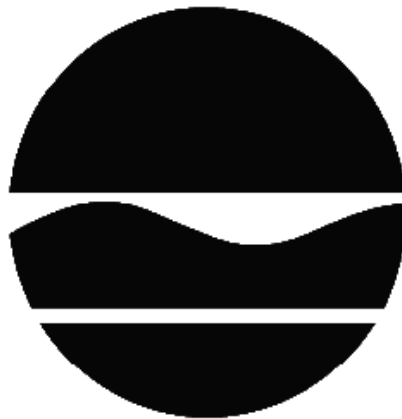


# RECORD OF DECISION

---

Crouse-Hinds Landfills  
State Superfund Project  
Syracuse, Onondaga County  
Site No. 734004  
March 2011



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

# **DECLARATION STATEMENT - RECORD OF DECISION**

---

Crouse-Hinds Landfills  
State Superfund Project  
Syracuse, Onondaga County  
Site No. 734004  
March 2011

## **Statement of Purpose and Basis**

This document presents the remedy for the Crouse-Hinds Landfills site, a Class 2 inactive hazardous waste disposal 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, 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 Crouse-Hinds Landfills site and the public's input to the proposed remedy 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.

## **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.
2. There are three identified hot spots that will be targeted for excavation and off-site disposal. All three areas occur in the North Landfill. One area on the east side includes approximately 750 cubic yards of waste containing PCBs at concentrations of 50 ppm or greater. The other area on the east side includes approximately 4,500 cubic yards of waste that contains elevated solvents. The area on the west side of the North Landfill includes approximately 1,500 cubic yards of oily waste in the vicinity of monitoring well MW-6. All three areas will be characterized, excavated and transported off-site to a TSCA and/or hazardous waste landfill as applicable. Characterization will include design borings to further delineate the hot spot areas. During excavation, the hot spot areas containing oily waste or elevated solvents will be further delineated through visual confirmation, detection of strong odors, measurement of elevated contaminant vapor concentrations, or by otherwise readily implementable methods without the need for laboratory analyses.
3. Both the North and South Landfills will be consolidated to reduce their current area. The consolidated areas will have engineered cap systems designed and constructed in conformance

with the substantive requirements for landfill caps set forth in 6 NYCRR Part 360. The areas to be consolidated will be determined during the design; however, areas to be excavated will include a 50-foot buffer zone area between the South Landfill and Ley Creek and 30-foot buffer zone areas between the landfills and on-site wetlands. If required for cap installation, buffer zones will be established between the landfills and Seventh North Street. This excavated material will be consolidated in the landfills above the water table.

4. Wetland sediment at PCB concentrations greater than 1 ppm and less than 50 ppm will be excavated for consolidation and capping on site with the material discussed above. PCB contaminated sediment at concentrations of 50 ppm or greater will be properly transported off-site for disposal.

5. The excavated wetlands and buffer zones will be restored and maintained per an approved restoration plan developed during the remedial design phase. Buffer zone soils will need to meet the Unrestricted Use Soil Cleanup Objectives set forth in Table 375-6.8(a) of 6 NYCRR Part 375 for a minimum of two feet in depth measured from the finished surface grade. The remaining buffer zone soils will need to meet, at a minimum, the lower of the protection of groundwater or the protection of public health soil cleanup objectives for commercial use as set forth in Table 375-6.8(b) of 6 NYCRR Part 375.

6. Green remediation and sustainability efforts would be considered in the design and implementation of the remedy to the extent practicable, including;

- (a) using renewable energy sources;
- (b) reducing green house gas emissions;
- (c) encouraging low carbon technologies;
- (d) conserve natural resources;
- (e) increase recycling and reuse of clean materials;
- (f) preserve open space and working landscapes; and
- (g) design cover systems to be usable for habitat or recreation

7. Imposition of an institutional control in the form of an environmental easement for the controlled property that will:

- (a) require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- (b) allow the use and development of the controlled property for industrial use, although subject to local zoning laws;
- (c) restrict the use of groundwater and surface water as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;
- (d) prohibit agriculture or vegetable gardens on the controlled property; and
- (e) require compliance with the Department approved Site Management Plan

8. A Site Management Plan will be 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 assure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed above.

Engineering Controls: The landfill caps and fencing discussed above.

This plan would include, but may not be limited to:

- (i) an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- (ii) descriptions of the provisions of the environmental easement including any land use, groundwater and surface water use restrictions;
- (iii) provisions for the management and inspection of the identified engineering controls;
- (iv) maintaining site access controls and Department notification;
- (v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls; and
- (vi) a provision to evaluate the potential for vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.

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

- (i) monitoring of wetlands, groundwater, surface water and sediment to assess the performance and effectiveness of the remedy;
- (ii) a schedule of monitoring and frequency of submittals to the Department; and
- (iii) monitoring of wetlands and buffer areas to assess restoration success.

9. The remedial party or subsequent property owner will provide a periodic certification of institutional and engineering controls for the site, 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 will: (a) contain certification that the institutional controls and engineering controls put in place are still in place, and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state 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 unless otherwise approved by the Department.

**New York State Department of Health Acceptance**

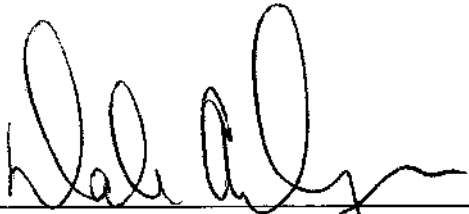
The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

**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. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

MAR 31 2011

\_\_\_\_\_  
Date



\_\_\_\_\_  
Dale A. Desnoyers, Director  
Division of Environmental Remediation

# **RECORD OF DECISION**

Crouse-Hinds Landfills  
Syracuse, Onondaga County  
Site No. 734004  
March 2011

---

## **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 hazardous wastes 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 hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

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: SITE DESCRIPTION AND HISTORY**

Location:

The Crouse-Hinds Landfills Site consists of two inactive landfills, referred to as the North and South Landfills. The Site is located in the Town of Salina (North Landfill) and City of Syracuse (South Landfill), Onondaga County, New York.

The North Landfill is bordered along its northern border by vacant land owned by Plaza East, LLC. This vacant land to the north of the North Landfill consists of areas of fill (municipal waste and miscellaneous debris) with woodland cover and wetlands. The North Landfill is bordered to the east by CSX railroad tracks followed by the Crouse-Hinds manufacturing facility. Seventh North Street followed by the South Landfill border the North Landfill to the south. West of the North Landfill are wetlands, also owned by Plaza East, followed by Ley Creek.

The South Landfill is bordered to the north by Seventh North Street followed by the North Landfill. To the east, the South Landfill is bordered by CSX railroad tracks. Undeveloped woods, wetlands and mixed commercial and retail development border the South Landfill to the south. Ley Creek abuts the entire west and northwest boundary of the South Landfill.

#### Site Features:

The North Landfill is 21.5 acres in size, and the South Landfill is 19.4 acres in size. Seventh North Street is oriented southeast-northwest and separates the two landfills that comprise the site. Adjacent to the North Landfill are on-site wetlands to the east and west, along with an on-site drainage channel to the east. Adjacent to the South Landfill are on-site wetlands to the south and an on-site drainage channel to the east.

#### Current Zoning:

The Site is currently zoned industrial and is located in an area of mixed usage including light industrial/manufacturing and commercial.

#### Historical Use:

Prior to the mid-to-late 1950's the North and South Landfill areas had been occupied by low lying fields, salt marshes and woodlands. From the mid-1950's to 1989 fill material was placed across various areas of the North and South Landfills.

Beginning in the mid-1950's, the North Landfill was used for disposal of industrial wastes that were generated at the Crouse-Hinds manufacturing facility. Wastes disposed of in the North Landfill include foundry sand, core butts, floor sweepings, metal buffing and polishing residue, scrap lumber, plastic wastes and paint scrapings, all originating from the facility. Zinc hydroxide sludge generated from the facility's wastewater treatment plant was also disposed of in the North Landfill from 1972 to 1980. Waste disposal was discontinued at the North Landfill in 1989, and it has been inactive since.

In 1960, the company began using the South Landfill for disposal of industrial wastes that were generated at the Crouse-Hinds manufacturing facility. These wastes included foundry molds and core sand, scrap steel drums and shot, fly ash, paint scrapings, garbage and construction and demolition debris. In addition to disposal of wastes by the facility, from 1960 to 1965, the South Landfill also accepted approximately 2,000 cubic yards per week of municipal solid waste from the City of Syracuse. Waste disposal activities were discontinued at the South Landfill in 1969, and the South Landfill has been inactive ever since that time.

#### Site Geology and Hydrogeology:

The site geology consists of unconsolidated glaciolacustrine and glaciofluvial sediments as described below. A shallow groundwater flow system, located from approximately 6 to 30 below ground surface, in the fill, peat, sand and silt deposits, and a deep confined groundwater

flow system located in sand and gravel deposits are present at the site. The deep groundwater system is separated from the overlying shallow groundwater system by a continuous confining layer of silt and clay deposits of varying thickness commencing at approximately 30 feet below ground surface.

Groundwater flow in the shallow groundwater system is generally to the west toward Ley Creek. Groundwater flow in the deep groundwater flow system is generally to the east. Groundwater in the deep aquifer exhibits a strong upward vertical gradient and at times exhibits artesian conditions in the deep wells located on the North Landfill.

A site location map is attached as Figure 1.

### **SECTION 3: 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 included in the Tables for the media being evaluated in Exhibit A.

### **SECTION 4: ENFORCEMENT STATUS**

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

The PRPs for the site, documented to date, include:

Cooper Crouse-Hinds

The Department and Cooper Crouse-Hinds entered into a Consent Order on May 14, 2004. The Order obligates the responsible party to implement a PSA/RI/FS remedial program. After the remedy is selected, the Department will approach Cooper Crouse-Hinds to implement the selected remedy.

### **SECTION 5: SITE CONTAMINATION**

#### **5.1: Summary of the Remedial Investigation**

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

#### **5.1.1: 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. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

#### **5.1.2: RI Information**

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

industrial wastes  
benzene  
zinc

phenol  
1,4-dichlorobenzene  
chlorobenzene

benzo(a)pyrene  
arsenic  
cadmium  
benz(a)anthracene  
lead

pcb-aroclor 1242  
pcb-aroclor 1248  
pcb-aroclor 1254  
pcb-aroclor 1260  
chromium

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- surface water
- soil
- sediment

## 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 issuance of the Record of Decision.

There were no IRMs performed at this site during the RI.

## 5.3: **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*.

People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by site-related contamination. Also, they are not coming into contact with the groundwater unless they dig deeper than six feet below the ground surface. The potential for direct contact with contaminated surface soils identified in isolated areas of the site is minimized by vegetation that covers the site. People are not expected to come into direct contact with contaminated soil (dirt) or sediment unless they dig below the ground surface or wade through creek and/or wetland sediment.

Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for people to inhale site-related contaminants in indoor air due to soil vapor intrusion in any future on-site building development and occupancy. An evaluation of the potential for soil vapor intrusion to occur will be completed should the current use of the site change.

#### **5.4: 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 Fish and Wildlife Resources Impact Analysis (FWRIA) for OU 01, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

No threatened or endangered plant or animal species were observed on the Crouse-Hinds Landfills Site or are believed to inhabit the site. The site supports vegetation and wildlife consistent with terrestrial, wetland and stream corridor cover types.

Contaminants of concern were detected at concentration levels exceeding relevant ecological criteria in shallow and subsurface soil, on-site sediment, surface water and groundwater at the site. While contaminants of concern were detected in the sediment and surface water in Ley Creek, the data demonstrate that the current impacts to Ley Creek are not attributable to the site. Rather, sampling has shown that upstream sources, not associated with this site, are impacting the creek. For example, lead in Ley Creek surface water was detected at concentrations in excess of the New York State surface water quality standard (17.9 ppb) adjacent to the site; however, the highest concentration detected in Ley Creek during the RI was at the upgradient sampling location (84.2 ppb). In addition, sediment concentrations of PAHs, PCBs and metals generally remain consistent from upstream of the landfills to downstream of the landfills indicating that the site is not significantly impacting Ley Creek.

Complete and potentially ecologically-significant pathways to wildlife receptors were identified for each of the media (soil, sediment, groundwater and surface water) sampled at the site. The site is unpaved and exhibits a potential pathway to wildlife receptors through the erosion of contaminated surface soils to onsite wetlands and drainage channels. Contaminated sediment erosion to Ley Creek is minimized by sediment check dams in a drainage channel to the wetland east of the North Landfill and by the prior removal of a 36-inch culvert from a drainage channel between Ley Creek and the wetland adjacent to the South Landfill. Both soil and waste provide a complete pathway to burrowing wildlife. Surface water and sediments in drainage channels and wetlands at the site provide a complete pathway to aquatic organisms and their predators. Surface water runoff to Ley Creek provides a potential pathway to aquatic organisms and their predators. Groundwater seepage to surface water onsite provides a potential pathway to aquatic organisms.

#### **SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES**

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in

Exhibit B. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit C. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit D.

### **6.1: Evaluation of Remedial Alternatives**

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

## **6.2: Elements of the Remedy**

The basis for the Department's remedy is set forth at Exhibit E.

The estimated present worth cost to implement the remedy is 12500000. The cost to construct the remedy is estimated to be 11800000 and the estimated average annual cost is 48000.

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.

2. There are three identified hot spots that will be targeted for excavation and off-site disposal. All three areas occur in the North Landfill. One area on the east side includes approximately 750 cubic yards of waste containing PCBs at concentrations of 50 ppm or greater. The other area on the east side includes approximately 4,500 cubic yards of waste that contains elevated solvents. The area on the west side of the North Landfill includes approximately 1,500 cubic yards of oily waste in the vicinity of monitoring well MW-6. All three areas will be characterized, excavated and transported off-site to a TSCA and/or hazardous waste landfill as

applicable. Characterization will include design borings to further delineate the hot spot areas. During excavation, the hot spot areas containing oily waste or elevated solvents will be further delineated through visual confirmation, detection of strong odors, measurement of elevated contaminant vapor concentrations, or by otherwise readily implementable methods without the need for laboratory analyses.

3. Both the North and South Landfills will be consolidated to reduce their current area. The consolidated areas will have engineered cap systems designed and constructed in conformance with the substantive requirements for landfill caps set forth in 6 NYCRR Part 360. The areas to be consolidated will be determined during the design; however, areas to be excavated will include a 50-foot buffer zone area between the South Landfill and Ley Creek and 30-foot buffer zone areas between the landfills and on-site wetlands. If required for cap installation, buffer zones will be established between the landfills and Seventh North Street. This excavated material will be consolidated in the landfills above the water table.

4. Wetland sediment at PCB concentrations greater than 1 ppm and less than 50 ppm will be excavated for consolidation and capping on site with the material discussed above. PCB contaminated sediment at concentrations of 50 ppm or greater will be properly transported off-site for disposal.

5. The excavated wetlands and buffer zones will be restored and maintained per an approved restoration plan developed during the remedial design phase. Buffer zone soils will need to meet the Unrestricted Use Soil Cleanup Objectives set forth in Table 375-6.8(a) of 6 NYCRR Part 375 for a minimum of two feet in depth measured from the finished surface grade. The remaining buffer zone soils will need to meet, at a minimum, the lower of the protection of groundwater or the protection of public health soil cleanup objectives for commercial use as set forth in Table 375-6.8(b) of 6 NYCRR Part 375.

6. Green remediation and sustainability efforts would be considered in the design and implementation of the remedy to the extent practicable, including;

- (a) using renewable energy sources;
- (b) reducing green house gas emissions;
- (c) encouraging low carbon technologies;
- (d) conserve natural resources;
- (e) increase recycling and reuse of clean materials;
- (f) preserve open space and working landscapes; and
- (g) design cover systems to be usable for habitat or recreation

7. Imposition of an institutional control in the form of an environmental easement for the controlled property that will:

- (a) require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- (b) allow the use and development of the controlled property for industrial use, although subject to local zoning laws;

- (c) restrict the use of groundwater and surface water as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;
- (d) prohibit agriculture or vegetable gardens on the controlled property; and
- (e) require compliance with the Department approved Site Management Plan

8. A Site Management Plan will be 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 assure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed above.

Engineering Controls: The landfill caps and fencing discussed above.

This plan would include, but may not be limited to:

- (i) an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- (ii) descriptions of the provisions of the environmental easement including any land use, groundwater and surface water use restrictions;
- (iii) provisions for the management and inspection of the identified engineering controls;
- (iv) maintaining site access controls and Department notification;
- (v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls; and
- (vi) a provision to evaluate the potential for vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.

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

- (i) monitoring of wetlands, groundwater, surface water and sediment to assess the performance and effectiveness of the remedy;
- (ii) a schedule of monitoring and frequency of submittals to the Department; and
- (iii) monitoring of wetlands and buffer areas to assess restoration success.

9. The remedial party or subsequent property owner will provide a periodic certification of institutional and engineering controls for the site, 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 will: (a) contain certification that the institutional controls and engineering controls put in place are still in place, and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state 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 unless otherwise approved by the Department.

## **Exhibit A**

### **Nature and Extent of Contamination**

This section describes the findings of the Remedial Investigation. As described in the RI report, waste/source materials were identified at the site and are impacting groundwater, soil, surface water and/or sediment.

#### **Waste/Source Areas**

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375-1.2 (au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and/or Source areas identified at the site include the North and South Landfills (see Figure 2).

The North Landfill is predominantly industrial fill ranging in thickness from 3 to 17 feet and consisting primarily of foundry sand, foundry core butts, foundry molds, metal debris, wood debris and miscellaneous industrial debris. The industrial fill was generally black in color and had an oily type nature. Varying amounts of municipal waste (glass, bottles, plastic debris, metal cans, paper, *etc.*) were observed along the northern/northeastern property boundary. The volume of waste in the North Landfill is estimated at 223,000 cubic yards.

PID readings in the majority of test pits were generally low indicating that VOC impacts in fill materials located across the North Landfill were generally low. However, there were three hot spots identified in the North Landfill. One area on the east side includes approximately 750 cubic yards of waste containing PCBs at concentrations of 50 ppm or greater. The other area on the east side includes approximately 4,500 cubic yards of waste that exhibit elevated solvent concentrations. The area on the west side of the North Landfill includes approximately 1,500 cubic yards of oily waste in the vicinity of monitoring well MW-6.

The South Landfill contains industrial fill and municipal waste ranging in thickness from 0 to 19 feet. The industrial fill is consistent with that found in the North Landfill. The municipal waste consists of glass, bottles, plastic debris, metal cans, paper and general municipal refuse. The fill along the western boundary with Ley Creek is all municipal waste and no industrial fill. The volume of waste in the South Landfill is estimated at 220,000 cubic yards.

The waste/source areas identified will be addressed in the remedy selection process.

Below, the section describes the findings for all environmental media that were evaluated. As described in the RI report, groundwater, soil, surface water and sediment samples were collected to characterize the nature and extent of contamination.

For each medium sampled, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compare the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), and inorganics (metals). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 are also presented.

## Groundwater

A shallow groundwater flow system, located from approximately 6 to 30 below ground surface, in the fill, peat and associated mixed deposits, and a deep confined groundwater flow system located in sand and gravel deposits are present at the site. The deep groundwater system is separated from the overlying shallow groundwater system by a continuous confining layer of silt and clay deposits of varying thickness commencing at approximately 30 feet below ground surface.

Groundwater flow in the shallow groundwater system is generally to the west toward Ley Creek. Groundwater flow in the deep groundwater flow system is generally to the east. Groundwater in the deep aquifer exhibits a strong upward vertical gradient and at times exhibits artesian conditions in the deep wells located on the North Landfill.

Groundwater samples were collected from on-site monitoring wells in July 2004 (nineteen wells), November 2005 (twenty-three wells) and December 2007 (twenty-six wells).

| Table 1 – Groundwater      |                                                 |                        |                         |
|----------------------------|-------------------------------------------------|------------------------|-------------------------|
| Detected Constituents      | Concentration Range Detected (ppb) <sup>a</sup> | SCG <sup>b</sup> (ppb) | Frequency Exceeding SCG |
| <b>VOCs</b>                |                                                 |                        |                         |
| 1,4-Dichlorobenzene        | 2.0-8.2                                         | 3.0                    | 8 of 74                 |
| Benzene                    | 1.1-10.0                                        | 1.0                    | 22 of 74                |
| Chlorobenzene              | 10.0-42.0                                       | 5.0                    | 9 of 74                 |
| Chloroethane               | 0.68-190                                        | 5.0                    | 3 of 74                 |
| Chloroform                 | 0.7-25.0                                        | 7.0                    | 2 of 74                 |
| Ethylbenzene               | 2.0-19.0                                        | 5.0                    | 3 of 74                 |
| Methylene Chloride         | 7.6-110                                         | 5.0                    | 2 of 74                 |
| Toluene                    | 1.0-14.0                                        | 5.0                    | 1 of 74                 |
| <b>SVOCs</b>               |                                                 |                        |                         |
| Benz(a)anthracene          | 0.2-5.0                                         | 0.002                  | 4 of 74                 |
| Benzo(a)pyrene             | 0.2-9.0                                         | 0.002                  | 2 of 74                 |
| Benzo(b)fluoranthene       | 1.5                                             | 0.002                  | 1 of 74                 |
| Benzo(k)fluoranthene       | 1.5                                             | 0.002                  | 1 of 74                 |
| Bis(2-Ethylhexyl)phthalate | 1.0-20.0                                        | 5.0                    | 1 of 74                 |
| Chrysene                   | 0.4-9.0                                         | 0.002                  | 3 of 74                 |
| Fluoranthene               | 0.3-85                                          | 50                     | 1 of 74                 |

|                        |                  |        |          |
|------------------------|------------------|--------|----------|
| Indeno(1,2,3-cd)pyrene | 6.0              | 0.002  | 1 of 74  |
| Naphthalene            | 0.4-11.0         | 10.0   | 1 of 74  |
| Phenanthrene           | 0.2-73.0         | 50.0   | 1 of 74  |
| Pyrene                 | 0.2-97.0         | 50.0   | 1 of 74  |
| Total Phenols          | 1.5-1,360        | 1.0    | 18 of 74 |
| <b>Metals</b>          |                  |        |          |
| Arsenic                | 2.0-28           | 25     | 2 of 50  |
| Barium                 | 24-2,350         | 1,000  | 3 of 50  |
| Beryllium              | 0.31-5.8         | 3.0    | 4 of 50  |
| Cadmium                | 0.39-37.5        | 5.0    | 3 of 74  |
| Chromium               | 0.81-85.6        | 50     | 1 of 74  |
| Iron                   | 706-53,000       | 300    | 25 of 50 |
| Lead                   | 1.6-351          | 25     | 4 of 74  |
| Magnesium              | 12,200-199,000   | 35,000 | 2 of 50  |
| Manganese              | 36-657           | 300    | 2 of 50  |
| Selenium               | 9.1-49           | 10     | 8 of 50  |
| Sodium                 | 64,600-4,370,000 | 20,000 | 4 of 50  |
| Zinc                   | 1.6-5,160        | 2,000  | 2 of 74  |

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

The analytical data for shallow groundwater samples collected on the North Landfill indicate that shallow groundwater beneath the North Landfill has contaminant concentrations above NYSDEC Class GA groundwater standards for VOCs (*e.g.*, benzene, chlorobenzene and 1,4-dichlorobenzene), SVOCs (*e.g.*, total phenols) and metals (primarily iron). The analytical data for shallow groundwater samples collected on the South Landfill indicate that shallow groundwater beneath the South Landfill has not been impacted by VOCs or SVOCs and has been minimally, and infrequently, impacted by phenols and limited metals at concentrations slightly in excess of the NYSDEC Class GA groundwater standards. No pesticides, PCBs or cyanide were detected in the shallow groundwater at either landfill.

The analytical data for deep groundwater samples collected on the North and South Landfills indicate no reproducible detections of VOCs, SVOCs, or total phenols. Metals (primarily aesthetic water quality criteria for iron) were detected at concentrations slightly in excess of the NYSDEC Class GA groundwater standards. No pesticides, PCBs or cyanide were detected in the deep groundwater.

Based on the findings of the RI, the disposal of hazardous waste has resulted in the localized contamination of groundwater on-site. While groundwater migrates off-site, there was no discernable impact detected off-site (*e.g.*, to

Ley Creek) from site groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: total phenols, benzene, chlorobenzene and 1,4-dichlorobenzene (see Figure 3). The iron found in groundwater was found in both the shallow aquifer (site impacted aquifer) and deep groundwater (non-impacted aquifer), and appears to be ubiquitous to the area. Therefore, iron in groundwater is not considered a site specific contaminant of concern.

## Soil

Shallow and subsurface soil samples were collected at the site during the RI. Shallow soil samples were collected from a depth of 0-6 inches. Subsurface soil samples were collected from a depth of 2 - 18 feet to assess soil contamination impacts to groundwater. The results indicate that soils at the site in the waste masses exceed the unrestricted SCGs for volatile and semi-volatile organics, PCBs/pesticides and metals. The results indicate that soils along the eastern property boundary of both landfills along a strip of land between the wetlands and the railroad property exceed the unrestricted SCGs for PCBs.

| Table 2 - Soil        |                                                 |                                     |                                      |                                   |                                    |
|-----------------------|-------------------------------------------------|-------------------------------------|--------------------------------------|-----------------------------------|------------------------------------|
| Detected Constituents | Concentration Range Detected (ppm) <sup>a</sup> | Unrestricted SCG <sup>b</sup> (ppm) | Frequency Exceeding Unrestricted SCG | Restricted SCG <sup>c</sup> (ppm) | Frequency Exceeding Restricted SCG |
| <b>VOCs</b>           |                                                 |                                     |                                      |                                   |                                    |
| 1,1,1-Trichloroethane | 0.002-15                                        | 0.68                                | 1 of 61                              | 1,000                             | 0 of 61                            |
| 1,1-Dichloroethane    | 0.004-22                                        | 0.27                                | 1 of 61                              | 480                               | 0 of 61                            |
| Acetone               | 0.002-2.6                                       | 0.05                                | 28 of 61                             | 1,000                             | 0 of 61                            |
| Benzene               | 0.001-0.230                                     | 0.06                                | 3 of 61                              | 0.06 <sup>d</sup>                 | 3 of 61                            |
| Chlorobenzene         | 0.004-2.1                                       | 1.1                                 | 1 of 61                              | 1.1 <sup>d</sup>                  | 1 of 61                            |
| Ethylbenzene          | 0.002-330                                       | 1.0                                 | 9 of 61                              | 780                               | 0 of 61                            |
| Methylene Chloride    | 0.001-87                                        | 0.05                                | 2 of 61                              | 1,000                             | 0 of 61                            |
| Tetrachloroethene     | 0.002-5.8                                       | 1.3                                 | 1 of 61                              | 300                               | 0 of 61                            |
| Toluene               | 0.002-310                                       | 0.7                                 | 5 of 61                              | 1,000                             | 0 of 61                            |
| Trichloroethene       | 1.7                                             | 0.47                                | 1 of 61                              | 400                               | 0 of 61                            |
| Xylenes, Total        | 0.004-19                                        | 0.26                                | 8 of 61                              | 1,000                             | 0 of 61                            |
| <b>SVOCs</b>          |                                                 |                                     |                                      |                                   |                                    |
| Benz(a)anthracene     | 0.045-14                                        | 1.0                                 | 15 of 61                             | 11                                | 1 of 61                            |
| Benzo(a)pyrene        | 0.035-12                                        | 1.0                                 | 14 of 61                             | 1.1                               | 13 of 61                           |
| Benzo(b)fluoranthene  | 0.041-20                                        | 1                                   | 19 of 61                             | 11                                | 1 of 61                            |
| Benzo(k)fluoranthene  | 0.021-7.5                                       | 0.8                                 | 13 of 61                             | 110                               | 0 of 61                            |

|                        |              |        |          |                   |          |
|------------------------|--------------|--------|----------|-------------------|----------|
| Chrysene               | 0.053-17     | 1      | 14 of 61 | 110               | 0 of 61  |
| Dibenzo(a,h)anthracene | 0.014-1.4    | 0.33   | 10 of 61 | 1.1               | 1 of 61  |
| Dibenzofuran           | 0.019-7.2    | 6.2    | 1 of 61  | 1,000             | 0 of 61  |
| Indeno(1,2,3-cd)pyrene | 0.020-3.8    | 0.5    | 15 of 61 | 11                | 0 of 61  |
| Phenol                 | 0.060-3.9    | 0.33   | 15 of 61 | 0.33 <sup>d</sup> | 15 of 61 |
| <b>Metals</b>          |              |        |          |                   |          |
| Arsenic                | 1.6-31.3     | 13     | 8 of 61  | 16                | 4 of 61  |
| Cadmium                | 0.11-1,200   | 2.5    | 29 of 61 | 60                | 5 of 61  |
| Chromium               | 7.5-1,560    | 1      | 55 of 61 | 800               | 2 of 61  |
| Copper                 | 15.9-12,900  | 50     | 40 of 61 | 10,000            | 1 of 61  |
| Total Cyanide          | 107          | 27     | 1 of 20  | 10,000            | 0 of 20  |
| Lead                   | 11.8-621     | 63     | 26 of 61 | 3,900             | 0 of 61  |
| Total Mercury          | 0.002-2.0    | 0.18   | 26 of 61 | 5.7               | 0 of 61  |
| Nickel                 | 4.0-302      | 30     | 17 of 61 | 10,000            | 0 of 61  |
| Zinc                   | 41.5-33,600  | 109    | 47 of 61 | 10,000            | 1 of 61  |
| <b>Pesticides/PCBs</b> |              |        |          |                   |          |
| 4,4'-DDE               | 0.0022-0.017 | 0.0033 | 3 of 20  | 120               | 0 of 20  |
| Aldrin                 | 0.011        | 0.005  | 1 of 20  | 1.4               | 0 of 20  |
| Dieldrin               | 0.0053-0.032 | 0.005  | 5 of 20  | 2.8               | 0 of 20  |
| Total PCBs             | 0.000835-65  | 0.1    | 53 of 96 | 25                | 2 of 96  |

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted (Industrial Use) Soil Cleanup Objectives.

d - SCG: Part 375-6.8(b), Restricted Soil Cleanup Objectives, Protection of Groundwater – used for the primary contaminants of concern listed in the groundwater section above.

The primary soil contaminants are benzene, benzo(a)pyrene, phenol and metals (arsenic and cadmium) associated with disposal of wastes in the landfill. In addition, PCB contamination exists in soil along the eastern boundary of the site (see Figure 4).

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of soil. Protection of groundwater SCOs are also exceeded for benzene, chlorobenzene and phenol. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, benzene, benzo(a)pyrene, phenol, metals (arsenic and cadmium) and PCBs.

## Surface Water

Surface water samples were collected during the RI in Ley Creek from upstream of the site, adjacent to the site and downstream of the site. Surface water samples were also collected from on-site wetlands and drainage channels. The samples were collected to assess the surface water conditions on and off-site. The results indicate that contaminants in surface water on-site in wetlands and drainage swales exceed the Department's SCG for methylene chloride, benz(a)anthracene, benzo(a)pyrene and metals (aluminum, cadmium, chromium, copper, iron, lead and zinc). Surface water quality was generally consistent and below standards in Ley Creek from upstream to downstream indicating that the site does not currently impact Ley Creek surface water. Lead in Ley Creek surface water was detected at concentrations in excess of the New York State surface water quality standard (17.9 ppb) adjacent to the site; however, the highest concentration (84.2 ppb) detected in Ley Creek during the RI was at the upgradient sampling location (see Figure 5). PCBs were detected in only one surface water sample (*i.e.*, upstream in Ley Creek).

**Table 3 - Surface Water**

| Detected Constituents  | Concentration Range Detected (ppb) <sup>a</sup> | SCG <sup>b</sup> (ppb) | Frequency Exceeding SCG |
|------------------------|-------------------------------------------------|------------------------|-------------------------|
| <b>VOCs</b>            |                                                 |                        |                         |
| Methylene Chloride     | 34-3,700                                        | 200                    | 1 of 11                 |
| <b>SVOCs</b>           |                                                 |                        |                         |
| Benz(a)anthracene      | 0.6-12                                          | 0.03                   | 3 of 19                 |
| Benzo(a)pyrene         | 0.2-16                                          | 0.0012                 | 5 of 19                 |
| <b>Metals</b>          |                                                 |                        |                         |
| Aluminum               | 96.1-548                                        | 100                    | 2 of 8                  |
| Cadmium                | 0.42-83.9                                       | 6.6                    | 3 of 19                 |
| Chromium               | 0.78-332                                        | 250                    | 1 of 19                 |
| Copper                 | 1.4-60.2                                        | 31.4                   | 2 of 8                  |
| Iron                   | 955-30,600                                      | 300                    | 8 of 8                  |
| Lead                   | 3.4-675                                         | 17.9                   | 7 of 19                 |
| Zinc                   | 12.1-3,500                                      | 290                    | 5 of 19                 |
| <b>Pesticides/PCBs</b> |                                                 |                        |                         |
| Heptachlor             | 0.017                                           | 0.0002                 | 1 of 8                  |
| Heptachlor epoxide     | 0.01                                            | 0.0003                 | 1 of 8                  |
| 4,4'-DDE               | 0.011                                           | 0.000007               | 1 of 8                  |

|          |             |          |        |
|----------|-------------|----------|--------|
| 4,4'-DDT | 0.038-0.044 | 0.00001  | 3 of 8 |
| PCBs     | 0.86        | 0.000001 | 1 of 8 |

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b-SCG: Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1) and 6NYCRR Part 703: Surface Water and Groundwater Quality Standards.

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of on-site surface water in wetlands and drainage swales. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of surface water to be addressed by the remedy selection process are SVOCs (benz(a)anthracene and benzo(a)pyrene) and metals (cadmium, lead and zinc).

The iron found in the wetlands and drainage swales surface water was also found in groundwater, including deep groundwater not impacted by the site and appears to be ubiquitous. Therefore, iron in surface water is not considered a site specific contaminant of concern.

## Sediments

Sediment samples were collected during the RI in Ley Creek from upstream of the site, adjacent to the site and downstream of the site. Sediment samples were also collected from on-site wetlands and drainage channels. The samples were collected to assess the potential for impacts to on-site wetlands and drainage channel sediment, and Ley Creek sediment, from the site. The results indicate that sediment in the on-site wetlands and on-site drainage channels exceed the Department's SCGs for sediments for benz(a)anthracene, PCBs and metals (arsenic, cadmium, chromium, iron, lead, manganese, mercury, nickel, silver and zinc). In Ley Creek, sediment concentrations exceed criteria for several PAHs (*e.g.*, benzo(a)pyrene, benzo(k)fluoranthene), PCBs and several metals (*e.g.*, silver, nickel, lead); however, sediment quality was generally consistent in Ley Creek from upstream (*e.g.*, SED-4) to downstream indicating that the site does not currently impact Ley Creek sediment (see figure 6).

| Table 4 – Sediment    |                                                 |                        |                         |                                       |                                        |
|-----------------------|-------------------------------------------------|------------------------|-------------------------|---------------------------------------|----------------------------------------|
| Detected Constituents | Concentration Range Detected (ppm) <sup>a</sup> | SCG <sup>b</sup> (ppm) | Frequency Exceeding SCG | Site Derived Value <sup>c</sup> (ppm) | Frequency Exceeding Site Derived Value |
| <b>SVOCs</b>          |                                                 |                        |                         |                                       |                                        |
| Benz(a)anthracene     | 0.220-4.2                                       | 2.0                    | 7 of 33                 | NA                                    | NA                                     |
| <b>Metals</b>         |                                                 |                        |                         |                                       |                                        |
| Arsenic               | 1.9-30.5                                        | LEL – 6.0<br>SEL - 33  | 27 of 33<br>0 of 33     | NA                                    | NA                                     |
| Cadmium               | 0.66-199                                        | LEL – 0.6<br>SEL – 9.0 | 33 of 33<br>23 of 33    | NA                                    | NA                                     |
| Chromium              | 28.4-5,440                                      | LEL – 26<br>SEL – 110  | 33 of 33<br>15 of 33    | NA                                    | NA                                     |

|                        |               |                              |                      |     |            |
|------------------------|---------------|------------------------------|----------------------|-----|------------|
| Iron                   | 13,900-51,700 | LEL – 20,000<br>SEL – 40,000 | 21 of 33<br>3 of 33  | NA  | NA         |
| Lead                   | 46-676        | LEL – 31<br>SEL – 110        | 33 of 33<br>23 of 33 | NA  | NA         |
| Manganese              | 165-1,360     | LEL – 460<br>SEL – 1,100     | 15 of 33<br>1 of 33  | NA  | NA         |
| Mercury                | 0.097-0.774   | LEL – 0.15<br>SEL – 1.3      | 27 of 33<br>0 of 33  | NA  | NA         |
| Nickel                 | 26.7-1990     | LEL – 16<br>SEL – 50         | 33 of 33<br>15 of 33 | NA  | NA         |
| Silver                 | 0.43-11.6     | LEL – 1.0<br>SEL – 2.2       | 26 of 33<br>18 of 33 | NA  | NA         |
| Zinc                   | 274-3,500     | LEL – 120<br>SEL - 270       | 28 of 33<br>28 of 33 | NA  | NA         |
| <b>Pesticides/PCBs</b> |               |                              |                      |     |            |
| Total PCBs             | 0.0055-140    | 0.228                        | 257 of 499           | 1.0 | 186 of 499 |

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment;

b - SCG: The Department's "Technical Guidance for Screening Contaminated Sediments."

c – Site Derived Value: Previously selected sediment clean-up goal at New York State hazardous waste sites.

NA – Not Applicable

The primary wetlands and drainage swales sediment contaminants are PCBs and metals, such as cadmium, chromium, lead and zinc, associated with the historic waste disposal at the landfills. The iron found in sediment was also found in groundwater, including deep groundwater not impacted by the site and appears to be ubiquitous. Therefore, iron in sediment is not considered a site specific contaminant of concern.

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of sediment in on-site wetlands and drainage swales. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of sediment to be addressed by the remedy selection process are PCBs and metals, such as cadmium, chromium, lead and zinc.

## **Exhibit B**

### **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 objectives for this site are:

#### **Public Health Protection**

##### *Groundwater*

- Prevent people from drinking groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with contaminated groundwater.
- Prevent potential for inhalation of contaminants volatilizing from the groundwater.

##### *Soil*

- Prevent ingestion/direct contact with contaminated soil.
- Prevent potential for inhalation of contaminants volatilizing from the soil.

##### *Surface water*

- Prevent people from drinking surface water impacted by contaminants.
- Prevent contact with contaminants from impacted water bodies.

##### *Sediment*

- Prevent direct contact with contaminated sediments.

#### **Environmental Protection**

##### *Groundwater*

- Restore the groundwater aquifer to meet ambient groundwater quality criteria, to the extent feasible.
- Prevent discharge of contaminated groundwater to surface water.

##### *Soil*

- 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.

##### *Surface Water*

- Restore surface water to ambient water quality criteria for the contaminant of concern, to the extent feasible.
- Prevent impacts to biota from ingestion/direct contact with surface water causing toxicity and impacts from bioaccumulation through marine and aquatic food chain.

*Sediment*

- Prevent releases of contaminants from sediment that would result in surface water levels in excess of ambient water quality criteria.
- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity and impacts from bioaccumulation through marine and aquatic food chain.

Exhibit C

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Exhibit B) to address the contaminated media identified at the site as describe in Section 5:

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Alternative 2: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1, and the soil meets the unrestricted soil cleanup objectives listed in Part 375-6.8 (a). This alternative includes the removal of all waste and contaminated fill above the unrestricted soil cleanup objectives and the removal of all contaminated sediments for off-site disposal. The landfill areas would be backfilled to 7th North Street grade, and the wetlands areas would be restored. Because contaminant removal would be complete, there would be no institutional controls, fencing or long-term monitoring.

The volume of impacted sediment calculated for each area is 11,400 cubic yards for the North Landfill wetlands and 14,750 cubic yards for the South Landfill wetlands. Of this volume, 1,500 cubic yards contains PCBs at concentrations of 50 ppm or greater and would be transported to a TSCA landfill. The remainder of the contaminated sediment would be transported to a solid waste landfill.

For landfill removal, the volume of waste and contaminated fill calculated is approximately 220,000 cubic yards for each of the North and South Landfills. Of this volume, approximately 750 yards contain greater than 50 ppm PCBs and would be transported to a TSCA landfill. The remainder of the waste contaminated fill would be transported to a solid waste landfill.

This alternative would take approximately one year to design and five years to implement.

Capital Cost: ..... \$44,100,000

Alternative 3: Consolidation/Capping and Groundwater Collection via Pumping Wells with On-Site Groundwater Treatment/Disposal

Consolidation/capping refers to the remedial action whereby contaminated wastes, soil, sediment and debris would be excavated and characterized. Excavated material that exceeds the criteria for relocation and capping on site would be either sent off-site for disposal or treated. Excavated material that meets the criteria for relocation and capping on site would be consolidated above the water table and covered. The consolidated areas would have engineered cap systems designed and constructed in conformance with the substantive requirements of 6 NYCRR Part 360 solid waste regulations. A long-term monitoring program would be developed to monitor groundwater and ensure the effectiveness of the engineered cap systems and appropriate storm water management systems. Site control measures (e.g., fencing) would be considered as needed.

Approximately 26,000 cubic yards of sediments from on-site wetlands above 1.0 ppm PCBs and below 50 ppm PCBs would be excavated and consolidated on-site as described above. Approximately 1,500 cubic yards of sediments at concentrations of 50 ppm and above would be excavated and transported off-site for disposal at a TSCA landfill. The wetlands and related drainage channels would be restored *via* a wetland restoration plan developed during the design.

A buffer zone of 50 feet between Ley Creek and any landfill waste and 30 feet between wetland areas and any landfill waste would be created. Waste within these buffer zones would be removed and consolidated on-site for subsequent capping as described above. For the North and South Landfills, the approximate volume of waste to be consolidated from the buffer zones would be 10,000 and 18,000 cubic yards, respectively.

Engineered cap systems designed and constructed in conformance with the substantive requirements of 6 NYCRR Part 360 solid waste regulations would be installed over the consolidated North and South Landfills. The consolidated waste footprint is estimated to be approximately 14 acres for the North Landfill and 12 acres for the South Landfill. See Figure 7 for the sediment and soil excavation areas, buffer zone areas and cap areas.

Capture of shallow groundwater flow toward Ley Creek would be accomplished through the installation and operation of nine (9) extraction wells placed along the western boundaries of the landfills. Groundwater would be treated on-site to meet discharge criteria either *via* a new water treatment plant or *via* the existing wastewater treatment system at the Crouse-Hinds facility.

Since soil at the site would still contain chemical contaminants at concentrations exceeding unrestricted soil cleanup objectives, this alternative includes an environmental easement that would include institutional controls, such as groundwater and land use restrictions and a Site Management Plan (SMP), and engineering controls, such as the engineered caps, and periodic certifications. The SMP would be prepared to: (1) identify known locations of any remaining impacted soil at the site; (2) establish appropriate controls for future disturbances of site soil; (3) set forth the inspection and maintenance activities for perimeter fencing (if needed), the groundwater collection and treatment system and cap materials; and (4) establish protocols and frequencies for media monitoring activities. The SMP would be a means to address potential future soil excavation and potential future exposure to soil vapor (*e.g.*, a soil vapor intrusion evaluation would be completed prior to any buildings being developed on the site).

This alternative would take approximately one year to design and two years to implement. As on-site waste was disposed of below the water table, this waste would continue to locally impact on-site groundwater for the foreseeable future; however, the mitigation of future potential impacts to Ley Creek *via* groundwater would occur due to remedy implementation.

|                             |              |
|-----------------------------|--------------|
| <i>Present Worth:</i> ..... | \$13,500,000 |
| <i>Capital Cost:</i> .....  | \$11,100,000 |
| <i>Annual Costs:</i> .....  | \$155,000    |

**Alternative 4: Consolidation/Capping and Hotspot Removal**

This alternative includes most of the same components as Alternative 3 (institutional controls, fencing, groundwater and surface water monitoring, sediment and waste consolidation and landfill capping). However, instead of installing and operating a groundwater extraction and treatment system, hotspot areas within the North Landfill would be excavated for off-site disposal. It is intended that the removal of the landfill hotspots under Alternative 4,

which serve as continuing sources for most of the groundwater contamination, would eliminate the need for active remediation of the groundwater included under Alternative 3.

There are three identified hot spots that would be targeted for excavation and off-site disposal as shown on Figure 7. All three areas occur in the North Landfill. One area on the east side includes approximately 750 cubic yards of waste containing PCBs at concentrations of 50 ppm or greater. The other area on the east side includes approximately 4,500 cubic yards of waste that contains elevated solvents. The area on the west side of the North Landfill includes approximately 1,500 cubic yards of oily waste in the vicinity of monitoring well MW-6. All three areas would be characterized, excavated and transported off-site to a TSCA and/or hazardous waste landfill as applicable.

Since soil at the site would still contain chemical contaminants at concentrations exceeding unrestricted soil cleanup objectives, this alternative includes an environmental easement that would include institutional controls, such as groundwater and land use restrictions and a Site Management Plan (SMP); engineering controls, such as the engineered caps; and periodic certifications. The SMP would be prepared to: (1) identify known locations of any remaining impacted soil at the site; (2) establish appropriate controls for future disturbances of site soil; (3) set forth the inspection and maintenance activities for perimeter fencing (if needed) and cap materials; and (4) establish protocols and frequencies for media monitoring activities. The SMP would be a means to address potential future soil excavation and potential future exposure to soil vapor (e.g., a soil vapor intrusion evaluation would be completed prior to any buildings being developed on the site).

This alternative would take approximately one year to design and two years to implement.

|                             |                     |
|-----------------------------|---------------------|
| <i>Present Worth:</i> ..... | <i>\$12,500,000</i> |
| <i>Capital Cost:</i> .....  | <i>\$11,800,000</i> |
| <i>Annual Costs:</i> .....  | <i>\$48,000</i>     |

**Exhibit D**

**Table 5**  
**Remedial Alternative Costs**

| <b>Remedial Alternative</b>                                                                                                   | <b>Capital Cost (\$)</b> | <b>Annual Costs (\$)</b> | <b>Total Present Worth (\$)</b> |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|---------------------------------|
| Alternative 1: No Action                                                                                                      | 0                        | 0                        | 0                               |
| Alternative 2: Restoration to Pre-Disposal or Unrestricted Conditions                                                         | 44,100,000               | 0                        | 44,100,000                      |
| Alternative 3: Consolidation/Capping and Groundwater Collection via Pumping Wells with On-Site Groundwater Treatment/Disposal | 11,100,000               | 155,000                  | 13,500,000                      |
| Alternative 4: Consolidation/Capping and Hotspot Removal                                                                      | 11,800,000               | 48,000                   | 12,500,000                      |

## **Exhibit E**

### **SUMMARY OF THE PROPOSED REMEDY**

The Department is proposing Alternative 4, Consolidation/Capping and Hotspot Removal, as the remedy for this site. The elements of this remedy are described at the end of this section. Also, see Figure 7.

#### **Basis for Selection**

The proposed remedy is based on the results of the RI and the evaluation of alternatives.

Alternative 4 is being proposed because, as described below, it satisfies the threshold criteria and provides the best balance of the balancing criterion described in Exhibit C. It would achieve the remediation goals for the site by consolidating and capping contaminated soils, sediment and waste, and excavating hotspot areas for off-site disposal. Excavation and off-site disposal of hotspot areas would significantly reduce their source to localized groundwater contamination in the vicinity of these hotspot areas. Alternative 4 addresses the source of the sediment and surface water contamination, and addresses direct contact with contaminated soil and waste, which are the most significant threats to public health and the environment. In addition, the environmental easement would further reduce the potential for exposures at the site by restricting the site's future use to industrial, prohibiting access to groundwater, preventing unauthorized soil excavations, and requiring that a soil vapor intrusion evaluation be completed prior to any buildings being developed on the site.

Alternative 1 (No Action) does not provide any additional protection to public health and the environment and will not be evaluated further. Alternative 2, by removing all soil contaminated above the "unrestricted" soil cleanup objective, meets the threshold criteria. Alternatives 3 and 4 also comply with these criteria, but to a lesser degree of removal. Because Alternatives 2, 3, and 4 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

Alternatives 2 through 4 all have short-term impacts which could easily be controlled; however, Alternative 2 has the greatest short-term impacts with little additional protection. The time needed to achieve the remediation goals is the shortest for Alternatives 3 and 4. Alternative 2 takes the longest to achieve the remediation goals.

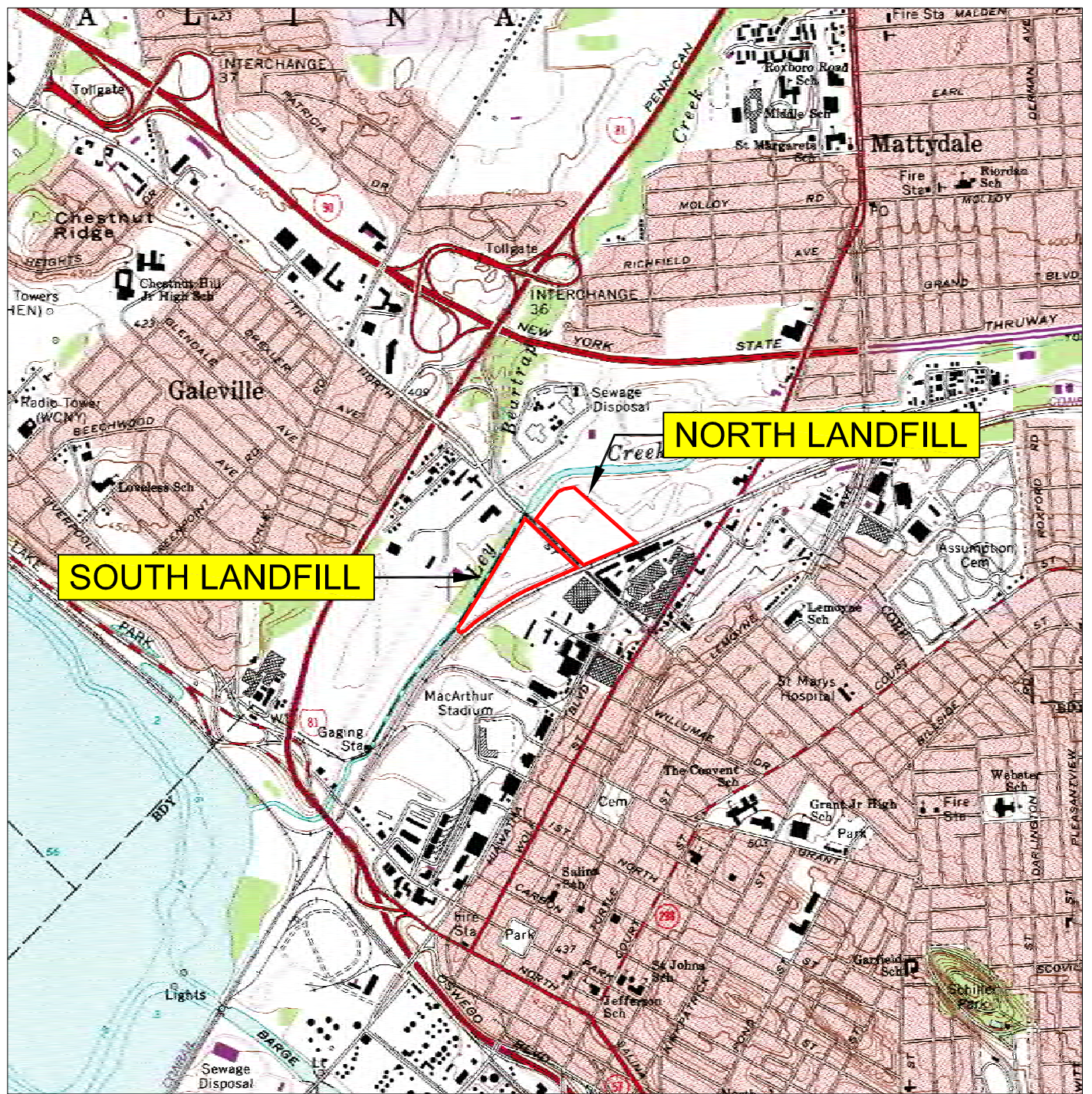
Long-term effectiveness is best accomplished by Alternative 2, followed by Alternative 4, and finally Alternative 3. Alternative 2 would result in the full removal of waste from the site, and would not require an environmental easement or long-term monitoring. Alternative 4 would result in the removal of the main sources of localized groundwater contamination. Alternatives 3 and 4 would remove direct contact with contamination through consolidation and capping. Alternatives 3 and 4 would require an environmental easement and long-term monitoring.

Alternative 2, excavation and off-site disposal, reduces the toxicity, mobility and volume of on-site waste by transferring the material to an approved off-site location. However, depending on the disposal facility, the volume of the material may not be reduced. Alternatives 3 and 4 require the excavation and consolidation of approximately 54,000 and 61,000 cubic yards of contaminated soil and sediment, respectively. Although the volume of the contaminated soils/sediments is not reduced, the contaminated soils/sediments would be excavated and placed above the water table in the consolidation area reducing their mobility. In relation to Alternative 3, Alternative 4 reduces the toxicity, mobility and volume of on-site waste by transferring the hotspot material, approximately 6,750 cubic yards, to an approved off-site disposal facility.

Alternatives 3 and 4 are favorable in that they are readily implementable. Alternative 2 is also implementable, but the volume of soil excavated under this alternative would necessitate increased truck traffic on local roads for several years.

The costs of the alternatives vary significantly. With its large volume of soil to be handled, Alternative 2 (excavation and off-site disposal) would have the highest present worth cost. Consolidation and capping, with either groundwater collection and treatment or hotspot removal (Alternatives 3 and 4), would be much less expensive than Alternative 2, yet it would provide virtually equal protection to public health and the environment. The present worth costs of Alternatives 3 and 4 are similar to each other. The long-term maintenance cost of the cap and groundwater collection and treatment system with Alternative 3 would be higher than long-term maintenance cost of the cap under Alternative 4.

Alternative 2 would remove the contaminated soil permanently. Notwithstanding the residual contamination with Alternatives 3 and 4, anticipated site uses would be readily accommodated with the implementation of a Site Management Plan.



National Geodetic Vertical Datum of 1929  
Contour Interval 10 Feet

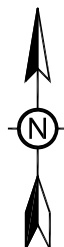
SCALE

0 5000

FEET



QUADRANGLE LOCATION



COOPER CROUSE-HINDS LANDFILL FACILITY  
SYRACUSE, NEW YORK

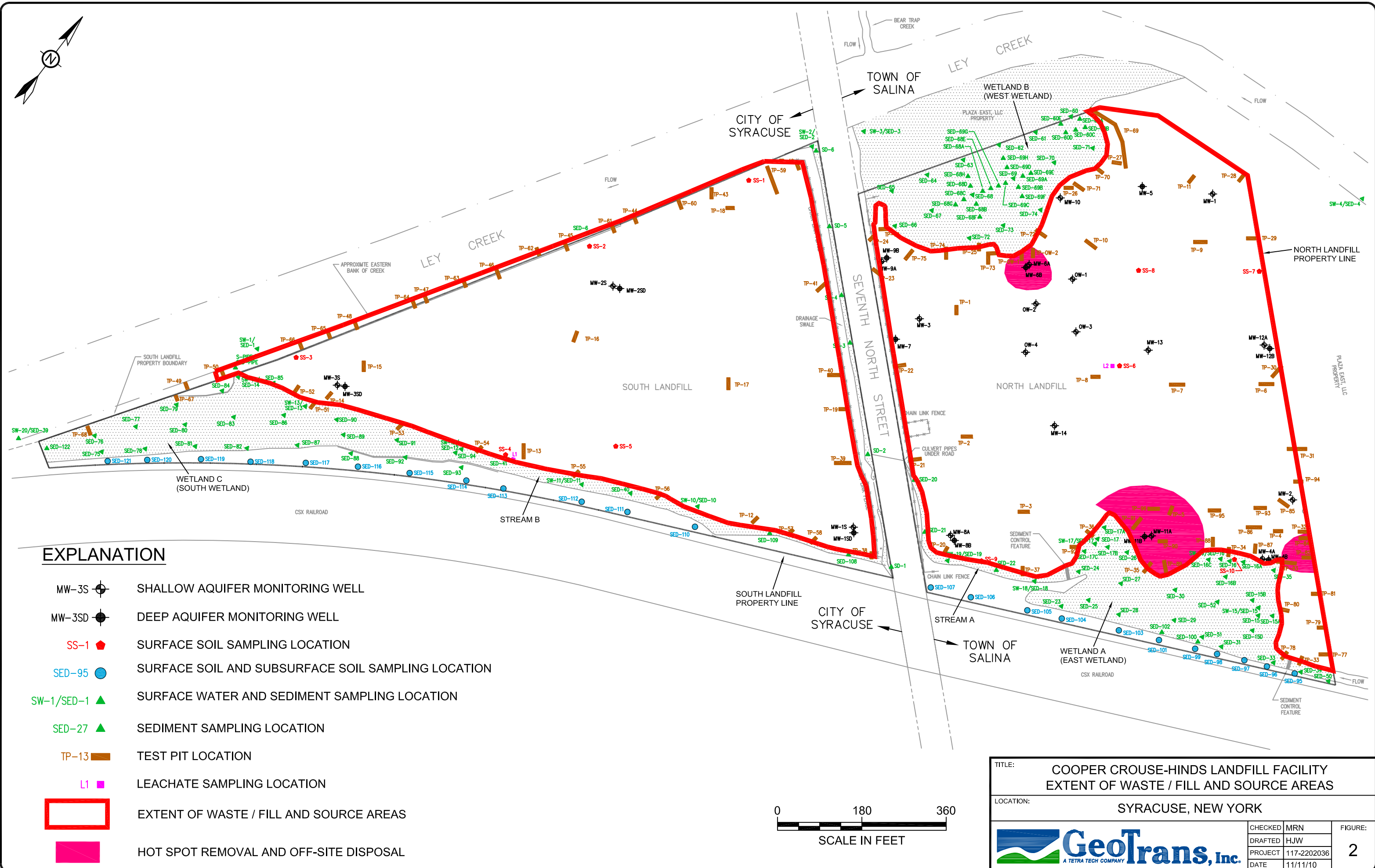
SITE LOCATION MAP

|           |             |
|-----------|-------------|
| DATE:     | 12/11/09    |
| DESIGNED: | HJW         |
| CHECKED:  | MRN         |
| APPROVED: | MRN         |
| DRAWN:    | HJW         |
| PROJ.:    | 117-2202036 |

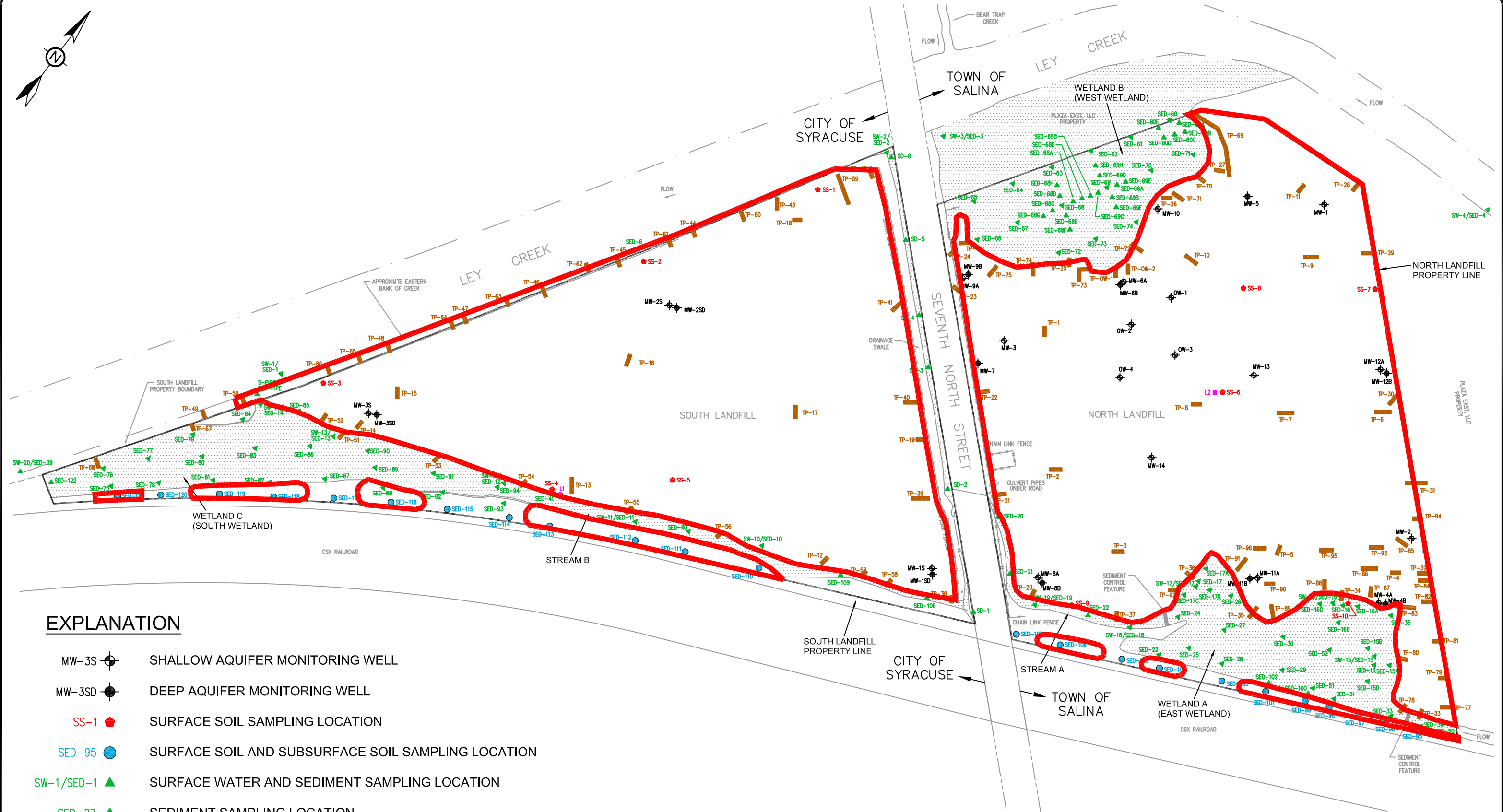
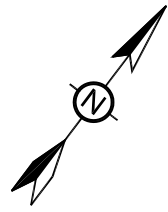
Base map from U.S.G.S. 7.5' SYRACUSE WEST, NEW YORK  
topographic quadrangle map.



Figure 1

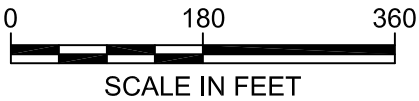






EXPLANATION

- MW-3S SHALLOW AQUIFER MONITORING WELL
- MW-3SD DEEP AQUIFER MONITORING WELL
- SS-1 SURFACE SOIL SAMPLING LOCATION
- SED-95 SURFACE SOIL AND SUBSURFACE SOIL SAMPLING LOCATION
- SW-1/SED-1 SURFACE WATER AND SEDIMENT SAMPLING LOCATION
- SED-27 SEDIMENT SAMPLING LOCATION
- TP-13 TEST PIT LOCATION
- L1 LEACHATE SAMPLING LOCATION
- EXTENT OF SOIL ABOVE SCOs (UNRESTRICTED)

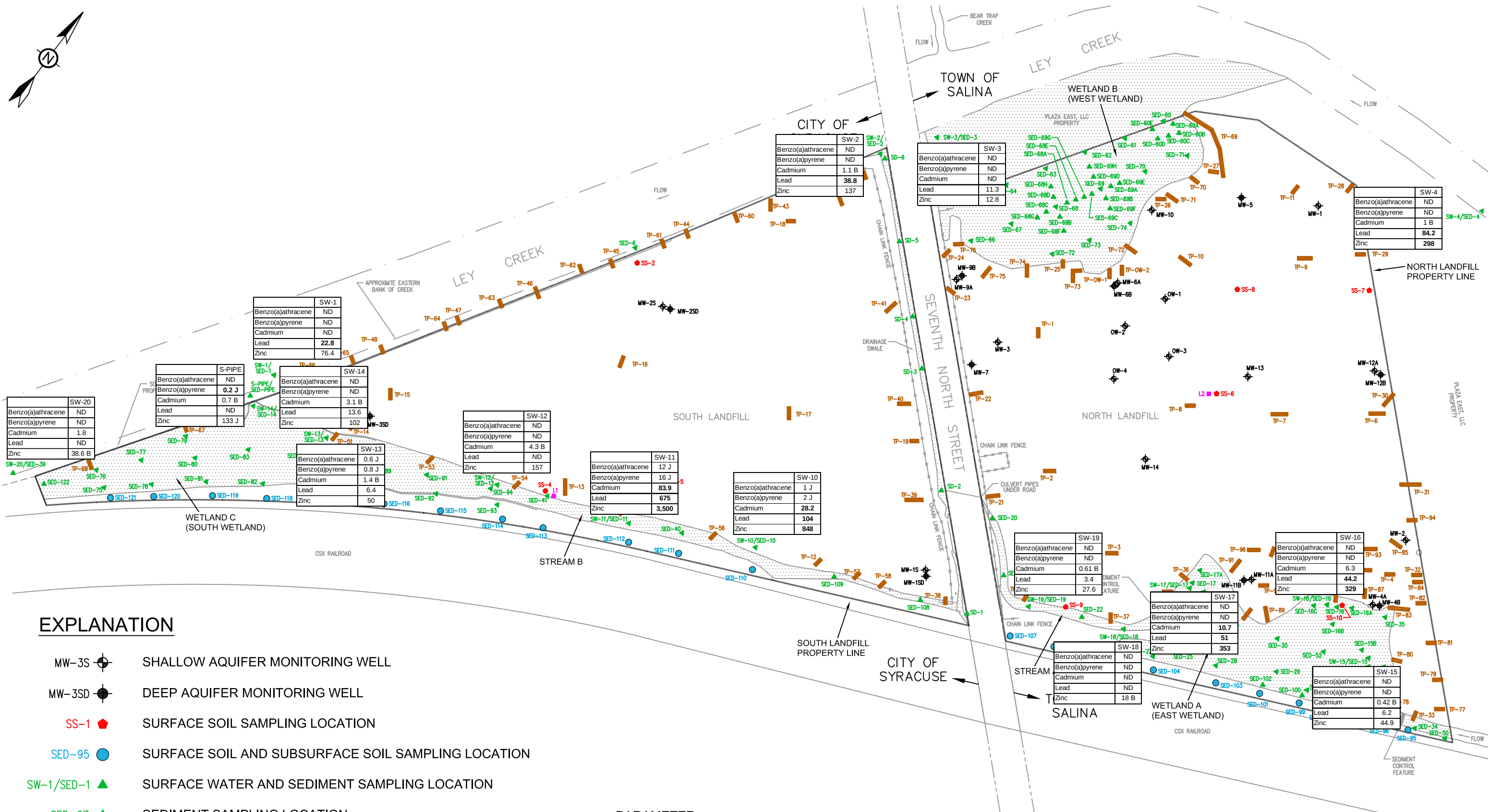
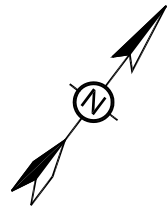


TITLE: COOPER CROUSE-HINDS LANDFILL FACILITY  
EXTENT OF SOIL CONTAMINATION

LOCATION: SYRACUSE, NEW YORK



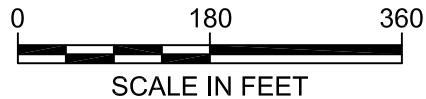
|         |             |              |
|---------|-------------|--------------|
| CHECKED | MRN         | FIGURE:<br>4 |
| DRAFTED | HJW         |              |
| PROJECT | 117-2202036 |              |
| DATE    | 1/27/11     |              |



EXPLANATION

- MW-3S SHALLOW AQUIFER MONITORING WELL
- MW-3SD DEEP AQUIFER MONITORING WELL
- SS-1 SURFACE SOIL SAMPLING LOCATION
- SED-95 SURFACE SOIL AND SUBSURFACE SOIL SAMPLING LOCATION
- SW-1/SED-1 SURFACE WATER AND SEDIMENT SAMPLING LOCATION
- SED-27 SEDIMENT SAMPLING LOCATION
- TP-13 TEST PIT LOCATION
- L1 LEACHATE SAMPLING LOCATION

| PARAMETER             |             |
|-----------------------|-------------|
| SAMPLING LOCATION     |             |
| NON-DETECT            |             |
| CONCENTRATION (ug/L)  |             |
| BOLD INDICATES NYSDEC |             |
| CLASS C SURFACE WATER |             |
| STANDARD EXCEEDED     |             |
| Benzo(a)anthracene    | SW-4 ND     |
| Benzo(a)pyrene        | ND          |
| Cadmium               | 1 B         |
| Lead                  | <b>84.2</b> |
| Zinc                  | <b>298</b>  |

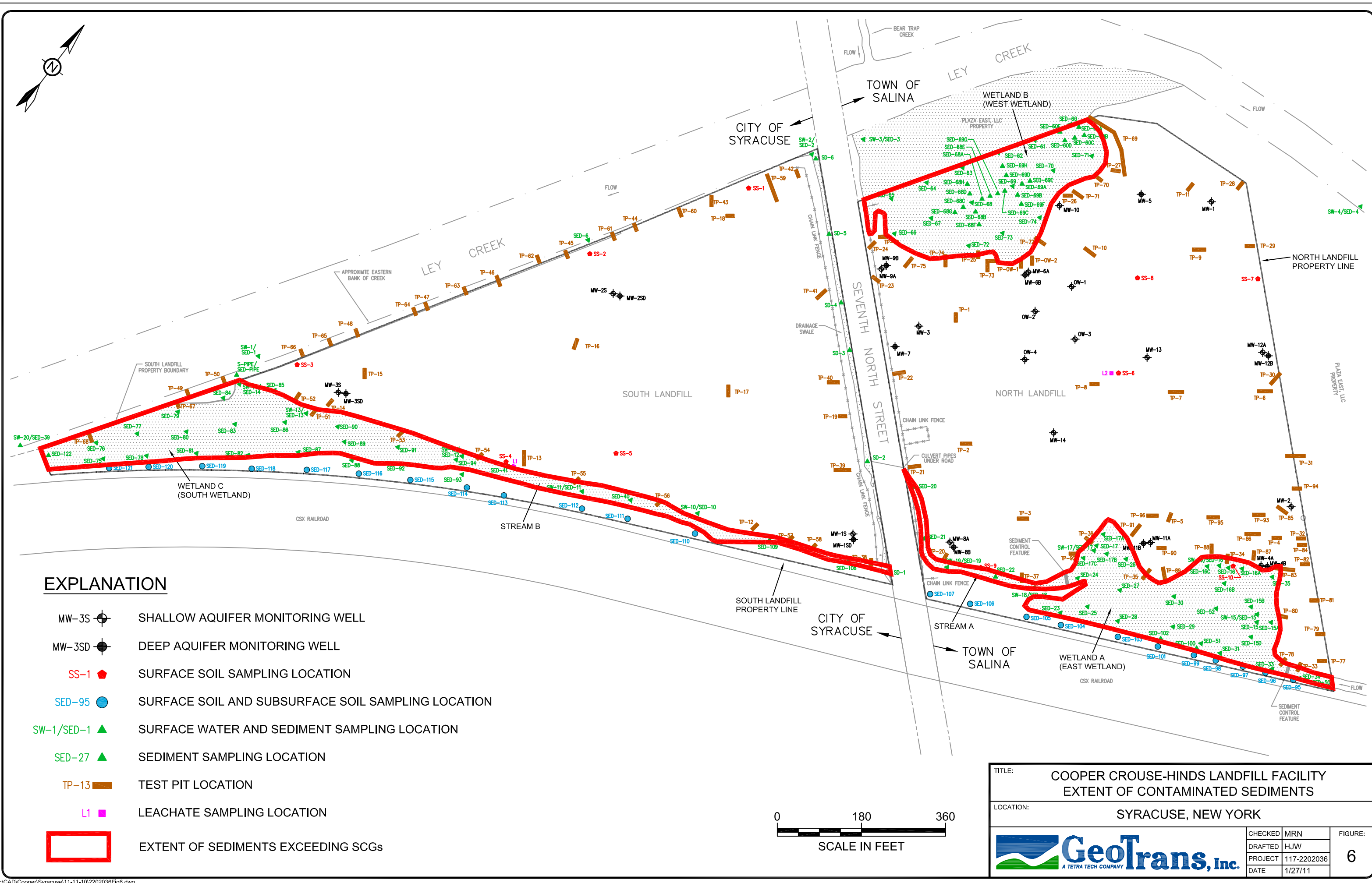


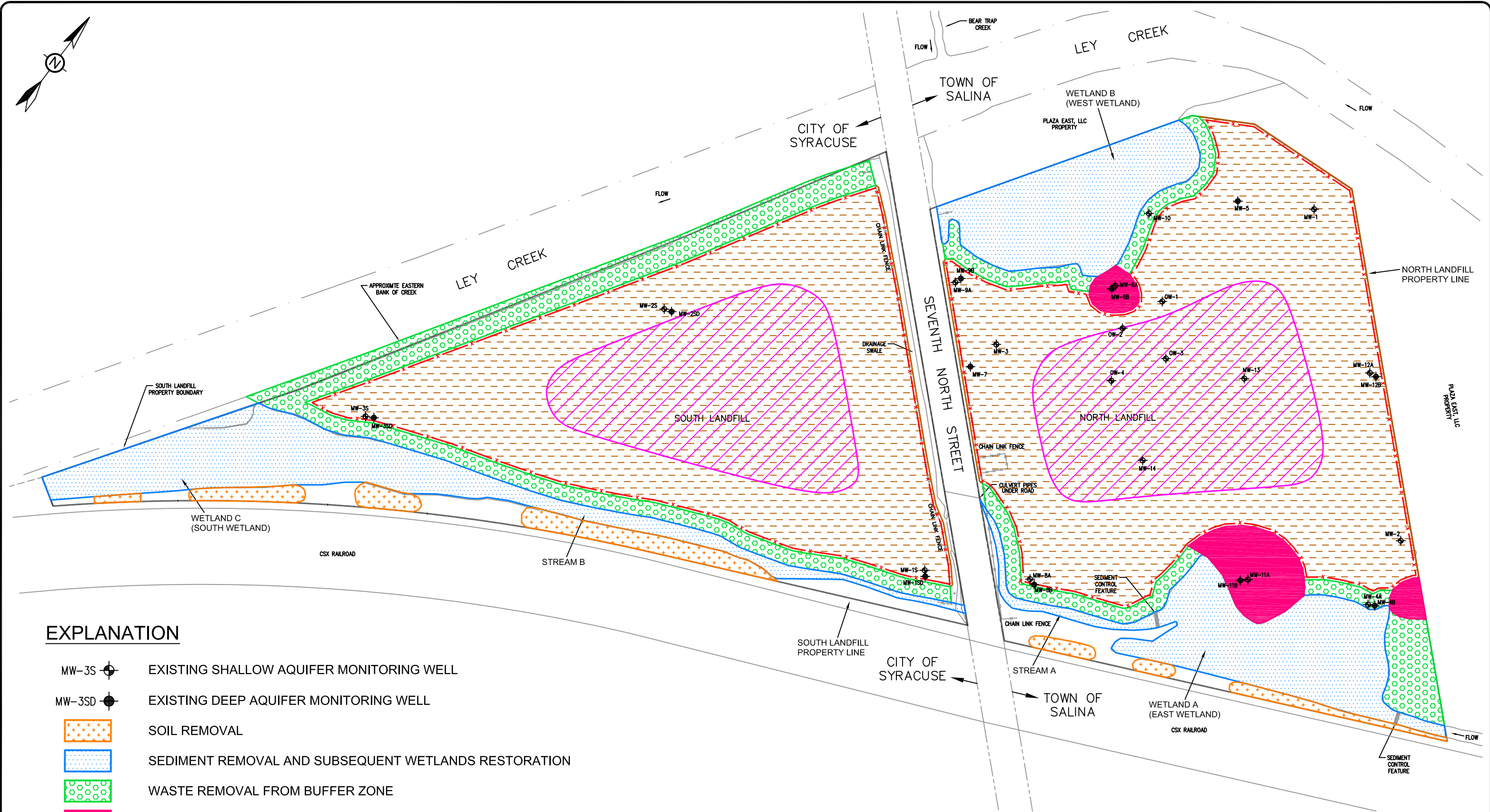
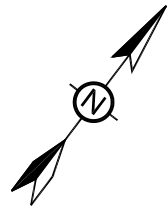
TITLE: COOPER CROUSE-HINDS LANDFILL FACILITY  
EXTENT OF CONTAMINATED SURFACE WATER

LOCATION: SYRACUSE, NEW YORK



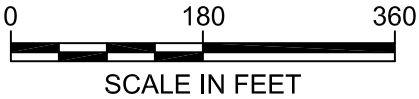
|         |             |                     |
|---------|-------------|---------------------|
| CHECKED | MRN         | FIGURE:<br><b>5</b> |
| DRAFTED | HJW         |                     |
| PROJECT | 117-2202036 |                     |
| DATE    | 11/11/10    |                     |





# EXPLANATION

- MW-3S EXISTING SHALLOW AQUIFER MONITORING WELL
- MW-3SD EXISTING DEEP AQUIFER MONITORING WELL
- SOIL REMOVAL
- SEDIMENT REMOVAL AND SUBSEQUENT WETLANDS RESTORATION
- WASTE REMOVAL FROM BUFFER ZONE
- HOT SPOT REMOVAL AND OFF-SITE DISPOSAL
- SEDIMENT / WASTE CONSOLIDATION
- 6 NYCRR PART 360 CAP
- FENCE



|                                                               |         |             |              |
|---------------------------------------------------------------|---------|-------------|--------------|
| TITLE: COOPER CROUSE-HINDS LANDFILL FACILITY<br>ALTERNATIVE 4 |         |             |              |
| LOCATION: SYRACUSE, NEW YORK                                  |         |             |              |
|                                                               | CHECKED | MRN         | FIGURE:<br>7 |
|                                                               | DRAFTED | HJW         |              |
|                                                               | PROJECT | 117-2202036 |              |
|                                                               | DATE    | 11/11/10    |              |

# **APPENDIX A**

## **Responsiveness Summary**

# **RESPONSIVENESS SUMMARY**

**Crouse-Hinds Landfill Site  
State Superfund Project  
City of Syracuse and Town of Salina, Onondaga County, New York  
Site No. 7-34-004**

The Proposed Remedial Action Plan (PRAP) for the Crouse-Hinds Landfills 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 February 4, 2011. The PRAP outlined the remedial measure proposed for the contaminated soil, sediment, surface water and groundwater at the Crouse-Hinds Landfills 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 February 17, 2011, which included a presentation of the remedial investigation and feasibility study (RI/FS) for the Crouse-Hinds Landfills site 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 was to have ended on March 7, 2011, however it was extended to March 25, 2011, at the request of the public.

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:** After the remedy is implemented, will there be public access for fishing at the site?

**RESPONSE 1:** The site is currently zoned industrial and is private property. Access for fishing or other activities at the site would need to be allowed by the property owner, although such use would be consistent with the commercial use restriction for the site. Any such change of use at the site would have to be approved by New York State.

**COMMENT 2:** The on-site treatment of hot spots should be evaluated.

**RESPONSE 2:** The hot spot removals will occur in three areas each of which are based on different contaminants and are of limited volume. Based on this limited volume and treatment needs on-site treatment was not pursued. The Feasibility Study identified and evaluated a sufficient number of alternatives, and there is no need to evaluate on-site treatment alternatives.

The following comments were received from Joseph J. Heath, Esq., General Counsel for the Onondaga Nation, in a March 8, 2011 letter to the Department.

**COMMENT 3:** Most of the alternatives considered in the PRAP do not take substantial steps toward Nation's Vision of a clean, healthy, and useable environment in and around Onondaga Lake. Rather, in the majority of alternatives considered, the Crouse Hinds Landfill site will continue to be a potential source of contamination for the Lake and its environs, will be limited to industrial or other limited contact uses, and will potentially endanger subsistence or traditional users of the Lake and its surrounding. For all those reasons, the Nation strongly supports Alternative 2, which requires full remediation of the site. At minimum, additional review and revision of some alternatives is required.

**RESPONSE 3:** As stated in the PRAP under 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, the current, intended and reasonably anticipated future land use of the site is industrial. Once the remedy is implemented, it is possible that commercial soil cleanup objectives (SCOs) are achieved, in which case the use of the property could be expanded to include commercial if zoning is changed. In addition, as stated in the PRAP in Exhibit E, consolidation and capping, with hotspot removal (Alternative 4), would be much less expensive than Alternative 2, while Alternative 2 would have additional short term impacts and implementability issues, yet it would provide virtually equal protection to public health and the environment. Alternative 4, while providing equivalent protection to public health and the environment, uses less natural resources and produces less greenhouse gas emissions, with respect to construction equipment and truck traffic, compared to Alternative 2. In addition, Alternative 4 will cut off potential pathways for releases to Ley Creek via wetland remediation, capping and hotspot removal.

**COMMENT 4:** The PRAP undervalues the restoration of this property to unrestricted uses and, for that reason, favors a limited remediation. Without proper assessment of the value added by the full remediation contemplated by Alternative 2, neither the DEC nor local governments can properly weigh the alternatives. Accordingly, we ask that DEC provide more detailed consideration of the benefits of full remediation at this site and ensure that the full range of affected communities be notified and fully involved in the selection of a remedy.

**RESPONSE 4:** The evaluation of alternatives, including remediation that would allow for unrestricted use, followed applicable regulations and guidance during which a detailed evaluation of each alternative was performed using the criteria in section 7. In addition, affected communities were provided opportunity to comment on the proposed remedy in accordance with applicable regulations and policies. Relative to the undervaluing of the restoration of the property, the estimated cost to achieve unrestricted use is greater than \$44M as compared to \$12.5 M for the selected remedy. In conjunction with the discussion in Response 3 above of several of the technical balancing criteria evaluated which demonstrate the protectiveness of the remedy, the incremental cost of \$31.5M clearly exceeds the value of the subject property.

**COMMENT 5:** The DEC must ensure that any remedy prevents additional contaminants of concern from flowing to the Lake. However, the PRAP itself documents a clear pathway for contaminant movement from the site to the Lake. As described in this document, the South Landfill directly abuts Ley Creek, the North Landfill is separated from the Creek by vacant land

and wetlands and the upper layer of groundwater is generally moving toward the Creek. Given this unobstructed pathway from the site to the Creek, the DEC's lightly supported conclusion that Crouse Hinds Landfill does not contribute contaminants to the Creek or the Lake strains belief. Without a more thorough investigation of the potential contributions of Crouse Hinds Landfill to Ley Creek, we believe that the discussion in Section 3.4, paragraph 3, stating that the Landfill does not contribute contaminants to Ley Creek, should be removed from the PRAP. The DEC also must ensure that its remedy breaks any potential soil to groundwater and groundwater to surface water pathways flowing from the Landfill. Only Alternative 3 includes an active groundwater treatment and monitoring element that meets this requirement. A similar monitoring and treatment element should be added to any alternative that the DEC adopts.

**RESPONSE 5:** As discussed in Exhibit A, surface water data from site investigations reveal that Ley Creek meets applicable water quality standards for site related contaminants in the vicinity of the site with the exception of lead, which exhibits higher concentrations upstream of the site indicative of an upstream source. Sediment data, as discussed in Exhibit A, reveal a consistent pattern of contaminants (several PAH's, PCBs, and several heavy metals) and corresponding concentrations upstream, adjacent to, and downstream of the site which indicates that there are no discernable site impacts to Ley Creek sediments in the vicinity of the site (see Figure 6). Although the data are not conclusive in relation to the potential for historic releases from the site to Ley Creek, the available data do not warrant the inclusion of Ley Creek sediment contamination within the site's remedial program. It should be noted that Lower Ley Creek (downstream from the former GM IFG facility site) is a part (subsite) of the Onondaga Lake National Priorities List site for which the Environmental Protection Agency is presently conducting a remedial investigation. Any unacceptable risks to human health and the environment posed by the Lower Ley Creek site will be addressed by this EPA lead remedial program. Furthermore, the remedy for Crouse-Hinds landfill site includes development of a monitoring program to ensure that the objectives of the remedy, which include preventing releases to Ley Creek, are met.

Regarding the comment's recommendation that the remedy include an active groundwater treatment and monitoring element, an active groundwater collection system is not warranted for this site. Groundwater data demonstrate that site groundwater contamination is not impacting Ley Creek.

Although the site investigation did not discern any ongoing releases from this site to Ley Creek, the selected remedy will eliminate potential pathways to Ley Creek and Onondaga Lake from storm water run-off /erosion (landfill capping and sediment remediation of sediments in drainage ways) and the remedy will further reduce impacts to on-site groundwater (capping and hot spot removal).

**COMMENT 6:** As in past remedial efforts, the DEC continues to rely on human health risk assessment standards that are not protective of subsistence users. As a result, the remediation contemplated by DEC would not allow the Nation to safely resume its traditional uses of the Lake. For this reason, the Nation again asks the DEC to revise its human health risk assessment to consider Nation-specific exposure rates and exposure durations.

**RESPONSE 6:** Superfund site cleanup goals relative to human health are aimed at preventing exposures while taking into consideration current and likely future uses. The site is private property owned by Cooper Crouse-Hinds, is currently zoned for industrial use, and changes to this use would have to be approved by the Department due to restrictions posed by the environmental easement. Furthermore, the cleanup of this site does not impact the protectiveness of human uses of Onondaga Lake.

**COMMENT 7:** The Nation is particularly concerned about some elements of the DEC's preferred alternative. In particular, Alternative 4 contemplates creating a buffer between on-site wetlands and the contaminated soils that will be left in place (Sec. 7.2), but provides no similar protection for the off-site wetlands that abut the North Landfill to the west and north or lie to the south of the South Landfill (Sec. 3). At minimum, these off-site wetlands should receive the same protection as on-site wetlands.

**RESPONSE 7:** The remedy calls for, and Figure 7 depicts, buffers between the North Landfill and Wetlands A and B and buffers between the South Landfill and Ley Creek and Wetland C. All wetlands and Ley Creek are buffered from the landfills. In addition, Alternative 4 calls for the remediation of sediments in, and the restoration of, Wetlands A, B and C.

**COMMENT 8:** Further, the DEC proposes removing PCB-contaminated wastes and PCB-contaminated sediments from on-site wetlands if PCB levels reach 50 ppm or higher, but leaving those wastes in place and simply consolidated contaminated sediments within the smaller landfill footprint if PCB levels fall between 1 ppm and 50 ppm. Our concern is that the restricted (industrial use) soil cleanup objective listed in the PRAP for total PCBs is only 25 ppm and the DEC provides no explanation within the draft PRAP for the higher limit being proposed. We believe that the DEC should, at minimum, remove PCB-contaminated wastes above the 25 ppm standard or provide a clear explanation of the 50 ppm standard being proposed.

**RESPONSE 8:** Alternative 4 calls for the remediation of contaminated sediments in Wetlands A, B and C to 1 ppm, with wetland restoration. Contaminated sediments between 1 ppm and 50 ppm will be excavated and consolidated in the landfills, above the water table and will be covered by an engineered cap. PCB-contaminated soil and sediment above hazardous waste regulatory levels (*i.e.*, 50 ppm) will be excavated and properly disposed of off-site. The 25 ppm SCO for industrial use is based on exposure to surficial soils where direct contact may occur. The engineered cap systems will cover the landfill masses (all solid and hazardous waste), providing protection to direct contact to any site soils, PCB-contaminated or other, above the Department's industrial use SCOs. The approach to consolidating and shrinking the footprint of the landfill is consistent with the Department's approach to landfill remediation. It is also consistent with EPA's presumptive remedy for landfills (see <http://www.epa.gov/superfund/policy/remedy/presump/clms.htm>).

**COMMENT 9:** The Nation believes that the PRAP should include information about the potential contamination of the lower aquifer and whether any site-related contaminants have been identified in this aquifer. Given that this lower aquifer is described as sometimes being under artesian conditions, it may exacerbate the soil to groundwater to surface water pathway discussed above.

**RESPONSE 9:** The PRAP (and the ROD) includes information related to potential site impacts on the lower aquifer. In Exhibit A, Nature and Extent of Contamination, Groundwater section, the PRAP stated that samples collected at the North and South Landfills indicate no reproducible detections of VOCs, SVOCs, or total phenols. Metals were detected at concentrations slightly in excess of the NYSDEC Class GA groundwater standards (primarily aesthetic water quality criteria for iron). No pesticides, PCBs or cyanide were detected in the deep groundwater. Therefore, the data indicate that the site is not impacting the deep groundwater aquifer.

The shallow and deep groundwater aquifers are not in communication with each other. They are separated by a continuous confining layer of silt and clay deposits of varying thickness commencing at approximately 30 feet below the ground surface (see the ROD, Section 2, Site Description and History, Site Geology and Hydrogeology).

In addition to the silt and clay unit, groundwater in the deep aquifer exhibits a strong upward vertical gradient, further preventing the migration of contamination from the upper aquifer to the lower aquifer.

**COMMENT 10:** It is not clear that:

- (1) interested parties, including elected officials, and land planning entities, and the general public have been advised that an unrestricted cleanup is a viable option and
- (2) an increase in economic benefits via increased land value (other than construction, O&M, ICs costs) were considered in the economic valuation used to support full removal of wastes on the south side of the creek.

Current zoning and planning was conducted as a consequence of current condition—not what is likely attainable after clean-up.

As stated before on comments associated with the Salina Landfill, the Onondaga Nation believes that the concept of increased land valuation has been omitted from many of the other RODs for the other OUs. This concept should be revisited to generate a more accurate portrayal of costs associated with each alternative.

**RESPONSE 10:** See the Department's response to Comment #4.

**COMMENT 11:** The Lake Bottom OU does not allow for an influx of COCs; therefore, the preferred Alternative for this OU as well as all other OUs or subsites must be designed to “Break the soil to groundwater and the groundwater to surface water pathways”. This design requirement is central to all remedies. The Nation requests that this statement be included within the first paragraph in order to inform the reader early-on.

Only Alternative 3 provides a means of potentially breaking the ground water to surface water pathway (Alternatives 2 and 4 would also require active pumping and treatment until pre-release baseline conditions had re-established). Based on current potentiometric map, Ley Creek is a discharge area that will receive water from the site. Even, if the landfills are capped with

impermeable or semi-permeable membranes, a depression in the potentiometric surface underlying the landfill caused by the temporary infiltration shadow will be in-filled by lateral flow toward the contaminated area. Post capping contours will indicate that groundwater will still pass underneath the site where the aquifer matrix material is contaminated. In summary, Ley creek and Onondaga Lake will continue to be contaminated unless active pump and treat is employed. From this discussion alone, a properly designed and implement Alternative 3 is much more proactive of downstream interests.

**RESPONSE 11:** See the Department's response to Comment #5.

**COMMENT 12:** The Human Health Risk Assessment does not include future traditional subsistence or current subsistence use of resources. Many of the clean-up goals PRAD are not protective of subsistence users. The Nation recommends that the entire BHHRA section be revised, complete with Nation-Specific Exposure factors and durations of exposure.

**RESPONSE 12:** Please see the Department's response to Comment #6.

**COMMENT 13:** Page 4; Section: Site Geology and Hydrogeology. This section needs to advise the reader on the status of the lower aquifer, and if any site related contaminants have been identified. The fact that the lower aquifer is sometimes under artesian conditions may exacerbate the problem described in General Comment No 2, above.

**RESPONSE 13:** Please see the Department's response to Comment #9.

**COMMENT 14:** Page 5; Section 6.1.1: Paragraph 2:

*The tables found in Exhibit A list the applicable SCGs in the footnotes.*

Again, these RAO's are not protective of subsistence users or for release as unrestricted.

**RESPONSE 14:** See the Department's response to Comment #6 above.

**COMMENT 15:** Page 7; Section 6.4; Paragraph 3:

*While contaminants of concern were detected in the sediment and surface water in Ley Creek, the data demonstrate that the current impacts to Ley Creek are not attributable to the site. Rather, sampling has shown that upstream sources, not associated with this site, are impacting the creek. For example, lead in Ley Creek surface water was detected at concentrations in excess of the New York State surface water quality standard (17.9 ppb) adjacent to the site; however, the highest concentration detected in Ley Creek during the RI was at the upgradient sampling location (84.2 ppb).*

This discussion should be removed, since one cannot conclude that Crouse-Hinds is not contributing contaminants to Ley Creek.

**RESPONSE 15:** See the Department's response to Comment #5.

The following comments were received from Onondaga County through a March 7, 2011 from Kevin C. Murphy, Esq. of Wladis Law Firm to the Department.

**COMMENT 16:** The County is in full agreement that the data establishes that Ley Creek is impacted by upstream sources of contamination, but disputes that the data in Remedial Investigation Report establishes that there is *no current impact* to Ley Creek from the Site and more importantly, any implication that the Site had no historic impact on the Creek.

**RESPONSE 16:** See the Department's response to Comment #5.

**COMMENT 17:** In support of this objection the County notes that prior to being used as landfills the Site consisted of low lying fields and salt marshes immediately adjacent to and in the flood plain of Ley Creek. The County also directs the Department to page 5 of the PRAP which notes that "[s]urface water and sediments in drainage channels and wetlands at the site provide a complete pathway to aquatic organisms and their predators. Surface water runoff to Ley Creek provides a potential pathway to aquatic organisms and their predators. Groundwater seepage to surface water onsite provides a potential pathway to aquatic organisms."

**RESPONSE 17:** Section 3: Site Description and History, Historical Use, of the PRAP states, "Prior to the mid-to-late 1950's the North and South Landfill areas had been occupied by low lying fields, salt marshes and woodlands." Currently, wetland maps indicate that only Wetland B is considered a National Wetland Inventory wetland, and that there are no State wetlands onsite. While surface water runoff to Ley Creek and groundwater seepage to surface water onsite provide *potential pathways*, the only completed pathway discussed in the PRAP text is in regard to on-site wetlands and drainage channels, not to Ley Creek. As discussed in the Department's response to Comment #5, site investigatory data indicate that there are no on-going contaminant releases from the site to Ley Creek. Further, remedial actions set forth in the ROD will minimize the potential for future impacts.

**COMMENT 18:** While the County does not dispute and in fact, concurs that the primary source of historic and on-going contamination to Ley Creek is up gradient of this Site, the County submits the suggested "no impact" statement made in the PRAP Fact Sheet is premature and not adequately supported by either the data or the data-based conclusions in the Remedial Investigation Report.

**RESPONSE 18:** See the Department's response to Comment #5.

The following comments were received from Samuel H. Sage, President and Senior Scientist of Atlantic States Legal Foundation in a March 24, 2011 letter to the Department.

**COMMENT 19:** Atlantic States is particularly concerned that DEC has not adequately considered the potential habitat impacts of its preferred alternative. Because DEC plans to

pursue an alternative aimed at restoring the property to industrial use, the Site will continue to be a potential source of contamination for the surrounding habitat and potentially pose a danger to the wildlife dependent on those habitats. While Atlantic States would prefer a remedy that provides more complete remediation and returns the Site to natural conditions, at minimum, additional review and revision of the habitat and wildlife impact of this preferred alternative is required.

**RESPONSE 19:** The Department has reviewed the potential habitat impacts of its preferred alternative. The remedy will mitigate threats to the environment through hotspot removal, consolidation, capping, creating a buffer zone between the landfills and the wetlands and the restoration of on-site wetlands.

**COMMENT 20:** Although the PRAP recognizes the presence of complete contaminant pathways affecting burrowing wildlife and aquatic organisms (Sec. 6.4, p. 7), the impact of such exposure is not seriously considered in the evaluation of alternatives. DEC appears to have dismissed the possibility of off-site exposure because sampling in Ley Creek failed to show contaminant spikes downstream of the Site. Without a more thorough analysis, including contaminant finger-printing, this finding is speculative at best. There is no discussion of wetland sampling on adjacent sites (Exhibit A, p. 6). Further, there is no discussion of potential wildlife exposure on the site itself or steps to minimize that potential exposure. Given that DEC's preferred alternative does not disrupt recognized contaminant pathways affecting habitat and wildlife in the vicinity of the Site, the PRAP should include a more detailed assessment of potential exposure impacts and consider additional remediation or protective measures to disrupt those impacts.

**RESPONSE 20:** See the Department's response to Comment #5.

**COMMENT 21:** In addition, the PRAP makes no mention of the potential exposure of humans through recreational fishing in Ley Creek downstream of the Site. Human exposure is considered only through direct contact pathways, such as drinking contaminated water or dermal contact with contaminated soils. While there may not be designated public access for fishing or other water-related recreation in these downstream areas, recreational fishing and similar uses are occurring in these areas. The argument that there is now no public access or public property on this site is not a convincing argument against this. We know of people who fish there now and with further cleanup, additional fisher days will ensue making it essential that their health be considered in this cleanup plan. In addition, public access may well be provided in future, as part of habitat restoration plans created under the Onondaga Lake Superfund remediation or the related Natural Resources Damages action. The PRAP should reflect this reality.

**RESPONSE 21:** The remedy for the Crouse Hinds Landfill site will address potential pathways from the site to Ley Creek as discussed in the response to Comment #5.

Ley Creek is also subject to a NYSDOH human health advisory for consumption of fish that may be caught from Ley Creek (and all tributaries to Onondaga Lake) in the reach between the lake upstream to the first barrier impassible by fish.

**COMMENT 22:** Other habitat restoration projects are also being developed in and around Onondaga Lake, some of which may be impacted by the remedial design at the Site. We believe that DEC should explicitly evaluate the potential for the Site to interfere with or otherwise impact habitat restoration projects that may be planned or proposed in the surrounding areas. At a minimum, the PRAP should identify and explicitly discuss all habitat restoration projects that are underway or currently being planned in the area.

**RESPONSE 22:** The remedy for this site includes restoration of the on-site impacted wetlands following removal of contaminated sediments. The details for wetland restoration will be developed during remedial design with DEC input/oversight and subject to DEC approval. Evaluation of ongoing or potential future habitat restoration projects related to remediation of other inactive hazardous waste disposal sites in the area is outside the scope of the Crouse-Hinds Landfill site's remedial program. However, insofar as the DEC is managing the majority of the remedial programs for sites within the Onondaga Lake basin or is providing oversight/support to EPA for the several sites that EPA is managing, coordination among respective sites' remedial programs, as appropriate, is ongoing including issues such as habitat restoration projects.

**COMMENT 23:** Further, DEC should assess the possibility that wetlands were historically present on the Site itself and the potential impact of its preferred alternative on restoration or recover of this historic habitat. As noted in the PRAP, adjacent properties to the north and south of the Site contain numerous wetlands. Prior to the 1950s, according to both the PRAP and the Fact Sheet, the Site included "low lying fields and salt marshes" (Sec. 3, p. 3), which suggests that wetlands may have been common on site. At present, there is a small federally recognized wetland on the Site itself. This was confirmed in conversation with the DEC Region 7 Office in Syracuse and could be further verified from wetlands maps. Given these facts, it seems likely that the Site contained more extensive wetlands at one time. The PRAP should evaluate this possibility and consider the potential impacts of leaving significant levels of contamination in an area of historic wetlands.

**RESPONSE 23:** It is outside the scope of the Fish and Wildlife Impact Analysis and the remedy to consider potential historic filling of wetlands. The Department considers wetlands that exist now and evaluates potential routes of exposure and impacts, as appropriate, in order to determine whether remedial action is necessary and if so, to help select the remedy.

**COMMENT 24:** The full extent of historic wetlands on the Site can be determined by various methods of physical analysis on the site and by checking with older maps and aerial photographs. In addition, according to the PRAP there will be "new" wetlands created on the side of the work site farthest from Ley Creek and we expect that these will then be considered jurisdictional under state and federal regulations. All of these wetlands areas should be considered in evaluating the full impact of any proposed remedial action.

**RESPONSE 24:** The remedy does not call for the creation of new wetlands. The remedy calls for the remediation and restoration of existing on-site wetlands (*i.e.*, Wetlands A, B and C).

**COMMENT 25:** DEC must ensure that any remedy prevents additional contaminants of concern from flowing to adjacent surface waters. The PRAP documents a clear pathway for

contaminant movement from the Site to Ley Creek and adjacent wetlands and potentially Onondaga Lake. The South Landfill directly abuts Ley Creek. The North Landfill is separated from the Creek by vacant land and wetlands. Further, the shallow groundwater layer is generally moving from the Site toward the Creek. Given this unobstructed pathway, DEC's lightly supported conclusion that the Site does not contribute contaminants to the Creek, adjacent wetlands or Onondaga Lake strains belief. A more thorough investigation is required to document this position. DEC also must ensure that its remedy breaks any potential soil to groundwater and groundwater to surface water pathways flowing from the Landfill.

**RESPONSE 25:** See the Department's response to Comment #5.

**COMMENT 26:** As described in the PRAP, the preferred alternative simply creates a 50 foot buffer between Ley Creek and contaminated soils remaining on-site and a 30 foot buffer between on-site wetlands and remaining contaminated soils. This provision is inadequate. If DEC does not include any remedial components designed to completely break the groundwater to surface water pathway, it should at minimum double the buffer between surface waters and contaminated soils. Moreover, this larger buffer should be applied to all surface water components, including Ley Creek, on-site wetlands and the off-site wetlands that abut the North Landfill to the west and north or lie to the south of the South Landfill.

**RESPONSE 26:** The buffer zones were developed with input from the Department's Division of Fish, Wildlife and Marine Resources, and are protective of the environment.

**COMMENT 27:** Atlantic States was disappointed with the range of alternatives considered as part of the Remedial Investigation/Feasibility Study (RI/FS) done for the Site. Although public input is not mandatory for this portion of the project, we believe that public involvement could have dramatically improved the final product. As a result, we stress the importance of and ask that DEC continue to provide for public involvement, particular of key stakeholders, in any additional review of this Site, modifications to the remedial design, development of additional remedial alternatives, and restoration planning. In addition to the ROD and responsiveness summary documents, we expect to be on the site mailing list and receive other technical and work plan submittals.

**RESPONSE 27:** Citizen participation for this site will continue through remedial design and construction, as appropriate, consistent with Department policy. Subsequent to the issuance of a PRAP, this generally consists of keeping the public informed of major remedial program milestones, including issuance of the ROD and the start of remedial construction. Public information meetings may be held, depending upon the level of interest expressed by the community, related to specific aspects of a site's remedial program. The site's Project Manager is readily accessible by phone or e-mail to respond to questions and/or concerns expressed by individuals.

The Division of Environmental Remediation (DER) is actively working to reduce the use of paper in its programs. Some recent efforts include the current initiative to move to e-citizen participation (transmitting fact sheets and notices electronically through a listserv) and e-procurement efforts (providing procurement documents electronically on our website and

providing notices through a listserv). To further this effort, the DER is reducing the number of copies of work plans and reports that it requires to be submitted to DER and the New York State Department of Health (DOH). This policy was stated in the PRAP.

It is the Department's understanding that ASLF, in an effort to aid the Department in "going paperless", has already signed up for the listserv in which information regarding this site is distributed electronically. While the Department has agreed that ASLF may be an additional document repository for this site, and as with other document repositories for this site, copies of future documents will be transmitted to ASLF in .pdf format on a CD.

**COMMENT 28:** In particular, Atlantic States asks that DEC open the development of the restoration plan for the Site to public comment. The PRAP includes minimal discussion of post-remediation restoration on the Site, noting only that a restoration must be developed using "green remediation and sustainability efforts" (Sec. 7.2, p. 11). Although DEC calls for "cover systems [that are] useable for habitat and restoration," (Sec. 7.2, p. 11), we have too often seen restoration plans at similar sites which simply provide for planting grass or other vegetation that adds little or nothing of value to the surrounding habitat. DEC should require more productive uses of the Site. Without public input and oversight, we are concerned that opportunities to create a sustainable and environmentally beneficial restoration will be lost. These areas are suitable for various agricultural and forestry applications, whether edible products are considered or not (at this point we are not pushing growing consumables although scientific opinion from both US EPA and US Department of Agriculture increasingly feels there is little or no risk involved). Potential plantings could be for timber, nuts, fiber (linen from flax for example), and biofuels. Even plantings where the objective is carbon sequestration without any harvest is a possibility. A detailed planting plan and analysis needs to be done. Aside from aesthetics, habitat, carbon sequestration, and economic value, certain plantings might enhance remediation efforts. For example, Red mulberry, *Morus rubra*, is reputed to enhance growth of the bacteria responsible for breaking down PCBs in soil. This tree is a native species, another benefit in planting some on this site.

**RESPONSE 28:** ALSF's recommendations regarding site restoration in relation to remedy implementation will be considered during the design of the remedy. The level of citizen participation during the remedial design phase will depend largely on the degree of interest expressed by the public. Any comments received from the public will be considered.

**COMMENT 29:** Further, we urge DEC to be mindful of the potential for additional remediation and restoration at the Site as part of the on-going Natural Resources Damage (NRD) action being pursued by the Department of Interior, the State of New York and the Onondaga Nation. Any restoration or remediation plans for the Site should be considered in light of their potential to affect or disrupt future restoration efforts by the NRD Trustees. Given the interconnected nature of this remedial action and the NRD process and the confusion that may arise as a result, we ask DEC to acknowledge in the PRAP or related documents that the state-based remedy on the Site and its treatment as separate from the Onondaga Lake Superfund Site will not affect its potential inclusion in the NRD action.

**RESPONSE 29:** The DEC is the designated New York State NRD Trustee. The Department's remedial and NRD programs are coordinated in relation to a specific site's remedial programs, as appropriate. In relation to the Onondaga Lake NRD claim, DEC, the Department of Interior and the Onondaga Nation are working together under a Memorandum of Understanding which provides for coordination among the Trustees.

The Department does not believe that language in the ROD is needed to explain that remedy selection for this site does not affect potential inclusion of impacts from this site in a NRD action.

Nelson Olavarria, Director Environmental Assessment & Remediation of Cooper Industries submitted an e-mail (dated March 2, 2011) which included the following comments:

**COMMENT 30:** Section 3 page 3 Site Description and History under the paragraph on Historical Use can DEC add the dates of when CC-H disposed of the zinc hydroxide sludge into the North Landfill. According to GeoTrans' FS report, it was between 1972-1980.

**RESPONSE 30:** The referenced passage has been revised in the Record of Decision to state: "Zinc hydroxide sludge generated from the facility's wastewater treatment plant was also disposed of in the North Landfill from 1972 to 1980."

**COMMENT 31:** The PRAP states that no IRM's were performed at the site, however there were some beneficial improvements implemented by CC-H with DEC's oversight, such as the installation of sediment check dams for erosion control measures in both landfills and follow-up inspections. The recovery of free and dissolved petroleum product from monitoring well MW-6A, monitoring of the nearby observation wells and the collection and treatment of the purge water by CC-H. In addition, a fence was installed around the landfill site with warning signs as an institutional control measure.

**RESPONSE 31:** Even though not considered interim remedial measures, the Department acknowledges that the above beneficial improvements were implemented by Cooper Crouse-Hinds.

## **APPENDIX B**

### **Administrative Record**

# **Administrative Record**

**Crouse-Hinds Landfill Site  
State Superfund Project  
City of Syracuse and Town of Salina, Onondaga County, New York  
Site No. 7-34-004**

1. *Proposed Remedial Action Plan for the Crouse-Hinds Landfills site*, dated February 2011, prepared by the Department.
2. Order on Consent, Index No. D-7-0002-01-07, between the Department and Cooper Crouse-Hinds, executed on May 14, 2004.
3. “Preliminary Site Assessment Work Plan”, April 2004, prepared by InteGreyted International, LLC.
4. “Preliminary Site Assessment Report”, September 2004, prepared by InteGreyted International, LLC.
5. “Supplemental PSA Work Plan”, October 2005, prepared by Delta Environmental Consultants, Inc.
6. “Preliminary Site Assessment and Supplemental Site Assessment Report”, May 2006, prepared by Delta Environmental Consultants, Inc.
7. “Remedial Investigation/Feasibility Study Work Plan”, February 2008, prepared by Delta Environmental Consultants, Inc.
8. “Remedial Investigation Report”, August 2009, prepared by GeoTrans, Inc.
9. “Feasibility Study Report”, April 2010, prepared by GeoTrans, Inc.
10. Comment letter from Onondaga County, March 7, 2011, prepared by Kevin C. Murphy, Esq. of Wladis Law Firm.
11. Comment letter from the Onondaga Nation, March 8, 2011, prepared by Joseph J. Heath, Esq., General Counsel for the Onondaga Nation.
12. Comment letter from Atlantic States Legal Foundation, March 24, 2011, prepared by Samuel H. Sage, President and Senior Scientist of ASLF.



WLADIS LAW FIRM  
THE NEW STANDARD IN CLIENT SERVICE

Kevin C. Murphy, Esq.  
[kmurphy@wladislawfirm.com](mailto:kmurphy@wladislawfirm.com)

March 7, 2011

Via E-Mail: [rxmustic@gw.dec.state.ny.us](mailto:rxmustic@gw.dec.state.ny.us)

Richard Mustico, P.E.  
New York State Department of Environmental Conservation  
625 Broadway  
Albany, New York 12233

Re: Crouse-Hinds Landfills, Site Number 7-34-004  
City of Syracuse and Town of Salina, NY

Proposed Remedial Action Plan

Dear Mr. Mustico:

I write on behalf of our client, Onondaga County, New York, and provide below the following limited comments in response to the Proposed Remedial Action Plan for the Crouse-Hinds Landfills, Site Number 7-34-004.

These comments are submitted following a review and analysis of the Proposed Remedial Action Plan (PRAP), the supporting August 5, 2009 Remedial Investigation Report and the PRAP Fact Sheet by the County and its consultants.

The County notes and takes issue with the statement in the PPAP Fact Sheet that "the data demonstrate that Ley Creek is not currently being impacted by the site."

The County is in full agreement that the data establishes that Ley Creek is impacted by upstream sources of contamination, but disputes that the data in Remedial Investigation Report establishes that there is *no current impact* to Ley Creek from the Site and more importantly, any implication that the Site had no historic impact on the Creek.

In support of this objection the County notes that prior to being used as landfills the Site consisted of low lying fields and salt marshes immediately adjacent to and in the flood plain of Ley Creek. The County

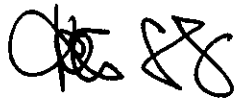
Richard Mustico, P.E.  
Crouse-Hinds Landfills, Site Number 7-34-004  
March 7, 2011  
Page 2 of 2

In support of this objection the County notes that prior to being used as landfills the Site consisted of low lying fields and salt marshes immediately adjacent to and in the flood plain of Ley Creek. The County also directs the Department to page 5 of the PRAP which notes that "[s]urface water and sediments in drainage channels and wetlands at the site provide a complete pathway to aquatic organisms and their predators. Surface water runoff to Ley Creek provides a potential pathway to aquatic organisms and their predators. Groundwater seepage to surface water onsite provides a potential pathway to aquatic organisms."

While the County does not dispute and in fact, concurs that the primary source of historic and on-going contamination to Ley Creek is up gradient of this Site, the County submits the suggested "no impact" statement made in the PRAP Fact Sheet is premature and not adequately supported by either the data or the data-based conclusions in the Remedial Investigation Report.

Should you have any questions or comments, please do not hesitate to contact me or David Coburn, Director of the Onondaga County Department of the Environment directly.

Very truly yours,  
The Wladis Law Firm, P.C

A handwritten signature in black ink, appearing to read 'Kevin C. Murphy', with a stylized flourish at the end.

Kevin C. Murphy

KCM/cs

Cc: David Coburn  
Luis A. Mendez, Esq.

**JOSEPH J. HEATH**  
GENERAL COUNSEL FOR THE ONONDAGA NATION  
ATTORNEY AT LAW  
716 EAST WASHINGTON STREET  
SUITE 104  
SYRACUSE, NEW YORK 13210-1502  
315-475-2559  
Facsimile  
315-475-2465  
jheath@atsny.com

March 8, 2011

VIA ELECTRONIC MAIL

Richard Mustico  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
625 Broadway  
Albany, NY 12233  
[rxmustic@gw.dec.state.ny.us](mailto:rxmustic@gw.dec.state.ny.us)

**Re: Comments on Crouse Hinds Landfill PRAP**

Dear Mr. Mustico:

We submit these comments on behalf of the Onondaga Nation. Onondaga Lake and the land along its shoreline are sacred to the Onondaga Nation and the restoration of these resources is critical to the Nation. Based on our review and the review of our technical consultants, we wish to raise the following concerns.

Our biggest concern is that most of the alternatives considered in the PRAP do not take substantial steps toward Nation's Vision of a clean, healthy, and useable environment in and around Onondaga Lake. Rather, in the majority of alternatives considered, the Crouse Hinds Landfill site will continue to be a potential source of contamination for the Lake and its environs, will be limited to industrial or other limited contact uses, and will potentially endanger subsistence or traditional users of the Lake and its surrounding. For all those reasons, the Nation strongly supports Alternative 2, which requires full remediation of the site. At minimum, additional review and revision of some alternatives is required.

As noted in the attached comments from our consultant, Fred Kerschner, the PRAP undervalues the restoration of this property to unrestricted uses and, for that reason, favors a limited remediation. Without proper assessment of the value added by the full remediation contemplated by Alternative 2, neither the DEC nor local governments can properly weigh the alternatives. Accordingly, we ask that DEC provide more detailed consideration of the

benefits of full remediation at this site and ensure that the full range of affected communities be notified and fully involved in the selection of a remedy.

Further, the DEC must ensure that any remedy prevents additional contaminants of concern from flowing to the Lake. However, the PRAP itself documents a clear pathway for contaminant movement from the site to the Lake. As described in this document, the South Landfill directly abuts Ley Creek, the North Landfill is separated from the Creek by vacant land and wetlands and the upper layer of groundwater is generally moving toward the Creek. Given this unobstructed pathway from the site to the Creek, the DEC's lightly supported conclusion that Crouse Hinds Landfill does not contribute contaminants to the Creek or the Lake strains belief. Without a more thorough investigation of the potential contributions of Crouse Hinds Landfill to Ley Creek, we believe that the discussion in Section 3.4, paragraph 3, stating that the Landfill does not contribute contaminants to Ley Creek, should be removed from the PRAP. The DEC also must ensure that its remedy breaks any potential soil to groundwater and groundwater to surface water pathways flowing from the Landfill. Only Alternative 3 includes an active groundwater treatment and monitoring element that meets this requirement. A similar monitoring and treatment element should be added to any alternative that the DEC adopts.

As in past remedial efforts, the DEC continues to rely on human health risk assessment standards that are not protective of subsistence users. As a result, the remediation contemplated by DEC would not allow the Nation to safely resume its traditional uses of the Lake. For this reason, the Nation again asks the DEC to revise its human health risk assessment to consider Nation-specific exposure rates and exposure durations.

The Nation is particularly concerned about some elements of the DEC's preferred alternative. In particular, Alternative 4 contemplates creating a buffer between on-site wetlands and the contaminated soils that will be left in place (Sec. 7.2), but provides no similar protection for the off-site wetlands that abut the North Landfill to the west and north or lie to the south of the South Landfill (Sec. 3). At minimum, these off-site wetlands should receive the same protection as on-site wetlands.

Further, the DEC proposes removing PCB-contaminated wastes and PCB-contaminated sediments from on-site wetlands if PCB levels reach 50 ppm or higher, but leaving those wastes in place and simply consolidated contaminated sediments within the smaller landfill footprint if PCB levels fall between 1 ppm and 50 ppm. Our concern is that the restricted (industrial use) soil cleanup objective listed in the PRAP for total PCBs is only 25 ppm and the DEC provides no explanation within the draft PRAP for the higher limit being proposed. We believe that the DEC should, at minimum, remove PCB-contaminated

wastes above the 25 ppm standard or provide a clear explanation of the 50 ppm standard being proposed.

Finally, the Nation believes that the PRAP should include information about the potential contamination of the lower aquifer and whether any site-related contaminants have been identified in this aquifer. Given that this lower aquifer is described as sometimes being under artesian conditions, it may exacerbate the soil to groundwater to surface water pathway discussed above.

Thank you for your attention to these comments. We will be happy to provide more information or discuss them further at your request.

Sincerely,

*Joseph J. Heath*

Joseph J. Heath

Enc.

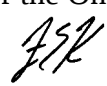
cc: Onondaga Nation Council of Chiefs  
Haudenosaunee Environmental Task Force  
EPA Region 2

# AESE, Inc.

P.O. Box 50392,  
Henderson, NV 89016  
509-924-0184  
<http://www.aeseinc.com>

## MEMORANDUM

---

**TO:** Joseph J. Heath, Esq.  
Counsel for the Onondaga Nation  


**FROM:** Dr. F. E. Kirschner, Senior Scientist

**DATE:** March 2, 2011

**SUBJECT:** Rapid review of “*Proposed Remedial Action Plan Crouse-Hinds Landfills State Superfund Project Syracuse, Onondaga County Site No. 734004 February 2011*”

**CC:** Alma Lowry Esq.  
Dr. Harper, DABT  
File

---

We have rapidly reviewed the aforementioned document. Below are a few General Comments flowed by Specific Comments.

## General Comment No. 1

Unlike the ROD and subsequent amendments to the ROD for the Salina landfill, this Alternative 2 of the PRAD does contemplate full cleanup that would render this land appropriate for unrestricted land use (URLU).

However, it is not clear that:

- (1) interested parties, including elected officials, and land planning entities, and the general public have been advised that URLU is a viable option and
- (2) an increase in economic benefits via increased land value (other than construction, O&M, ICs costs) were considered in the economic valuation used to support full removal of wastes on the south side of the creek.

Current zoning and planning was conducted as a consequence of current condition—not what is likely attainable after clean-up.

As stated before on comments associated with the Salina Landfill, the Onondaga Nation believes that the concept of increased land valuation has been omitted from many of the other RODs for the other OUs. This concept should be revisited to generate a more accurate portrayal of costs associated with each alternative.

## General Comment No. 2

The Lake Bottom OU does not allow for an influx of COCs; therefore, the Preferred Alternative for this OU as well as all other OUs or subsites must be designed to **“Break the soil to groundwater and the groundwater to surface water pathways”**. This design requirement is central to all remedies. The Nation requests that this statement be included within the first paragraph in order to inform the reader early-on.

Only Alternatives 3 provides a means of potentially breaking the ground water to surface water pathway.<sup>1</sup> Based on current potentiometric map, Ley Creek is a discharge area that will receive water from the site. Even, if the landfills are capped with impermeable or semi-permeable membranes, a depression in the potentiometric surface underlying the landfill caused by the temporary infiltration shadow will be in-filled by lateral flow toward the contaminated area. Post capping contours will indicate that groundwater will still pass underneath the site where the aquifer matrix material is contaminated. In

---

<sup>1</sup> Alternatives 2 and 4 would also require active pumping and treatment until pre-release baseline conditions had re-established.

summary, Ley creek and Onondaga Lake will continue to be contaminated unless active pump and treat is employed. From this discussion alone, a properly designed and implement Alternative 3 is much more proactive of downstream interests.

### **General Comment No. 3**

The Human Health Risk Assessment does not include future traditional subsistence or current subsistence use of resources. Many of the clean-up goals PRAD are not protective of subsistence users. The Nation recommends that the entire BHHRA section be revised, complete with Nation-Specific Exposure factors and durations of exposure.

## Specific Comments

### 1. Page 4; Section: Site Geology and Hydrogeology

This section is needs to advise the reader on the status of the lower aquifer, and if any site related contaminants have been identified. The fact that the lower aquifer is sometimes under artesian conditions may exacerbate the problem described in General Comment No 2, above.

### 2. Page 5; Section 6.1.1: Paragraph 2:

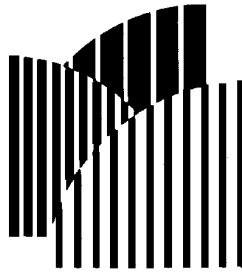
*The tables found in Exhibit A list the applicable SCGs in the footnotes.*

Again, these RAO's are not protective of subsistence users or for release as URLU.

### 3. Page 7; Section 6.4; Paragraph 3:

*While contaminants of concern were detected in the sediment and surface water in Ley Creek, the data demonstrate that the current impacts to Ley Creek are not attributable to the site. Rather, sampling has shown that upstream sources, not associated with this site, are impacting the creek. For example, lead in Ley Creek surface water was detected at concentrations in excess of the New York State surface water quality standard (17.9 ppb) adjacent to the site; however, the highest concentration detected in Ley Creek during the RI was at the upgradient sampling location (84.2 ppb).*

This discussion should be removed, since one cannot conclude that Crouse-Hinds is not contributing contaminants to Ley Creek.



**ATLANTIC STATES  
LEGAL FOUNDATION, INC.**

March 24, 2011

Richard Mustico  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
625 Broadway  
Albany, NY 12233  
[rxmustic@gw.dec.state.ny.us](mailto:rxmustic@gw.dec.state.ny.us)

Re: Comments on Crouse Hinds Landfill PRAP  
Submitted via e-mail

Dear Mr. Mustico:

Atlantic States Legal Foundation submits the following comments on the Proposed Remedial Action Plan (PRAP) for the Crouse Hinds Landfill site ("the Site"). Atlantic States Legal Foundation, Inc. (ASLF) is a New York chartered not-for-profit corporation founded in 1982 with its purpose being to provide technical, legal, and organizing services to a variety of citizens, citizen groups, local governments, and others on a wide variety of environmental issues. We are creative problem solvers trying to advance environmental sanity through the implementation of projects that in addition to their intrinsic merit can be prototypes for similar efforts elsewhere by ourselves and others.

Atlantic States is concerned that the DEC is not taking adequate measures to assess the potential damage to or protect habitat at or near the Site. The PRAP should be revised to include more detailed assessment of the impacts of proposed remedial measures on surrounding habitats, on current recreational uses of those areas, on habitat restoration projects that may be undertaken in and around the site, and on the historic habitat on-site. Any alternatives that leave contaminated soils or groundwater in place should include larger buffers to protect adjacent surface waters and wetlands. Finally, we were dismayed at the limited alternatives considered in the RI/FS and ask that the State consult more frequently with key stakeholders, including Atlantic States, on any additional review of this site, modifications to the remedial design or development of additional remedial alternatives.

**I. THE PRAP DOES NOT GIVE SUFFICIENT CONSIDERATION TO THE  
HABITAT AND ECOSYSTEM IMPACTS OF THE PREFERRED  
ALTERNATIVE.**

Atlantic States is particularly concerned that DEC has not adequately considered the potential habitat impacts of its preferred alternative. Because DEC plans to pursue an alternative aimed at restoring the property to industrial use, the Site will continue to be a potential source of contamination for the surrounding habitat and potentially pose a danger to the wildlife dependent on those habitats. While Atlantic States would prefer a remedy that provides more complete remediation and returns the Site to natural conditions, at minimum, additional review and revision of the habitat and wildlife impact of this preferred alternative is required.

Although the PRAP recognizes the presence of complete contaminant pathways affecting burrowing wildlife and aquatic organisms (Sec. 6.4, p. 7), the impact of such exposure is not seriously considered in the evaluation of alternatives. DEC appears to have dismissed the possibility of off-site exposure because sampling in Ley Creek failed to show contaminant spikes downstream of the Site. Without a more thorough analysis, including contaminant fingerprinting, this finding is speculative at best. There is no discussion of wetland sampling on adjacent sites (Exhibit A, p. 6). Further, there is no discussion of potential wildlife exposure on the site itself or steps to minimize that potential exposure. Given that DEC's preferred alternative does not disrupt recognized contaminant pathways affecting habitat and wildlife in the vicinity of the Site, the PRAP should include a more detailed assessment of potential exposure impacts and consider additional remediation or protective measures to disrupt those impacts.

In addition, the PRAP makes no mention of the potential exposure of humans through recreational fishing in Ley Creek downstream of the Site. Human exposure is considered only through direct contact pathways, such as drinking contaminated water or dermal contact with contaminated soils. While there may not be designated public access for fishing or other water-related recreation in these downstream areas, recreational fishing and similar uses are occurring in these areas. The argument that there is now no public access or public property on this site is not a convincing argument against this. We know of people who fish there now and with further cleanup, additional fisher days will ensue making it essential that their health be considered in this cleanup plan. In addition, public access may well be provided in future, as part of habitat restoration plans created under the Onondaga Lake Superfund remediation or the related Natural Resources Damages action. The PRAP should reflect this reality.

Other habitat restoration projects are also being developed in and around Onondaga Lake, some of which may be impacted by the remedial design at the Site. We believe that DEC should explicitly evaluate the potential for the Site to interfere with or otherwise impact habitat restoration projects that may be planned or proposed in the surrounding areas. At minimum, the PRAP should identify and explicitly discuss all habitat restoration projects that are underway or currently being planned in the area.

Further, DEC should assess the possibility that wetlands were historically present on the Site itself and the potential impact of its preferred alternative on restoration or recover of this historic habitat. As noted in the PRAP, adjacent properties to the north and south of the Site contain numerous wetlands. Prior to the 1950s, according to both the PRAP and the Fact Sheet, the Site included "low lying fields and salt marshes" (Sec. 3, p. 3), which suggests that wetlands may have been common on site. At present, there is a small federally recognized wetland on the

Site itself. This was confirmed in conversation with the DEC Region 7 Office in Syracuse and could be further verified from wetlands maps. Given these facts, it seems likely that the Site contained more extensive wetlands at one time. The PRAP should evaluate this possibility and consider the potential impacts of leaving significant levels of contamination in an area of historic wetlands.

The full extent of historic wetlands on the Site can be determined by various methods of physical analysis on the site and by checking with older maps and aerial photographs. In addition, according to the PRAP there will be “new” wetlands created on the side of the work site farthest from Ley Creek and we expect that these will then be considered jurisdictional under state and federal regulations. All of these wetlands areas should be considered in evaluating the full impact of any proposed remedial action.

## **II. THE PRAP MUST INCLUDE GREATER PROTECTIONS FOR ADJACENT WATERWAYS AND WETLANDS.**

DEC must ensure that any remedy prevents additional contaminants of concern from flowing to adjacent surface waters. The PRAP documents a clear pathway for contaminant movement from the Site to Ley Creek and adjacent wetlands and potentially Onondaga Lake. The South Landfill directly abuts Ley Creek. The North Landfill is separated from the Creek by vacant land and wetlands. Further, the shallow groundwater layer is generally moving from the Site toward the Creek. Given this unobstructed pathway, DEC’s lightly supported conclusion that the Site does not contribute contaminants to the Creek, adjacent wetlands or Onondaga Lake strains belief. A more thorough investigation is required to document this position. DEC also must ensure that its remedy breaks any potential soil to groundwater and groundwater to surface water pathways flowing from the Landfill.

As described in the PRAP, the preferred alternative simply creates a 50 foot buffer between Ley Creek and contaminated soils remaining on-site and a 30 foot buffer between on-site wetlands and remaining contaminated soils. This provision is inadequate. If DEC does not include any remedial components designed to completely break the groundwater to surface water pathway, it should at minimum double the buffer between surface waters and contaminated soils. Moreover, this larger buffer should be applied to all surface water components, including Ley Creek, on-site wetlands and the off-site wetlands that abut the North Landfill to the west and north or lie to the south of the South Landfill.

## **III. DEC SHOULD COMMIT TO ON-GOING PUBLIC INVOLVEMENT.**

Atlantic States was disappointed with the range of alternatives considered as part of the Remedial Investigation/Feasibility Study (RI/FS) done for the Site. Although public input is not mandatory for this portion of the project, we believe that public involvement could have dramatically improved the final product. As a result, we stress the importance of and ask that DEC continue to provide for public involvement, particular of key stakeholders, in any additional review of this Site, modifications to the remedial design, development of additional remedial alternatives, and restoration planning. In addition to the ROD and responsiveness

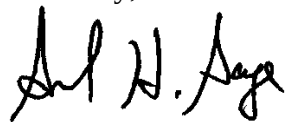
summary documents, we expect to be on the site mailing list and receive other technical and work plan submittals.

In particular, Atlantic States asks that DEC open the development of the restoration plan for the Site to public comment. The PRAP includes minimal discussion of post-remediation restoration on the Site, noting only that a restoration must be developed using “green remediation and sustainability efforts” (Sec. 7.2, p. 11). Although DEC calls for “cover systems [that are] useable for habitat and restoration,” (Sec. 7.2, p. 11), we have too often seen restoration plans at similar sites which simply provide for planting grass or other vegetation that adds little or nothing of value to the surrounding habitat. DEC should require more productive uses of the Site. Without public input and oversight, we are concerned that opportunities to create a sustainable and environmentally beneficial restoration will be lost. These areas are suitable for various agricultural and forestry applications, whether edible products are considered or not (at this point we are not pushing growing consumables although scientific opinion from both US EPA and US Department of Agriculture increasingly feels there is little or no risk involved). Potential plantings could be for timber, nuts, fiber (linen from flax for example), and biofuels. Even plantings where the objective is carbon sequestration without any harvest is a possibility. A detailed planting plan and analysis needs to be done. Aside from aesthetics, habitat, carbon sequestration, and economic value, certain plantings might enhance remediation efforts. For example, Red mulberry, *Morus rubra*, is reputed to enhance growth of the bacteria responsible for breaking down PCBs in soil. This tree is a native species, another benefit in planting some on this site.

Further, we urge DEC to be mindful of the potential for additional remediation and restoration at the Site as part of the on-going Natural Resources Damage (NRD) action being pursued by the Department of Interior, the State of New York and the Onondaga Nation. Any restoration or remediation plans for the Site should be considered in light of their potential to affect or disrupt future restoration efforts by the NRD Trustees. Given the interconnected nature of this remedial action and the NRD process and the confusion that may arise as a result, we ask DEC to acknowledge in the PRAP or related documents that the state-based remedy on the Site and its treatment as separate from the Onondaga Lake Superfund Site will not affect its potential inclusion in the NRD action.

Thank you for your attention to these comments. We will be happy to provide more information or discuss them further at your request.

Sincerely,

A handwritten signature in black ink, appearing to read "Sam H. Sage". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Samuel H. Sage, President and Senior Scientist