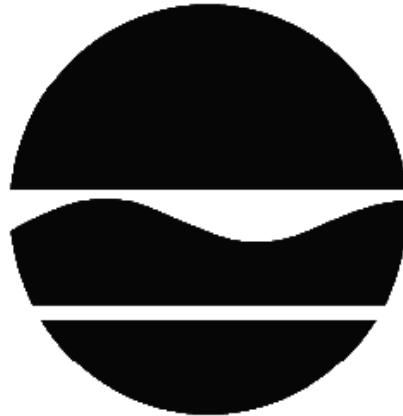


PROPOSED DECISION DOCUMENT

1501 College Avenue Site
Brownfield Cleanup Program
Niagara Falls, Niagara County
Site No. C932134
November 2012



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

PROPOSED DECISION DOCUMENT

1501 College Avenue Site
Niagara Falls, Niagara County
Site No. C932134
November 2012

SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of contaminants at the site resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or alternative analysis (AA). The IRMs undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy proposed by this Proposed Decision Document (PDD). A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for the site. This PDD identifies the IRM(s) conducted and discusses the basis for No Further Action.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repositories identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all Proposed Decision Documents. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repositories:

Niagara Falls Public Library
Attn: Reference Department
Earl W Bridges Building
1425 Main St
Niagara Falls, NY 14305
Phone: 716-286-4881

Doris Jones Family Resource Center
3001 9th Street
Niagara Falls, NY 14305
Phone: 716-285-5374

A public comment period has been set from:

11/8/2012 to 12/22/2012

Written comments may be sent through 12/20/2012 to:

Michael Hinton
NYS Department of Environmental Conservation
Division of Environmental Remediation
270 Michigan Ave
Buffalo, NY 14203-2915
mjhinton@gw.dec.state.ny.us

The proposed remedy may be modified based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

This 12.25 acre BCP site is located in the north end of the City of Niagara Falls. It is situated in a generally industrialized area. The BCP site is bounded by College Avenue to the north, with a private access road along the western property boundary, and vacant industrial-use properties to the east and south. Industrial and commercial buildings are present to the north, south, and west of the site. The project site is located within a Federal Renewal Community Zone, a New York State Empire Zone, a New York State Environmental Zone, and is in a highly distressed area as defined under New York State General Municipal Law.

Site Features:

This site consists of the majority of the former Union Carbide facility located at 1501 College Avenue, Niagara Falls, Niagara County. It once consisted of several large abandoned manufacturing buildings and had been the site of illegal vehicle stripping and dumping. The abandoned manufacturing buildings have been removed.

Current Zoning/Use:

The site is currently inactive and is zoned for industrial use. The surrounding land use is mixed and includes industrial, commercial and public use parcels. The nearest residential properties are located approximately 650 feet to the southwest. The intended future use of this site is for industrial purposes.

History:

Union Carbide operated the site as a manufacturing facility from 1910-1986. Products that were manufactured included specialty machined graphite, carbon liners, cathode blocks, and furnace electrodes. After 1986, the site was operated by Niagara Vest Corporation. This site is also adjacent to the Hazorb site - which had an EPA removal action performed in 2003 to dispose of building materials with PCBs.

Site Geology and Hydrogeology:

The geology at the site was investigated during the RI and is generally described as fill materials overlying native brown/reddish-brown silty clay. The fill material consists of silt, sand, and gravel with varying amounts of slag, metal and cinder-like materials at depths ranging from surface to 10' below ground surface. The native materials consist of clay with varying amounts of slag and gravel to depths up to 24 feet below ground surface. The bedrock surface is up to 24 feet below ground surface and consists of carbonate rock and shale that are nearly impermeable as a homogeneous rock. However, due to regional tectonic stresses the bedrock is vertically and horizontally fractured providing openings for the storage and transmission of groundwater. Based on groundwater measurements taken during the RI from monitoring wells installed during the investigation, localized groundwater flow was determined to be west/north west at a depth of approximately 9.3 feet below ground surface.

The site is being managed as a single operable unit.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to industrial use as described in Part 375-1.8(g) is/are being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the Remedial Investigation (RI) Report.

SECTION 5: ENFORCEMENT STATUS

The BCA agreement, B9-0757-07-10, was signed on December 13, 2007 and an Amendment 1 was issued on January 31, 2011 that modified the site size/boundary along the eastern property line. The Agreement requires the implementation of a remedial program at the site.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. 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 below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

ACENAPHTHENE	PHENANTHRENE
BENZ(A)ANTHRACENE	PYRENE
BENZO(A)PYRENE	POLYCHLORINATED BIPHENYLS (PCB)
BENZO(B)FLUORANTHENE	ARSENIC
BENZO(GHI)PERYLENE	CHROMIUM
BENZO[K]FLUORANTHENE	COPPER
Chrysene	NICKEL
DIBENZ[A,H]ANTHRACENE	ZINC
DIBENZOFURAN	MERCURY
FLUORANTHENE	BENZ(A)ANTHRACENE
FLUORENE	BENZO(A)PYRENE
indeno(1,2,3-cd)pyrene	BENZO(B)FLUORANTHENE
NAPHTHALENE	Chrysene

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM - Soil/Debris/Asbestos Removal

This IRM consisted of the demolition of all existing structures and the removal of surface debris and piles of waste materials to allow for the implementation of the RI activities. The IRM also required the removal of contaminated source area surface soil identified during the RI that exceeded the Part 375 industrial soil cleanup objectives. Remaining sub-surface soils exceed Part 375 industrial SCOs and required the placement of a cover system in areas not already covered by existing concrete slabs and/or asphalt paving. As part of the IRM activities, approximately 3,620 tons of PAH contaminated soil, 411 tons of PCB contaminated soil, 153 tons of galbestos material and 1340 tons of general site debris were removed from the site and disposed at an approved facility. In addition 7 roll-offs containing miscellaneous waste and drums along with 7851 gallons of waste petroleum and 20,000 gallons of water from work zones were removed and disposed at approved facilities.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Soils contaminated with PAHs and petroleum constituents have been confirmed on site in concentrations above Part 375 Industrial soil cleanup objectives. Contaminated source area soils were removed as part of the IRM work. Sub-surface soils exceed the industrial SCOs and have been covered. A cover system of soil, concrete or asphalt exists over the entire site. The IRM field work was substantially complete on October 12, 2012.

In addition, a significant quantity of building roof and siding material (galbestos) containing high concentrations of PCBs (greater than 50,000 ppm) was found on the site. This material was removed and disposed at a permitted facility as part of the IRM building demo activities.

Some areas of the site include former sumps and vaults have been investigated and closed with fill materials. Several utility manholes remain for future use. The remaining manholes were investigated and cleaned as necessary. The remainder of the site primarily consists of 2-3 feet of fill materials over native silty clay and is contaminated with PAHs and metals that exceed the industrial SCOs. Six PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and indeno(1,2,3-cd)pyrene exceed their respective industrial

SCO with the highest individual compound detected at 580 ppm. In addition, arsenic exceeds its industrial SCO at a maximum concentration of 198 ppm. Due to the low permeability of the native soils, there is no significant overburden groundwater unit. The RI data from the on-site groundwater sampling did not indicate any significant groundwater contamination.

A site cover consisting of existing concrete slabs, asphalt paving and a composite soil cover is present over the entire site. The composite soil cover consists of a demarcation layer over the native soil and a minimum of 12 inches of acceptable soil, stone or crushed concrete. The site cover prevents any contact with the underlying fill materials.

At the request of the City of Niagara Falls as part of the planning and site re-use process, berms were required to be built around the perimeter of the site to act as a visual barrier. The berms were constructed from site soil under predetermined BUD #8 from the Division of Solid and Hazardous Materials. Site soil used for the berm were covered with a demarcation layer a minimum of 12 inches of clean soil and seeded.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

The site is partially fenced and bermed, which restricts public access. The site is vacant, the area is served by a public water supply, and environmental sampling indicates soil vapor intrusion is not a concern.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

SECTION 7: ELEMENTS OF THE PROPOSED REMEDY

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department is proposing No Further Action with the implementation of Institutional Controls (ICs) consisting of a Site Management Plan (SMP) and Environmental Easement (EE), as the proposed remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed and the institutional and engineering controls required are listed below:

1) Excavation

Site-specific soil cleanup objectives (SCOs) relevant to the planned use of the site as industrial were used to guide excavation of contaminated soils. On-site soils were excavated and transported off-site for disposal unless re-used in accordance with the pre-determined Beneficial Use Determination (BUD) No 8. The site specific SCOS are industrial SCOS for all contaminants. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) was brought in to replace the excavated soil and establish the designed grades at the site. A protective cover system consisting of existing concrete slabs, asphalt pavements or a 12" soil/stone cover was constructed over the entire site.

2) Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- Requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional controls in accordance with Part 375-1.8 (h) (3);
- Allows the use and development of the controlled property for industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- Prohibits agriculture or vegetable gardens on the controlled property; and
- Requires compliance with the Department approved SMP.

4) Site Management Plan

A Site Management Plan is required which includes the following:

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

Institutional Control – Environmental Easement

Engineering Control – Site cover system as described in Section 6.3

The SMP plan includes, but may not be limited to:

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

- Description of the provisions of the environmental easement including any land use and groundwater use restrictions;
- Provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- The steps necessary for the periodic reviews and certification of the institutional controls.

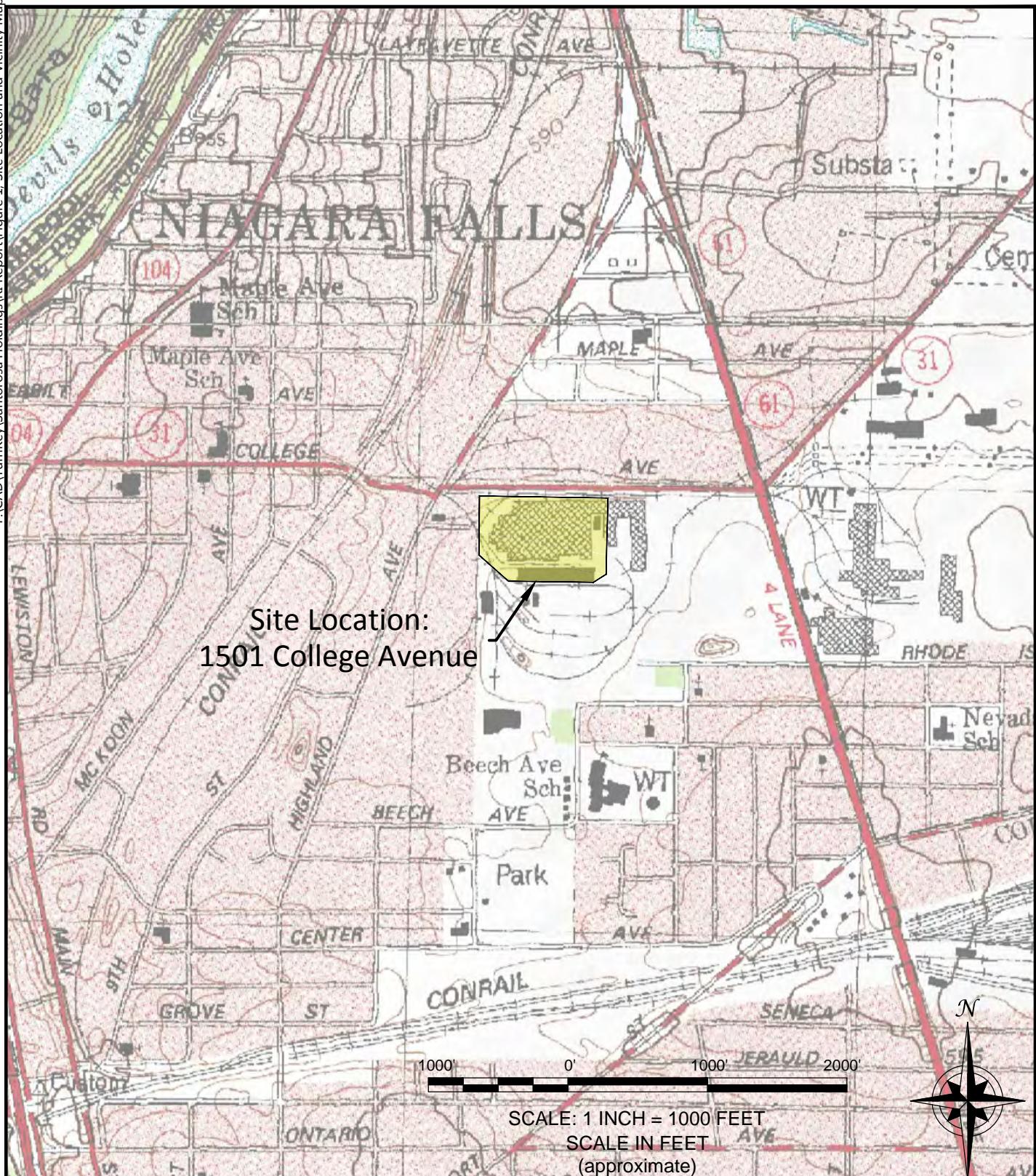
B) A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of the site groundwater to assess the performance and effectiveness of the remedy; and
- A schedule of monitoring and frequency of submittal's to the Department.

5) Cover System

A site cover currently exists and will be maintained to allow for industrial use of the site. Any site redevelopment will maintain the site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of foot of soil, meeting the SCO's for cover material as set forth in 6NYCRR Part 375-6.7(d) for industrial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetative layer. Any fill material brought into the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

FIGURE 1



2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

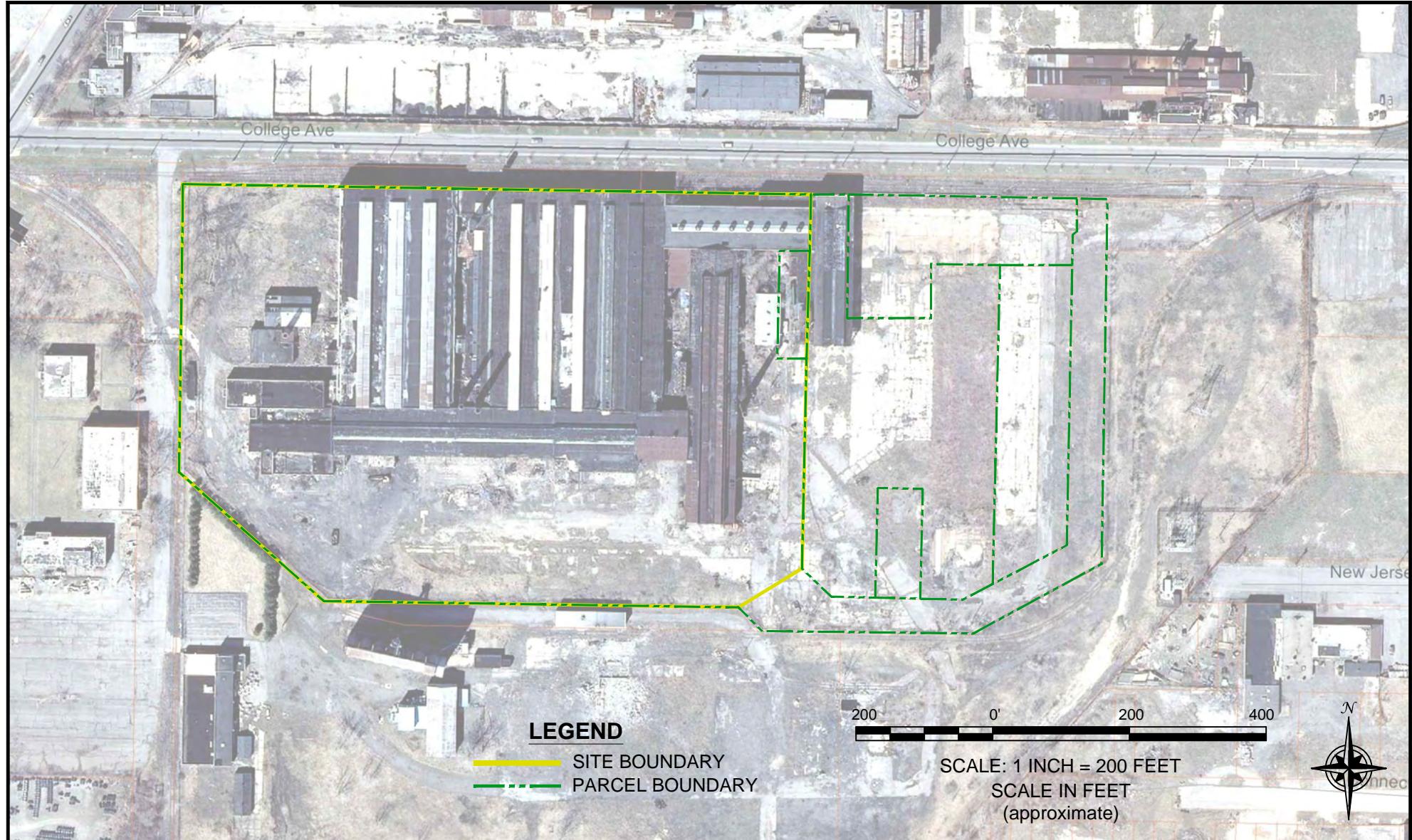
PROJECT NO.: 0140-001-105

DATE: AUGUST 2012

DRAFTED BY: JCT

SITE LOCATION AND VICINITY MAP RI/AA/IRM REPORT

1501 COLLEGE AVENUE SITE
NIAGARA FALLS, NEW YORK
PREPARED FOR
SANTAROSA HOLDINGS, INC.



2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

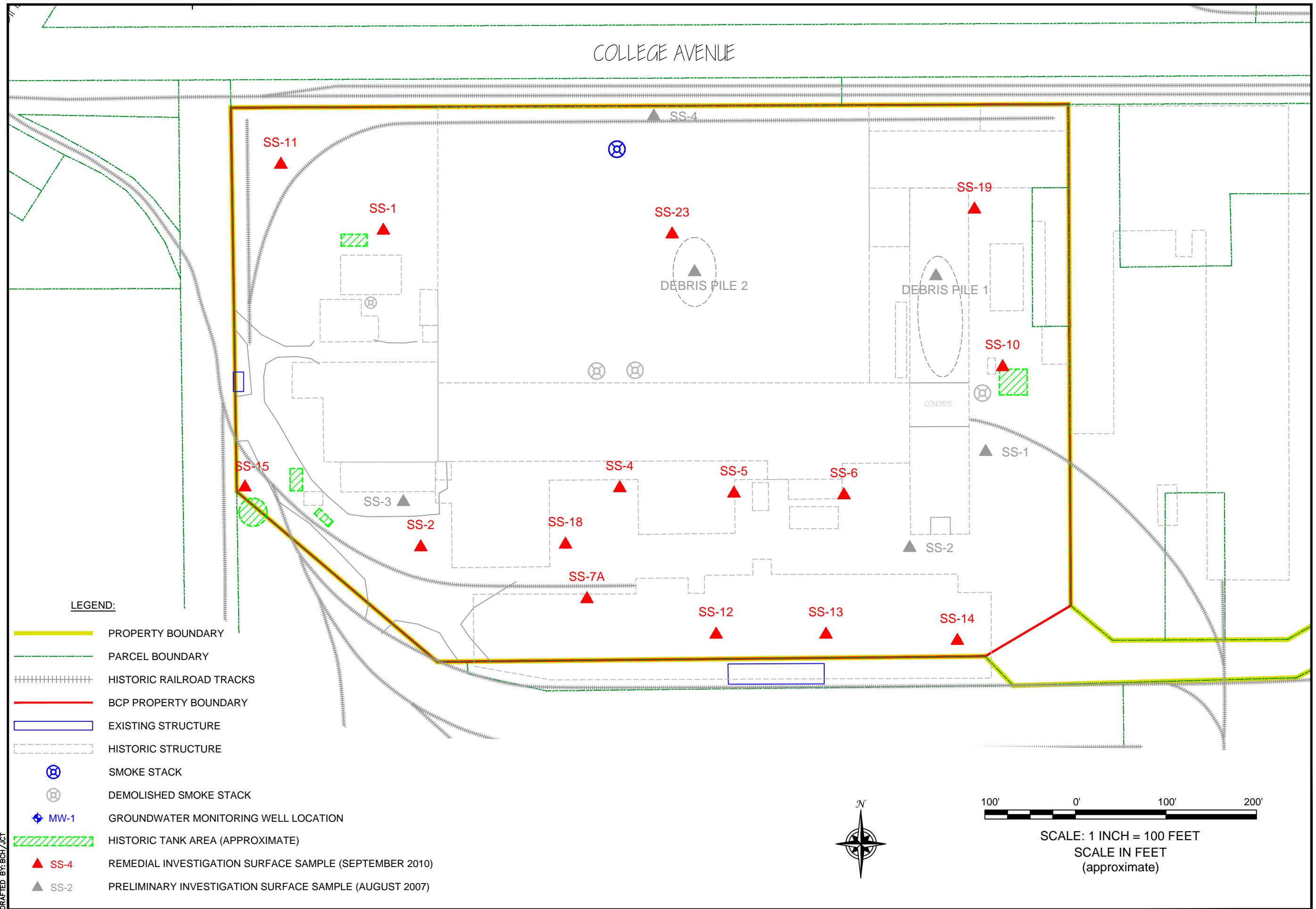
PROJECT NO.: 0140-001-105
DATE: AUGUST 2012
DRAFTED BY: JCT

SITE PLAN (AERIAL) (PRE-DEMOLITION)

RI/AA/IRM REPORT

1501 COLLEGE AVENUE SITE
NIAGARA FALLS, NEW YORK
PREPARED FOR
SANTAROSA HOLDINGS, INC.

FIGURE 2



REMEDIAL INVESTIGATION SURFACE SAMPLE LOCATIONS

RI/AA/IRM REPORT

1501 COLLEGE AVENUE SITE
NIAGARA FALLS, NEW YORK
PREPARED FOR
SANTAROSA HOLDINGS, INC.

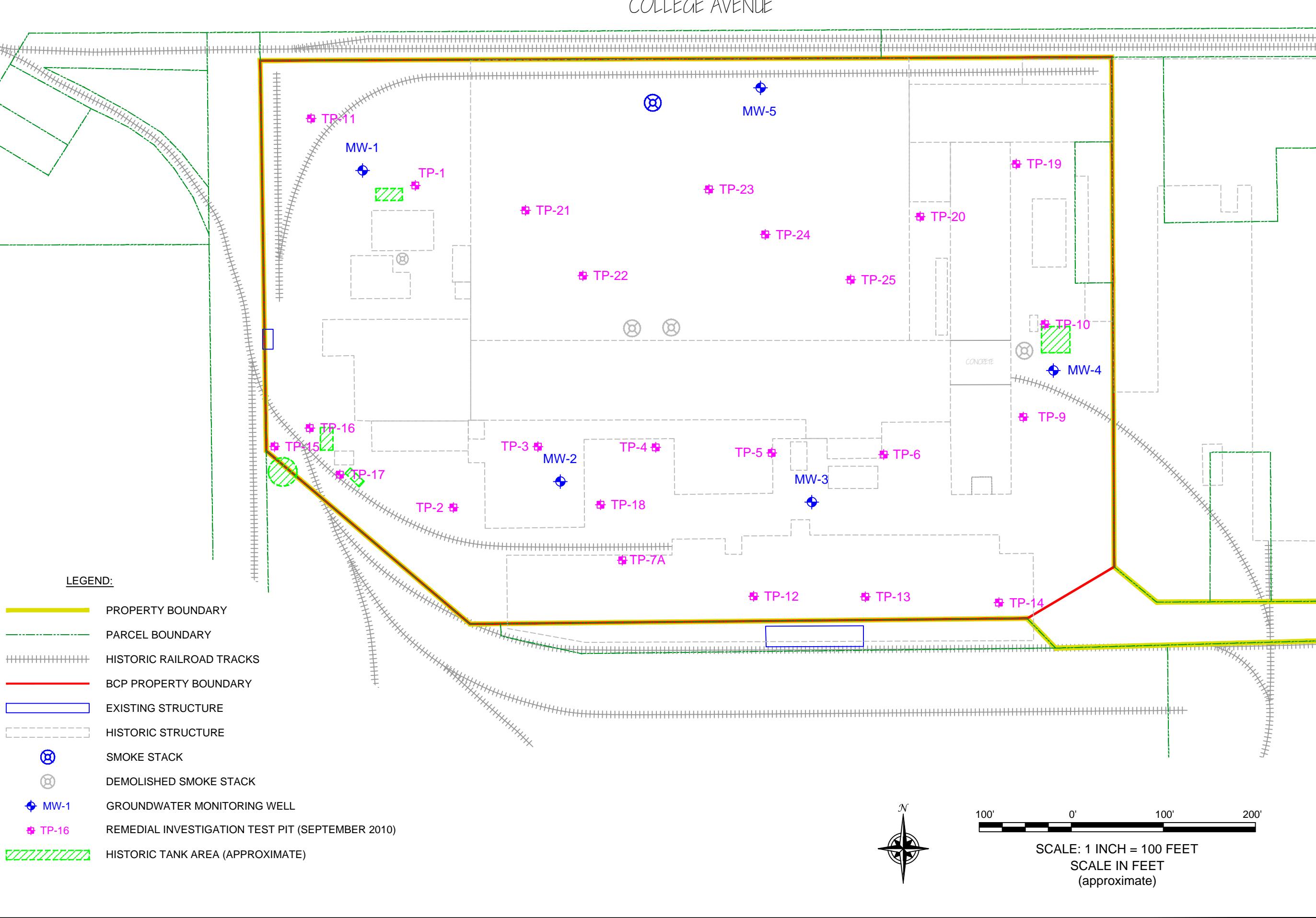
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

TURNKEY ENVIRONMENTAL RESTORATION, LLC

JOB NO.: 0140-001-105

FIGURE 3

COLLEGE AVENUE

**SUBSURFACE SAMPLE LOCATIONS**

RI/AAR/IRM REPORT

1501 COLLEGE AVENUE SITE
NIAGARA FALLS, NEW YORK
PREPARED FOR
SANTOROSA HOLDINGS, INC.

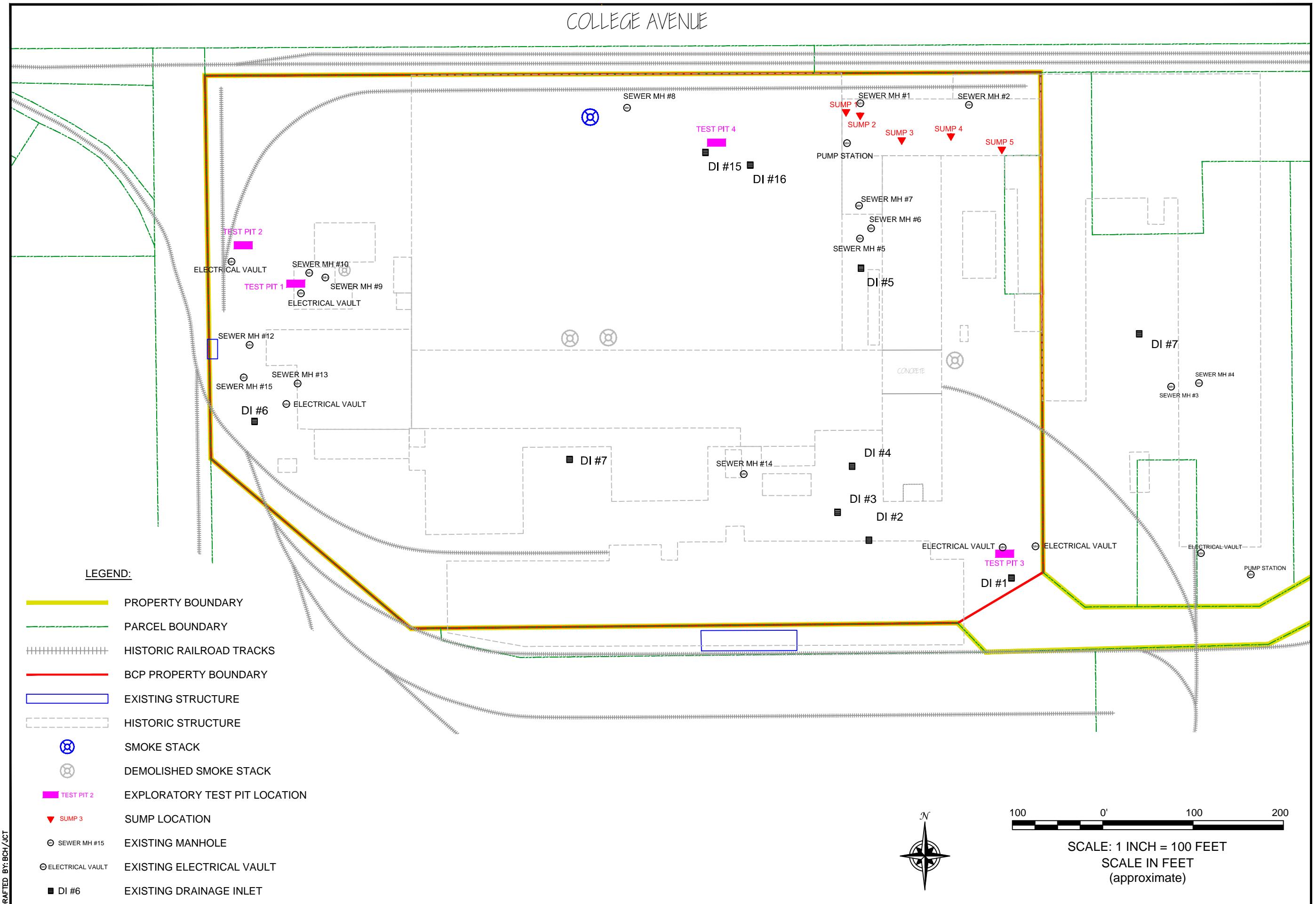
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

TURNKEY
ENVIRONMENTAL
RESTORATION, LLC

JOB NO.: 0140-001-105

FIGURE 4

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SANTAROSA HOLDINGS, INC.

**25558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635**

JOB NO.: 0140-001-105

MANHOLE LOCATIONS

PI/AIA/IBM REPORT

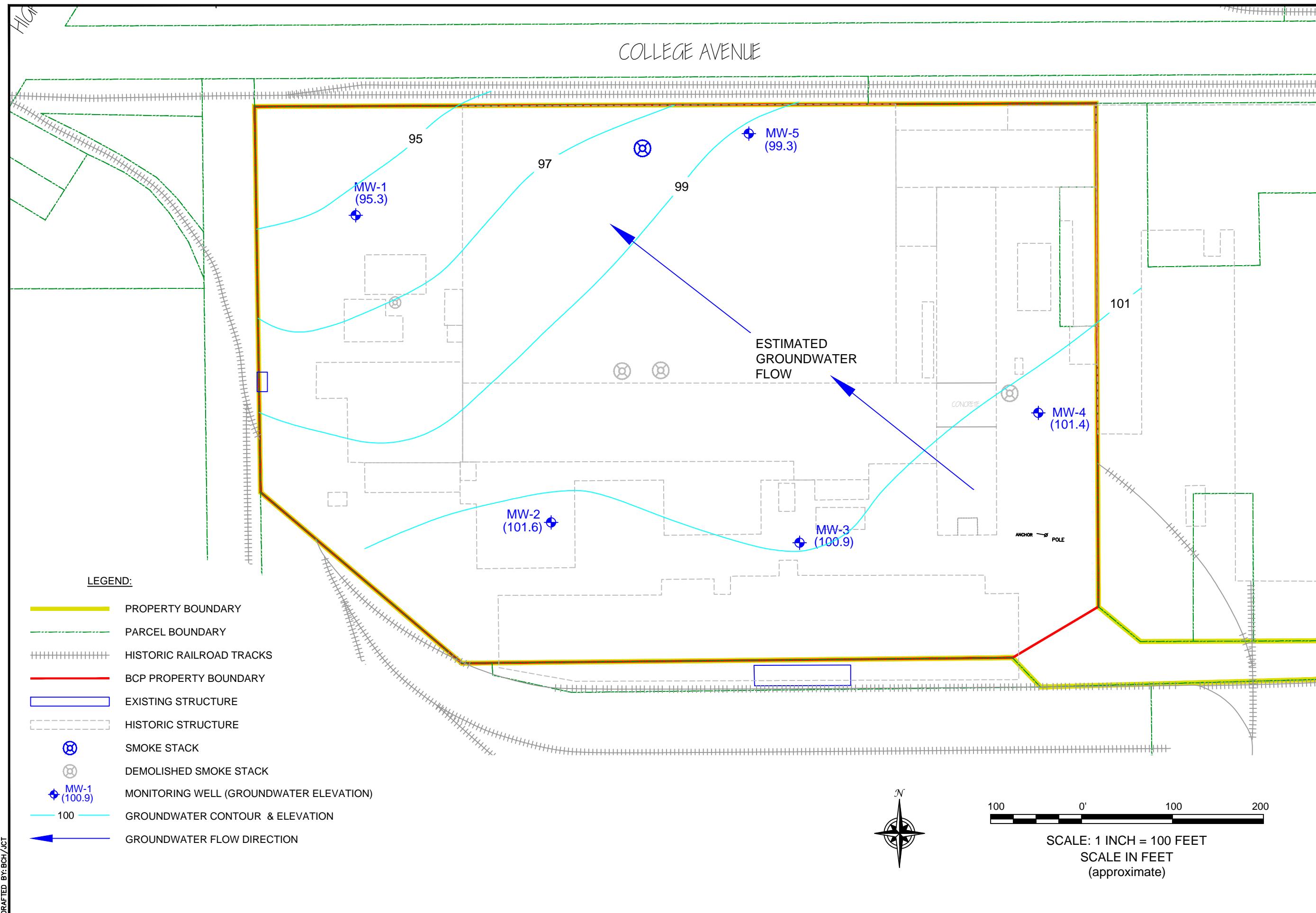
COLLEGE AVENUE

1351 COLEMAN AVENUE SITE
NIAGARA FALLS, NEW YORK

PREPARED FOR

SA HOLDING

FIGURE 5



GROUNDWATER SAMPLE LOCATIONS & ISOPOTENTIAL MAP
RI/AA/IRM REPORT

1501 COLLEGE AVENUE SITE
NIAGARA FALLS, NEW YORK
PREPARED FOR
SANTAROSA HOLDINGS, INC.

2658 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635



JOB NO.: 0140-001-105

FIGURE 6

COLLEGE AVENUE

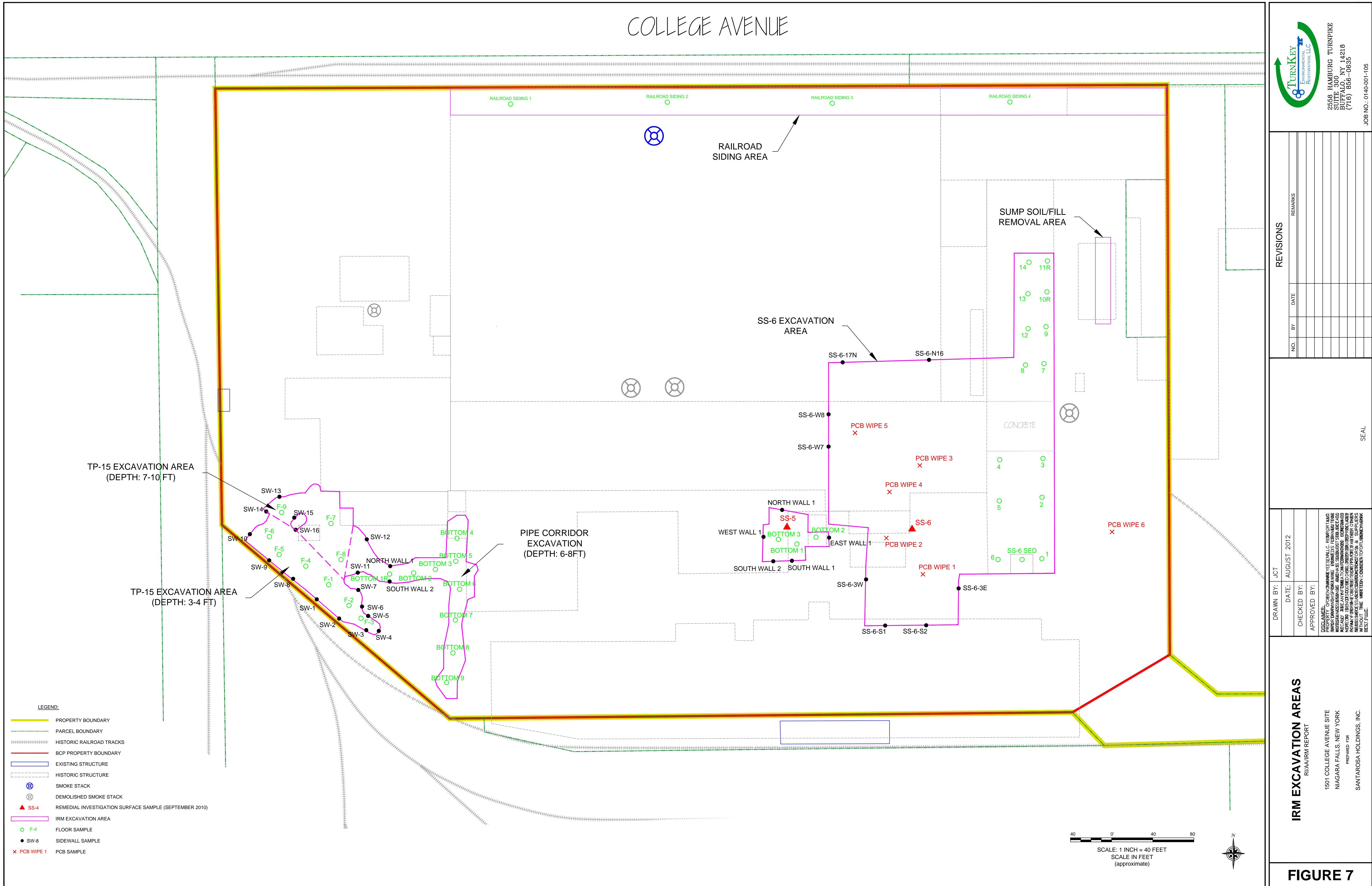




TABLE 2
Summary of Surface Soil/Fill Analytical Data
1501 College Avenue Site
Niagara Falls, New York

PARAMETER ¹	Industrial SCOs ²	Sample Location																				
		SS-1	SS-2	SS-3	SS-4	Debris Pile 1	Debris Pile 2	SS-1	SS-2	SS-4	SS-5	SS-6	SS-7A	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15	SS-18	SS-19	SS-23
		August 2007										September 2010										
Volatile Organic Compounds (VOCs) - mg/kg																						
1,2,4-Trimethylbenzene	—	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	0.055	ND	--	--	--	--
1,3,5-Trimethylbenzene	—	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	0.014 J	ND	--	--	--	--	--
p-Cymene (o-isopropyltoluene)	—	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	0.012 J	ND	--	--	--	--	--
Acetone	1000	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--
Methylene chloride	1000	--	--	--	--	--	--	--	0.0024 J	--	--	--	--	--	--	0.019 J	0.0032 J	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs) - mg/kg																						
2-Methylnaphthalene	—	ND	0.13 J	43	1.8	2.4	ND	ND	0.28 D	2.6 D	ND	0.25 D	0.59 D	2.7 D	ND	0.59 D	8.7 D	J	ND	ND	1.2 D	0.038 D
Acenaphthene	1000	ND	2.5	36	6.9	ND	ND	0.47 D	0.087	1.6 D	ND	6.7 D	1.2 D	1.2 D	2.4 D	5.5 D	3.5 D	J	19 D	J	4 D	3.1 D
Acenaphthylene	1000	ND	0.33 J	39	0.6	ND	ND	0.39 D	J	ND	0.86 D	3.7 D	ND	ND	0.6 D	J	3.4 D	J	0.57 D	J	1.3 D	2.6 D
Anthracene	1000	ND	3.1	140	12	0.2 J	ND	1.1 D	J	130	4.4 D	16 D	2.3 D	1.2 D	3.9 D	6 D	5 D	4.6 D	7.3 D	J	20 D	J
Benzol(a)anthracene	11	15 J	28	340	28	0.71 J	0.18 J	4.6 D	0.72	13 D	56 D	13 D	5.6 D	24 D	21 D	28 D	21 D	22 D	J	100 D	J	22 D
Benzol(a)pyrene	1.1	22 J	38	210	28	0.38 J	0.17 J	7 D	1.4 D	17 D	73 D	16 D	9.8 D	20 D	41 D	48 D	29 D	30 D	J	150 D	J	38 D
Benzol(b)fluoranthene	11	3.2 J	48	360	41	0.77 J	0.29 J	7.4 D	1.5 D	16 D	74 D	16 D	9.9 D	39 D	43 D	51 D	29 D	29 D	J	150 D	J	38 D
Benzol(gh)perylene	1000	1.6 J	24	96	15	0.26 J	0.097 J	5.1 D	1.5 D	12 D	46 D	11 D	8.8 D	9.1 D	32 D	40 D	22 D	20 D	120 D	J	26 D	2.7 B
Benzol(k)fluoranthene	110	0.92 J	17	120	13	0.21 J	0.066 J	3 D	0.52	8.1 D	33 D	7.2 D	3.5 D	9.5 D	18 D	14 D	13 D	12 D	53 D	T	11 D	13 D
Biphenyl	—	--	--	--	--	--	--	ND	ND	0.11 D	ND	ND	ND	ND	ND	0.28 D	ND	ND	1.6 D	J	ND	ND
Bis(2-ethylhexyl) phthalate	—	ND	ND	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ
Butyl benzyl phthalate	—	ND	ND	60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole	—	--	--	--	--	--	--	0.7 D	0.065 D	1.9 D	9.1 D	1.5 D	0.77 D	2 D	3.7 D	3.1 D	J	2.8 D	J	ND	11 D	2.3 D
Chrysene	110	1.8 J	27	340	29	1 J	0.23 J	4.7 D	0.76 D	13 D	55 D	1.2 D	5.5 D	38 D	22 D	28 D	21 D	20 D	95 D	J	21 D	27 D
Dibenz(a,h)anthracene	1.1	ND	6.1	35	4.2	0.13 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	1000	ND	0.4 J	36	4.8	0.74 J	ND	ND	0.7 D	J	5 D	ND	0.47 D	J	1.1 D	1.7 D	0.8 D	J	1.3 D	2.8 D	J	4.6 D
Fluoranthene	1000	1.7 J	34	780 D	57	1.4 J	0.42 J	7.7 D	1 D	22 D	100 D	17 D	9.7 D	31 D	33 D	43 D	37 D	37 D	J	150 D	J	30 D
Fluorene	1000	ND	0.97 J	65	5.4	0.13 J	ND	0.35 D	J	1.3 D	6.7 D	0.51 D	0.71 D	1.4 D	2.2 D	1.6 D	2.0 D	5.3 D	J	9.5 D	J	1.2 D
Indeno(1,2,3-cd)pyrene	11	2.4 J	22	96	14	0.17 J	0.085 J	4.3 D	1.1 D	9.7 D	38 D	9.4 D	6.9 D	8.2 D	27 D	34 D	18 D	17 D	100 D	J	30 D	22 D
Naphthalene	1000	ND	0.24 J	26	3.6	1.1 J	ND	ND	0.53 D	J	6.5 D	ND	0.94 D	1.3 D	3.2 D	0.75 D	0.97 D	J	1.2 D	J	21 D	22 D
Phenanthrene	1000	1 J	12	920 D	52	3.7	0.2 J	4.8 D	0.52 D	J	14 D	76 D	8.9 D	5.8 D	17 D	21 D	21 D	22 D	28 D	T	80 D	J
Phenol	1000	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pryene	1000	1.9 J	27	480	37	1 J	0.24 J	7.1 D	0.94 D	19 D	97 D	18 D	8.9 D	25 D	29 D	42 D	33 D	31 D	T	160 D	J	31 D
Total PCBs - mg/kg																						
Aroclor 1242	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	0.24 D	J	ND	ND	ND	ND
Aroclor 1248	25	ND	0.11	7.1	ND	ND	ND	ND	ND	0.25 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.3 D	ND
Aroclor 1254	25	ND	0.089	ND	ND	ND	ND	0.081 D	J	0.01 J	0.086 J	6 D	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05 D
Aroclor 1260	25	ND	ND	ND	ND	ND	ND	0.52 D	0.056	ND	ND	ND	ND	0.28	ND	0.34	1.1 D	4.9 D	ND	ND	ND	0.11 D
Aroclor 1262	25	ND	ND	ND	ND	ND	ND	ND	0.091 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1268	25	8.4 B	0.12 B	1.4 B	0.34 B	1.7 B	0.83 B	0.39 D	0.035	0.074 J	1.7 D	ND	43 J	0.16	7.6 D	0.1	0.64 D	2.4 D	2.9 D	0.085 D	J	0.19 D
Total Metals - mg/kg																						
Aluminum	—	--	--	--	--	--	--	5290 B	5850 B	5460 B	5610 B	10100 B	10500 B	6600 B	5110 B	8310 B	6490 B	5020 B	2750 B	9900 B	10100 B	5500 B
Antimony	—	--	--	--	--	--	--	3.4 J	1.1 B	J	ND	1.8 J	ND	1.8 J	2.5 J	0.6 J	1.9 J	2.1 J	0.7 J	ND	ND	1.6 J
Arsenic	16	89	2.8	23.9	8.1	15	ND	11.7	1.7 B	3.1 B	6.1 B	3.7 B	4.5	7.1	21.8	9.9	6.9	11.2	20.5	3.1 B	10.6	2.8
Barium	10000	127	75.8	2520	81.2	88.8	19.1	334 B	518 B	574 B	698 B	971 B	751 B	110 B	87.2 B	86.6 B	167 B	260 B	57.9 B	76.8 B	63.1 B	75.7 B
Beryllium	2700	--	--	--	--	--	--	0.353	0.728 B	0.253	0.296	0.2 J	0.493	0.671	0.459	0.518	0.418	0.318	0.245	0.342	0.368	0.377
Cadmium	60	30.8	1.8	12.6	0.96	ND	0.26	4.14	1.13	0.642	4.3	1.19	0.714	1.77	1.22	3.13	1.9 J	8.56 J	0.787 J	0.906	3.05	4.01
Calcium	—	--	--	--	--	--	--	57400 B	18300 B	12400 B	57200 B	32400 B	21500 B	85100 B	27200 B	26100 B	46200 B	63900 B	74700 B	40400 B	19300 B	
Chromium	6800	73.2	38	297	66.1	3.6	23.2	173	22.4	10.4 J	58.7 J	34.4 J	25.5	27.7	41.7	44.8	35.3	118	21.2	41.4 J	80.3	25.2
Cobalt	—	--	--	--	--	--	--	6.54	2.87 B	2.74	5.92	4.72	6.13	7.46	5.97	12.2	6.31	9.85	3.78	4.52	6.22	6.38
Copper	10000	--	--	--	--	--	--	497 B	259	16.6 J	55.3 J	67.4 J	19.5 B	82.1	122 B	2770 B	150 B	163 B	50.5 B	28.6 J	83.4	26.4
Iron	—	--	--	--	--	--	--	26200	3650 B	10200 J	28900 J	16500 J	16500 B	26600 B	10700	64500 D	18200	49100	15400	21400 B	12300 B	
Lead	3900	171	208	3310	232	59.1	43.9	465 B	60.2	117 J	313 J	276 A	49.6 B	325	211 B	2060 B	549 B	591 B	112 B	156 J	156	43.4
Magnesium	—	--	--	--	--	--	--	25800 B	7560	23000 J	7875 J	11400 J	9580 B	17300	15000 B	6970 B	16500 B	2500 B	36100 B	9510 J	9200	
Manganese	10000	--	--	--	--	--	--	653	403 B	353 J	532	314	1210 B	404	653	655	522	1240	535 B	530	308	3400 B
Nickel	10000	--	--	--	--	--	--	73.5	19.7	8.0 J	24.1	25.3 J	14.7	30.1 J	30.4	58.1	54.7	55.2	21.1	14.1 J	120 J	18.9 J
Potassium	—	--	--	--	--	--	--	913 B	141	665	532	314	1310 B	621 B	461 B	627 B	1120 B	656 B	525 B	530	308	3400 B
Selenium	6800	ND	ND	ND	6.6	ND	1.7 J	0.6 J	0.9 J	1.9 J	1.1 J	1.5 J	1.2 J	1.1 J	5.7	1.5 J	3.4 J	1 J	1.4 J	1.6 J	4.4 J	—
Silver	6800	ND	ND	1.1	ND	ND	0.467 J	ND	ND	0.389 J	0.164 J	0.071 J	0.154 J	0.212 J								



TABLE 3

Summary of RI Subsurface Soil/Fill Analytical Data

1501 College Avenue Site

Niagara Falls, New York

PARAMETER ¹	Industrial SCOs ²	Sample Location																																
		BCP MW-1 (0-4)	BCP MW-2 (0-4)	BCP MW-3 (0-4)	BCP MW-4 (8-11.5)	BCP MW-5 (4-8)	TP-1 (5-7)	TP-2 (3-5)	TP-3 (1-4)	TP-4 (1-2)	TP-5 (1-2.5)	TP-6 (1-2)	TP-7A (1-2.5)	TP-9 (0.5-1.5)	TP-10 (5-7)	TP-11 (1-2)	TP-12 (1-2.5)	TP-13 (1-3)	TP-14 (1.5-2)	TP-15 (0-2)	TP-16 (0.5-1.5)	TP-17 (2-4)	TP-18 (0.5-1.5)	TP-19 (0-2)	TP-20 (2-4)	TP-21 (0.5-2)	TP-22 (0-6)	TP-23 (1-5)	TP-24 (1-7)	TP-25 (1-7)	Railroad Siding 1	Railroad Siding 2	Railroad Siding 3	Railroad Siding 4
September 2010																												July 2011						
September 2010																																		
Volatile Organic Compounds (VOCs) - mg/Kg																																		
1,1-Dichloroethane	480	--	--	--	ND	ND	ND	--	--	ND	--	--	ND	--	ND	ND	0.26 W	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND				
1,2,4-Trimethylbenzene	380	--	--	--	ND	0.66	23 D,W	ND	--	--	ND	--	--	ND	--	0.22	0.15 W	0.072 J,W	--	--	--	--	--	--	--	ND	ND	ND	ND	ND				
1,3,5-Trimethylbenzene	380	--	--	--	ND	0.22	6.1 D,W	ND	--	--	ND	--	--	ND	--	0.092	ND	ND	--	--	--	--	--	--	ND	ND	ND	ND	ND					
2-Butanone (MEK)	1000	--	--	--	ND	ND	0.026 J	--	--	ND	--	--	ND	--	ND	ND	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND					
p-Cymene (p-isopropyltoluene)	--	--	--	--	ND	0.048 J	1.3 D,W	ND	--	--	ND	--	--	ND	--	0.082 J	ND	ND	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Acetone	1000	--	--	--	ND	ND	0.15	--	--	ND	--	--	ND	--	ND	ND	0.082 J	ND	ND	--	--	--	--	--	0.013 J	ND	ND	ND	ND					
Benzene	89	--	--	--	ND	ND	ND	--	--	ND	--	--	ND	--	ND	0.041 J	ND	ND	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Chloroethane	--	--	--	--	ND	ND	ND	--	--	ND	--	--	ND	--	ND	ND	0.21 W	--	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Cyclohexane	--	--	--	--	ND	ND	0.55 D,J,W	ND	--	--	ND	--	--	ND	--	ND	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Ethylbenzene	780	--	--	--	ND	0.33	4 D,W	ND	--	--	ND	--	--	ND	--	0.055	ND	ND	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Isopropylbenzene (Cumene)	--	--	--	--	ND	0.054	0.88 D,W	ND	--	--	ND	--	--	ND	--	0.077 NJ,W	--	--	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Methylcyclohexane	--	--	--	--	ND	ND	2.6 D,W	ND	--	--	ND	--	--	ND	--	0.17 W	0.068 J,W	--	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Methylene chloride	1000	--	--	--	ND	ND	0.0033 J	--	--	0.0037 J	--	--	ND	--	--	ND	ND	--	--	--	--	--	--	--	8.9	0.0031 J	0.0026 J	0.0075	0.0075					
n-Butylbenzene	1000	--	--	--	ND	1	5 D,W	ND	--	--	ND	--	--	ND	--	0.014 J	ND	ND	U	0.14 NJ,W	--	--	--	--	--	ND	ND	ND	ND	ND				
n-Propylbenzene	1000	--	--	--	ND	ND	2.9 D,W	ND	--	--	ND	--	--	ND	--	ND	ND	0.14 NJ,W	--	--	--	--	--	--	ND	ND	ND	ND	ND					
sec-Butylbenzene	1000	--	--	--	ND	ND	1.2 D,W	ND	--	--	ND	--	--	ND	--	ND	ND	0.097 J,W	--	--	--	--	--	--	ND	ND	ND	ND	ND					
Styrene	1000	--	--	--	ND	ND	0.18	ND	--	--	ND	--	--	ND	--	0.028 J	ND	ND	--	--	--	--	--	ND	ND	ND	ND	ND						
Toluene	1000	--	--	--	ND	0.18	ND	--	--	ND	--	--	ND	--	0.087 J	0.062 J,W	ND	--	--	--	--	--	--	ND	ND	ND	ND	ND						
Total Xylene	1000	--	--	--	ND	0.76	19 D,W	ND	--	--	ND	--	--	ND	--	0.31 J	ND	ND	--	--	--	--	--	ND	ND	ND	ND	ND						
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg																																		
2-Methylnaphthalene	--	0.43 D,J	ND	0.57 D,J	0.65 D,J	260 D	110 T,D	ND	0.58 D	0.54 D,J	1.4 D,J	ND	0.21 D,J	0.36 D,J	ND	0.35 D,J	ND	320 T,D	2 D,J	8.3 T,D,J	ND	0.33 D,J	0.27 D,J	ND	ND	ND	0.093 D,J	ND	ND	2.4	27	7.5 J		
Aceanaphthene	1000	0.18 D,J	3.1 D,J	1.3 D,J	0.48 D,J	210 D	6.7 T,D	0.51 D,J	0.018 J	2.3 D	6.1 D	6.20 D	0.81 D,J	0.63 D,J	ND	0.9 D,J	ND	370 D	3.5 D,J	37 T,D,J	11 D	1.3 D	0.92 D,J	0.022 J	12 D	ND	1.6 D	ND	3 J	12 J	46	29		
Aceanaphthylene	1000	ND	ND	ND	ND	ND	ND	0.033 J	0.67 D,J	1.2 D,J	ND	0.26 D,J	0.17 D,J	ND	ND	ND	48 T,D	3.4 D,J	ND	ND	0.12 D,J	0.12 D,J	ND	ND	ND	0.054 D,J	ND	ND	4.2 J	6.7 J				
Anthracene	1000	0.2 D,J	5.5 D	3.6 D	0.28 D,J	13 D	ND	0.065 J	5.3 D	3.3 D,J	13 D	8.2 D	1.7 D	0.78 D,J	ND	0.032 J	2.2 D	ND	500 T,D	13 D	68.1 D	14 D	3.5 D	1.9 D	0.024 J	13 D	0.14 D,J	0.81 D,J	0.38 T,D,J	4.6 J	21	98	44	
Benz(a)anthracene	11	1.2 D,J	29 D	13 D	1 D	7.4 D	ND	8.3 D	0.49	17 D	9 D	28 D	4.7 D	4 D	0.055 J																			



TABLE 4
Summary of Groundwater Analytical Data
1501 College Avenue Site
Niagara Falls, New York

PARAMETER ¹	GWQS ²	MW-1	MW-2	MW-3	MW-4	MW-5
		October 2010				
Volatile Organic Compounds (VOCs) - ug/L						
1,2,4-Trimethylbenzene	5	ND	ND	ND	0.78 J	ND
Acetone	50	3.4 J	ND	ND	4.3 J	4.7 J
Trichlorofluoromethane (Freon-11)	5	ND	ND	ND	1.4	ND
Semi-Volatile Organic Compounds (SVOCs) - ug/L						
2-Methylnaphthalene	--	ND	ND	ND	0.58 J	ND
Acenaphthene	20	ND	ND	ND	2.8 J	12
Acetophenone	--	ND	ND	ND	ND	0.88 J
Anthracene	50	ND	ND	ND	0.95 J	ND
Benz(a)anthracene	0.002	ND	ND	ND	0.71 J	ND
Benz(a)pyrene	ND	ND	ND	ND	0.63 J	ND
Benz(b)fluoranthene	0.002	ND	ND	ND	0.71 J	ND
Carbazole	--	ND	ND	ND	1.7 J	ND
Chrysene	0.002	ND	ND	ND	0.58 J	ND
Dibenzofuran	--	ND	ND	ND	1 J	ND
Di-n-butyl phthalate	50	0.57 B,J	0.53 B,J	0.32 B,J	0.39 B,J	0.49 B,J
Fluoranthene	50	ND	ND	ND	2 J	ND
Fluorene	50	ND	ND	ND	1.8 J	ND
Naphthalene	10	ND	ND	ND	1.5 J	ND
Phenanthrene	50	0.52 J	ND	ND	0.94 J	ND
Pyrene	50	ND	ND	ND	1.4 J	ND
Total Metals - ug/L						
Aluminum	--	585	1590	2410	2250	454
Barium	1000	20.1	34.6	32.1	86.1	21
Cadmium	5	0.4 J	ND	ND	ND	ND
Calcium	--	103000	77800	108000	121000	224000
Chromium	50	1.4 J	1.6 J	3.1 J	2.3 J	ND
Cobalt	5	2.5 J	1.7 J	3.8 J	0.9 J	2.7 J
Copper	200	4.3 J	3.9 J	4.3 J	3.2 J	2.5 J
Iron	300	565	1360	2170	1610	580
Lead	25	ND	ND	ND	4.2 J	ND
Magnesium	35000	100000	93700	114000	13800	132000
Manganese	300	105	99.6	240	245	564
Nickel	100	5.6 J	5.4 J	6.9 J	3.2 J	4.4 J
Potassium	--	3830	3020	6520	11300	4820
Sodium	20000	52400	51400	48600	31000	53400
Vanadium	14	2.3 J	4.7 J	4.8 J	8	2.4 J
Zinc	2000	12.5	12.4	8.2	6.7 J	9.6 J
Pesticides and Herbicides - ug/L						
4,4'-DDD	0.3	0.22 D,J	0.21 D,J	0.21 D,J	0.071	0.24 D
4,4'-DDT	0.2	0.22 D,J	0.2 D,J	0.21 D,J	ND	ND
delta-BHC	--	ND	ND	ND	0.038 J	ND
Endosulfan I	--	ND	ND	ND	ND	0.072 D,J
Endosulfan II	--	ND	ND	ND	0.022 J	ND
Endrin	ND	0.17 D,J	ND	ND	ND	ND
Endrine ketone	5	ND	ND	ND	ND	0.082 D,J
gamma-Chlordane	--	0.1 D,J	0.095 D,J	0.094 D,J	0.025 J	0.095 D,J
Heptachlor epoxide	0.03	0.051	ND	ND	ND	0.075 D,J
Methoxychlor	35	0.088	ND	ND	0.025 J	ND

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.

2. Values per NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - GA Class (TOGS 1.1.1)

Definitions:

ND = Non-detect; Parameter not detected above laboratory detection limit.

-- = No SCO available for the parameter.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

D = Compounds were identified in an analysis at the secondary dilution factor.

Bold = Result exceeds GWQS.



TABLE 6a

Summary of Post Excavation Sample Results for Excavation Area A

1501 College Avenue Site

Niagara Falls, New York

PARAMETER ¹	Industrial SCOs ²	Sample Location																								
		F-1 (3.5)	F-2 (3.5)	F-3 (3)	F-4 (3.5)	F-5 (3.5)	F-6 (3.5)	F-7 (5-7)	F-8 (10)	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7	SW-8	SW-9	SW-10	SW-11	SW-12	SW-13	SW-14	SW-15	SW-16	
		3/21/2011	3/23/2011	3/30/2011	3/31/2011	4/12/2011	4/15/2011	3/21/2011	3/23/2011									3/24/2011	3/30/2011	3/31/2011	4/13/2011	4/15/2011	4/22/2011			
Volatile Organic Compounds (VOCs) - mg/Kg																										
1,2,4-Trimethylbenzene	380	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.0039 J	ND	ND	NA		
1,3,5-Trimethylbenzene	380	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.0019 J	ND	0.00053 J	NA		
2-Butanone (MEK)	1000	NA	NA	NA	NA	NA	0.0034 J	NA	NA	0.0031 J	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.0096 J	ND	0.0099 J	NA		
p-Cymene (p-isopropyltoluene)	--	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.0015 J	ND	ND	NA		
Acetone	1000	NA	NA	NA	NA	NA	0.041	NA	NA	0.02 J	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.044	0.029 J	0.07	NA		
Ethylbenzene	780	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.0051 J	ND	ND	NA		
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.0051 J	ND	ND	NA		
Methylcyclohexane	--	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.03	ND	0.001 J	NA		
Methylene chloride	1000	NA	NA	NA	NA	NA	0.0075	NA	NA	0.016	NA	NA	NA	NA	NA	NA	NA	0.0046 J	NA	NA	0.014 J	0.015	0.0053 J	NA		
Naphthalene	1000	NA	NA	NA	NA	NA	0.0091 J	NA	NA	0.017 J	NA	NA	NA	NA	NA	NA	NA	0.0075	NA	NA	0.016 B	0.0014 J B	0.0012 J	NA		
n-Butylbenzene	1000	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.017	ND	0.002 J	NA		
n-Propylbenzene	1000	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.02	ND	0.0033 J	NA		
Total Xylene	1000	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	0.0041 J	ND	ND	NA		
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg																										
2-Methylnaphthalene	--	ND	ND	ND	ND	ND	ND	ND	0.0074 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	0.058 J	ND	ND	ND	
Acenaphthene	1000	0.026 J	0.0052 J	0.012 J	0.036 J	0.22 J	ND	0.11 J	ND	0.9	0.25	50	6 J	4.2 J	28	2.1 J	19 J	5 J	5.8 J	2.4	0.99 J	0.0027 J	ND	0.017 J	0.15 J	
Acenaphthylene	1000	0.04 J	ND	ND	0.1 J	ND	0.028 J	ND	0.3	0.011 J	ND	0.9 J	ND	2.7 J	4.5 J	ND	4.3 J	12	0.14 J	0.094 J	ND	ND	ND	0.5		
Anthracene	1000	0.15 J	0.013 J	0.014 J	0.0099 J	0.36 J	ND	0.12 J	ND	1.5	0.56	68	9.5 J	7 J	35	ND	48	13	19	5.7	4.2	0.0092 J	ND	ND	0.67	
Benz(a)anthracene	11	0.31	0.052 J	0.055 J	0.014 J	1	ND	0.3	0.018 J	ND	4.9	2	190	33	24	93	19	120	35	70	21	23	0.029 J	0.012 J	0.051 J	2.3
Benz(a)pyrene	1.1	0.31	0.064 J	0.074 J	0.012 J	1	ND	0.55	0.022 J	ND	6	2.5	230	46	30	120	30	140	42	87	25	25	0.018 J	0.013 J	0.043 J	2.5
Benz(b)fluoranthene	11	0.34	0.066 J	0.077 J	0.012 J	1.2	ND	0.65	0.029 J	ND	6.9	2.7	240	44	32	140	32	150	39	86	26	28	0.022 J	0.014 J	0.06 J	2.8
Benz(gh)perylene	1000	0.2 J	0.057 J	0.053 J	ND	0.78	ND	0.38	0.018 J	ND	4.1	2	160	37	23	82	29	110	31	49	19	18	0.013 J	0.0091 J	0.047 J	2
Benz(k)fluoranthene	110	0.16 J	0.037 J	0.029 J	0.0067 J	0.35 J	ND	0.25	0.013 J	ND	2.8	1.3	110	24	15	46	15	66	21	40	12	13	0.014 J	0.0081 J	0.028 J	1.4
Chrysene	110	0.3	0.062 J	0.056 J	0.0097 J	0.87	ND	0.29	0.013 J	ND	5.2	2.3	200	33	26	100	23	130	33	66	23	23	0.027 J	0.011 J	0.056 J	2.2
Dibenzo(a,h)anthracene	1.1	0.051 J	ND	ND	0.23 J	ND	0.095 J	0.0044 J	ND	1.5	0.45	42	7.7 J	5.6 J	24	5.6 J	23 J	8.6 J	13	5.5	5	ND	ND	ND	0.56	
Fluoranthene	1000	0.94	0.13 J	0.09 J	0.017 J	2	ND	0.48	0.024 J	0.0048 J	9.6	4.1	360	60	48	190	39	310	66	110	40	40	0.067 J	0.019 J	0.14 J	4.7
Fluorene	1000	0.16 J	ND	ND	0.035 J	0.28	ND	0.16 J	ND	1.1	0.18 J	33	3.6 J	2.4 J	19	1.5 J	21 J	7.3 J	6.5 J	2.4	0.89 J	0.0064 J	ND	0.022 J	0.29	
Indeno(1,2,3-cd)pyrene	11	0.17 J	0.037 J	0.042 J	0.0076 J	0.68	ND	0.3	0.015 J	ND	3.7	1.4	120	28	17	74	20	78	26	44	15	16	0.011 J	0.0082 J	0.041 J	1.7
Naphthalene	1000	0.14 J	ND	ND	0.031 J	0.11 J	ND	0.17 J	ND	0.017	0.34	0.14 J	53	5.4 J	2.4 J	29	ND	6.4 J	3.5 J	3.5 J	1.1 J	0.27 J	0.02 J	ND	0.12 J	0.055 J



TABLE 6b
Summary of Post Excavation Sample Results for Test Pit-5 Area
1501 College Avenue Site
Niagara Falls, New York

PARAMETER ¹	Industrial SCOs ²	Sample Locations							
		Northwall 1	Southwall 1	Southwall 2	Eastwall 1	Westwall 1	Bottom 1	Bottom 2	Bottom 3
		5/27/2011	5/6/2011	5/9/2011	5/6/2011	5/9/2011	5/6/2011	5/6/2011	5/9/2011
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg									
2-Methylnaphthalene	--	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	1000	ND	30	0.01 J	0.29 J	0.096 J	2.8	0.033 J	ND
Acenaphthylene	1000	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	1000	ND	4.9	ND	0.34 J	0.031 J	0.39 J	0.017 J	ND
Benzo(a)anthracene	11	ND	3.8	ND	1 J	0.11 J	0.52 J	0.08 J	ND
Benzo(a)pyrene	1.1	ND	2.5	ND	1.2	0.092 J	0.21 J	0.07 J	ND
Benzo(b)fluoranthene	11	ND	3.1	ND	1.4	0.1 J	0.32 J	0.072 J	ND
Benzo(ghi)perylene	1000	ND	1.6 J	ND	1 J	0.06 J	ND	0.045 J	ND
Benzo(k)fluoranthene	110	ND	0.84 J	ND	0.68 J	0.044 J	0.072 J	0.042 J	ND
Chrysene	110	ND	3.7	ND	1.2	0.1 J	0.39 J	0.11 J	ND
Dibenzo(a,h)anthracene	1.1	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	1000	ND	23	0.0088 J	2 J	0.25	4.4	0.12 J	ND
Fluorene	1000	ND	15	ND	0.16 J	0.025 J	1.7	ND	ND
Indeno(1,2,3-cd)pyrene	11	ND	1.3 J	ND	0.78 J	0.053 J	ND	0.037 J	ND
Naphthalene	1000	ND	5.5	ND	ND	ND	ND	ND	ND
Phenanthrene	1000	ND	60	ND	1.7	0.088 J	9.4	0.058 J	ND
Pyrene	1000	ND	19	0.0068 J	1.8 J	0.26	3.2	0.14 J	ND

Definitions:

ND = Parameter not detected above laboratory detection limit.

-- = Sample not analyzed for parameter or no SCO available for the parameter.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

Bold = Result exceeds 6NYCRR Part 375 Industrial SCO.

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Part 375 Industrial Soil Cleanup Objectives (December 2006)



TABLE 6c

Summary of Post Excavation Sample Results for SS-6 Area

1501 College Avenue Site

Niagara Falls, New York

PARAMETER ¹	Industrial SCOs ²	Sample Location												
		SS-6-S1	SS-6-S2	SS-6-E	SS-6-W	SS-6-W-7	SS-6-W-8	SS-6-N-16	SS-6-N-17					
		5/27/2011		5/13/2011		6/13/2011		6/13/2011						
Polychlorinated Biphenyls (PCBs) - mg/Kg														
Aroclor 1268	25	24	23	8.9	23	1.2	1.8	6.8	5.9					
Aroclor 1254	25	--	--	--	--	--	--	--	--					
Polychlorinated Biphenyls (PCBs) - mg/Kg														
Aroclor 1268	25	ND	12	6.7	1.8	ND	1.7	9.4	1.9					
Aroclor 1254	25	--	--	--	--	--	--	--	--					
PARAMETER ¹	Industrial SCOs ²	Sample Location								7/25/2011				
		SS-6 Confirmatory Sample 1	SS-6 Confirmatory Sample 2	SS-6 Confirmatory Sample 3	SS-6 Confirmatory Sample 4	SS-6 Confirmatory Sample 5	SS-6 Confirmatory Sample 6	SS-6 Confirmatory Sample 7	SS-6 Confirmatory Sample 8		SS-6 Confirmatory Sample 9	SS-6 Confirmatory Sample 10R	SS-6 Confirmatory Sample 11R	SS-6 Confirmatory Sample 12
7/15/2011										7/25/2011	8/15/2011	7/25/2011		
Aroclor 1268	25	--	--	--	--	--	--	--	--	8.7	5.3	4.5	0.26	0.21
Aroclor 1254	25	--	--	--	--	--	--	--	--	--	0.22	--	--	--

Definitions:

ND = Parameter not detected above laboratory detection limit.

"--" = Sample not analyzed for parameter or no SCO available for the parameter.

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.

2. Values per NYSDEC Part 375 Industrial Soil Cleanup Objectives (December 2006)



TABLE 6d

Summary of Post Excavation PCB Wipe Sample Results from SS-6 Area

1501 College Avenue Site

Niagara Falls, New York

PARAMETER ¹	Sample Location							
	PCB Wipe 1	PCB Wipe 2	PCB Wipe 3	PCB Wipe 4	PCB Wipe 5	PCB Wipe 6	PCB Wipe 6 (2)	PCB Wipe 7
	5/19/2011	7/7/2011				7/25/2011	2/13/2012	
<i>Polychlorinated Biphenyls (PCBs) - ug/100cm²</i>								
Aroclor 1268	2.7	2.3	1.5	3.3	ND	2.4	11	110
Average PCBs²	19.03							

Definitions:

ND = Parameter not detected above laboratory detection limit.

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Average PCBs via EPA PCB cleanup policy for restricted access outdoor low contact surfaces (>100ug/100cm²).



TABLE 8a
Summary of Remaining on Site Surface Soil Analytical Data Compared to Unrestricted SCOs
1501 College Avenue Site
Niagara Falls, New York

PARAMETER ¹	Unrestricted SCOs ²	Sample Location																		
		SS-1	SS-2	SS-3	SS-4	SS-1	SS-2	SS-4	SS-5	SS-6	SS-7A	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15	SS-18	SS-19	SS-23
Volatile Organic Compounds (VOCs) - mg/Kg																				
1,2,4-Trimethylbenzene	3.6	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	0.055	ND	--	--	--
1,3,5-Trimethylbenzene	8.4	--	--	--	--	--	ND	--	--	--	--	--	--	--	0.014 J	ND	--	--	--	
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	0.012 J	ND	--	--	--	
Methylene chloride	0.05	--	--	--	--	--	0.0024 J	--	--	--	--	--	--	--	0.019 J	0.0032 J	--	--	--	
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg																				
2-Methylnaphthalene	--	ND	0.13 J	43	1.8	ND	0.28 D,J	2.6 D,J	ND	0.25 D,J	0.59 D,J	2.7 D,J	ND	0.59 D,J	8.7 D,J,T	ND	ND	1.2 D,J	0.036 D,J	
Acenaphthene	20	ND	2.5	36	6.9	0.47 D,J	0.087	1.6 D,J	8.7 D,J	1.2 D,J	2.8 D	5.5 D	3.5 D,J	3.1 D,J	6.1 D,J,T	19 D,J,T	4 D	3.1 D,J	0.28 D,J	
Acenaphthylene	100	ND	0.33 J	39	0.6	0.39 D,J	ND	0.86 D,J	3.7 D,J	ND	0.6 D,J	3.4 D,J	0.57 D,J	1.3 D,J	2.6 D,J,T	10 D,J,T	ND	0.37 D,J	ND	
Anthracene	100	ND	3.1	140	12	1.1 D,J	130	4.4 D	16 D	2.3 D,J	1.2 D,J	3.9 D	6 D	4.6 D	7.3 D,J,T	20 D,J,T	3.5 D	5.3 D	0.4 D,J	
Benzol(a)anthracene	1	1.5 J	28	340	28	4.6 D	0.72	13 D	56 D	13 D	5.6 D	24 D	21 D	28 D	21 D	22 D	100 D,T	22 D	28 D	3 D
Benzol(a)pyrene	1	2.2 J	38	210	28	7 D	1.4 D	17 D	73 D	16 D	9.8 D	20 D	41 D	48 D	29 D	30 D,T	150 D,T	38 D	41 D	5.4 B,D
Benzol(b)fluoranthene	1	3.2 J	48	360	41	7.4 D	1.5 D	16 D	74 D	16 D	9.9 D	39 D	43 D	51 D	29 D	29 D,T	150 D,T	38 D	41 D	5.4 B,D
Benzol(b)perylene	100	1.6 J	24	96	15	5.1 D	1.5 D	12 D	46 D	11 D	8.8 D	9.1 D	32 D	40 D	22 D	20 D,T	120 D,T	40 D	26 D	2.7 B,D
Benzol(k)fluoranthene	0.8	0.92 J	17	120	13	3 D,J	0.52	8.1 D	33 D	7.2 D	3.5 D	9.5 D	18 D	14 D	13 D	12 D,T	53 D,T	11 D	13 D	1.4 B,D
Biphenyl	--	--	--	--	--	ND	ND	0.11 D,J	ND	ND	ND	0.28 D,J	ND	ND	1.6 D,J,T	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	--	ND	ND	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ
Butyl benzyl phthalate	--	ND	ND	60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole	--	--	--	--	--	0.7 D,J	0.065 D,J	1.9 D	9.1 D,J	1.5 D,J	0.77 D,J	2 D	3.7 D	3.1 D,J	2.8 D,J	ND	11 D,J,T	2.3 D,J	3.9 D	0.36 D,J
Chrysene	1	1.8 J	27	340	29	4.7 D	0.76 D,J	13 D	55 D	1.2 D	5.5 D	38 D	22 D	28 D	21 D	20 D,T	95 D,T	21 D	27 D	3.6 D
Dibenzo(a,h)anthracene	0.33	ND	6.1	35	4.2	ND	ND	ND	ND	ND	ND	2.4 D	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	7	ND	0.4 J	36	4.8	ND	ND	0.7 D,J	5 D,J	ND	0.47 D,J	1.1 D,J	1.7 D,J	0.8 D,J	1.3 D,J	2.8 D,J,T	4.6 D,J,T	0.6 D,J	1.5 D,J	0.064 D,J
Fluoranthene	100	1.7 J	34	780 D	57	7.7 D	1 D	22 D	100 D	17 D	9.7 D	31 D	33 D	43 D	37 D	37 D,T	150 D,T	30 D	42 D	5 D
Fluorene	30	ND	0.97 J	65	5.4	0.35 D,J	ND	1.3 D,J	6.7 D,J	0.51 D,J	0.71 D,J	1.4 D,J	2.2 D,J	1.6 D,J	2 D,J	5.3 D,J,T	9.5 D,J,T	1.2 D,J	2.1 D,J	0.11 D,J
Indeno(1,2,3-cd)pyrene	0.5	2.4 J	22	96	14	4.3 D	1.1 D	9.7 D	38 D	9.4 D	6.9 D	8.2 D	27 D	34 D	18 D	17 D,T	100 D,T	30 D	22 D	2.5 B,D
Naphthalene	12	ND	0.24 J	26	3.6	ND	ND	0.53 D,J	6.5 D,J	ND	0.94 D,J	1.3 D,J	3.2 D,J	0.75 D,J	0.97 D,J	2.1 D,J,T	ND	0.63 D,J	2.7 D,J	ND
Phenanthrene	100	1 J	12	920 D	52	4.8 D	0.52 D,J	14 D	76 D	8.9 D	5.8 D	17 D	21 D	21 D	22 D	28 D,T	80 D,T	14 D	25 D	1.9 D
Phenol	0.33	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	100	1.9 J	27	480	37	7.1 D	0.94 D	19 D	97 D	18 D	8.9 D	25 D	29 D	42 D	33 D	31 D,T	160 D,T	31 D	41 D	4 D
Polychlorinated biphenyls (PCBs) - mg/Kg																				
Aroclor 1242	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	0.24 D,J	ND	1.1 D	0.33 D	0.22 D,J	ND	ND	ND
Aroclor 1248	0.1	ND	0.41	7.1	ND	ND	0.025 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.3 D	ND	ND
Aroclor 1254	0.1	ND	0.089	ND	ND	0.081 D,J	0.01 J	0.086 J	6 D	ND	ND	ND	ND	ND	ND	ND	ND	0.048 D,N,J	ND	ND
Aroclor 1260	0.1	ND	ND	ND	ND	0.52 D	0.056	ND	ND	ND	ND	0.28	ND	0.34	1.1 D	4.9 D	ND	ND	ND	0.11 D,N,J
Aroclor 1268	0.1	8.4 B	0.12 B	1.4 B	0.34 B	0.39 D	0.035	0.074 J	1.7 D,N,J	43 J	0.16	7.6 D	0.1	0.64 D	2.4 D	2.9 D	0.085 D,J	0.19 D,J	13 D	0.1 D,N,J
Total Metals - mg/Kg																				
Aluminum	--	--	--	--	--	5290 B	5850 B	5460 B,J	5610 B,J	10100 B,J	10500 B	6600 B	5110 B	8310 B	6490 B	5020 B	2750 B	9900 B,J	2010 B	5500 B
Antimony	--	--	--	--	--	3.4 J	1.1 B,J	ND UJ	1 J	0.8 J	ND	1.8 J	2.5 J	0.6 J	1.9 J	2.1 J	0.7 J	ND UJ	1.6 J	ND UJ
Arsenic	13	89	2.8	23.9	8.1	11.7	1.7 B,J	3.1 B	6.1 B	3.7 B	4.5	7.1	21.8	9.9	6.9	11.2	20.5	3.1 B	10.6	2.8
Barium	350	127	75.8	2520	81.2	334 B	51.8 B	57.4 B,J	698 B,J	97.1 B,J	75.1 B	110 B,J	87.2 B	86.6 B	167 B	260 B	57.9 B	76.8 B,J	63.1 B,J	75.7 B,J
Beryllium	7.2	--	--	--	--	0.353	0.728 B	0.253	0.296	0.2 J	0.493	0.671	0.459	0.518	0.418	0.318	0.245	0.342	0.368	0.377
Cadmium	2.5	30.8	1.8	12.6	0.96	4.14	1.13	0.642	4.3	1.19	0.714	1.77	1.22	3.13	1.9 J	8.56 J	0.787 J	0.906	3.05	1.01
Calcium	--	--	--	--	--	57400 B	18300 B	1E+05 B,D,J	52700 B,D,J	34200 B,J	321500 B	85100 B	27200 B	26100 B	46200 B	63900 B	74700 B,D	40400 B,J	19300 B	6910 B
Chromium	1	73.2	38	297	66.1	173	22.4	10.4 J	58.7 J	34.4 J	25.5	27.7	41.7	44.8	35.3	118	21.2	41.4 J	80.3	25.2
Cobalt	--	--	--	--	--	6.54	2.87 B	2.74	5.92	4.72	6.13	7.46	5.97	12.2	6.31	9.85	3.78	4.52	6.22	6.38
Copper	50	--	--	--	--	497 B	25.9	16.6 J	55.3 J	67.4 J	19.5 B	82.1	122 B	150 B	163 B	50.5 B	28.6 J	83.4	26.4	
Iron	2000	--	--	--	--	26200	3650 B	10200 J	28900 J	16500 J	16500 J	26600 B	10700 J	64500 D	18200	4910	15400	21400 J	12300 B	10.3 B
Lead	63	171	208	3310	232	465 B	69.2	117 J	313 J	276 J	49.6 B	325	211 B	206 B	549 B,J	591 B,J	112 B,J	156 J	156	43.4
Magnesium	--	--	--	--	--	25800 B	7580	23000 J	7820 J	11400 J	9580 B	17300	15000 B	6970 B	16500 B	25500 B	36100 B	9510 J	9890	11400
Manganese	1600	--	--	--	--	633	403 B	353 J	426 B	593 J	371	1210 B	404	653	695	1240	562	2010 J	794 B	211 B
Nickel	30	--	--	--	--	73.5	19.7	8.07 J	24.1 J	25.3 J	14.7	30.1 J	30.4	56.1	54.7	55.2	21.1	14.1 J	120 J	18.9 J
Potassium	--	--	--	--	--	913 B	141	665	532	314	1310 B	821 B	461 B	627 B	1120 B	656 B	525 B	530	308 B	3400 B
Selenium	3.9	ND	ND	ND	ND	1.7 J	0.6 J	0.9 J	1.9 J	1.1 J	1.5 J	1.2 J	1.1 J	5.7	1.5 J	3.4 J	1 J	1.4 J	1.6 J	4.4 J
Silver	2	ND	ND	1.1	ND	0.467 J	ND	0.389 J	0.164 J	0.071 J	0.154 J	0.212 J	0.338 J	0.144 J	0.168 J	ND	0.17 J	0.221 J	0.29 J	
Sodium	--	--	--	--	--	286	110 J	191 J	132 J	137 J	109 J	283	113 J	169	314	21	79.6 J	92.2 J	143 J	16400
Vanadium	--	--	--	--	--	141	221	130 J	48.2 J	90.5 J	21.9	31.6	21.6	66.7	130	62.5	23.9	512 J	25.3	80.5
Zinc	109	--	--	--	--	955 B	54.6	136 B,J	610 B,J	408 B,J	93.9 B	804 B	182 B	365 B	462 B,J	797 B,J	115 B,J	164 B,J	322 B	250 B
Mercury	0.18	0.086	0.035	3.1	0.046	5.25 D	0.0078 J	0.0417	0.28	0.0699	0.164	0.226	0.945	0.481	0.177	0.115	0.0816	0.168	0.366	ND

Definitions:

ND = Parameter not detected above laboratory detection limit.

-- = Sample not analyzed for parameter or no SCO available for the parameter.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

