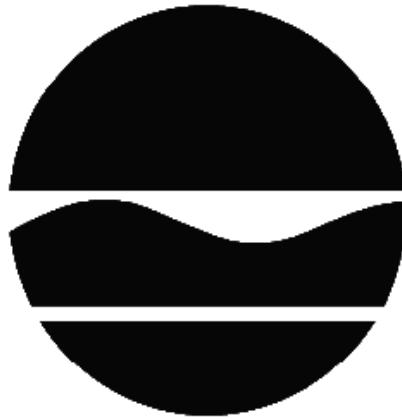


DECISION DOCUMENT

Tecumseh Phase I Business Park
Brownfield Cleanup Program
Lackawanna, Erie County
Site No. C915197
January 2012



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

DECLARATION STATEMENT - DECISION DOCUMENT

Tecumseh Phase I Business Park
Brownfield Cleanup Program
Lackawanna, Erie County
Site No. C915197
January 2012

Statement of Purpose and Basis

This document presents the remedy for the Tecumseh Phase I Business Park site, a brownfield cleanup site. The remedial program was chosen in accordance with the 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 decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Tecumseh Phase I Business Park site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principals and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. A site cover will be required to allow for commercial use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development

or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial 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 vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

3. Imposition of an institutional control in the form of an environmental easement is required for the controlled property that:

- allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- requires compliance with the Department approved Site Management Plan; and
- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3.)

4. A Site Management Plan is required, which includes, but not limited to, the following:

- an Institutional and Engineering Control Plan that identifies all use restrictions for the site noted above and details the steps necessary to ensure the following controls remain in place and effective;
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a Monitoring Plan to ensure groundwater quality and to assess the performance and effectiveness of the site cover;
- 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 and/or engineering controls.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

02/03/2012

Date



Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

Tecumseh Phase I Business Park
Lackawanna, Erie County
Site No. C915197
January 2012

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

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 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Lackawanna Public Library
Attn: Jennifer Hoffman
560 Ridge Road
Lackawanna, NY 14218
Phone: (716)823-0360

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:

The Tecumseh Phase I Business Park (Phase I or site) is located at 1958 Hamburg Turnpike in the City of Lackawanna, New York. Situated in an industrial area, the site is one parcel of a larger property identified on the Erie County Tax maps as SBL 141.11-1.111 that once was the Bethlehem Steel Company (BSC). The site is located to the west of Route 5, south and east of Gateway Metroport, and north of Tecumseh Phase II Business Park Sites.

Site Features:

The mostly rectangular property is approximately 5500 feet long, averages 1500 feet wide and is approximately 102 acres in size. The generally flat, slag filled site is vegetated with natural grasses, shrubs and poplar trees typical of a primary shrub-young forest ecosystem. Remnants of former steel manufacturing buildings and foundations are prevalent. An active rail spur which parallels the access road traverses the eastern side of the site. The larger BSC site is fenced with vehicle access limited to one automatic gate.

Zoning/Use(s):

The site is vacant. The site is zoned Commercial/Industrial and a site Master Development Plan exists. Surrounding uses include: vacant former industrial land, shipping, and a storage and transport facility.

Historical Use(s):

The site was formerly a portion of BSC's steel making operations. Prior uses of the site included the manufacture of steel, until production was discontinued at the site in 1983. Specific processes and steel making facilities performed on or proximate to the parcel included:

- Open Hearth Furnaces
- Blooming Mill
- Billet Preparation Mills
- Roughing Mills
- Rail Mills
- Foundry
- Water Treatment Plant

Future Use anticipates commercial, industrial and passive recreational opportunities.

Geology/Hydrology:

The entire site is mostly filled land with between two to eight feet of steel and iron-making slag as well as other fill material being used for backfill. Underlying the fill material are lacustrine silts and clays.

Bedrock is Middle Devonian, consisting of Levanna shale and Stafford limestone of the Hamilton Group and Skaneateles Formation. Bedrock is located about 60 feet deep near the eastern border of the site.

Due to the nature of the slag/soil fill there is very little ponding of stormwater, or surface runoff as most of the precipitation seeps into the highly permeable slag/soil fill. Any surface waters flow into the North Water Return Trench which parallels the property, flowing northerly until emptying into the Union Ship Canal.

Groundwater is between 5 and 6 feet below ground surface trending westerly and northerly toward the Buffalo Outer Harbor and Lake Erie. An existing deed restriction prohibits use of groundwater for potable purposes or non-potable purposes without treatment. Public water is supplied by the Erie County Water Authority.

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 commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the remedial investigation (RI) 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 RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

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 6.4.

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 Information

The analytical data collected on this site includes data for:

- groundwater
- soil

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:

arsenic	dibenz[a,h]anthracene
chromium	benzo(b)fluoranthene
lead	benz(a)anthracene
mercury	indeno(1,2,3-cd)pyrene
cyanides(soluble cyanide salts)	barium
benzo(a)pyrene	iron

manganese
magnesium

sodium

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

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 Excavation and UST removal

During the investigations several test pit areas throughout the site noted impacts from petroleum. Two test pit areas were impacted with coal tar residuals and one test pit area contained lead contaminated soils. Additionally two underground storage tanks (USTs) were discovered in the northeast corner of the site.

Remedial activities were completed as IRMs at the Site in accordance with an approved IRM Work Plan. Remedial activities starting in April 2009 were substantially complete in August 2009.

The IRM activities included:

- excavation and bio-remediation of approximately 12,000 cubic yards of petroleum impacted fill;
- excavation and appropriate off-site disposal of an estimated 100 cubic yards of soils impacted by lead and an additional 45 cubic yards of coal tar-impacted soil/fill;
- removal of two former petroleum USTs and remediation of impacted soils; and
- backfill of excavations with reclaimed slag material under a NYSDEC issued Beneficial Use Determination.

6.3: 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 completely fenced, which restricts public access. However, persons who enter the site could contact contaminants in the soil by walking on the site, digging, or otherwise disturbing the soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination.

6.4: 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.

Based upon investigations conducted to date, the primary contaminants of concern for soils at the Tecumseh Phase I site include metals, and Semi-Volatile Organic Compounds (SVOCs).

The nature and extent of metals contamination is consistent with the former site use as a steel manufacturing facility. Widespread exceedances of unrestricted use site cleanup objectives (SCOs) are common in the soil and fill, mostly in the upper two feet of soils. However, when compared to the commercial SCOs, only arsenic is found to exceed the SCOs (16 ppm) in a large number of the samples. Arsenic is found ranging from 2.4J* ppm to 152J ppm with the average of 25.3 ppm exceeds the commercial SCOs in 20 of 49 samples. Cadmium, ranging from not detected (ND) to 94.9 ppm was found to exceed commercial SCOs (9.3 ppm) in only four samples. Lead, from ND – 10,200 ppm, exceeds commercial SCO (1000 ppm) in only five samples. Mercury from 0.031 to 12.0 exceeds the commercial SCOs (2.8 ppm) in 7 of 49 samples. Cyanide only exceeded the commercial (27 ppm) SCOs in only one sample.

* A “J” value is an estimated value given when a sample result is less than the sample quantitation limit but greater than zero.

SVOCs are widespread in soils throughout the Phase I Business Park. Most of the contaminants are polyaromatic hydrocarbons (PAHs) and are usually associated with the burning of fossil fuels and heavy rail use. SVOC contamination also results from use of lubricating and cooling oils which were ubiquitous at the former steel mill. SVOC contamination is usually greater within or near surface soils, but typically decreases with depth, unless there is definitive evidence of source material such as stained soils, odors or visible impacts.

Although many SVOC compounds are present in soils throughout the site only five (5) compounds exceed the commercial SCOs in more than twenty-five (25) percent of the samples. Of these five compounds, benzo(a)pyrene with sample results from ND to 50 ppm averaging 8.5 ppm exceeds the commercial SCO of 1 ppm eighty-six(86) percent of the time. Dibenzo(a,h)anthracene, resulting from ND to 8.6J exceeded the commercial SCO of 0.56 ppm about one-half the time. Benzo(b)fluoranthene, (SCO 5.6 ppm) from ND to 86 ppm and benzo(a)anthracene (SCO 5.6 ppm) from 0.33J to 50 ppm exceeded the commercial SCOs in a little less than one-half the time. Finally, indeno(1,2,3-cd)pyrene, from ND to 30 ppm exceeds the commercial SCO of 5.6 ppm in about one in four samples.

Polychlorinated biphenyls (PCBs) were found to exceed the commercial SCOs (1.0 ppm) ranging from ND to 4.2 ppm in only three samples.

No volatile organic compounds (VOCs) were found to exceed the commercial or unrestricted SCOs in soil.

Sampling at the site indicates groundwater quality has been compromised. VOCs, SVOCs and PCBS were not found to exceed groundwater quality standards at any location. Groundwater sampled at Monitoring well MW-12A groundwater was found to contain barium at 8.7 ppm, (1.0 ppm standard), iron at 248 ppm (0.3 ppm standard), magnesium (2,260 ppm) manganese (74.3 ppm) and sodium (44,000 ppm). Additionally at MW-12A, pH (9.69) was greater than the groundwater quality standard of 6.5 to 8.5.

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:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principals and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. A site cover will be required to allow for commercial use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial 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 vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

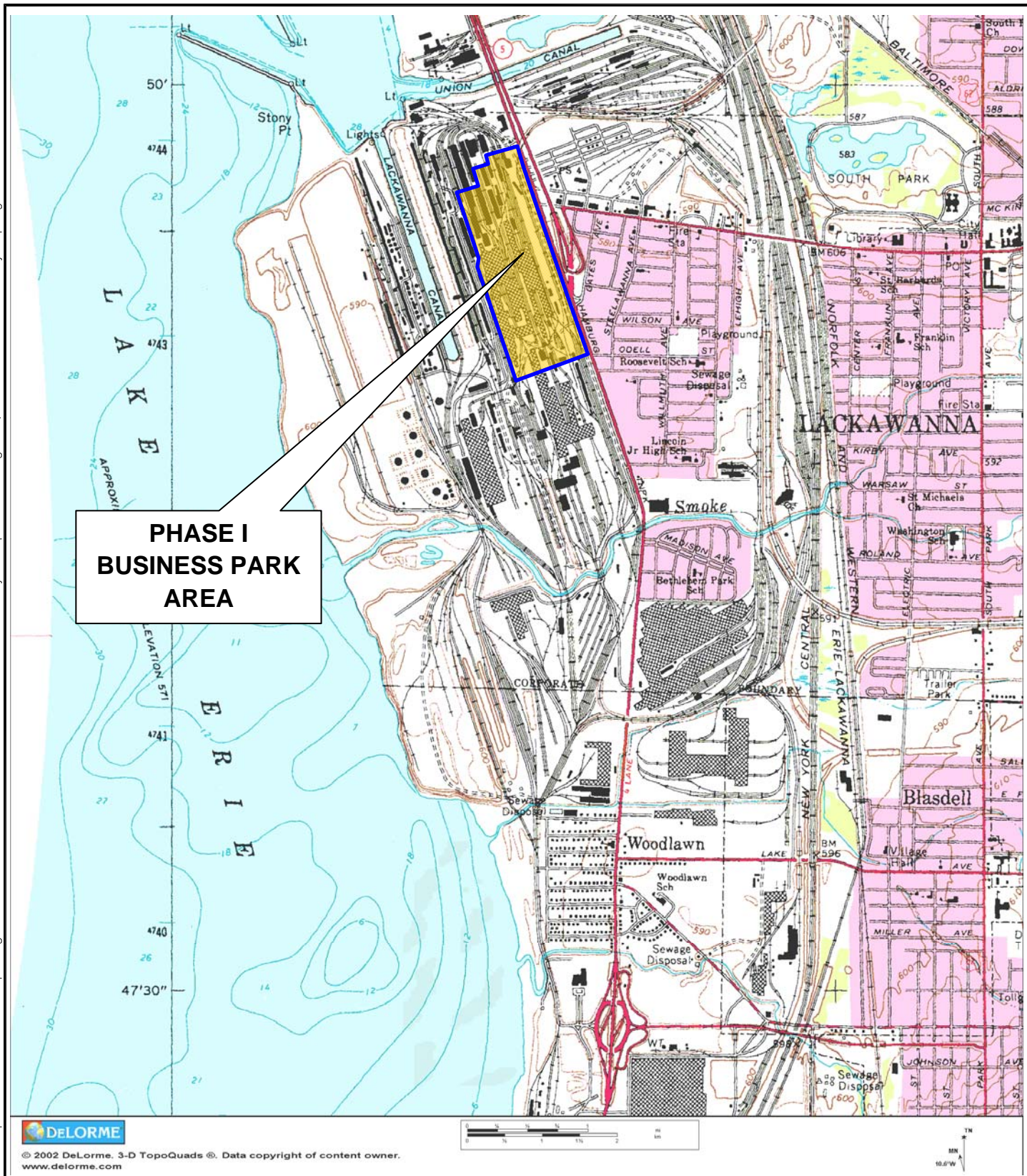
3. Imposition of an institutional control in the form of an environmental easement is required for the controlled property that:

- allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- requires compliance with the Department approved Site Management Plan; and
- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3.)

4. A Site Management Plan is required, which includes, but not limited to, the following:

- an Institutional and Engineering Control Plan that identifies all use restrictions for the site noted above and details the steps necessary to ensure the following controls remain in place and effective;
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a Monitoring Plan to ensure groundwater quality and to assess the performance and effectiveness of the site cover;
- 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 and/or engineering controls.

FIGURE 1



FILEPATH:\CAD\TurnKey\Tecumseh Redevelopment\Brownfield Cleanup Program (BCP)\Phase I Business Park Area\Alternatives Analysis Report (AAR)\Figure 1, site location and vicinity map.dwg



2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NEW YORK 14218
(716) 856-0599

SITE LOCATION AND VICINITY MAP ALTERNATIVES ANALYSIS REPORT

PHASE I BUSINESS PARK AREA
LACKAWANNA, NEW YORK

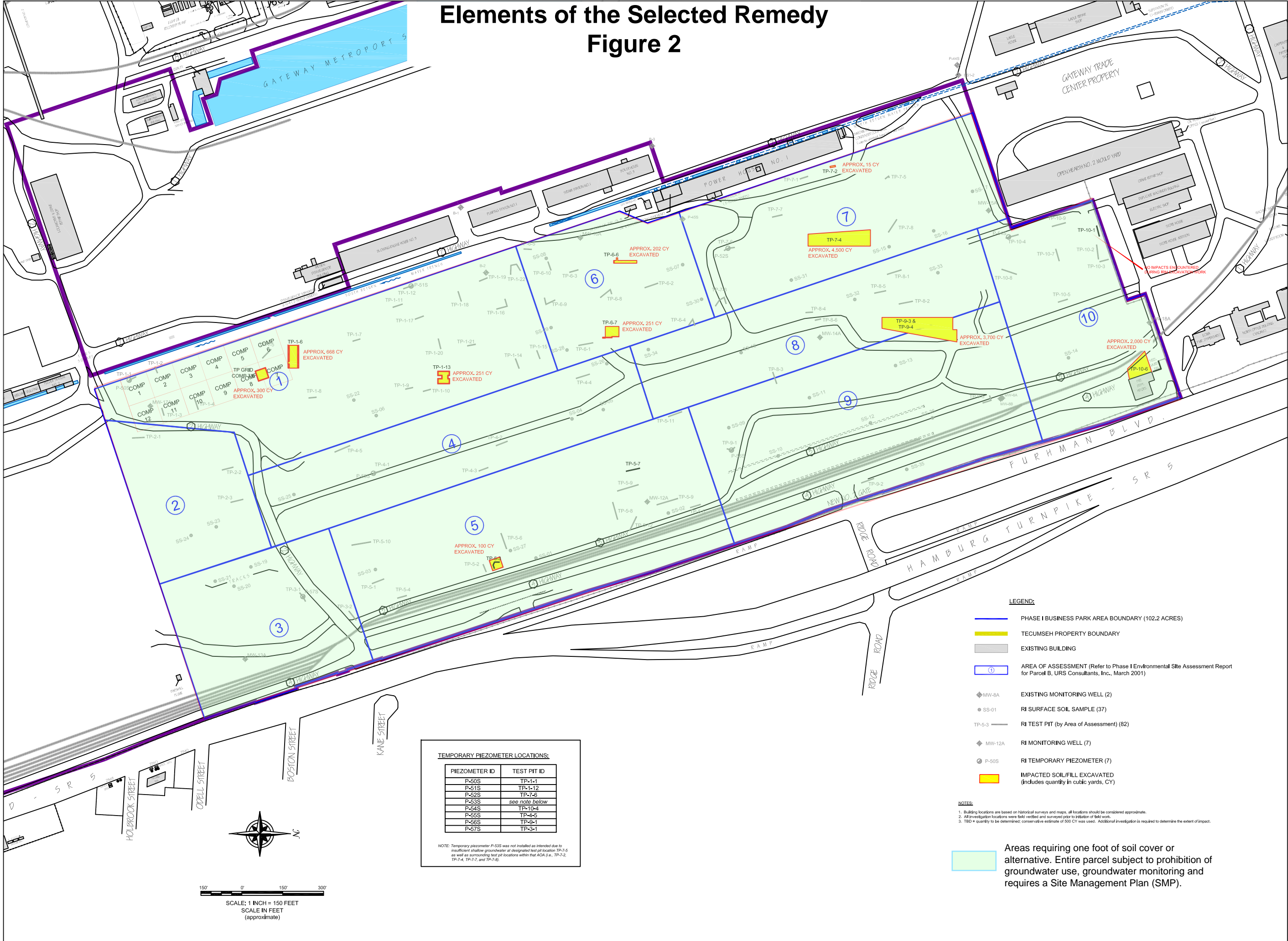
PROJECT NO.: 0071-006-202

DATE: MAY 2010

DRAFTED BY: BCH

PREPARED FOR
TECUMSEH REDEVELOPMENT, INC.

Elements of the Selected Remedy Figure 2



TEMPORARY PIEZOMETER LOCATIONS:

PIEZOMETER ID	TEST PIT ID
P-50S	TP-1-1
P-51S	TP-1-12
P-52S	TP-7-6
P-53S	see note below
P-54S	TP-10-4
P-55S	TP-4-5
P-56S	TP-9-1
P-57S	TP-3-1

NOTE: Temporary piezometer P-53S was not installed as intended due to insufficient shallow groundwater at designated test pit location TP-7-5 as well as surrounding test pit locations within that ADA (i.e., TP-7-2, TP-7-4, TP-7-7, and TP-7-8).

- LEGEND:**
- PHASE I BUSINESS PARK AREA BOUNDARY (102.2 ACRES)
 - TECUMSEH PROPERTY BOUNDARY
 - EXISTING BUILDING
 - 1 AREA OF ASSESSMENT (Refer to Phase I Environmental Site Assessment Report for Parcel B, URS Consultants, Inc., March 2001)
 - MW-5A EXISTING MONITORING WELL (2)
 - SS-01 RI SURFACE SOIL SAMPLE (37)
 - TP-5-3 RI TEST PIT (by Area of Assessment) (82)
 - MW-12A RI MONITORING WELL (7)
 - P-50S RI TEMPORARY PIEZOMETER (7)
 - IMPACTED SOIL/FILL EXCAVATED (includes quantity in cubic yards, CY)

NOTES:

1. Building locations are based on historical surveys and maps, all locations should be considered approximate.
2. All investigation locations were field verified and surveyed prior to initiation of field work.
3. TSD = quantity to be determined; conservative estimate of 500 CY was used. Additional investigation is required to determine the extent of impact.

Areas requiring one foot of soil cover or alternative. Entire parcel subject to prohibition of groundwater use, groundwater monitoring and requires a Site Management Plan (SMP).

2658 HAMBURG TURNPIKE
SUITE 1300
BUFFALO, NEW YORK 14218
(716) 856-0599
JOB NO.: 0071-006-204

REVISIONS

NO.	BY	DATE	REMARKS

SEAL

EXTENT OF REMEDIAL EXCAVATION PERFORMED AS IRM

DRAWN BY: BCH/NTM	DATE: MAY 2010
CHECKED BY: THF	APPROVED BY:

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PHASE I BUSINESS PARK AREA
LACKAWANNA, NEW YORK

PREPARED FOR:
TECUMSEH REDEVELOPMENT, INC.