3/16/2007

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
PRAP/ROD ROUTING SLIP

TO: Assistant Division Director

FROM: The attached is submitted for your approval by:

NAME	INITIAL	DATE
Project Manager: Thomas Biel	TB	3/14
Section Chief/RHWRE: Martin Doster	MD	3/14
Bureau Director: Edward Belmore	EWB	3/14

DATE: 3/16/2007

RE: **Site Name** Six Vacant Lots on Ridge Road **Site Code** E 915188
City Lackawanna **County** Erie

☐ **PRAP**

☐Draft PRAP
☐Clean copy of the PRAP
☐Redline /Strikeout version of the PRAP
☐Copies of edits to PRAP ()
☐Site Briefing Report
☐NYSDOH concurrence letter
☐USEPA concurrence letter

PRAP Release Approvals

Ass't Div Director:_____

Division Director:_____

☐ **ROD**

FINAL S9948

☒ Draft ROD
☒ Signature-ready copy of the ROD
☐ Redline/Strikeout version of the ROD
☒ Copies of edits to ROD () ☐

Site Briefing Report
☒ NYSDOH concurrence letter
☐ USEPA concurrence letter

ROD Signoff

Ass't Div Director: [signature] 3/16/07

☐ **BRIEFING**
Date:_____ **Time:**_____ **Room:**_____

c:

Other reviewers who are invited to Briefing

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
Site Briefing Report

Site Code	E915188	**Site Name**	Six Vacant Lots on Ridge Road		
Classification	A	**Address**	113-135 Ridge Road		
Region	9	**City**	Lackawanna	**Zip**	14218
Latitude	42.827399N	**Town**	Lackawanna (c)		
Longitude	78.847126W	**County**	Erie	**Project Manager**	DAVID SZYMANSK
Site Type				**Estimated Size**	0.7700

Site Description

This site is composed of six contiguous commercial lots that front on a major arterial in the City. The site has housed a number of different commercial activities dating back to the early 1900's. The Six Vacant Lots site includes the addresses 113, 117, 121, 125, 129 and 135 Ridge Road. The total area of the site is approximately 0.77 acres. The site is located in a mixed industrial, commercial, and residential area of Lackawanna. Historically, commercial buildings were present on the site but were subsequently demolished.

The City of Lackawanna applied and was accepted into the State's Environmental Restoration Program (ERP)in December 2004. A Site Investigation was conducted on the property in 2005 to ascertain the nature and extent of possible contamination by hazardous substances.
The investigation determined that the property contained fill material that had elevated levels of chromium. An Interim Remedial Measure was conducted to remove a small area of soil contaminated with chromium in March 2006. The excavated material was disposed of off site at a landfill as solid waste.

A Proposed Remedial Action Plan recommending a Site Management Plan to address residual contamination during development was issued in December 2006. The public comment period ended on February 5, 2007.

Materials Disposed at Site **Quantity Disposed**

Analytical Data Available for :

Applicable Standards Exceeded for:

Assessment of Environmental Problems

An environmental assessment has determined that the site soils have moderate contamination from metals. Groundwater has not been impacted. An Interim Remedial Measure (IRM) was conducted in March 2006. The IRM was completed on 03/22/06 when excavated fill material was disposed of off site as solid waste at a landfill. The site no longer presents a threat to the environment. A soil management plan has been prepared for this site. The PRAP for this site was completed in December 2006 and was presented at a public meeting on January 11,2007.

Assessment of Health Problems

The primary concerns at the site are based on the common building materials. Investigations at the site documented two areas that contained
elevated concentrations of chromium in soils. An IRM has been approved that includes the removal and off-site disposal of all impacted soil and
fill, confirmation sampling, and backfilling with clean fill. The IRM was completed in March 2006, therefore, all potential exposure pathways have
been eliminated.

Remedy Description and Cost

Remedy Description for Operable Unit 00

- Imposition of an institutional control in the form of an environmental easement that would: (a) require compliance with the approved site management plan; (b) limit the use and development of the property to restricted commercial or industrial uses only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) require the property owner to complete and submit to the NYSDEC a periodic certification.
- Upon development, a soil cover will be constructed over all areas not covered by pavement or building foundations to prevent exposure to contaminated soils. The one foot thick cover would consist of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of soil would be of sufficient quality to support vegetation. Clean soil would constitute soil with no analytes in exceedance of NYSDEC TAGM 4046 soil cleanup objectives or local site background. Other areas such as (buildings, roadways, parking lots, etc) would be covered by a paving system or concrete at least 6 inches in thickness.
- Implementation of a soil/fill management plan to address residual contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations.

Total Cost

Capital Cost

OM&M Cost

Issues / Recommendations

Remedy Description for Operable Unit 01

- Imposition of an institutional control in the form of an environmental easement that would: (a) require compliance with the approved site management plan; (b) limit the use and development of the property to restricted commercial or industrial uses only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) require the property owner to complete and submit to the NYSDEC a periodic certification.
- Upon development, a soil cover will be constructed over all areas not covered by pavement or building foundations to prevent exposure to contaminated soils. The one foot thick cover would consist of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of soil would be of sufficient quality to support vegetation. Clean soil would constitute soil with no analytes in exceedance of NYSDEC TAGM 4046

soil cleanup objectives or local site background. Other areas such as (buildings, roadways, parking lots, etc) would be covered by a paving system or concrete at least 6 inches in thickness.

- Implementation of a soil/fill management plan to address residual contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations.

Total Cost

Capital Cost $3,750

OM&M Cost $2,000

Issues / Recommendations

PRAP being prepared requiring ICs to provide cover, limit to comm/ind use, and periodic certification.

Remedy Description for Operable Unit 01A

On 02/21/06 areas IRM7 and IRM8 were excavated with post excavation samples collected. Soil/fill staged on site.

Supplemental excavation at IRM7 was conducted with post excavation sampling on 02/24/06.

On 03/02/06 both excavations were backfilled with clean soil.

On 03/22/06 removal and off-site disposal of the impacted soil/fill pile.

The volume of clean soil used to backfill the excavations was 189 cubic yards.

The total weight of fill/soil disposed of at the landfill was 263 tons tallied from the landfill scale tickets.

Total Cost

Capital Cost $45,000

OM&M Cost

Issues / Recommendations

No further action PRAP being prepared requiring ICs to provide cover, limit to comm/ind use, and periodic certification.

Ed B

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

March 12, 2007

Mr. Dale Desnoyers, Director
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway - 12th Floor
Albany, New York 12233-7011

Re: Record of Decision
Six Vacant Lots
Site #E915188
Lackawanna (C), Erie County

Dear Mr. Desnoyers:

Staff reviewed the February 2007 draft Record of Decision for the Six Vacant Lots site. Previous investigations documented that site soils have been contaminated with metals. An Interim Remedial Measure (IRM) was conducted in March 2006 that included the excavation and off-site disposal of a small area of fill impacted by elevated levels of chromium. Post excavation samples of the IRM area verified that the levels of chromium remaining in on-site soils were below the site- specific clean-up objective.

The selected remedy includes the construction of a cover system and the implementation of a site management plan (SMP). Areas not developed with buildings or paved parking lots will be covered with a minimum of one foot of clean soil underlain by an indicator barrier to demarcate the cover soil from the subsurface soil. A SMP will be developed to address residual contaminated soils that may be excavated from the site during future redevelopment and to identify any use restrictions. An institutional control in the form of an environmental easement will be imposed that will: require compliance with the SMP; limit the use and development of the property to commercial or industrial uses only; and require the property owner to complete and submit to the NYSDEC a periodic certification.

Based on this information, I believe the selected remedy is protective of public health and concur with it.

If you have any questions, please contact Richard Fedigan at (518) 402-7870.

Sincerely,

Steven M. Bates, Assistant Director
Bureau of Environmental Exposure Investigation

cc: G. A. Carlson, Ph.D./A. Grey, Ph.D.
Mr. G. Litwin/Mr. R. Fedigan/FILE
Mr. C. O'Connor, WRO
Mr. J. Kociela, ECHD
Mr. S. Ervolina/Mr. E. Belmore, DEC
Mr. M. Doster, DEC Reg. 9

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Department of Environmental Conservation

Division of Environmental Remediation

Environmental Restoration
Record of Decision
Six Vacant Lots Site

City of Lackawanna, Erie, New York
Site Number E915188

March 2007

New York State Department of Environmental Conservation
ELIOT SPITZER, *Governor*

DECLARATION STATEMENT
ENVIRONMENTAL RESTORATION RECORD OF DECISION

Six Vacant Lots Environmental Restoration Site
City of Lackawanna, Erie County, New York
Site No. E915188

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Six Vacant Lots site, an environmental restoration site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Six Vacant Lots environmental restoration site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous substances from this site have been addressed by implementing the interim remedial measures identified in this ROD. The removal of contaminated fill material containing elevated concentrations of chromium from the site has significantly reduced the threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Site Investigation/Remedial Alternatives Report (SI/RAR) for the Six Vacant Lots site and the criteria identified for evaluation of alternatives, the Department has selected a remedy with the following elements:

- Imposition of an institutional control in the form of an environmental easement that would: (a) require compliance with the approved site management plan; (b) limit the use and development of the property to restricted commercial or industrial uses only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) require the property owner to complete and submit to the NYSDEC a periodic certification.
- Upon development, a soil cover will be constructed over all areas not covered by pavement or building foundations to prevent exposure to contaminated soils. The one foot thick cover would consist of clean soil underlain by an indicator such as orange plastic snow fence to

demarcate the cover soil from the subsurface soil. The top six inches of soil would be of sufficient quality to support vegetation. Clean soil would constitute soil with no analytes in exceedance of NYSDEC TAGM 4046 soil cleanup objectives or local site background. Other areas such as (buildings, roadways, parking lots, etc) would be covered by a paving system or concrete at least 6 inches in thickness.

- Implementation of a soil/fill management plan to address residual contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective.

MAR 16 2007

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

TABLE OF CONTENTS

Environmental Restoration
RECORD OF DECISION

Six Vacant Lots Site
City of Lackawanna, **Erie, New York**
Site No. E915188
March 2007

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the Six Vacant Lots site. The Six Vacant Lots site includes the addresses 113, 117, 121, 125, 129 and 135 Ridge Road in the City of Lackawanna, Erie County, New York. The total area of the site is approximately 0.77 acres. The site is located in a mixed industrial, commercial, and residential area of Lackawanna. Historically, commercial buildings were present on the Site but have been subsequently demolished. Currently, the site is a vacant lot covered with dirt and gravel with no aboveground structures. Foundations of previous structures still remain on the site. The presence of hazardous substances has created threats to human health and/or the environment that are addressed by this proposed remedy.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated the property can then be reused.

As more fully described in Sections 3 and 5 of this document, contaminated fill material was placed on portions of the site following the demolition of the site buildings. The placement of this fill material resulted in the disposal of hazardous substances, including elevated concentrations of chromium. These hazardous substances contaminated the fill material and surface soil at the site and resulted in a threat to human health associated with potential exposure to chromium contaminated fill material.

During the course of the investigation certain actions, known as interim remedial measures(IRMs), were undertaken at the Six Vacant Lots site in response to the threats identified above. An IRM is conducted at a site when a source of contamination or an exposure pathway can be effectively addressed before completion of the site investigation/remedial alternatives report (SI/RAR). The IRM undertaken at the site included excavation and disposal of contaminated fill material.

To eliminate or mitigate these threats, and to allow for commercial/industrial development of the site the following IRM activities were performed:

- Impacted areas of the site identified to contain elevated chromium contaminated fill material were excavated and disposed off-site as a solid waste;
- Placement of clean soil in the excavations;
- A vegetative cover was established on all disturbed areas;
- Development of a site management plan to address residual contamination and use restrictions;

Based on the implementation of the above IRM, the findings of the investigation of this site indicate that the site no longer poses a significant threat to the environment. Therefore, No Further Action is proposed as the remedy for this site.

The selected remedy, discussed in detail in Section 6, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. Standards, criteria and guidance are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Six Vacant Lots site includes the addresses 113, 117, 121, 125, 129 and 135 Ridge Road in the City of Lackawanna, Erie County, New York. The total area of the site is approximately 0.77 acres. The site is located in a mixed industrial, commercial, and residential area of Lackawanna, near the intersection of Ridge Road and Wasson Avenue. Historically, commercial buildings were present on the site but have been subsequently demolished. Currently, the site is a vacant dirt/gravel covered lot with no aboveground structures. Foundations of previous structures still remain on the site. The site location is depicted in Figure 1, an excerpt from a USGS topographic map.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Based on interviews with city officials and review of Sanborn Maps® from the years 1915, 1927, and 1927 - 1950, it is known that a variety of commercial activities including a bakery, jeweler, men's clothing store, restaurants and a tin shop operated on the site. The Sanborn Maps® indicate that the structures were constructed on the site primarily between 1915 and 1927. Those structures were likely constructed in the manner and of materials typical of that period. The Sanborn Maps® indicate the buildings were mainly two story brick framed structures along Ridge Road and Wasson Avenue, and several single story wood-framed and stone structures at the rear of the main structures or along the southern property boundary. Based on the review of City Directories and the Sanborn Maps®, it is believed that many of the buildings existed until the late 1960s, however this could not be verified. It is not known when the former buildings were demolished. The primary environmental concerns include the storage and/or use of petroleum based heating fuels at the site and the potential for the presence of fill material, such as slag, from industrial sources.

3.2: Remedial History

It is not known if any previous environmental investigations or remedial actions have taken place at any of the six lots. The City of Lackawanna acquired the properties in the late 1970s.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past owners and operators, waste generators, and haulers.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. The City of Lackawanna will assist the state in its efforts by providing all information to the state which identifies PRPs. The City of Lackawanna will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 5: SITE CONTAMINATION

The City of Lackawanna has recently completed a site investigation/remedial alternatives report (SI/RAR) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

5.1: Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI was conducted between May and September, 2005. The field activities and findings of the investigation are described in the SI report.

The following activities were conducted during the SI:

- Research of historical information;
- Excavation of twenty test pits to determine the nature and extent of fill material;
- Installation of three soil borings and three monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;
- Sampling of three monitoring wells;
- Collection of six subsurface soil/fill samples from the test pits. One soil/fill sample was collected on each sublot;

- A survey of public and private water supply wells in the area around the site.

To determine whether the surface soil, subsurface soil/fill, and groundwater contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels".

- Background surface soil samples were taken from five off-site locations. These locations were north, northwest, west, east and south of the site, and were unaffected by current site operations. The samples were analyzed for Target Compound List (TCL) SVOCs, PCBs, Pesticides, Target Analyte List (TAL) metals, and total cyanide analyses.

- A value of 1,000 parts per million (ppm) total chromium was selected as the Site Specific Action Level (SSAL) at this site. This SSAL was determined based upon an evaluation of existing site-wide data and a human health evaluation.

Based on the SI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. These are summarized below. More complete information can be found in the SI report.

5.1.1: Site Geology and Hydrogeology

The subsurface conditions at the site consist of fill material underlain by glaciolacustrine deposits of silt and fine sand. Foundations of the former on-site structures are visible at the surface and were also encountered during excavation of several of the test trenches.

Fill Materials - Fill materials were encountered throughout the site, and are likely a result of the previous development and razing of the former structures at the site. Fill thicknesses were primarily from one to three feet. Two former basements were encountered near the northern property boundary during the test pit excavations. Their depths extended to 6.7 and 7.5 feet below ground surface. The floor slabs could not be penetrated, and therefore conditions beneath these locations could not be verified. Further investigation was not pursued because the floor slabs were installed within the native soil unit that is present at approximately three feet below ground surface throughout the site.

The fill materials encountered varied from location to location as well as vertically. Fill units consisted primarily of a sandy silt, slag and gravel, foundry sands, and at one location (VL7-TP2), a former basement filled with bricks and timbers.

Fine-Grained Soils - Native lacustrine deposits exist beneath the fill materials at the site at approximately three feet below the ground surface. These deposits consisted primarily of a sandy silt with trace amounts of gravel and clay.

Two glacial till units exist beneath the lacustrine silts. The upper unit consists of a sandy silt till that extends to depths between 13 and 15 feet below ground surface. The lower unit is a silty, sandy, clay till that extended the full depth drilled at each boring location.

Bedrock - Bedrock was not encountered in any of the soil borings drilled during the site investigation. Bedrock beneath the site is reportedly the Levanna Shale member of the Skaneateles Formation. The depth to bedrock is not known but is probably within 50 feet below ground surface.

Depths to groundwater were measured at depths ranging from approximately four to seven feet below the ground surface in the three monitoring wells installed at the site. The groundwater flow across the site was determined to be to the northeast.

5.1.2: Nature of Contamination

Before the IRM, fill material containing elevated concentrations of chromium (greater than 1,000 ppm) existed at two locations on the Six Vacant Lots site. Exposure could occur via incidental ingestion of and dermal contact with soil and/or inhalation of particles released from the soil to the neighborhood from wind erosion as long as the wastes remain in place.

Confirmation samples collected following the IRM yielded results for chromium within the range of background values (5.3 - 101 ppm) collected in the area. The surface soil samples (outside the IRM area) collected on site during the RI ranged between 15.4 - 866 ppm.

As described in the SI report, many soil/fill, and groundwater samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceed their SCGs are semivolatile organic compounds (SVOCs) and inorganics (metals).

5.1.3: Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

Chemical concentrations are reported in parts per billion (ppb) for water, parts per million (ppm) and for soil / fill. For comparison purposes, where applicable, SCGs are provided for each medium.

Table 1 summarizes the degree of contamination for the contaminants of concern in and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Surface Soil & Subsurface Soil

Fill materials were encountered throughout the site but varied in composition from location to location, as well as vertically. Fill units consisted primarily of sandy silt, slag and gravel, foundry sands and, at one location, a former basement filled with bricks and timbers.

Off - site

Surface soil sampling was performed at five off-site locations adjacent to the site to establish background soil concentrations. The background surface soil samples were analyzed for Polynuclear Aromatic Hydrocarbons and metals. The PAH compounds; benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene and chrysene were detected at concentrations that exceed TAGM values. The metals chromium, zinc, iron and beryllium were detected in concentrations exceeding the TAGM value.

On - site

Six on-site surface soil samples (depth; 0-2 inches) were collected from each of the vacant lots and analyzed for TCL SVOCs, pesticides, PCBs, TAL Metals, cyanide, and pH. One sample (VL6-SS) was analyzed for Volatile Organic Compounds due to the presence of staining observed at the surface.

Twenty test pits were excavated on the site to determine the nature and extent of the fill material. Six subsurface soil samples were collected for laboratory analysis (one sample on each lot).

Analytical results found six SVOCs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, chrysene, and phenol) were present in the surface soils at the site at concentrations in excess of TAGM. Five of the six SVOCs are identified as carcinogenic polycyclic aromatic hydrocarbons (PAHs) and therefore have reduced lower cleanup objectives as compared to other SVOCs. Phenol is not categorized as a carcinogenic PAH. Of the compounds detected at concentrations greater than the TAGM, only two (benzo(a)pyrene and chrysene) were present above the typical range found in urban soils at one or more sample locations. Benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, and chrysene were also detected in the off-site background samples at concentrations greater than the TAGM. This indicates that the concentrations of these PAHs are indicative of the soil/fill materials present at the surface throughout the area and are likely the result of past industrial and commercial use of the site and neighboring properties. PAHs are a byproduct of anthropogenic combustion processes the burning of fossil fuels and are ubiquitous common in urban soils. PAHs are particularly present near roads, factories, power plants, railroads and parking lots where petroleum fuels are burned and asphalt paving is present. The phenol detections occurred at only two on-site sample locations, and are only slightly above the TAGM.

Metals were also relatively consistent across the site with the exception of one area which exhibited elevated levels of chromium. The data indicate that metals are characteristic of fill material on the site. Concentrations of these metals in the off-site/background samples are at concentrations greater than the expected background range. This observation indicates that on-

site values (with the exception of the elevated "hotspot" areas) represent typical background concentrations for this area. During the initial sampling on the site, the sample designated VL8-SS showed an elevated level of chromium of 1360 ppm. Supplemental sampling found levels as high as 1750 ppm in soil. Chromium was found to be associated with slag found on the site. Figure 2 defines the extent of the contaminated hotspot areas. These areas were addressed by the IRM described in Section 5.2. Post excavation samples shown in Figure 2 indicate the IRM removed contaminated soils down to levels consistent with other parts of the site i.e. below 1000 ppm.

Groundwater

No VOCs, SVOCs or PCBs were detected at levels above the laboratory reporting limits for groundwater samples collected from the three monitoring wells installed on the site. The pesticide endrin was detected in monitoring well MW-2 at an estimated concentration of 0.048 ppb. Several metals were detected in the groundwater samples at the site. All but sodium were at concentrations below the NYSDEC Class GA Groundwater Standards. Sodium concentrations exceeding the 20,000 ppb standard were detected in monitoring wells MW-1 and MW-2. These two wells are located adjacent to Ridge Road and it is possible that these elevated concentrations are the result of road salt application.

5.2: 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 completion of the SI/RAR.

Fill material present at two portions of the site with elevated total chromium levels were remediated. Beginning on February 21, 2006, fill material was excavated down to the zone of undisturbed native soil. The excavated material was properly disposed of as off-site as solid waste. The IRM was completed on March 22, 2006. Post excavation sampling of the IRM areas verified that the levels of chromium remaining were consistent with remaining values on the site. The average concentration of chromium before the IRM was 1440 ppm. The average post-excavation value in the area of the excavation was 34.3ppm.

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 6.3 of the SI report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

Potential exposure pathways identified at the Six Vacant Lots site are direct contact, ingestion and inhalation of surface and subsurface soil. An IRM conducted at the site included the removal of all fill material and soil identified as containing levels of chromium above the SSAL (1000 ppm). Upon completion of this action, the excavation was backfilled with clean soil and seeded.

The qualitative human health evaluation concluded that future exposure to remaining PAHs and metals is likely for trespassers.

It is anticipated that redevelopment of the site will result in much of the site being covered with either pavement and building structure. In order to address the remaining site contamination (low level PAHs and metals), upon development exposed site soils shall be covered with a minimum of 12 inches of clean soil and a vegetated cover (i.e. grass) shall be established.

5.4: Summary of Environmental Impacts

This section summarizes the existing and potential future environmental impacts presented by the site prior to the IRM. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The site is located in an urban residential, commercial and industrial area in the City of Lackawanna. No potential fish and wildlife impacts were identified.

Site contamination has not impacted the groundwater resource. The City of Lackawanna is served by a municipal water and sewer systems.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS, SELECTED REMEDY, AND THE PROPOSED USE OF THE SITE

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The selected remedy must, at a minimum, eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles.

Prior to the completion of the IRM described in Section 5.2, the remediation goals for this site were to eliminate or reduce to the extent practicable: be protective of human health and the environment, be cost-effective, comply with other statutory requirements.

The fill material containing elevated concentrations of chromium was excavated and removed from the site during the IRM. The selected remedy assumes that 1/10 of the site area will require soil cover with the rest of the site covered with pavement or building foundations. A 6" topsoil layer will make up the uppermost portion of the 12" soil barrier layer. Soil/fill material excavated during site redevelopment and maintenance would be managed following the soil/fill management plan.

The remedy is based on the results of the SI and the evaluation of alternatives presented in the RAR. The proposed future use for the Six Vacant Lots site is commercial or industrial use.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to elevated metals and PAHs in soil; and
- the release of contaminants from surface soil and subsurface soil into ambient air through wind borne dust.

Based on the results of the IRM that has been performed, and the evaluation presented here, the Department has selected a remedy with the following elements:

1. A soil cover would be constructed over all areas not covered by pavement or building foundations to prevent exposure to contaminated soils. The one foot thick cover would consist of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of soil would be of sufficient quality to support vegetation. Clean soil would constitute soil with no analytes in exceedance of NYSDEC TAGM 4046 soil cleanup objectives or local site background. Other areas such as (buildings, roadways, parking lots, etc) would be covered by a paving system or concrete at least 6 inches in thickness.

2. Implementation of a site management plan (SMP) to address residual contaminated soils that may be excavated from the site during future redevelopment. The plan would require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations. The SMP would also identify any use restrictions.

3. Imposition of an institutional control in the form of an environmental easement that would: (a) require compliance with the approved site management plan; (b) limit the use and development of the property to restricted commercial or industrial uses only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) require the property owner to complete and submit to the Department a periodic certification.

4. The property owner would provide an periodic certification, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal would contain certification that the institutional controls and engineering controls are still in place, allow the Department access to the site, and that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the environmental restoration process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site:

- Repositories for documents pertaining to the site were established;
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established;
- Three Fact sheets were produced and distributed; and
- Three public meetings were held: January 11, 2007(PRAP), October 18, 2005 (IRM) and September 26, 2005 (site reuse alternatives) to present and receive comments.

TABLE 1
Nature and Extent of Contamination Prior to IRM

SURFACE & SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic				
	Benzo(a)anthracene	0.067 - 9.3	0.224 or MDL	8 / 12
	Benzo(a)pyrene	0.075 - 7.6	0.061 or MDL	12 / 12
	Benzo(b)fluoranthene	0.12 - 9.3	1.1	8 / 12
	Benzo(k)fluoranthene	0.043 - 3.1	1.1	4 / 12
	Chrysene	0.94 - 8.8	0.4	8 / 12
	Dibenzo(a,h)Anthracene	0.019 - 1.0	0.014 or MDL	12 / 12
	Phenol	0.20 - 0.038	0.03 or MDL	3 / 12
Inorganic Compounds				
	Chromium	12 - 1,750	1,000[c]	14 / 20
	Iron	16,200 - 120,000	2,000 or SB(372)	12 / 12
	Magnesium	1,960 - 19,400	SB(1,080)	12 / 12
	Manganese	485 - 25,200	SB(0.48)	12 / 12
	Mercury	0.019 - 0.32	0.1	8 / 12
	Potassium	416 - 1,340	SB(0.7)	4 /12
	Sodium	78 - 264	SB(ND)	1 / 12
	Vanadium	14 - 335	150 or SB(21)	1 / 12
	Zinc	99 - 1,420	20 or SB(1,170)	4 / 12

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Pesticides	Endrin	ND - 0.048	ND	1 / 3
Inorganic Compounds	Antimony	4.7	3	1 / 3
	Iron	116 -4,760	300	1/ 3
	Lead	3.2	25	0 / 3
	Magnesium	23,400 - 84,500	35,000	1 / 3
	Nickel	1.4 - 7.5	100	3 / 3
	Potassium	7,840 - 10,200	NA	3 / 3
	Sodium	14,400 - 227,000	20,000	2 / 3

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
[b] SCG = standards, criteria, and guidance values;
[c] Site Specific Action Level
ND = Not Detected

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Six Vacant Lots Site Environmental Restoration Site
City of Lackawanna, Erie, New York
Site No. E915188

The Proposed Remedial Action Plan (PRAP) for the Six Vacant Lots site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on December 22, 2006. The PRAP outlined the remedial measure proposed for the contaminated fill material at the Six Vacant Lots site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on January 11, 2007 which included a presentation of the Site Investigation (SI) and the Remedial Alternatives Report (RAR) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on February 5, 2007.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: What caused contamination at the site?

RESPONSE 1: Fill material containing chromium and other contaminants was brought to the site.

COMMENT 2: Are there any potential health hazards on the neighboring property? Could contamination from the Six Lots site affect neighboring properties?

RESPONSE 2: The sampling included five off-site locations as well as many on-site locations. The sampling results show the elevated contamination did not migrate off-site onto neighboring properties.

COMMENT 3: Is it common for fill to be unclean?

RESPONSE 3: Fill material is defined as non-native material historically disposed on a site to create useable land. Many times fill contains solid waste including coal ash, construction and demolition debris, steel-making slag etc. which can contain levels of contamination.

COMMENT 4: At what depth was chromium found during sampling?

RESPONSE 4: Elevated levels of chromium were found in samples collected from the surface to a depth of six inches on the property.

COMMENT 5: What exactly is chromium and where does it originate from?

RESPONSE 5: Chromium is a steel-gray, lustrous, hard metal that takes a high polish and has a high melting point. It is also odorless, tasteless, and is malleable. Chromium occurs naturally in soils at low concentrations depending on the local geology. Chromium metal and chromium(III) compounds are not usually considered health hazards, but hexavalent chromium (chromium VI) compounds can be toxic if orally ingested or inhaled. The lethal dose of poisonous chromium (VI) compounds is about one half teaspoon of material. Most chromium (VI) compounds are irritating to eyes, skin and mucous membranes. Chronic exposure to chromium (VI) compounds can cause permanent eye injury, unless properly treated.

COMMENT 6: What are the dimensions of the site?

RESPONSE 6: The site is 240 feet by 140 feet and is about 0.77 acres in size.

COMMENT 7: What was the cost of the project?

RESPONSE 7: The investigation cost $95,000 and the IRM cost $40,000.

COMMENT 8: Are there any prospects for future site ownership?

RESPONSE 8: The City is working on finding an owner or developer.

APPENDIX B

Administrative Record

Six Vacant Lots Site
Site No. E915188

1. Proposed Remedial Action Plan for the Six Vacant Lots site, dated December, 2006, prepared by the Department.

2. "Final Site Investigation/Remedial Alternatives Report Six Vacant Lots on Ridge Road Site Lackawanna, New York", May 2006, prepared by Malcolm Pirnie, Inc..

3. SI/RAR Work Plans - September 2004

4. Final SI Report - May 2006

5. Final RAR Report - May 2006

6. IRM Documentation - May 2006

7. CP Plan - March 2005

8. Field Notes/Telephone Logs - May 2006

9. Fact Sheets/Notices - March 2005, September 2006, December 2006.