMENT FOR TITLE INSURANCE #10-162167

EXCEPTION NUMBER:

12(a) NOTE: THE INSURED PREMISES INCLUDE RIGHTS OF INGRESS AND EGRESS AS BETWEEN THE INSURED PREMISES AND 47th STREET OVER ADJOINING LANDS OF COVANTA NIAGARA, L.P. (SEE DEED EXECUTED BY NIAGARA COUNTY INDUSTRIAL DEVELOPMENT AGENCY TO COVANTA NIAGARA, L.P. DATED APRIL 25, 2013 AND RECORDED IN THE NIAGARA COUNTY CLERK'S OFFICE ON MAY 2, 2013 AS INSTRUMENT No. 2013-08359).

12(b) TERMS, COVENANTS, CONDITIONS, LIMITATIONS, RESERVATIONS, EASEMENTS AND RESTRICTIONS SET FORTH IN DEED MADE BY THE NIAGARA FALLS POWER COMPANY TO UNION CARBIDE COMPANY DATED MAY 4, 1917 AND RECORDED JULY 21, 1917 IN LIBER 403 OF DEEDS AT PAGE 55. (AFFECTS ENTIRE PREMISES).

12(c) EASEMENT FOR A TUNNEL TRUNK SEWER RESERVED TO THE CITY OF NIAGARA FALLS SET FORTH IN TRI-PARTITE DEED MADE AMONG UNION CARBIDE COMPANY, THE NIAGARA FALLS POWER COMPANY AND CITY OF NIAGARA FALLS DATED DECEMBER 14, 1917 AND RECORDED JANUARY 4, 1918 IN LIBER 403 OF DEEDS AT PAGE 306. (AFFECTS PREMISES, SHOWN HEREON).

12(d) TERMS, COVENANTS, CONDITIONS, LIMITATIONS, RESERVATIONS, EASEMENTS AND RESTRICTIONS SET FORTH IN DEED MADE BY THE NIAGARA FALLS POWER COMPANY TO UNION CARBIDE COMPANY DATED DECEMBER 15, 1928 AND RECORDED JANUARY 19, 1929 IN LIBER 556 OF DEEDS AT PAGE 1. (AFFECTS NORTHERLY PORTION OF PREMISES. (AFFECTS PREMISES, SHOWN HEREON).

12(e) EASEMENT MADE BY UNION CARBIDE CORPORATION TO NIAGARA MOHAWK POWER CORPORATION DATED MARCH 23, 1978 AND RECORDED APRIL 20TH, 1978 IN LIBER 1615 OF DEEDS AT PAGE 19, AS CORRECTED BY EASEMENT MADE BY UNION CARBIDE CORPORATION TO NIAGARA MOHAWK POWER CORPORATION DATED MARCH 23, 1978 AND RECORDED JANUARY 11, 1979 IN LIBER 1629 OF DEEDS AT PAGE 194. (AFFECTS PREMISES, SHOWN HEREON).

12(f) EASEMENT MADE BY UNION CARBIDE CORPORATION TO HOOKER ENERGY CORPORATION DATED FEBRUARY 22, 1980 AND RECORDED MARCH 3, 1980 IN LIBER 1694 OF DEEDS AT PAGE 176. (AFFECTS PREMISES, SHOWN HEREON).

12(g) EASEMENT AGREEMENT FOR GRADE CROSSING MADE BETWEEN UNION CARBIDE CORPORATION AND HOOKER ENERGY CORPORATION DATED JANUARY 28, 1980 AND RECORDED MARCH 28, 1980 IN LIBER 1708 OF DEEDS AT PAGE 248. (DOES NOT AFFECT PREMISES).

ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED LAND SURVEYOR, IS ILLEGAL

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PREPARED BY:

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ARCHITECTURE • ENGINEERING • PLANNING
ENERGY SERVICES • CONSTRUCTION MANAGEMENT

PREPARED FOR - COVANTA NIAGARA, L.P.

MAP OF LANDS OF COVANTA NIAGARA, L.P.
BROWNFIELD CLEANUP ENVIRONMENTAL EASEMENT
139 47th STREET REAR, CITY OF NIAGARA FALLS, STATE OF NEW YORK
NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION SITE NUMBER C932160
SITUATE IN PART OF
LOTS 48 & 49 OF THE MILE RESERVE
CITY OF NIAGARA FALLS, COUNTY OF NIAGARA, STATE OF NEW YORK

TAX IDENTIFICATION NO.: 160.09-1-21

1 INCH = 100 FEET
1:1200

I HEREBY CERTIFY TO THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH ITS COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AS WELL AS, COVANTA NIAGARA, L.P. AND STEWART TITLE INSURANCE COMPANY, THAT THIS IS AN ACCURATE MAP PREPARED UNDER MY DIRECTION, FROM AN ACTUAL SURVEY, PERFORMED IN ACCORDANCE WITH THE STANDARDS AND PROCEDURES ADOPTED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, SEPTEMBER, 1989. FIELD SURVEY COMPLETED APRIL 9th, 2013.

Marshall D. Wilson, Land Surveyor #050192 — DATE 4/30/13
Kelly S. Klopfer, Survey Drafter — DATE

STATE OF NEW YORK — MARSHALL D. WILSON — No. 050192 — LICENSED LAND SURVEYOR

WENDEL PROJECT NUMBER: 446901E

REVISION No.	DATE	DESCRIPTION	DRAWN	CHECK
1	5/3/2013	REVISED TITLE COMMITMENT	KSK	MDW

NOTES:
ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MAP MARKED WITH THE SIGNATURE AND AN ORIGINAL OF THE LAND SURVEYOR'S SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.

THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WENDEL AND IS NOT TO BE USED IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF WENDEL.

UNAUTHORIZED ALTERATION OR ADDITION TO ANY SURVEY DRAWING, DESIGN, SPECIFICATION, PLAN OR REPORT IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

LEGEND:
APPROXIMATE EASEMENT AREA (AS NOTED) (ALSO, SEE SCHEDULE "B")

LaBella Associates, D.P.C.
300 Pearl Street, Suite 130
Buffalo, New York 14202

Appendix B

Excavation Work Plan

APPENDIX B – EXCAVATION WORK PLAN

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 Department. Currently, this notification will be made to:

Gregory Sutton, P.E.
Regional Hazardous Waste Remediation Engineer
270 Michigan Avenue
Buffalo, New York 14203-2915

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,
- A summary of environmental conditions anticipated 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, in electronic format, if it differs from the HASP provided in Appendix C of this document,
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL/FILL SCREENING METHODS

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

The screening will consist of observations of visual and olfactory impacts; measurements of total organic vapors using a photoionization detector (PID), and screening for gamma radiation levels using a Ludlum model #2221 scaler with a #44-10 probe (or equivalent).

Soil/fill will be classified and segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

The following table shows the criteria by which material will be segregated:

Table A-1 - Soil and Fill Segregation Plan

Class of Material	Physical Description	Anticipated Depths
Class 1	Fill materials exhibiting gamma radiation field survey results less than 10,000 cpm with PID measurements of less than 5 ppm and no observable free product	0 to 5 feet
Class 2	Fill materials exhibiting gamma radiation field survey results less than 10,000 cpm with PID measurements of more than 5 ppm and/or observable free product	0 to 5 feet
Class 3	Any fill materials exhibiting gamma radiation field survey results over 10,000 CPM	0 to 5 feet
Class 4	This material classification not used	N/A
Class 5	Non-impacted, native soils	5 to 25 feet

Note: The average depth to the native material is estimated at five feet; however, the top six inches of the native material will also be handled as Class 1 material to address any potential impacts form the overlying fill material.

A-3 STOCKPILE METHODS

Fill materials not direct-loaded onto trucks for off-site disposal will be segregated by class, as shown in Table A-1, and handled, stockpiled, and characterized accordingly. Stockpiles will be constructed as follows:

- Each class of soil/fill is to be stockpiled separately;
- Excavated fill is to be stockpiled on-site will be placed on and covered by a minimum of double 6-mil polyethylene.
- Soil/Fill 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.
- Clearly visible signs indicating the class of material within each stockpile shall be placed around each stockpile;

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 NYSDEC.

Waste characterization sampling and analysis of the stockpiled soil/fill will conform to the requirements of the facility at which the material is planned to be disposed. The final, off-site disposal location will be based on the characterization data obtained at the time of the work and shall be permitted to receive such waste.

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 its contractors are solely 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 this SMP is posed by utilities or easements on the site.

Each truck loaded with soil/fill for off-site disposal will be screened for gamma radiation prior

to departure from the site. The screening shall be performed by a qualified environmental professional using a Ludlum model #2221 scaler with a #44-10 probe (or equivalent).

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).

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. If truck tires will be in contact with impacted materials and/or ground conditions result in mud carryout on vehicles, a truck wash will be operated on the site. Truck wash waters will be collected and disposed off-site in an appropriate manner. 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.

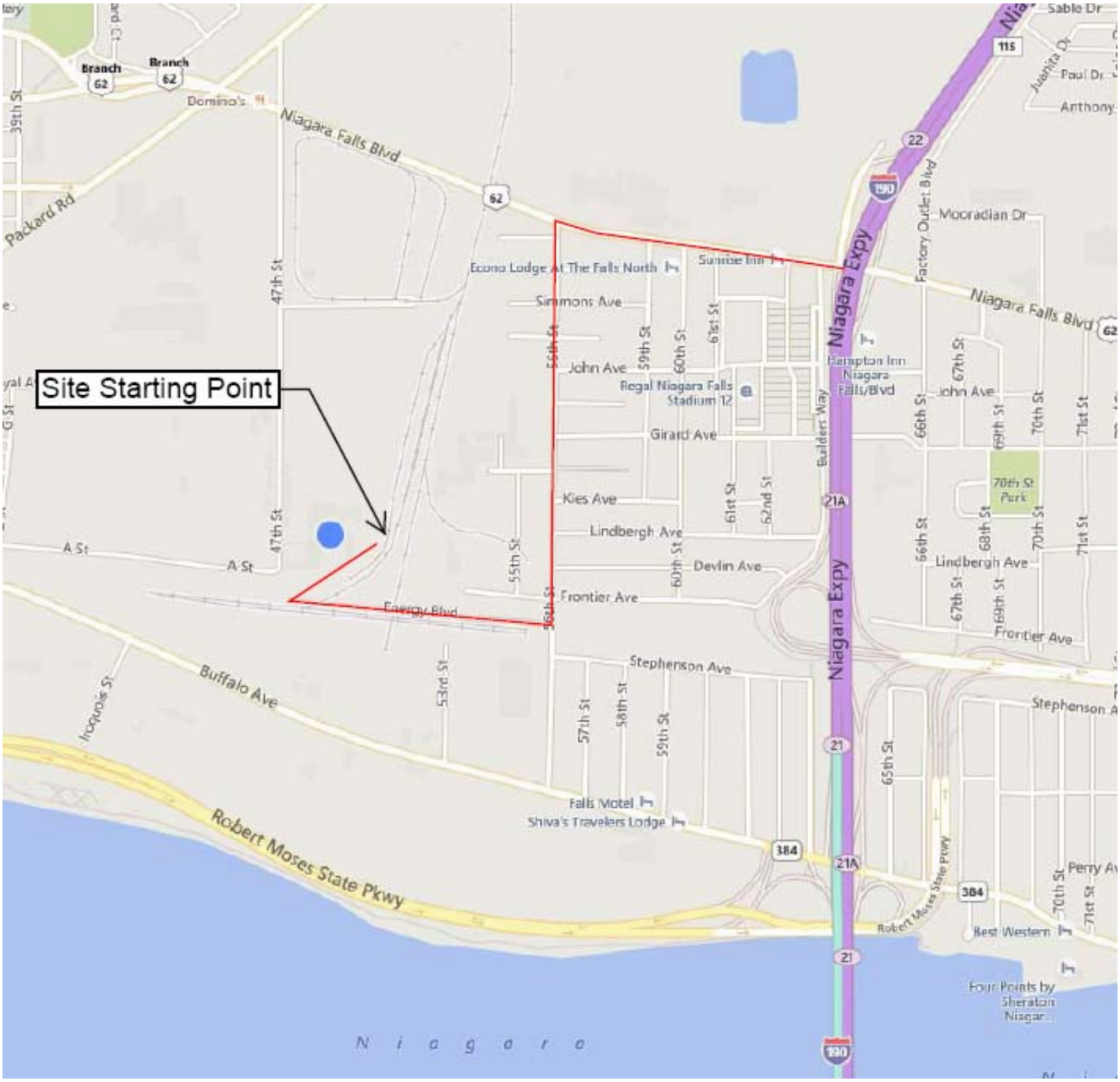
Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes are as follows:

- Upon exiting the Site, trucks shall travel north on 56th Street to US Route 62 (Niagara Falls Boulevard.)
- US Route 62 is a designated truck route with direct access to Interstate I-90 and other truck routes.

Figure 14

Truck Transport Route



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 soil/fill/solid waste 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 (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill 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 recycling 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, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

The final, off-site disposal location(s) will be selected based on the waste characterization data

obtained at the time of the work and will be permitted to receive such waste.

A-7 MATERIALS REUSE ON-SITE

On-site reuse of non-radiological soil/fill material (Class 1 and Class 5) is acceptable provided that the material does not exhibit visual or olfactory evidence of contamination and PID measurements of the atmosphere at the soil/fill interface do not exceed 5 parts per million above background levels. The on-site reuse of radiological soil/fill (Class 3) is prohibited.

Criteria for on-site reuse of material has been approved by NYSDEC and is listed in Table A-1 above. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering, will be verified to be visually free of any product, non-aqueous phase liquid, odor, or other visual indications of impact. In such instance, it may be acceptable to discharge such water to the ground surface on-site with prior NYSDEC approval. Generated water exhibiting signs of impact will not be recharged back to the land surface or subsurface of the site, but will be managed off-site. Impacted water will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations.

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-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the Decision Document. Where present, the demarcation layer will be replaced to provide a visual reference to the top of the ‘Remaining Contamination Zone’, the

zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site Management Plan. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the 'Remaining Contamination.' A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

A-10 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 SMP prior to receipt at the site. Off-Site borrow areas will be documented as having no evidence of disposal or release of solid or hazardous wastes, hazardous or toxic substances, radioactive materials, or petroleum products. 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 and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 6. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil 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.

Sampling of imported soil shall be conducted at a rate of one representative composite sample per source for virgin soil, and one composite sample per 500 cubic yards of material for non-virgin soil. If more than 1,000 cubic yards of soil are obtained from a given off-Site non-virgin soil source area, the sample collection frequency will be reduced to one composite sample for every 2,500 cubic yards. For sources greater than 5,000 cubic yards, the sampling frequency may be reduced further to one sample per 5,000 cubic yards. All samples will be analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and PCBs, as well as arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. The soil may not exceed any standards listed in Table 6.

Fill materials other than clean top soil and virgin stone products must also be screened for gamma radiation using a Ludlum model #2221 scaler with a #44-10 probe (or equivalent). No fill material exhibiting gamma radiation levels above 10,000 CPM will be imported to 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-11 STORMWATER POLLUTION PREVENTION

For larger excavations, procedures for stormwater pollution prevention should be specified. For construction projects exceeding 1 acre, a separate submission to NYSDEC will be required (i.e., State Pollution Discharge Elimination System (SPDES) Permit for Stormwater Pollution Prevention during construction activities.)

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 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 SMP 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-12 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 radiological screening of the work area can be performed, and until sufficient equipment is mobilized to address the condition.

Radiological screening will be conducted by a qualified environmental professional using a Ludlum model #2221 scaler with a #44-10 probe (or equivalent). Should radiation levels exceeding

10,000 CPM be detected, the contamination must be addressed using the procedures for Class 3 or Class 4 materials described in Sections A-3 through A-6 of this plan.

Sampling will also 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 full 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 reports prepared pursuant to Section 5 of the SMP.

A-13 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan (CAMP) requires real-time monitoring for VOCs and particulates (i.e., dust) at the Site property boundary downwind of each designated work area when intrusive and certain non-intrusive activities are in progress at contaminated sites. All monitoring will be conducted in accordance with the Site-Specific CAMP submitted to the NYSDEC as part of the March 2013 Remedial Action Work Plan (Appendix D). Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

A-14 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 will include screening excavated soils with a PID and storage of soils with PID readings in excess of 100 ppm beneath tarps or possibly within an enclosed container. 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 property owner'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-15 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-16 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.

LaBella Associates, D.P.C.
300 Pearl Street, Suite 130
Buffalo, New York 14202

Appendix C

Health and Safety Plan

Site Health and Safety Plan

Location:

Covanta Niagara Rail-to-Truck Intermodal Facility
139 47th Street
Niagara Falls, New York

Prepared For:

Covanta Niagara I, LLC
100 Energy Boulevard at 56th Street
Niagara Falls, New York 14304

Table of Contents

Page

SITE HEALTH AND SAFETY PLAN

Project Title: Covanta RTIF Site

Project Location (Site): 139 47th Street, Niagara Falls, New York

Site Management Activity: _____

SMP Activity-Specific HASP Prepared By: _____

Plan Submittal Date: _____

Plan Review Date: _____

Plan Approval Date: _____

Plan Approved By: _____

Site Safety Supervisor: _____

Site Contact: _____

Project Manager: _____

Proposed Date(s) of Field Activities: _____

Site Conditions: Rail-to-Truck Intermodal Facility Site encompassing approximately 15 acres

Air Monitoring Provided By: _____

Site Control Provided By: _____

EMERGENCY CONTACTS

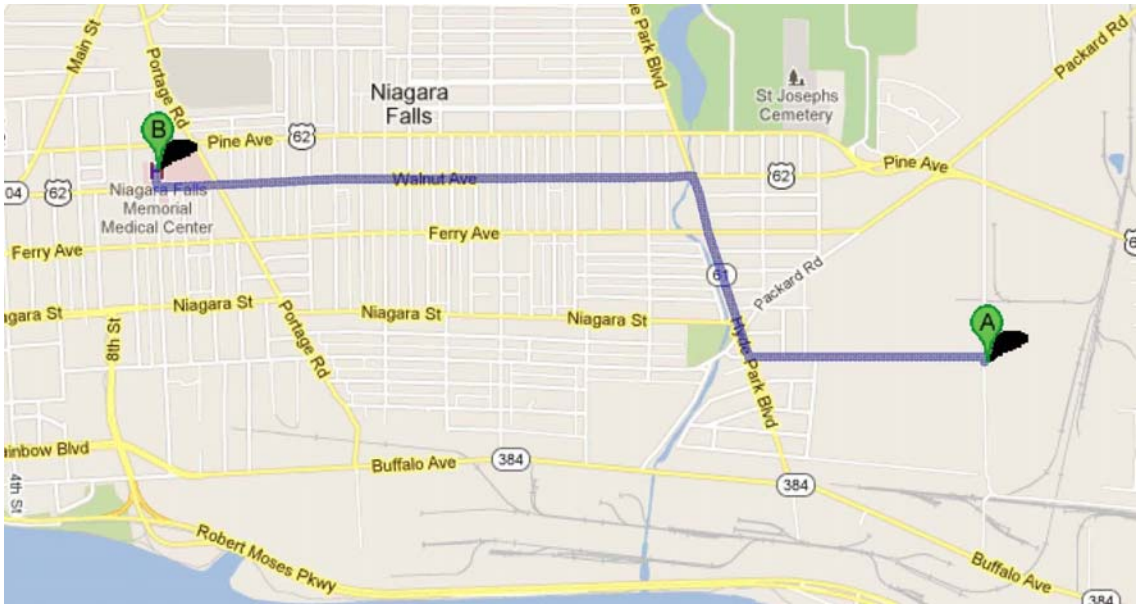
	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Niagara Falls Memorial Medical Center	716-278.4569
Poison Control Center:	National Poison Control Center (serving Niagara Falls Area)	800-222-1222
Police (local, state):	Niagara Falls Police	911
Fire Department:	Niagara Falls Fire Department	911
Site Contact:	Kevin O'Neil (Covanta Niagara, L.P.)	Direct: 716-278-8548 Cell: 716-818-0986
Agency Contact:	Greg Sutton (NYSDEC)	716-851-7220
Project Manager:	_____	Direct: _____ Cell: _____
Site Safety Supervisor:	_____	Direct:_____ Cell:_____
Radiation Project Manager:	_____	Direct:_____ Cell:_____
Radiation Site Supervisor:	_____	Direct:_____ Cell:_____

MAP AND DIRECTIONS TO THE MEDICAL FACILITY: NIAGARA FALLS MEMORIAL HOSPITAL

A 137 47th St, Niagara Falls, NY 14304

1.	Head **north** on **47th St** toward **Royal Ave**	go 72 ft total 72 ft
2.	Take the 1st left onto **Royal Ave** About 2 mins	go 0.6 mi total 0.6 mi
3.	Take the 3rd right onto **Hyde Park Blvd** About 2 mins	go 0.5 mi total 1.1 mi
4.	Turn left onto **Walnut Ave** About 4 mins	go 1.4 mi total 2.5 mi
5.	Turn right onto **10th St** Destination will be on the right	go 256 ft total 2.5 mi

B **Niagara Falls Memorial Medical Center**
621 10th Street, Niagara Falls, NY 14301



1.0 Introduction

The purpose of this Health and Safety Plan (HASP) is to provide guidelines for responding to potential health and safety issues that may be encountered during field activities relating to the implementation of the Site Management Plan (SMP) at the Covanta Rail-to-Truck Intermodal (RTIF) Site located at 139 47th Street in the City of Niagara Falls, Niagara County, New York. This document's project specifications and the Site-Specific Community Air Monitoring Plan are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP were developed in general accordance with 29 CFR 1910 and 29 CFR 1926 and do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body. Furthermore, should the nature of the field activities and/or the site conditions warrant modifications or additions to this HASP, an addendum shall be prepared and issued by a qualified health and safety professional.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is only applicable to the activities of persons involved with site work that breaches the site cover system or reduces the thickness of the site cover system to less than 1-foot. It is the responsibility of said persons to follow the requirements of this HASP, and all applicable safety procedures. The Project Manager shall implement the provisions of this HASP for the duration of the applicable activities.

3.0 Activities Covered

The activities covered under this HASP are limited to the following:

- Excavation of, or modifications to the site cover system that result in the temporary reduction of the cover system thickness to less than 1-foot
- Excavation that penetrates the cover system and exposes and/or disturbs contaminated industrial fill that remains on the site
- Management of excavated contaminated fill/soil
- Management of impacted groundwater, surface water, and excavation water
- Environmental monitoring/sampling associated with any of the preceding activities

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that may be encountered at the project site and some actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and his or her instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trains, hoists, trucks, loaders, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A hard hat, safety glasses and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavations can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches. Excavations that require working within the excavation will require air monitoring in the breathing zone (refer to Section 9.0).

Excavations left open create a fall hazard which can cause injury or death.

Protective Action:
Personnel must receive approval from the Project Manager to enter an excavation for any reason. Subsequently, approved personnel are to receive authorization for entry from the Site Safety Officer. Approved personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped or shored. Additional personal protective equipment may be required based on the air monitoring.

Personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable. The contractor will be responsible to ensure that all excavations are left in a safe condition.

Fencing and/or barriers accompanied by "caution – open excavation" signs should be placed around all excavations when left open for any period of time when work is not being conducted.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation or construction work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the Project Manager. Serious injuries are to be reported immediately to the Site Safety Officer.

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Volatile organic vapors from petroleum products, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring (refer to Section 9.0 and to the Site-Specific Community Air Monitoring Plan in Appendix D of the Alternatives Analysis Report and Remedial Action Work Plan (AAR/RAWP) of the work area will be performed at least every 60 minutes or more often using a Photoionization Detector (PID). Personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period. In the event that sustained total volatile organic compound (VOC) readings of 25 ppm are encountered, personnel should upgrade personal protective equipment to Level C (refer to Section 8.0) and an Exclusion Zone should be established around the work area to limit and monitor access to this area (refer to Section 6.0).

5.5 Injuries Due to Extreme Hot or Cold Weather Conditions

Potential Hazards:
Extreme hot weather conditions can cause heat exhaustion, heat stress and heat stroke or extreme cold weather conditions can cause hypothermia.

Protective Action:
Precaution measures should be taken such as dress appropriately for the weather conditions and drink plenty of fluid. If personnel should suffer from any of the above conditions, proper techniques should be taken to cool down or heat up the body and taken to the nearest hospital if needed.

5.6 Potential Exposure to Radiation

Potential Hazards:
During ground intrusive activities (e.g., excavating or drilling), fill containing Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) slag may be encountered. Additionally, on-site workers may be exposed to ionizing radiation.

Protective Action:
The presence of radiological impacts will be evaluated and addressed via the implementation of a monitoring and screening program. This program is discussed in the Radiological Safety Plan, which is included as Attachment 1.

6.0 Work Zones

In the event that conditions warrant establishing various work zones (i.e., based on hazards - Section 5.4), the following work zones should be established:

Exclusion Zone (EZ):

The EZ will be established in the immediate vicinity and adjacent downwind direction of site activities that elevate breathing zone VOC and/or dust concentrations to unacceptable levels based on field screening. These site activities include contaminated fill/soil excavation and management activities. If access to the site is required to accommodate non-project related personnel then an EZ will be established by constructing a barrier around the work area (yellow caution tape and/or construction fencing). The EZ barrier shall encompass the work area and any equipment staging/soil staging areas necessary to perform the associated work. The contractor(s) will be responsible for establishing the EZ and limiting access to approved personnel. Depending on the condition for establishing the EZ, access to the EZ may require adequate PPE (e.g., Level C).

Contaminant Reduction Zone (CRZ):
The CRZ will be the area where personnel entering the EZ will don proper PPE prior to entering the EZ and the area where PPE may be removed. The CRZ will also be the area where decontamination of equipment and personnel will be conducted as necessary.

7.0 Decontamination Procedures

Upon leaving the work area, approved personnel shall decontaminate footwear as needed. Under normal work conditions, detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. Personnel assigned to this project should be prepared with a change of clothing whenever on site.

Personnel will use the contractor's disposal container for disposal of PPE.

8.0 Personal Protective Equipment

Generally, site conditions at this work site require Level D or modified Level D level of protection. However, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 9.0). Descriptions of the typical safety equipment associated with Level D and Level C are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Level D PPE and full or ½-face respirator and tyvek suit (if necessary). [*Note: Organic vapor cartridges are to be changed after each 8 hours of use or more frequently.*]

9.0 Air Monitoring

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Air monitoring will consist at a minimum of the procedures described in the Site-Specific Community Air Monitoring Plan.

The Air Monitor will utilize a photoionization Detector (PID) to screen the ambient air in the work areas for total Volatile Organic Compounds (VOCs) and a DustTrak Model 8520 aerosol monitor or equivalent

for measuring particulates. Work area ambient air will generally be monitored in the work area and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes or more often using a PID and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, then either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8 hours of use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 25 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If dust concentrations exceed the upwind concentration by 150 $\mu g/m^3$ (0.15 mg/m^3) consistently for a 10 minute period within the work area or at the downwind location, then personnel may not re-enter the work area until dust concentrations in the work area decrease below 150 $\mu g/m^3$ (0.15 mg/m^3), which may be accomplished by the construction manager implementing dust control or suppression measures.

If ground intrusive activities are conducted at more than one location simultaneously, additional upwind and downwind perimeter sampling will be completed to comply with the intent of the Site-Specific Community Air Monitoring Plan.

10.0 Emergency Action Plan

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 Medical Surveillance

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 Employee Training

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the excavation and handling of contaminated soil/fill must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

Radiation safety training requirements shall be in accordance with the Radiological Safety Plan (Attachment 1).

Attachment 1
Radiological Safety Plan

Radiological Safety Plan

Location:

Covanta Niagara Rail-to-Truck Intermodal Facility
139 47th Street
Niagara Falls, New York

Prepared For:

Covanta Niagara I, LLC
100 Energy Boulevard at 56th Street
Niagara Falls, New York 14304

Table of Contents

1.0 INTRODUCTION

The presence of Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) slag within the industrial fill that underlies the cover system on portions of the Covanta Rail-to-Truck Intermodal Facility (RTIF) Site has been documented. The slag is reportedly derived from the processing of phosphorous ores and contains elements of uranium, thorium and radium. The TENORM slag is currently overlain by engineering controls in the form of the site cover system. A gamma radiation survey completed after the installation of the site cover system determined that radiation levels above the cover system are at or below typical background levels in the area and that no unacceptable exposure threat is associated with the presence of the TENORM slag in its current subsurface setting. However, should future maintenance or construction activities on the site breach the cover system or reduce its thickness to less than 1-foot, the TENORM slag may be encountered or exposed.

The purpose of this document is to prescribe the methodologies to be employed to protect all workers, members of the public, and the environment from radiation exposure and radiological contamination as a consequence of activities that could expose or disturb the TENORM slag (i.e., excavation, handling, storage, and shipment of TENORM slag). Effective training, radiological monitoring, risk communication, access controls, engineering controls, and oversight of operations will be the primary means of achieving this objective.

An experienced and appropriately licensed radiation safety consultant shall be responsible for overseeing the implementation of this plan and for ensuring that all radiological actions are conducted in compliance with applicable radiological regulations. Said radiation safety consultant shall provide on-site personnel to monitor and facilitate the identification and safe and effective management of any TENORM slag encountered during Site Management Plan implementation. The radiation safety consultant shall also provide consultative support and management oversight of any radiological operations.

2.0 RADIOLOGICAL MATERIALS LICENSE

Should the excavation, segregation, handling, staging, and shipment of TENORM slag be required in conjunction with Site Management activities, such activities will be performed under the auspices of a New York State Radioactive Materials License. As such, the final decisions related to compliance with radiological regulations, and measures taken to protect workers, the public, and the environment, will lie with the licensee.

3.0 ORGANIZATION AND RESPONSIBILITY FOR RADIATION SAFETY

The radiation safety consultant shall be responsible for the oversight and management of activities that have the potential to encounter TENORM slag and shall specifically oversee the identification, disturbance and/or excavation of TENORM slag on the RTIF site. The roles and responsibilities of the radiological consultant team are as follows:

3.1 Radiological Project Manager

- Bears overall responsibility for radiation safety, licensed activities and compliance with applicable radiological regulations and license specific requirements, as well as the effective identification, segregation and storage or shielding of TENORM slag;
- Preparing radiological work plans and subsidiary documents;
- Ensuring that the radiological components of the work plan and subsidiary documents are performed in accordance with the methods and procedures specified therein;
- Providing the necessary oversight and on-site radiological personnel;
- Ensuring the proper radiological safety measures are implemented;
- Ensuring that all radiological screening is performed in accordance with acceptable methods;
- Ensuring that all workers, the public and the environment are safe from radiation risks posed by site operations;
- Providing radiological training to all site personnel directly involved in the excavation, handling and management of TENORM slag commensurate with the level and type of radiological materials encountered and the specific physical actions they perform;
- Coordinating transport and off-site disposal of TENORM slag as needed in accordance with applicable regulations; and,
- Reviewing and documenting any radiation exposure incidents and eliminating any unsafe conditions.

The name and qualifications of the individual assigned to the role of Radiological Project Manager, and the consultant organization and radioactive materials license shall be provided to the NYSDEC and NYSDOH prior to the start of any applicable Site Management activities.

3.2 Radiological Site Supervisor

The Radiological Site Supervisor will be responsible for the following:

- Coordinating and managing the activities of the Radiological Technicians;
- Reporting to the Radiological Project Manager and coordinating with the Site Safety Officer and the Site Construction Manager on a daily basis;
- Ensuring that TENORM slag staging areas are properly constructed and managed, and that access is limited to authorized personnel;
- Developing and implementing corrective actions when necessary in consultation with the Radiological Project Manager, Site Safety Officer and Site Construction Manager; and,
- Identifying and documenting and radiation exposure incidents and working with the Radiological Project Manager to eliminate any unsafe radiological conditions.

The Radiological Site Supervisor is not required to be present during all activities involving TENORM slag. However, the Radiological Site Supervisor, Radiological Project Manager or other suitable individuals from within the radiation consultant organization shall be available for consultation at all times.

3.3 Radiation Technicians

A Radiation Technician will be on-site during all excavation activities conducted below the site cover system in areas where industrial fill remains on the site. The Radiation Technician will be responsible for the following:

- Screening the area planned for excavation;
- Screening the industrial fill material with an appropriate radiation meter and identifying TENORM materials for the excavator operator;
- Ensuring that TENORM is properly shielded or removed and placed within the designated staging area;
- Conducting radiological surveys of potentially impacted equipment, materials, vehicles and personnel;
- Overseeing decontamination activities;
- Collecting samples as directed by the Radiological Site Supervisor;
- Documenting all daily on-site tasks as required by subsidiary documents, regulations or license conditions;
- Performing and documenting daily radiation instrument calibration and performance checks;
- Ensuring that all personnel follow prescribed radiological controls and requirements; and,
- Reporting to the Radiological Site Supervisor.

All site workers and project managers have a mutual responsibility to follow all applicable radiological regulations, license requirements, and project specific plans and procedures instituted for the purpose of radiological protection, as well as operational directions by the radiation monitoring personnel. Any worker, who perceives that any action or potential action is potentially not in compliance with such, bears a responsibility to bring the issue to the attention of the Radiological Project Manager so that it may be properly and promptly resolved.

4.0 RADIOLOGICAL SAFETY TRAINING

All workers who will directly participate in the excavation, handling, storage, and stockpiling of TENORM will receive at a minimum "awareness level" radiological training, as well as on the job training and oversight from the radiological consultant staff. This will include but not be limited to the specific nature of the TENORM, safe handling precautions, emergency procedures, access controls and posting, and "Instructions to workers" requirements of NYS Code Rule 38.

5.0 ALARA COMMITMENT AND PROGRAM

All parties involved in TENORM identification, excavation and management shall make a written commitment to the ALARA Principal, to keep radiation exposures As Low As Reasonably Achievable. A continuing effort is required to maintain this commitment by developing and implementing improvements to work procedures and work performance.

Individual work procedures shall specify applicable actions (e.g., use of temporary shielding, removal of equipment from radiation areas, etc.) to be used to minimize radiation exposure while working.

Supervisory personnel and radiological safety personnel shall ensure that workers are not lingering unnecessarily in radiation areas.

A pre-job ALARA briefing shall be held prior to beginning work to ensure that all personnel understand the task, radiological conditions and radiological controls.

6.0 SITE SPECIFIC RADIOLOGICAL RISK ASSESSMENT

The following presents an assessment of the potential radiological hazards that could reasonably be expected to be encountered during execution of applicable Site Management activities:

6.1 External Radiation Exposure Hazards

External Radiation Exposure is the absorption of radiation resulting from being in proximity to the TENORM. The level of exposure is determined by the intensity of the radiation, distance from the source of radiation, and time spent in proximity to the source of radiation. It may be reduced by interposing a shielding material between the source and the person.

The TENORM contains low concentrations of isotopes of Uranium, Thorium, and Radium, and their respective progeny. Based on dosimetry results for workers involved with the remediation and construction of the RTIF on this site, the external exposure hazard will be extremely low. Exposure rates that are indistinguishable from background values are anticipated. Dosimetry results for workers engaged in previous TENORM slag removal activities on the RTIF site and adjacent rail corridor have demonstrated exposures well below occupational limits established by the Nuclear Regulatory Commission (NRC) and the New York State Department of Health.

6.2 Internal Radiation

Internal radiation exposure results when radiation is absorbed from radioactive materials that have been taken into the body (internalized). The primary pathways for radioactive materials to be taken into the body are through inhalation, ingestion, absorption through the skin, or entry through wounds and breaks in the skin. Inhalation of radioactivity can result when radioactivity becomes suspended in the air, such as by the creation of contaminated dust. Ingestion can result from surface contamination, such as when a worker's hands come in contact with radioactive material and the worker subsequently handles his or her food, or beverage, without first washing them. Internal exposure can also result if radioactive materials are absorbed through the skin or gain entry through uncovered breaks in the skin.

Since the radiation levels in the TENORM are low, this hazard can also be easily mitigated. Moreover, because of the physical properties of the TENORM slag, it does not readily become airborne, and the probability of respirable particles is extremely low. This is supported by radiological air monitoring conducted continuously on the site during the removal of TENORM slag and site-wide grading operations prior to construction of the RTIF, which did not find detectable concentrations of airborne radioactive particulates.

Of the two, exposure risks (Internal and External), the primary objective of the project radiation protection actions will be the prevention of internal exposure, primarily through inhalation and ingestion.

7.0 SITE PREPARATION AND ENGINEERING CONTROLS

The site set up and engineering controls will contribute to minimizing potential radiation exposures to workers and the public.

This will include:

- Reliance upon existing site security and perimeter fencing to effectively restrict public access to the site;
- Access control over areas designated as restricted for the purpose of mitigation of radiological contamination;
- Use of covers such as tarps over the TENORM when it is being conveyed from the point of excavation to the point of staging, and while stockpiled;
- Appropriately berming and/or sloping staging areas to divert water run-on and run-off around stockpile areas; and,
- Suppressing potentially contaminated dusts by wetting the TENORM when appropriate.

8.0 RADIOLOGICAL PROTECTION STRATEGIES AND METHODOLOGIES

Radiological protection will be achieved by employing the methods listed and further described below:

- Monitoring with appropriate instrumentation to frequently assess radiological conditions;
- Effectively identifying materials that are in fact TENORM;
- Wearing appropriate PPE to prevent worker contamination and the spread of contamination to uncontrolled areas;
- Personal hygiene;
- Suppressing potentially contaminated dusts;
- Maintaining effective contamination and exposure control zones as appropriate;
- Minimizing time spent in proximity to and handling TENORM;

- Using barriers such as tarps over stockpiles and plastic lining of TENORM conveyance containers or vehicles to prevent the uncontrolled spread of the TENORM; and,
- Equipment monitoring and decontamination.

8.1 Radiological Instrumentation

The primary instrument to be used to monitor for the presence of TENORM will be a scaler/rate meter coupled with a 2-inch Nai scintillation detector. This will detect gamma radiation emanating from the TENORM. In addition, Micro R meters will be used to measure and document the ambient external radiation exposure levels.

For purposes of contamination evaluation, the most appropriate instrument may be the 2-inch scintillation detector, a large cross section alpha/beta scintillation detector, or both, depending on the geometry and other physical characteristics of the objects or materials being surveyed. In some situations, a pancake Geiger Mueller (GM) detector may be appropriate, but it will not typically be the optimal choice. The appropriate instruments will be selected on a case by case basis by the radiological safety consultant.

Wipe samples can be collected when necessary to evaluate removable contamination levels. This would not be necessary when direct instrument readings demonstrate that total contamination levels are below the fixed contamination action level. These can be pre-screened with field instruments and, if necessary, counted at using an alpha/beta smear counter.

8.2 Occupational Monitoring

NRC and NYSDOH regulations require dosimetry monitoring of personnel at 10% of the occupational limit (5,000 mRem/yr). Based upon the doses measured at the RTIF site during the remediation and construction phases (24 mRem/yr), occupational monitoring (dosimetry) of site workers is not required for the anticipated Site Management activities.

8.3 Identifying TENORM materials

The 2-inch scintillation detector will also be the primary tool to identify TENORM-containing materials, guided by the established 10,000 CPM guidance level. Once a layer or pocket has been identified, visual methods may be used to delineate TENORM from non-contaminated materials. This will increase excavation productivity, thus reducing external exposures consistent with the ALARA principal.

8.4 Personal Protective Equipment (PPE)

Based on prior experience with TENORM of the type anticipated, typical PPE is anticipated to be normal construction work site wear such as hard hat, shirt, pants, work gloves, and work boots. Use of respiratory protective equipment is not anticipated. In some circumstances it is conceivable that the use of protective coveralls (Tyvek or similar)

and/or waterproof boots could be appropriate, but this would be the exception, not the rule. Such use would be determined on a case by case basis by radiation safety consultant personnel and must be consistent with the requirements of the health and safety plan that will be in place to protect workers for the aspect of the work associated with the chemically-impacted soil.

8.5 Personal Hygiene

Following personal hygiene rules is critical to minimize the potential for internal radiation exposure. This will include most importantly, a requirement to wash hands when there has been a potential for direct or indirect physical contact with the TENORM. This will be required before eating, drinking, smoking, or chewing. These activities are prohibited in the TENORM work areas, and food, beverages, tobacco, and gum, must not be taken into TENORM areas. Open wounds on exposed areas of skin will be covered to prevent TENORM contamination.

8.6 Dust Suppression

The suppression of dust potentially containing TENORM is an important strategy for preventing the inhalation of airborne TENORM. Keeping the TENORM moist during disturbance operations is required. This includes excavation, loading and unloading operations, and on-site transit of the materials. In general, the TENORM will be encountered at a sufficient depth that the material will be inherently moist during initial excavation. In addition, if the TENORM is as typically encountered (e.g., rocky consistency without visible co-mingled dust), dust suppression may not be necessary. This will be determined based on assessment by the radiological consultant. When in doubt, dust suppression will be employed and will consist of an appropriate combination of barriers (e.g., tarps/plastic), and wetting.

Covers may typically include plastic tarps or durable polyethylene plastic sheeting that will be placed securely over TENORM while in transit at the work site and over temporary stockpiles. This would include materials within the designated staging area and temporary lay down areas at or near points of excavation when not actively excavating, if presumed contaminated dust is visibly blowing from the pile.

8.7 Contamination and Exposure Control Zones

Contamination and exposure control zones will be established with guidance from the radiological consultant. It is not anticipated that such zones will require posting as "Radiation Areas", "Radioactive Materials Areas", or "Airborne Radioactivity Areas" as defined by NYS Industrial Code Rule 38. However, temporary areas (such as points of excavation) shall be marked using caution tape or similar, direct surveillance, or a combination thereof. More permanent areas such as TENORM stockpiles shall be demarcated with visible signage indicating "Authorized Personnel Only" or similar and caution tape.

8.8 Minimizing Time in Proximity to TENORM

In order to meet ALARA requirements, time spent in proximity to the TENORM will be minimized to the extent practicable. Workers not actively engaged in project activities will be advised not to linger in proximity to TENORM. Planning discussions will be conducted outside of exposure control zones. Stockpiles will be established in a location reasonably remote from operational areas.

8.9 Limiting the Spread of Contamination

Many of the aforementioned practices will limit the spread of contamination. These include dust suppression, use of tarps to cover TENORM, plastic lining of TENORM conveyance containers or vehicles, hand washing, and the establishment of contamination control zones. In furtherance of this objective, the use or tarps or plywood, or similar, will be utilized for temporary lay down zones.

In addition, effective monitoring and decontamination of equipment and tools as described below will further reduce the potential for the spread of contamination.

8.10 Monitoring and Decontamination of Equipment and Tools

Equipment such as excavators, trucks, storage containers, etc., and tools such as shovels will be monitored for contamination to determine whether there has been potential contact with TENORM.

Any detectable contamination will be removed consistent with ALARA. It is anticipated that generally detectable contamination will also be visible, due to the dilute levels of radioactivity in the TENORM. Minimally invasive mechanical means such as gentle scraping will be employed to achieve decontamination. Wetting the contamination first will eliminate the potential for creating airborne TENORM.

If necessary, more invasive methods of decontamination may be required such as pressure washing. (This action would require additional PPE). To the extent practical, such decontamination actions should be performed within immediate proximity to the TENORM zone (for example the point of excavation) so that the limited amount of decontamination water can be allowed to remain within the existing excavation zone.

8.11 Air Sampling

As previously noted, radiological air monitoring conducted continuously on the site during the removal of TENORM slag and site-wide grading operations prior to construction of the RTIF did not find detectable concentrations of airborne radioactive particulates. Therefore, air sampling will not be performed for Site Management-related excavation activities.

9.0 ENVIRONMENTAL AND PUBLIC SAFETY CONSIDERATIONS

Many of the measures that will be taken to protect site workers such as dust suppression, contamination monitoring and control, proper construction and maintenance of stockpiles, etc. will inherently also protect the environment and the public. For example:

- Covering TENORM stockpiles, and diversion of surface water around them, will prevent rainwater intrusion and hence contaminated run-off as well as wind borne contamination;
- Minimizing decontamination water and allowing it to run into TENORM excavation zones will prevent the spread of contamination; and,
- Surveying equipment prior to unrestricted release will prevent TENORM from inadvertently leaving the site.

In addition, it should be noted, that the RTIF site is surrounded by industrial properties and is located over 1,100-feet from the nearest residential properties. Therefore, the distance from excavation and staging areas to public areas will significantly reduce the potential for off-site radiological impacts.

10.0 EMERGENCY ACTIONS AND PROCEDURES

One credible emergency involving TENORM slag has been identified, which is illness or injury to a worker within a TENORM environment. In consideration of the types and levels of contamination present, response to the event should be driven by medical necessity without hindrance by radiological concerns or methodologies. More specifically:

- No special decontamination procedures are required before medical transport or treatment on site, or at the hospital;
- No radiological PPE is required for emergency responders; and,
- For suspected heat stroke or dehydration, water should be immediately administered to the victim.

These points shall be stressed during training.

The site specific HASP shall be amended to include the contact information for the Radiological Project Manager and Site Supervisor

Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential
Acetone	750	500	NA	2.15	13.2	20,000	Sweet	4.58	9.69
Anthracene	0.2	0.2	NA	NA	NA	NA	Faint aromatic	NA	NA
Benzene	1	0.5	5	1.3	7.9	3000	Pleasant	8.65	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.1	NA	NA	NA	700	NA	NA	NA
Benzo (a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	10.88
Carbon Disulfide	20	1	NA	1.3	50	500	Odorless or strong garlic type	0.096	10.07
Chlorobenzene	75	10	NA	1.3	9.6	2,400	Faint almond	0.741	9.07
Chloroform	50	2	NA	NA	NA	1,000	ethereal odor	11.7	11.42
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene	200	200	NA	9.7	12.8	400	Acrid	NA	9.65
1,2-Dichlorobenzene	50	25	NA	2.2	9.2		Pleasant		9.07
Ethylbenzene	100	100	NA	1	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	500	50	NA	12	23	5,000	Chloroform-like	10.2	11.35
Naphthalene	10, Skin	10	NA	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	NA	NA	NA	NA	NA	NA	Sweet	NA	NA
Toluene	100	100	NA	0.9	9.5	2,000	Sweet	2.1	8.82
Trichloroethylene	100	50	NA	8	12.5	1,000	Chloroform	1.36	9.45
1,2,4-Trimethylbenzene	NA	25	NA	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	NA	Distinct	2.4	NA
Vinyl Chloride	1	1	NA	NA	NA	NA	NA	NA	NA
Xylenes (o,m,p)	100	100	NA	1	7	1,000	Sweet	1.1	8.56
Metals									
Arsenic	0.01	0.2	NA	NA	NA	100, Ca	Almond	NA	NA
Cadmium	0.2	0.5	NA	NA	NA	NA	NA	NA	NA
Chromium	1	0.5	NA	NA	NA	NA	NA	NA	NA
Lead	0.05	0.15	NA	NA	NA	700	NA	NA	NA
Mercury	0.05	0.05	NA	NA	NA	28	Odorless	NA	NA
Selenium	0.2	0.02	NA	NA	NA	Unknown	NA	NA	NA
Other									
Asbestos	0.1 (f/cc)	NA	1.0 (f/cc)	NA	NA	NA	NA	NA	NA

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

Notes:
1. All values are given in parts per million (PPM) unless otherwise indicated.
2. Ca = Possible Human Carcinogen, no IDLH information.

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Appendix D

Community Air Monitoring Plan

Site-Specific Community Air Monitoring Plan

Location:

Covanta Niagara Rail-to-Truck Intermodal Facility
139 47th Street
Niagara Falls, New York

Prepared For:

Covanta Niagara I, LLC
100 Energy Boulevard at 56th Street
Niagara Falls, New York 14304

Table of Contents

1.0 Introduction

The purpose of this Site-Specific Community Air Monitoring Plan (SSCAMP) 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 work involving the disturbance of the site cover system and/or the exposure or excavation of residual contamination beneath the site cover system at the Site located at 139 47th Street in the City of Niagara Falls, Niagara County, New York. This SSCAMP is not intended for use in establishing action levels for worker respiratory protection.

This SSCAMP 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 the Site that disturb the established Site Cover and/or expose or disturb contaminated fill materials that remain under the cover system. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the SSCAMP will help to confirm that work activities have not spread contamination off-site through the air.

2.0 Responsibilities

This SSCAMP is applicable to any disturbances of the site cover system or underlying contaminated fill material conducted by contractors, engineers, consultants, facility employees, and their authorized visitors. The Owner or Owner's representative shall implement the provisions of this SSCAMP for the duration of any such disturbance activities. It is the responsibility of all workers associated with such disturbance activities to follow the requirements of this SSCAMP, and all applicable air safety procedures.

3.0 Activities Covered

The disturbance activities covered under this SSCAMP include the following:

- Environmental monitoring;
- Management of excavated soil and/or fill;
- Management of excavation water; and,
- Re-installation of engineering controls (i.e., site cover).

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control.

5.0 Volatile Organic Compound Monitoring

Monitoring for volatile organic compounds (VOCs) will be implemented in accordance with the New York State Department of Health Generic Community Air Monitoring Plan, which is included in Attachment 1.

6.0 Particulate Monitoring

Monitoring for dust will be implemented in accordance with the New York State Department of Health Generic Community Air Monitoring Plan (Attachment 1) as well as NYSDEC's Fugitive Dust and Particulate Monitoring (Attachment 2).

7.0 Radiological Monitoring

Radiological air monitoring was conducted throughout the course of the site remediation and RTIF construction activities completed at the Site in 2014 and 2015. Site remediation activities included the removal of radiological hot spot areas containing Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) slag. During the course of the remediation and construction phases of the project, approximately 8,916 tons of TENORM slag was excavated and removed from the site. No detectable concentrations of airborne radioactive particulates were measured over the course of the air monitoring program, which spanned approximately 35 weeks of remediation and infrastructure construction activities. Based upon the documented absence of airborne radioactive particulate risks during extensive disturbance and excavation of the TENORM slag present on the site, radiological air monitoring during Site Management activities is not warranted.

Attachment 1
NYSDOH Community
Air Monitoring Plan

Appendix 1
New York State Department of Health
Generic 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.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

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. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

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.

VOC Monitoring, Response Levels, and Actions

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. 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/m^3 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.

December 2009

Attachment 2
NYSDEC Fugitive Dust and Particulate Monitoring Plan

Appendix 2
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);
(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 PM10 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. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

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.

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Appendix E

Site-Wide Inspection Form

Annual Site Inspection Form

Covanta Niagara Rail-to-Truck Intermodal Facility Site
Niagara County, New York
NYSDEC Site Number: C932160

Prepared by:
Covanta Niagara I, LLC
100 Energy Boulevard at 56th Street
Niagara Falls, New York 14304

Month Year

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls (ECs). During these inspections, this form will be completed. The form will compile sufficient information to assess the following:

1. Compliance with all Institutional Controls (ICs), including site usage.
2. An evaluation of the condition and continued effectiveness of ECs.
3. General site conditions at the time of the inspection.
4. The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection.
5. Compliance with permits and schedules.
6. Confirmation that site records are up to date.

The following pages contain observations recorded during this annual inspection.

Completed by: _____ Date: _____

1. Compliance with all ICs, including site usage: **Date: _____**

SITE USAGE: Use of the Site is limited to Industrial Uses. Indicate if any other type of use is occurring at the Site.

GROUNDWATER USAGE: Use of groundwater underlying the Site is prohibited without treatment. Indicate whether groundwater use is occurring at the Site along with any treatment measures being applied.

VEGETABLE GARDENS & FARMING: Vegetable gardens and farming are prohibited at the Site. Indicate if gardening or farming is occurring at the Site.

COMPLIANCE WITH SMP: List Site activities and indicate compliance or non-compliance with SMP.

2. An evaluation of the condition and continued effectiveness of the ECs: **Date: _____**

Location	Condition (Good, Fair, Poor)	Effectiveness (As Intended vs. Needs Repair)
Concrete Slabs		
Reach Stacker Pad		
Container Storage Pad		
RTIF Building Floor Slabs		
RTIF Building Exterior Aprons		
Truck Scale Foundations		
Diesel Fueling Station Pad		
Monitoring Station Pad		
South Truck Turn-Around Pad		
Asphalt Pavement		
Clean Stone Cover		
Storm Water Overflow Basin		
Rail Yard		
Clean Soil Cover		
Earthen Berms		
Perimeter Green Space		

3. General site conditions at the time of the inspection: **Date: _____**

FENCING/SITE CONTROL

PAVEMENT-PARKING & INTERIOR ROADS

CONCRETE PADS

BUILDINGS

BERMS/GRASS AREAS

DRAINAGE

RAIL YARD

STONE SERVICE ROADS

STORM WATER OVERFLOW BASIN

4. The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection: **Date: _____**

Nature & Extent
Contractor(s)
Compliance with Excavation Work Plan
NYSDEC Notification Date:
NYSDEC Notification Package
Soil & Fill Screening Measures
Stockpiles
Off-Site Disposal Facility:
On-Site Re-use Criteria:
Fluid Management

Compliance with Excavation Work Plan (Continued)
Cover System Restoration
SWPP
CAMP
Dust Control
Odor Control
Confirmatory Sampling
Field Methods (COC)
Lab Methods
HASP Compliance
PPE

5. Compliance with permits and schedules: **Date: _____**

LIST REQUIRED PERMITS AND DATES OBTAINED

SCHEDULE REQUIREMENTS

6. Confirm that site records are up to date: **Date: _____**