Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision
Depew Village Landfill Site
Operable Unit No. 01
Village of Depew, Erie County, New York
Site Number 915105

March 2008

New York State Department of Environmental Conservation
DAVID PATERSON, *Governor* ALEXANDER B. GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Village of Depew Landfill Inactive Hazardous Waste Disposal Site
Operable Unit No. 01
Village of Depew, Erie County, New York
Site No. 915105

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for Operable Unit # 01 of the Village of Depew Landfill site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit # 01 of the Village of Depew Landfill inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for the Village of Depew Landfill site and the criteria identified for evaluation of alternatives, the Department has selected stream bank soil removal, stream bank stabilization, soil cover in any unpaved areas on-site, passive landfill gas controls, monitoring and institutional controls for the site. The components of the remedy are as follows:

The elements of the proposed remedy are as follows:

1. A remedial design program including a hydrologic and hydraulic analysis, will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. The soils/wastes/fill in the areas along the stream bank up to the bankfull flow elevation will be excavated and backfilled with clean soil. The stream bank will be restored and

stabilized including erosion controls, in accordance with 6 NYCRR Part 608. In addition, a one foot thick soil cover as depicted in Figure 8, will be constructed over vegetated areas on-site above the bankfull flow elevation. The excavated material from along the stream bank will be integrated under the cover system. The top six inches of soil will be of sufficient quality to support vegetation. Clean soil will constitute soil that meets the Division of Environmental Remediation's criteria for backfill or local site background. Non-vegetated areas (buildings, roadways, parking lots, etc.), will be covered by a paving system or concrete at least 6 inches thick.

3. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property above the bankfull flow elevation and the buffer strip to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

4. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover systems to restrict excavation into and below the soil cover, pavement, or buildings, including the areas within the site boundary north of the soil cover where lead contamination above the Commercial SCO is located at depth; (b) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater, surface water, sediments and biota (pre-remedial and long term); (d) identification of any use restrictions on the site; (e) fencing to control site access; and (f) provisions for the continued proper operation and maintenance of the components of the remedy.

5. The property owner will provide a periodic certification of institutional and engineering controls, 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.

6. Since the remedy results in untreated hazardous waste remaining at the site, a pre-remedial and long-term monitoring program will be instituted. Site groundwater and biota and the adjacent Cayuga Creek surface water and sediments will be monitored. The monitoring will insure that the contamination is not being mobilized to the Cayuga Creek environment via dissolution in the groundwater and/or by direct erosion of the soils. This program will allow the effectiveness of the soil cover system, stream bank stabilization

and restoration measures to be monitored and will be a component of the long-term management for the site.

New York State Department of Health Acceptance

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

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. 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 2 7 2008
Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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RECORD OF DECISION

Depew Village Landfill Site
Operable Unit No. 01
Village of Depew, Erie County, New York
Site No.915105
March 2008

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the Depew Village Landfill, Operable Unit No. 01, which encompasses 20 acres of property. The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this remedy. As more fully described in Sections 3 and 5 of this document, the operation of a former municipal solid waste incinerator and co-located landfill at the site, have resulted in the disposal of hazardous wastes, including ash material containing heavy metals. These wastes have contaminated the soils and nearby sediments at the site, and have resulted in:

- a significant threat to human health associated with the potential exposure to contaminated site soils and sediments.

- a significant environmental threat associated with the current and potential exposure of flora and fauna to contaminants and erosion of contaminants into the Cayuga Creek environment.

To eliminate or mitigate these threats, the Department has selected stream bank soil removal, stream bank stabilization, soil cover in any unpaved areas on-site, passive landfill gas controls, monitoring and institutional controls for the site.

The selected remedy, discussed in detail in Section 8, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Depew Village Landfill site is located in the Village of Depew, Town of Cheektowaga, in Erie County (Figure 1). The site consists of approximately 20 acres located on a peninsula of Cayuga Creek. Zurbrick Road is located across the stream to the south, Borden Road is to the west, and the Village of Depew DPW facilities are to the north of the site. An Erie County Sewer District No.4, Overflow Retention Facility (ORF) sits in the central section of the peninsula on the site. There is a utility corridor, access road right-of-way, and a permitted SPDES outfall associated with the ORF. The site's general location is in a suburban setting. Cayuga Creek is a Class C navigable stream,

which ultimately empties into Lake Erie, forms the south, east and west boundaries of the peninsula. The Village of Depew DPW and private lands are located to the north. A section of the former incinerator building is still on-site. The Land Reclamation (915070) and the Old Land Reclamation (915129) sites are located approximately one-half mile downstream and adjacent to the stream and the NL Industries (V00353) site is located approximately one and one-half miles to the north. The peninsula, including all of the site is located in the 100 year flood plain.

The site is underlain by fractured and jointed Onondaga limestone, which also forms the bed of Cayuga Creek in areas. The depth to bedrock on-site varies from approximately 7 to 25 feet. The bedrock is overlain by a silty, clayey till unit, which in turn is overlain by lenses of alluvial sand and gravel deposits from Cayuga Creek. Above these deposits, lies fill material consisting of black and gray ash residue, glass, metal, and other municipal solid waste. The fill thickness on the site ranges from 1 to 19 feet, and is typically encountered 2 feet below the ground surface. There are portions of the site where the fill is in the near surface soils, particularly on the sides of the ORF and on the southern peninsula tip. There are significant sections of the creek banks on the site where the fill material is exposed from erosion. The former landfill footprint encompasses much of the peninsula area.

Surface water collects in low lying areas in the northeast portion of the site. Most precipitation infiltrates the site soils / fill material, however, the steep western and some segments of the eastern sides of the landfill, and the covered areas in the northwest part of the site all promote localized surface runoff.

Groundwater occurs in the overburden / fill material at depths between 8 and 15 feet below the ground surface. Local groundwater flow at the site is from north to south and then radially towards the creek on the peninsula area.

Operable Unit (OU) No. 01, which is the subject of this document, consists of approximately 20 acres of area contained within the banks of the Cayuga Creek on the peninsula south of the Village of Depew DPW (Figure 2). The northern boundary (extending west to east) is identified as a combination of the southern perimeter of the DPW parking lot across to the tree-line that abuts the mowed fields in the northeast, continuing to the bank of Cayuga Creek. The OU includes the footprint of the former landfill excluding the Erie County ORF facility and associated structures. An operable unit represents a portion of the site remedy that for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. The remaining operable unit for this site is: Operable Unit No. 02, which includes the adjacent Cayuga Creek environment (surface water and sediments) and a segment of stream bank soils located below Zurbrick Road to the south. A limited amount of remedial investigation work was performed on the Cayuga Creek environment and Zurbrick Road soils during the RI of OU-01. A complete RI/FS for this operable unit is expected to be completed in 2008.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The Depew Village Landfill was operated by the Village of Depew between 1940 and 1961. During operations the landfill received approximately 10,000 tons per year of municipal solid waste and/or other unknown waste streams. Much of the wastes were processed through the incinerator located on-site, with the resulting ash disposed of in the landfill. Site hazardous waste contamination, including heavy metals and in particular lead, was concentrated in the ash residue. The former landfill was not lined. Spent foundry sand was reportedly utilized as daily cover for a time, at the site.

3.2: Remedial History

In 1983, the Department first listed the site as a Class 2a site in the Registry of Inactive Hazardous Waste Disposal Sites in New York (the Registry). Class 2a was a temporary classification assigned to a site that had inadequate and/or insufficient data for inclusion in any of the other classifications. Also in 1983, Erie County acquired 14.5 acres of the peninsula area for the ORF project. During ORF construction approximately 60,000 yd^3 of fill was removed from the site and disposed of in the BFI Landfill in Tonawanda, New York. No chemical analysis was performed. Following ORF construction, the County re-conveyed 9.5 acres back to the Village of Depew.

In 1985, the Erie County Department of Environment and Planning prepared a "Hazardous Waste Site Profile Report", which concluded that no hazardous waste was disposed at the site.

In 1988, the Department conducted a Phase I Investigation at the site. This report recommended conducting a Phase II Investigation.

In 1990, the Department de-listed the site from the Registry of Inactive Hazardous Waste Disposal Sites, based upon the determination that no hazardous wastes were present.

In 2001, the Village of Depew entered into a Section 14 (1946 Flood Control Act), Project Cooperation Agreement (PCA) with the U.S. Army Corps of Engineers (USACOE) to perform an Emergency Streambank Protection Project on a section of Cayuga Creek below Zurbrick Road, south of the site. As part of this project, the design called for excavating soils on the site peninsula tip, in order to maintain the required stream bed width, and use of these soils on the opposite bank as fill. During the excavation, the USACOE contractor noticed the presence of fill materials and conducted sampling and analysis. The analysis indicated total lead concentrations as high as 86,000 parts per million in the soils and in addition the samples failed the Environmental Protection Agency's (EPA), Toxicity Characteristics Leaching Procedure (TCLP) for leachable lead, making the material hazardous. With the determination of the presence of hazardous waste and in accordance with the PCA, the USACOE ceased operations on the streambank stabilization project.

In 2002, the Village of Depew entered the Department's Voluntary Cleanup Program (VCP) and the site was designated as V00609-9.

In 2003, a Site Investigation was conducted by the Village's consultant which focused on the 1.3 acre area at the tip of the peninsula.

In 2004, the Site Investigation / Remedial Report (SI/RR) was generated. This report confirmed the presence of hazardous wastes and it also indicated that the lead contamination most likely extends to the north, beyond the registry area on the peninsula tip. Based upon the estimated volumes of hazardous material thought to be present, the Village of Depew opted out of the VCP, the Voluntary Cleanup Agreement was terminated and the Department listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health and/or the environment and action is required.

In early 2007, the Department finalized a Site Boundary Modification Package, which increased the site size from 1.3 to 20 acres in the Registry of Inactive Hazardous Waste Disposal Sites. The site boundary modification was based upon the extent of the lead contamination as determined from the RI results. The modified site boundary includes the majority of the footprint of the original landfill.

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: the Village of Depew.

The PRPs declined to implement the RI/FS at the site when requested by the Department. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 5: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health and/or the environment.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between February/2006 and June/2006. The field activities and findings of the investigation are described in the RI report.

The RI involved the collection and analysis of surface and subsurface soil samples, installation of monitoring wells, and the collection and analysis of groundwater, surface water and sediment samples. The presence/absence of explosive gas was measured in various soil borings and in the headspace of the monitoring wells. Soil samples were collected both from the former landfill on the peninsula and the opposite stream bank across from the site. Surface water and sediments were collected from the Cayuga Creek environment.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil, groundwater, surface water, sediments, and soil vapor contain contamination at levels of concern, data from the investigation were compared to the following chemical specific SCGs:

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

- Soil SCGs are based on the Department's Soil Cleanup Objectives ("6 NYCRR Part 375, Environmental Remediation Programs, Subpart 375-6").

- Sediment SCGs are based on the Department's "Technical Guidance for Screening Contaminated Sediments."

- Landfill generated methane gas in the soil vapor, measured in the monitoring well headspace, boreholes and the groundwater was evaluated on a presence / absence basis. Measurements were in terms of percentage of explosive limits and concentration of methane, in order to determine the degree of concern for general health and safety at and around the site.

Location specific SCGs must also be considered during remedy selection. Articles 15 and 16, of the Environmental Conservation Law (ECL), are location specific SCGs applicable to the site. All work within the streambed and stream banks must meet the requirements of 6NYCRR Part 608, "Use and Protection of Waters" and all work within the floodplain must meet the requirements of 6NYCRR Part 500, "Floodplain Management Regulations Development Permits".

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI report.

5.1.2: Nature and Extent of Contamination

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

As described in the RI report, many soil, groundwater, surface water and sediment samples were collected to characterize the nature and extent of contamination. As seen in Figures 3 through 5, the main category of contaminants that exceed their SCGs are inorganic metals. The primary metal contaminant of concern at the site is lead. For comparison purposes, where applicable, SCGs are provided for each medium.

Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for, soil, and sediment. Soil vapor samples (as methane) are reported on a presence / absence basis.

Figures 3 through 5 summarize the degree of contamination for the contaminants of concern in soils, sediments and soil vapor and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Surface Soil

Surface soil samples on and off-site were collected from a depth of 0 to 3 inches utilizing a hand auger. Figure 3 shows the locations of the surface soil samples (hand auger) and the associated area lead concentrations above SCGs.

One of fourteen surface soil results collected on-site along the stream bank, exceeded the lead Part 375, Soil Cleanup Objective (SCO) of 1,000 ppm for the Protection of Public Health - Restricted Use Commercial. Seven of fourteen surface soil results collected on-site along the stream bank, exceeded the Part 375, SCO for the Protection of Ecological Resources of 63 ppm. These contaminated surface soils are located primarily at the tip of the peninsula and along the eastern and western stream bank. There is exposed debris, fill material and ash along certain sections of the stream bank, particularly in the more erosion prone areas. The site surface soils subject to erosion appear to be the source of the lead and other metals contamination found in the Cayuga Creek sediments.

Surface soil contamination identified during the RI/FS will be addressed in the remedy selection process.
Three of sixteen surface soil results collected off-site along the stream bank below the north side of Zurbrick Road, exceeded the lead Part 375 SCOs for both the Protection of Public Health - Restricted Use Commercial SCO and Protection of Ecological Resources SCO as shown on Figure 3. These surface soils will be addressed during the RI/FS of OU-02.

Subsurface Soil

Seventy four subsurface soil samples were collected from 68 borehole locations utilizing GeoProbe technique. These locations are shown on Figure 3. One sample was collected from each borehole of the ash material if encountered, except when additional ash layers were encountered and/or an elevated field instrument reading was obtained for volatile compounds. In such cases, a second sample was collected from this region.

Figure 3 shows the nature and extent of the soil lead contamination / hot spots above the Part 375 SCOs for both the Protection of Public Health - Restricted Use Commercial SCO (1000 ppm) and Protection of Ecological Resources SCO (63 ppm) and selected surface and near surface soil results for lead and the depth of sampling. Approximately 2.8 acres of the site subsurface and near surface soils contain lead above 1000 ppm and approximately 12 acres are above 63 ppm.

The area at the tip of the peninsula is highly disturbed from the extensive test pitting and excavations performed as part of a previous SI and the U.S. Army Corps of Engineers (USACOE), Cayuga Creek Streambank Protection Project at Zurbrick Road, respectively. These contaminated soils are located primarily at the peninsula tip, west, east and northeast of the ORF and represent areas of concern at the site. Some of these subsurface soils are at depths and locations, particularly in the southern

area, that could potentially be exposed and eroded into the stream. The site subsurface soils in certain areas, thus appear to be a contributing source of the lead contamination found in Cayuga Creek sediments. Lead contamination in soils north of the ORF and south of the Village DPW are primarily located at depths of 3 to 19 feet below the ground surface and are covered with sod and/or paved areas.

Subsurface soil contamination identified during the RI/FS will be addressed in the remedy selection process.

Groundwater

Six monitoring wells were installed during the RI, and two rounds of groundwater samples were collected. The RI data indicates that the contaminant of concern, lead, is bound up physically and chemically in the on-site soils and is not being significantly dissolved and mobilized by the groundwater. Thus, no site-related groundwater contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives need to be evaluated for groundwater.

Surface Water

A total of 10 surface water samples were collected and analyzed during the RI. Two of these samples were collected from highly turbid on-site pond water and 8 were from Cayuga Creek. No on-site-related surface water contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives need to be evaluated for on-site surface water. The nature and the extent of the contamination in the Cayuga Creek surface waters will be further investigated during the RI/FS of OU-02.

Sediments

Sediments in Cayuga Creek adjacent to and downstream have been impacted by metals migrating from the site primarily due to erosional forces. Figure 4 shows the sediment sample locations, their associated lead concentrations and the applicable SCGs. Lead exceeds the Lowest Effect Level (LEL), which is the level that can be tolerated by the majority of benthic organisms, in six out of seven stream samples. Lead exceeds the Severe Effect Level (SEL), the level at which pronounced disturbance of the sediment dwelling community can be expected, in four of seven stream locations sampled. Although lead is the primary contaminant of concern, sediment SCGs were also exceeded to a lesser extent for antimony, arsenic, copper, nickel, silver and zinc. The nature and extent of the sediment impacts and the need for, and type of, remedial action required, will be addressed during the RI/FS of OU-02.

Soil Vapor

Landfill gas as methane (CH_4) was present in all of the groundwater samples collected from the monitoring wells, with the exception of the up-gradient well (MW-05), located in the northeast section of the site. It was also detected in the open holes of several of the soil borings. Thus, it can be assumed that it is dispersed throughout the fill material layer and presents a health and safety hazard if allowed to accumulate in site buildings, structures and utilities. The highest concentration

of methane was present in the headspace and groundwater at monitoring well MW-06, which corresponds to the area of the site containing the deepest deposits of fill material. Figure 5 shows the estimated extent of the methane gas in the subsurface soils based upon the fill material and thickness.

Soil vapor identified during the RI/FS will be addressed in the remedy selection process.

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

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

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 7 of the RI report. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

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

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

Contamination is generally limited to the site, with additional impacts to the sediments of Cayuga Creek along the site and immediately downstream. The existing cover of the site varies; the overflow retention facility (ORF) occupies a large portion of the site and is fenced, thus controlling site access in that area, the Depew department of public works (DPW) uses portions of the site north of the ORF for equipment and material storage, while the remainder of the site is overgrown with trees and emergent shrubs. There is no evidence of trespassing on the site.

Currently, workers at the ORF or DPW could be exposed to surficial soil contamination if they enter portions of the site where insufficient cover may be present. Any excavation on the site would expose workers to lead contaminated fill materials through dermal contact and inhalation of contaminated dust particles. Methane gas is also present in the landfill and presents an

inhalation hazard. Recreational users of Cayuga Creek could be exposed to contaminated materials through direct contact with sediments.

The proposed remedy will eliminate potential routes of exposure to site-related contamination by workers at the DPW and ORF, and will prevent the migration and erosion of site-related contamination to Cayuga Creek, thus eliminating routes of exposure to recreational users of the stream.

5.4: Summary of Environmental Assessment

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

The Fish and Wildlife Impact Analysis, 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.

The following environmental exposure pathways and ecological risks have been identified:

- Terrestrial wildlife direct contact / ingestion with the contaminants present in the surface and subsurface soils;

- Sediments in the adjacent Cayuga Creek contain elevated levels of lead up to 23 times above the Severe Effect Level (SEL) screening criteria. These levels are known to affect the survival of benthic organisms and to bioaccumulate in biota. This results in reduced availability of food for forage species and in reproductive effects, in fish, terrestrial wildlife, and birds.

In addition to the ecological resource of the adjacent Cayuga Creek, other habitats and cover types in the site area include emergent wetland, beech-maple forest/successional woods, natural stream cover types, sucessional old fields and public works.

In the vicinity of the site, Cayuga Creek has several areas of bank erosion. The evidence of erosion includes exposed tree roots along the northern bank, and earth slides and suspended outfalls along the southern bank. Although channel meandering is normal within a stream floodplain, human influence on stream flow and channel restriction can result in local areas of intense bank scour. Since the stream banks were backfilled with contaminated landfill soils at the site, the bank scour has caused contaminated soils to erode into the active stream channel.

Samples from the stream surface water receiving drainage and erosional deposition from the site contained detectable levels of lead, but were below SCGs. Stream flow conditions at the time of surface water sample collection were unusually high (1,700 ft^3/sec, compared to the average flowrate of 110 ft^3/sec for the stream, as recorded at a upstream gaging station) and thus the measured lead concentrations may not represent typical potential exposures of biota to the dissolved contaminants in the surface water. The Cayuga Creek environment will be further investigated as part of the planned RI for OU-02.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

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

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

- exposures of persons at or around the site to contaminants in surface and subsurface soils;
- environmental exposures of flora or fauna to contaminants in surface and subsurface soils;
- the release of contaminants from the site into the surface water and sediments of Cayuga Creek through erosion;
- soil gas migration and potential vapor intrusion / buildup of methane gas in surrounding buildings, structures and utilities, which could cause a health and safety concern;

Further, the remediation goals for the site include attaining to the extent practicable:

- the Department's Soil Cleanup Objectives (SCOs) for: Protection of Ecological Resources in the surface, subsurface, and bank soils along Cayuga Creek from the stream bed to the bankfull flow elevation (the site-specific riparian habitat) ("NYSDEC Regulations 6 NYCRR Subpart 375-6, Remedial Program Soil Cleanup Objectives").
- the Department's Soil Cleanup Objectives (SCOs) for: Restricted Use - Commercial on the landfill portion of the site above the bankfull flow elevation ("NYSDEC Regulations 6 NYCRR Subpart 375-6, Remedial Program Soil Cleanup Objectives").
- control of the health and safety concerns caused by the continued generation of methane gas.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected 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. Potential remedial alternatives for the Depew Village Landfill, Operable Unit-01, were identified, screened and evaluated in the FS report which is available at the document repositories established for this site.

The use of a NYSDEC Part 360 landfill cap (consisting of : 12 inch gas venting layer, impermeable membrane, drainage layer, 24 inch barrier protection layer, and 6 inch topsoil layer) was considered for the site in the preliminary feasibility study scoping. This remedial

alternative was screened out, based upon the fact that the contaminants of concern are not being mobilized to groundwater and therefore stormwater infiltration does not need to be controlled. Also, leachate doesn't need to be collected and treated. The use of a Part 360 capping system would not be any more protective in preventing on-site erosion of contaminants into Cayuga Creek. In addition, because of the thickness of this type of cap, it may be in contravention of the floodplain regulations, in that the base flood elevation may be increased more than what is allowable in the area.

A summary of the remedial alternatives that were considered for this site is discussed below. The present worth 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.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated soils and soil vapor at the site.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Present Worth: *$197,000*
Capital Cost: *$0*
Annual Costs:
(Years 1-15): *$17,000*

Alternative 2: Institutional Controls with Continued Monitoring

Present Worth: *$240,000*
Capital Cost: *$44,000*
Annual Costs:
(Years 1-15): *$17,000*

Under this alternative site soils would not be actively addressed and the site conditions would remain the same. Currently access to the site is controlled and limited to Village DPW and Erie County ORF workers, this limited access would continue. Institutional controls in the form of an environmental easement would be put in place which would require continued commercial use of the property, development and compliance with an approved site management plan which restricts

soil excavations at the site, restricts groundwater use, and requires continued monitoring of site media, as well as biannual site inspections. This alternative is readily implementable, and would be completed in 6 to 9 months after selection of the remedy.

Alternative 3: Contaminated Soil Removal to Pre-disposal Conditions, Off-site Disposal, Bank Stabilization and Continued Monitoring

Present Worth: *$9,900,000*
Capital Cost: *$9,700,000*
Annual Costs:
(Years 1-15): *$20,400*

This alternative would involve the excavation of all soils that contain lead contamination above the Part 375, Unrestricted Use SCO of 63 ppm (which also corresponds to the Protection of Ecological Resources SCO for this contaminant). The excavation of lead contaminated soils to this concentration would prevent exposures and eliminate the source of the lead contamination at the site, which would also eliminate the migration and deposition of contaminants into the adjacent Cayuga Creek environment. The excavated soils would be transported and disposed off-site at a permitted landfill facility. The area requiring excavation is approximately 12 acres, down to an average depth of 5.5 feet, which equates to roughly 106,000 yds^3 of contaminated soils. The excavation area would be backfilled with clean material and the site would be graded and restored. Stream bank stabilization and restoration measures would be performed in the excavated areas along the stream to provide natural erosion protection and to provide for the re-establishment of the stream's riparian habitat.

Various types of erosion controls would be installed along areas of the stream shoreline as part of the bank stabilization and restoration in those areas exposed to these forces. Controls would be designed to dissipate the creek energy at bankfull flow as opposed to transferring it downstream. The backfilled areas and erosion controls would be tied together. Erosion control measures would include combinations of non-structural measures (slope grading and re-vegetating), bioengineering (brush matting, tree root wads), biotechnical (erosion control mats, vegetated structures), and structural (riprap, boulders, weirs) features where applicable.

Excavation of the fill material would result in a reduction of the waste mass available for anaerobic degradation and subsequent generation of landfill gas (methane), thus reducing and/or eliminating this health and safety hazard.

Figure 6 shows the approximate extent of the excavation area.

Continued monitoring of site media to include groundwater, surface water and sediment would be conducted to insure the effectiveness of the remedy.

The design and complete implementation of the alternative would take approximately 24 to 36 months from the selection of the remedy. The remediation goals for the site would be met once the remedy is implemented and completed.

Alternative 4: Contaminated Soil Removal and Off-site Disposal, Erosion Control, Institutional Controls and Continued Monitoring

Present Worth: *$3,400,000*
Capital Cost: *$3,100,000*
Annual Costs:
(Years 1-15): *$20,400*

Under this alternative, the six hot spots containing elevated lead concentrations above the SCO of 1,000 ppm including the northern stream bank would be excavated, transported and disposed off-site at a permitted disposal facility. The hot spots comprise a total surface area of approximately 2.84 acres and would be excavated to an average depth of 6.1 feet, which equates to a soil volume of roughly 27,950 yd^3 for disposal. This alternative would restore the site to the commercial use SCO, which is consistent with its current use.
The excavation areas would be backfilled with clean material and the site would be graded and restored. It is anticipated that the excavation of the hot spots would also reduce the generation of landfill gas. However, the need for methane gas control would be evaluated subsequent to completion of the excavations.

Refuse, municipal solid waste and ash that is exposed throughout the site including along the stream banks would also be excavated and disposed off-site. Stream bank stabilization and restoration measures would be performed in the excavation areas along the stream to provide natural erosion protection and to provide for the re-establishment of the stream's riparian habitat in these areas.

Erosion control measures would be installed along selected areas of the stream banks as part of the stabilization and restoration in those areas which are exposed to strong erosional forces. Controls would be designed to dissipate the stream energy as opposed to transferring it downstream. The backfilled areas and erosion controls would be tied together. Erosion control measures would include combinations of non-structural measures (slope grading and re-vegetating), bioengineering (brush matting, tree root wads), biotechnical (erosion control mats, vegetated structures), and structural (riprap, boulders, weirs) features where applicable.

Figure 7 shows the approximate extent of the excavation areas and the locations of the erosion controls.

Institutional controls in the form of an environmental easement will be put in place which would require continued commercial use of the property; development and compliance with an approved site management plan which restricts soil excavations at the site, restricts groundwater use, and requires continued monitoring of site media including groundwater, surface water and sediment, as well as biannual site inspections.
The design and complete implementation of the alternative would take approximately 24 to 36 months from the selection of the remedy.

Alternative 5: Stream Bank Soil Removal, Bank Stabilization, Soil Cover, Passive Landfill

Gas Control, Institutional Controls and Continued Monitoring

Present Worth: *$2,300,000*
Capital Cost: *$2,000,000*
Annual Costs:
(Years 1-15): *$26,000*

Under this alternative, all contaminated soils above the Protection of Ecological Resources SCO of 63 ppm located on the stream bank between the bankfull flow elevation and the stream bed would be removed. The bankfull flow elevation is equivalent to the point of transition between the stream channel and the flood plain (top of bank) as determined by regionalized hydraulic-geometry equations and actual stream flow data and conditions. Remediation of the contamination to the bankfull flow elevation, would result in the removal of approximately 14,000 yd^3 of contaminated soils and fill material from this zone. The extent of stream bank to be remediated is approximately 2,100 linear feet around the peninsula extending inland up to approximately 25 feet from the stream bed and with an average depth of 7 feet. Excavated soils would be moved to the upland part of the site, spread and placed under the proposed soil cover. All excavated material would be replaced with clean fill. Stream bank stabilization and restoration measures would be performed in the remediated area to provide natural erosion protection and to provide for the re-establishment of the riparian habitat. Bank stabilization and restoration would be designed to protect the stream bank without reducing floodwater conveyance consistent with 6 NYCRR Part 608.

Various types of erosion controls would be installed along areas of the stream shoreline as part of the bank stabilization and restoration in those areas exposed to strong erosional forces. Controls would be designed to dissipate the creek energy at bankfull flow as opposed to transferring it downstream. The backfilled areas and erosion controls would be tied together. Erosion control measures would include combinations of non-structural measures (slope grading and re-vegetating), bioengineering (brush matting, tree root wads), biotechnical (erosion control mats, vegetated structures), and structural (riprap, boulders, weirs) features where applicable.

The soils inland of the bankfull flow elevation to the south, east and west of the ORF, in those areas not paved, and the spread soils from the excavations along the stream bank would be covered with 1-foot of medium permeability soil to provide a cohesive, stabilized containment area that would prevent human exposure to the contamination in accordance with the Restricted Use - Commercial SCO of 1,000 ppm for lead. The area to be covered would comprise approximately 7.0 acres of surface area. Prior to covering, the area would be grubbed, graded and sloped. This would eliminate the mounds of fill and depressions on the peninsula caused by the extensive historical test pitting and aborted excavations, and would provide control of surface water drainage. The covered area would be restored by hydro-seeding except along the top of the bank where other vegetation (e.g. small shrubs, meadow grasses) would be planted within a 10 foot wide buffer to protect the restored bank. The buffer area would be managed to preclude growth of large trees or other deep rooted vegetation.

This alternative would include the installation of isolated passive vents to control the landfill gas. The vents would be installed in the cover area and would extend approximately to the bottom of the fill depth below the ground surface. The number and location of the vents would be designed to provide overlapping zones of influence. No further treatment of the low level methane would be

required. The installation of passive vents would minimize the potential health and safety concerns associated with the build-up of gas in nearby structures.

Figure 8 shows the approximate location of the bankfull flow elevation, extent of the soil cover and the locations of gas vents.

Institutional controls in the form of an environmental easement will be put in place which would require continued commercial use of the property, development and compliance with an approved site management plan which restricts excavation into and below the soil cover, pavement, or buildings, including the areas within the site boundary north of the soil cover where lead contamination above the Commercial SCO is located at depth; restricts groundwater use, and requires continued monitoring of site media to include groundwater, surface water, sediment and biota as well as biannual site inspections.

The design and complete implementation of the alternative would take approximately 24 to 36 months from the selection of the remedy.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of inactive hazardous waste disposal sites in New York 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 five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term 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.

4. 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.

5. 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.

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. The costs for each alternative are presented in Table #1.

This final criterion 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.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the Department addressed the concerns raised.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the Administrative Record (Appendix B) and the discussion presented below, the Department has selected Alternative #5, Stream Bank Soil Removal, Soil Cover, Bank Stabilization, Passive Landfill Gas Control, Institutional Controls and Continued Monitoring as the remedy for this site. The elements of this remedy are described at the end of this section.

The selected remedy is based on the results of the RI and the evaluation of alternatives presented in the FS.

Alternative 5 was selected because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It will achieve the remediation goals for the site for human health by limiting direct contact exposure of humans to the surface and subsurface soils by utilizing a soil cover. Alternative 5 will also eliminate further release of contaminants into Cayuga Creek by removing contaminated soils and waste from the stream bank and installing stream bank stabilization and restoration measures in the riparian zone. It will provide control of the landfill generated methane gas, thus reducing this health and safety hazard. Alternative 5, to a greater degree than Alternative 4, eliminates to the extent practical, terrestrial wildlife exposure to contaminated surface and subsurface soils on the site. The placement of the 1 foot of soil and management of the area as landfill cover will meet the Protection of Public Health SCO for commercial use in this area and will be consistent with the operations on-going at

the site (DPW and ORF). Alternative 3, total landfill excavation, would completely comply with the threshold selection criteria. Alternative 4, by leaving contaminated soils above the Protection of Ecological Resources SCO both on-site and along the stream bank, would comply to a considerably lesser degree than Alternatives 3 and 5.

Alternatives 1 and 2 (the No Action and Institutional Controls / Monitoring Alternatives) do not include actions to contain, remove, or treat contaminants that pose a current or potential threat to human health and the environment. While Alternative 2 would monitor the various site and stream media and would provide some measure of reduction of the potential for direct contact through the institutional controls, it would not fully meet the remedial objectives for the site.

The five balancing criteria are particularly important in selecting a final remedy for the site.

Alternatives 3 and 4 (excavation and removal), and 5 (stream bank soil excavation and soil cover) all have short-term on-site impacts which could be mitigated through the use of engineering controls. Short term impacts for the on-site area and surrounding community would include increased construction traffic and its associated noise and dust generation. Based upon the volume of materials to be excavated under Alternative 3 and the corresponding volume of backfill materials needed, this action would have the greatest short term impacts at the site and the surrounding community, followed by Alternatives 4 then 5.

Short term impacts to the stream may be associated with the construction of the stabilization and restoration measures and the erosion controls, and include such things as increased turbidity levels and minor impacts to the biota during bank relocation and/or stream diversion if required. These short-term impacts can be minimized by protecting all excavated slopes as soon as practicable, controlling storm water runoff, limiting the use of construction equipment in the waterway and using sediment traps, all of which would be part of the remedy construction erosion and sediment control plan. The short-term impacts associated with the erosion controls in Alternatives 3, 4 and 5 are expected to be minor and/or controllable and the recovery of the stream environment would occur in a reasonable time. Construction work associated with Alternatives 3, 4, and 5 would not result in the interruption of any DPW or ORF activities.

Long-term effectiveness and permanence at the site would be best achieved with the restoration of the site to pre-disposal conditions (Unrestricted Use SCOs) as outlined in Alternative 3. However, Alternative 3 would involve excavation of 12 acres of the landfill footprint, with a volume of approximately 106,000 yds^3, containing a heterogeneous mixture of wastes, composed of municipal solid waste, co-disposed with the lead containing incinerator ash and contaminated soils. Based upon the volume and type of wastes present, Alternative 5, represents the presumptive remedial method for the site (containment, in lieu of complete landfill excavation), which has been successfully utilized at other Class 2 municipal landfills.

Alternative 3 would provide long-term effectiveness and permanence by removing all the waste. The long-term effectiveness and permanence of Alternative 5 is less certain than for Alternative 3 because burrowing wildlife exposure to lead contaminated soils on the landfill may not be completely eliminated by the 1 foot soil cover. However, the use of a soil cover and the stream bank stabilization in Alternative 5 would provide a balanced approach to long-term effectiveness and

permanence in terms of wildlife exposures, by restoring the natural riparian and buffer zone habitats at the site. On-site biota monitoring will be performed in order to assess the effectiveness of Alternative 5 at eliminating to the extent practical, adverse impacts to burrowing wildlife in the long-term. Like Alternative 3, Alternative 5 will provide a stable restored stream bank that will increase the long-term effectiveness of the remedy by eliminating lead migration into Cayuga Creek.

Alternative 4, would provide long-term effectiveness and permanence to a lesser degree than Alternative 5, in that some contaminated site soils at concentrations between 63 ppm and 1000 ppm would be left exposed to possible erosion both on the upland portion of the site and near the stream. In addition, Alternative 4 would depend solely on erosion control measures to stabilize the eroding stream bank which is less likely to provide the long-term effectiveness in permanently reducing the erosion pathway into Cayuga Creek.

Alternatives 3 and 4 rely on the availability of permitted and operating hazardous waste disposal facilities to accept waste from the site. Depending on the facility utilized for upland disposal under these alternatives, the waste may have to be pre-treated. Alternative 3 and 4 would provide an on-site reduction in the volume of contamination and the associated reductions in mobility and toxicity. Alternative 5, will not reduce toxicity or volume, but will reduce the on-site mobility of the contaminants, particularly along the stream bank, to a greater extent than Alternative 4.

Alternatives 3, 4, and 5 are all readily implementable on a technical basis. One of the technical aspects which had to be taken into consideration in the analysis of the various alternatives is the fact that the site is located in a FEMA Zone A4 (100 year flood plain). Flood plain regulations dictate that any development in the flood plain should demonstrate “no adverse effects”, which is interpreted as no physical damage to an adjoining or other property. In addition, floodways receive extended protection. Any development in this zone must create no rise in base flood elevation. Alternatives 3 and 4, because they would maintain the same existing site elevations, would have no adverse effects on the flood plain. In the case of Alternative 5, the majority of the proposed soil cover is located above the designated floodway. For that portion of the alternative within the designated floodway (stream bank stabilization / restoration area and buffer zone) the remedy will be designed to meet the no rise criteria and/or would incorporate techniques to mitigate these effects in order to maintain floodwater conveyance capacity. In general, the bank stabilization / restoration and buffer strip, proposed in Alternative 5, will aid in flood mitigation in that natural conditions will be restored and drainage patterns improved. Any remedial work along the stream bank will comply with 6 NYCRR Part 608. The stabilization and restoration of the stream bank in Alternatives 3 and 5 are more likely to meet the substantive requirements of this location specific SCG than the erosion control measures in Alternative 4. Alternatives 3 and 4 involve off-site activities, thus the implementability of these alternatives from an administrative basis, is greater than that of Alternative 5.

The implementation of Alternative 5 will allow for some degree of flexibility in remediating OU-02 of the site, if required. For example, contaminated soils and stream sediments may be able to be consolidated under the soil cover of OU-01.

The cost of the alternatives vary significantly. Alternative 3, excavation to pre-disposal conditions

(Unrestricted Use SCOs) is the most expensive, followed by Alternative 4, hot spot removal and then Alternative 5, stream bank soil removal and soil cover. All three of these alternatives include stream bank restoration or erosion controls and Alternatives 4 and 5 both have continued monitoring, thus the costs for these aspects of the remedies are roughly the same for each. Waste disposal, backfill materials and construction management are substantial costs associated with Alternative 3 and to a lesser degree with Alternative 4. It is anticipated that there will be no waste disposal costs associated with Alternative 5. Although Alternatives 3 and 5 would be protective to different degrees (unrestricted versus commercial) as evaluated above, consideration is given to the cost differential in utilizing Alternative 5 for remediating the site, based upon the presumptive remedy and current site use.

The estimated present worth cost to implement the remedy is $*2,300,000*. The cost to construct the remedy is estimated to be $*2,000,000* and the estimated average annual costs for 15 years is $*26,000*.

The elements of the selected remedy are as follows:

1. A remedial design program including a hydrologic and hydraulic analysis, will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. The soils/wastes/fill in the areas along the stream bank up to the bankfull flow elevation will be excavated and backfilled with clean soil. The stream bank will be restored and stabilized including erosion controls, in accordance with 6 NYCRR Part 608. In addition, a one foot thick soil cover as depicted in Figure 8, will be constructed over vegetated areas on-site above the bankfull flow elevation. The excavated material from along the stream bank will be integrated under the cover system. The top six inches of soil will be of sufficient quality to support vegetation. Clean soil will constitute soil that meets the Division of Environmental Remediation's criteria for backfill or local site background. Non-vegetated areas (buildings, roadways, parking lots, etc.), will be covered by a paving system or concrete at least 6 inches thick.

3. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property above the bankfull flow elevation and the buffer strip to commercial use, which will also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

4. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover systems to restrict excavation into and below the soil cover, pavement, or buildings, including the areas within the site boundary north of the soil cover where lead contamination above the Commercial SCO is located at depth; (b) continued evaluation of the potential for vapor

intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater, surface water, sediments and biota (pre-remedial and long term); (d) identification of any use restrictions on the site; (e) fencing to control site access; and (f) provisions for the continued proper operation and maintenance of the components of the remedy.

5. The property owner will provide a periodic certification of institutional and engineering controls, 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 will 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.

6. Since the remedy results in untreated hazardous waste remaining at the site, a pre-remedial and long-term monitoring program will be instituted. Site groundwater and biota and the adjacent Cayuga Creek surface water and sediments will be monitored. The monitoring will insure that the contamination is not being mobilized to the Cayuga Creek environment via dissolution in the groundwater and/or by direct erosion of the soils. This program will allow the effectiveness of the soil cover system, stream bank stabilization and restoration measures to be monitored and will be a component of the long-term management for the site.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- Fact sheets announcing the start of the RI/FS, the time, date and place for the PRAP public meeting and/or copies of the complete PRAP were mailed to the site contact list.
- A public meeting was held on February 12, 2008 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

Table 1
Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
Alternative 1: No Action	$0	$17,000	$197,000
Alternative 2: Institutional Controls with Continued Monitoring	$44,000	$17,000	$240,000
Alternative 3: Contaminated Soil Removal to Pre-disposal Conditions , Off-site Disposal, Bank Stabilization and Continued Monitoring	$9,700,000	$20,400	$9,900,000
Alternative 4: Contaminated Soil Removal and Off-site Disposal, Erosion Control, Institutional Controls and Continued Monitoring	$3,100,000	$20,400	$3,400,000
Alternative 5: Stream Bank Soil Removal, Soil Cover, Bank Stabilization, Passive Landfill Gas Control, Institutional Controls and Continued Monitoring	$2,000,000	$26,000	$2,300,000

DEPEW VILLAGE LANDFILL
#915105 OU-01
SITE LOCATION MAP

FIGURE 1

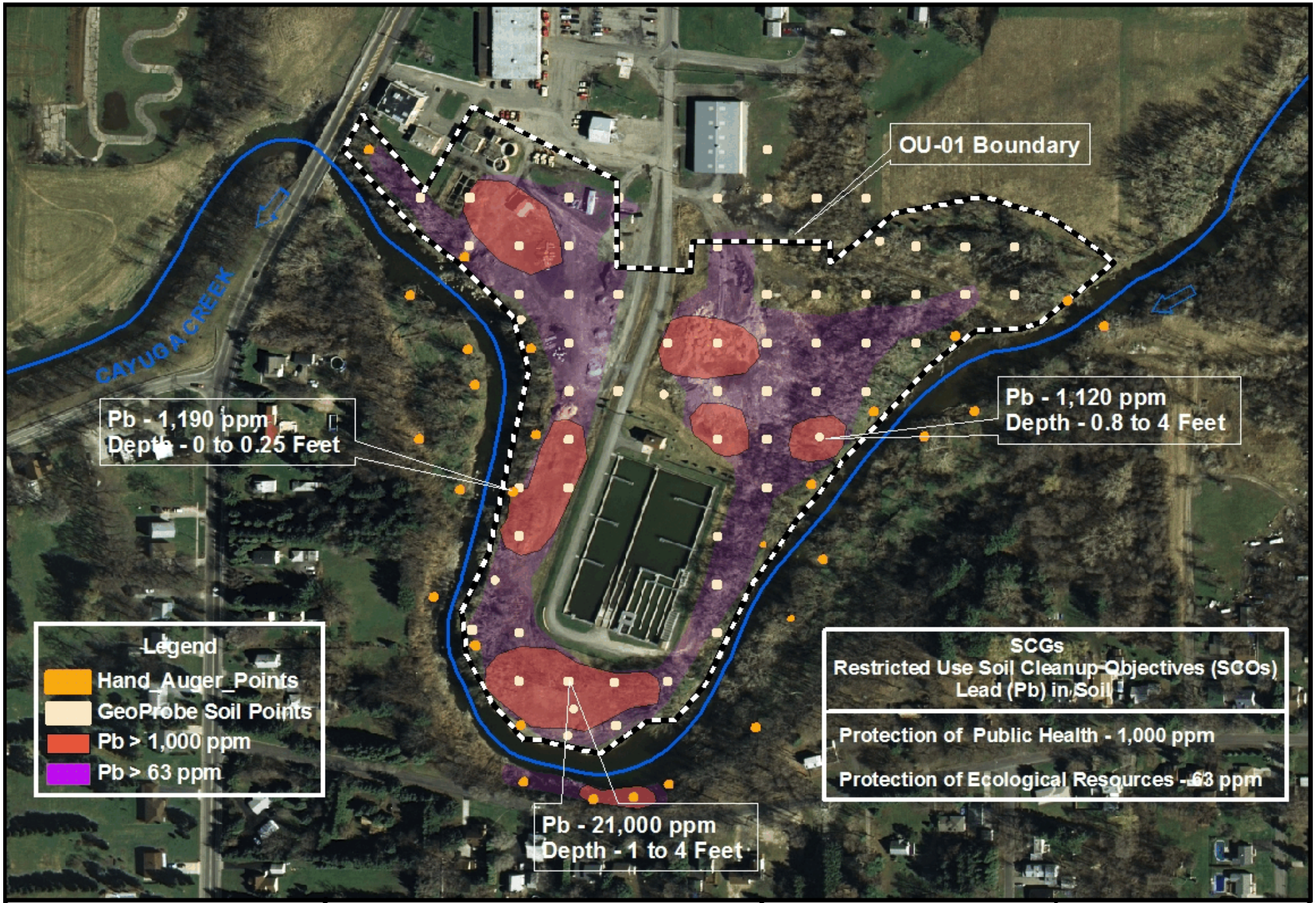
DEPEW VILLAGE LANDFILL
SITE #915105
OPERABLE UNIT- 01

DEPEW VILLAGE LANDFILL
OPERABLE UNIT - 01 BOUNDARY

N

0 75 150 300 450 600
Feet

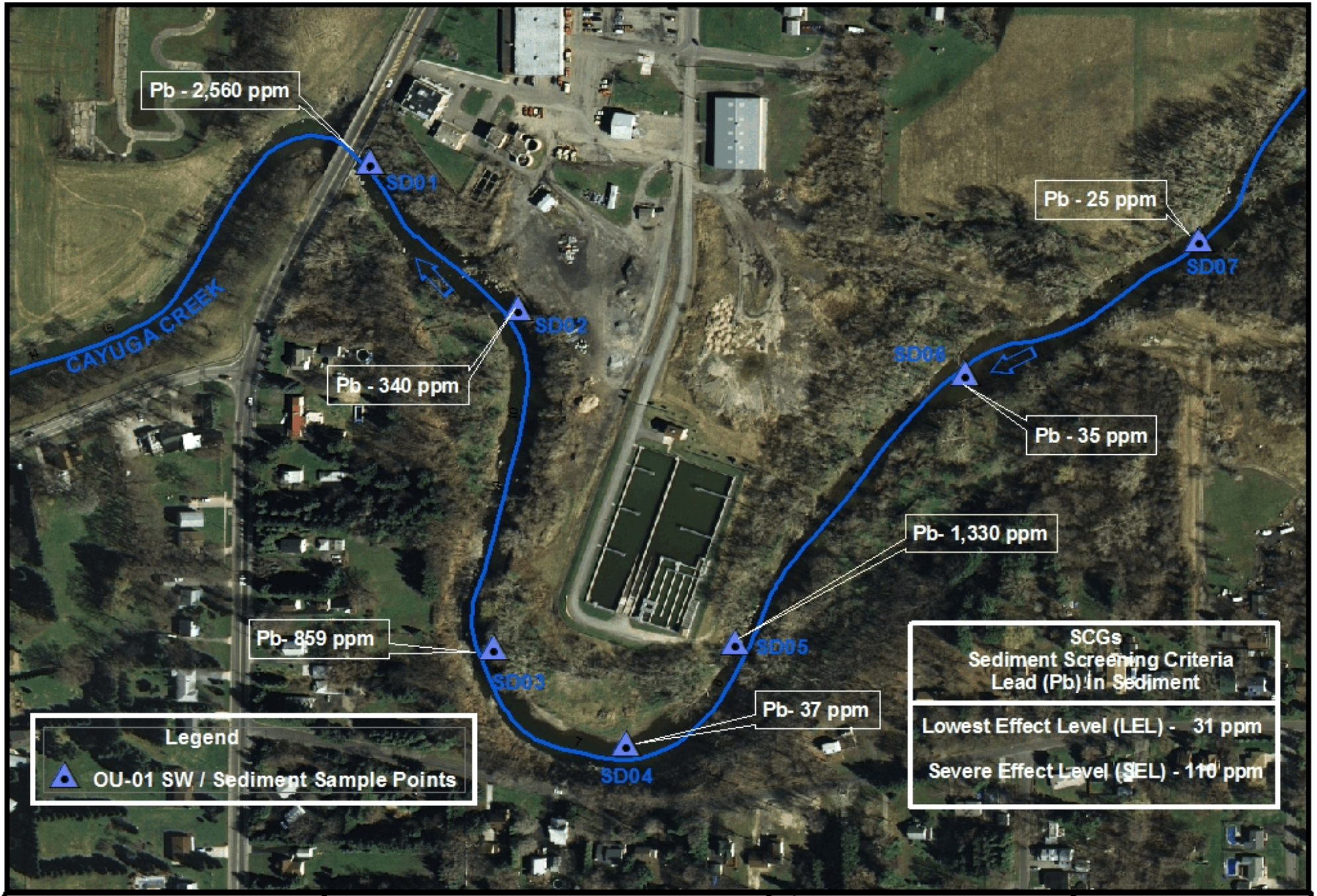
FIGURE 2



DEPEW VILLAGE LANDFILL
SITE #915105
OPERABLE UNIT-01

NATURE AND EXTENT OF CONTAMINATION
LEAD (Pb) IN SOILS - FEB 2006

FIGURE 3



DEPEW VILLAGE LANDFILL
SITE #915105
OPERABLE UNIT-01

NATURE AND EXTENT OF CONTAMINATION
LEAD (Pb) IN SEDIMENTS - FEB 2006

N

0 40 80 160 240 320 400
Feet

FIGURE 4

DEPEW VILLAGE LANDFILL
SITE #915105
OPERABLE UNIT-01

NATURE AND EXTENT OF CONTAMINATION
EXTENT OF LFG IN SOIL VAPOR - FEB 2006

0 40 80 160 240 320 400
Feet

FIGURE 5

DEPEW VILLAGE LANDFILL
SITE #915105
OPERABLE UNIT-01

ALTERNATIVE 3
AREA OF EXCAVATION

N

0 40 80 160 240 320 400
Feet

FIGURE 6

DEPEW VILLAGE LANDFILL
SITE #915105
OPERABLE UNIT-01

ALTERNATIVE 4
AREAS OF EXCAVATION - EROSION CONTROL

0 40 80 160 240 320 400 Feet

FIGURE 7

DEPEW VILLAGE LANDFILL
SITE # 915105
OPERABLE UNIT - 01

ALTERNATIVE 5
CREEK BANK SOIL REMOVAL, BANK STABILIZATION,
SOIL COVER, PASSIVE GAS CONTROL,
INSTITUTIONAL CONTROLS AND MONITORING

FIGURE 8

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Depew Village Landfill Site
Operable Unit No. 01
Village of Depew, Erie County, New York
Site No. 915105

The Proposed Remedial Action Plan (PRAP) for the Depew Village Landfill 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 January 29, 2008. The PRAP outlined the remedial measure proposed for the contaminated soil and soil vapor at the Depew Village Landfill 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 at the Village of Depew Municipal Building on February 12, 2008 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) 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. Written and verbal comments have become part of the Administrative Record for this site. The public comment period was to have ended on February 28, 2008, however it was extended to March 14, 2008, at the request of the public. Written comments were received from the following parties during the course of the public comment period:

- E-mail dated February 18, 2008, from Marcus Hartman, an apparent former resident of Honorine Drive, Town of Cheektowaga;

- Letter dated February 22, 2008, from Barbara A. Alberti, Mayor, Village of Depew, Depew, NY (included as an attachment to Responsiveness Summary);

- Letter dated February 27, 2008 from James Burst, resident of 71 Zurbrick Road, Depew, NY;

- E-mail dated February 28, 2008, from Carl N. Staszak, resident of 49 Zurbrick Road, Depew, NY;

- Letter dated March 5, 2008, from Richard Jakubowski, resident of 33 Zurbrick Road, Depew, NY;

- Letter undated, received March 12, 2008 from Jane Wiercioch, President of the Depew/Cheektowaga Taxpayers Association, Inc., Depew, NY;

- E-mailed letter dated March 14, 2008, from Jill Jedlicka, Director of Ecological Programs, Buffalo Niagara Riverkeeper, Niagara Street, Buffalo, NY;

Where the same or similar issues were raised either in writing during the comment period or verbally during the public meeting or phone calls, they have been grouped together and are addressed once. The remaining issues were addressed individually. The issues raised have been grouped into the following categories: (I) Extent of Contamination/Investigation Issues; (II) Health Issues; (III) Remedy Selection Issues; (IV) Remedy Construction and Site Restoration Issues; (V) Other Issues.

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:

(I) EXTENT OF CONTAMINATION/INVESTIGATION ISSUES

COMMENT 1: What is the source of the lead contamination, foundry sand, ash?

RESPONSE 1: It has been reported in various historical documents that spent foundry sand from the former Dresser Industries, which was located nearby, was utilized as daily cover material at the landfill. During the RI, the results of a Site Assessment which had been conducted by the Department in 1993 at Dresser Industries and included the collection and analysis of five individual samples of spent foundry sand, was reviewed. The results of this analysis showed that the average lead concentration in the five samples of sand was 13.9 ppm (mg/kg). Based upon the nature of the operations at Dresser Industries (steel castings), and the results of the analysis conducted on the foundry sand, it does not appear that these materials are the source of the lead contamination at the Village of Depew landfill.

Field observations during RI soil sample collection (soil classification) and subsequent analytical results, indicate that the lead contamination appears to be concentrated in the incinerator ash residue.

COMMENT 2: Municipal solid waste (MSW) which has been processed through an incinerator typically doesn't have this level of lead, correct?

RESPONSE 2: The concentration of lead and for that matter other inorganic constituents in the ash from an incinerator is a function of the original concentration of these elements in the waste materials processed. If the processed MSW also included an industrial waste stream that had elevated lead, this could account for the corresponding concentrations in the ash. However, available historical records for the site do not identify the processing of a specific industrial waste stream which may have contained elevated lead.

The City of Lackawanna Incinerator site (#915206) was a similar operation where disposed ash and certain site soils contained elevated levels of lead.

COMMENT 3: Is municipal solid waste ash exempt from being classified as a hazardous waste?

RESPONSE 3: No, the materials at the site are considered hazardous wastes based upon the characteristic of toxicity. Samples failed the EPA Toxicity Characteristics Leaching Procedure (TCLP) for lead.

COMMENT 4: It was said that lead was not detected in the groundwater, does this mean that it is not soluble?

RESPONSE 4: Lead was not detected in the groundwater above the NYSDEC, Class GA groundwater standard of 25 parts per billion (ppb or ug/l). Concentrations of lead were detected at and just above the method detection limit of 5.0 ppb. This indicates that the lead currently is not being significantly mobilized (fairly insoluble) to the groundwater and then out to the creek and that any leaching of the soluble fraction of the lead contamination that may have existed, already has occurred. It also indicates that the current source of lead contamination in the creek sediments is from erosion of the contaminated site soils, particularly along the stream banks.

COMMENT 5: Was it detected in the surface water?

RESPONSE 5: Lead was not detected in the surface water of Cayuga Creek above the NYSDEC, Class C site specific surface water standard of 7.2 parts per billion (ppb or ug/l). Surface water samples ranged from an estimated concentration of approximately 3.5 ppb to 5.0 ppb around the site. The Cayuga Creek surface water is being further investigated as part of Operable Unit (OU)-02 of the site.

COMMENT 6: Have the fish in the creek been sampled?

RESPONSE 6: There has been no fish sampling performed in Cayuga Creek. Biomonitoring of fish and other aquatic organisms may be performed as part of the RI/FS of OU-02 once the extent of the sediment contamination is fully delineated. Land dwelling organisms will be monitored as part of the remedy for OU-01.

COMMENT 7: What is the problem with the methane gas in the landfill?

RESPONSE 7: The municipal solid wastes disposed in the landfill are still degrading and producing methane gas. The methane gas is a localized problem at the landfill as it could accumulate in on-site structures. It will be addressed in the selected remedy utilizing passive landfill gas vents.

COMMENT 8: There may be ash material under Zurbrick Road from repairs due to previous washouts and there may be ash on the property directly across the street (81 Zurbrick Road) from the erosion area.

RESPONSE 8: The NYSDEC and NYSDOH will research the claim of ash materials along the Zurbrick Road area in question.

COMMENT 9: I did not see a formal wetland assessment in any of the investigation documents, but their presence is indicated by Federal inventory information.

RESPONSE 9: The Fish and Wildlife Impact Analysis, which was part of the Remedial Investigation Report for OU-01 of the site, included an identification of the terrestrial resources on and near the site. There are no NYSDEC designated wetland complexes at or surrounding the site. A National Wetland Inventory (NWI), wetland complex is located within the site area and includes Cayuga Creek and some of the adjacent stream banks on-site. Part of this stream bank area will be remediated, stabilized and restored as part of the selected alternative. The Cayuga Creek environment is being investigated as part of OU-02 of the site.

COMMENT 10: The resident species inventory included in the RI document was obviously deficient. Red fox, great blue herons, wood ducks, woodchucks, Cooper's hawks and a myriad of bird species are observed in the area. Snapping turtles have been seen upstream of the affected area, so it is not unreasonable to suggest that they may also reside near the landfill.

RESPONSE 10: The Fish and Wildlife Impact Analysis only documented the fauna species actually observed on-site and in the immediate surrounding area during site visits. Fourteen specific species of birds were identified. Based upon the actual species observed and the on-site and nearby habitat, other species could be present in the area.

(II) HEALTH / ENVIRONMENT ISSUES

COMMENT 11: A Borden Road resident maintains that she smells methane every summer and has to go inside sometimes because the odor is so bad.

RESPONSE 11: Methane is a colorless and odorless gas which is non-toxic. Health and safety concerns are generally applicable to the build up of methane in confined spaces. Methane is combustible, and mixtures of about 5 to 15 percent in air are explosive. Methane is not toxic when inhaled, but it can produce suffocation by reducing the concentration of oxygen available, primarily in confined spaces, such as underground utility corridors and manholes. Methane gas at the site is addressed in the remedy. It is more likely that the smell is from the combined wastes in the Erie County Overflow Retention Facility (ORF).

COMMENT 12: A Borden Road resident whose property backs up to the creek across from the landfill says she has a garden in the back of her property which may have high lead in the soil. What should she do with the vegetables she grows?

RESPONSE 12: Soil samples collected along the creek bank opposite the site on the west side, indicate that none of the lead results were above the NYSDEC Part 375 Soil Cleanup Objectives for Unrestricted Use. As a normal precaution, vegetables grown in the garden, especially root crops, should be thoroughly washed before consuming.

COMMENT 13: Erie County is designing repairs to the force mains into the ORF, which they plan on constructing in approximately nine months. What precautions should they take relative to the methane gas and exposures to lead in the soils?

RESPONSE 13: The ORF and it's associated utility corridors and access road are excluded from the site boundary. However, the county should submit a work plan covering the scope of all activities including locations so the State can assess whether the County's work would have any affect on the Site remedy and whether any additional precautions would be recommended.

COMMENT 14: If the primary goal is to protect human health and there is no documented impacts on humans from lead in the landfill then why do anything?

RESPONSE 14: The Department has developed and utilizes Standards, Criteria and Guidance (SCGs) to compare and evaluate site contamination levels in the various media and determine the need for remediation of the site. The SCGs were adopted in order to provide protection of human health and the environment. The health-based SCGs are based upon extensive risk assessments of such things as toxicity, including chronic and acute effects, while the protection of ecological resources SCGs are based upon such things as uptake and bioaccumulation by flora and fauna. Thus, the Department does not wait until there are "documented impacts" from the existing contamination in order to determine the need for remediation at a site. Rather, this determination is made when SCGs are exceeded in order to prevent those impacts.

COMMENT 15: If there is lead and it is not friable, it certainly is not going to hurt anything since only airborne lead matter is harmful.

RESPONSE 15: See RESPONSE 14.

(III) REMEDY SELECTION ISSUES

COMMENT 16: Hotspot removal of the lead contaminated soils over 1,000 ppm in the four locations south of and along the sides of the ORF, with consolidation of these soils in an area north of the ORF should be considered.

RESPONSE 16: The Department conducted an internal evaluation of a remedial alternative which included hotspot removal, on-site consolidation and capping in an area north of the ORF. The estimated volume of contaminated materials involved with the hotspot removal would be some 20,000 cubic yards. If consolidated in a one acre area north of the ORF, the material would

create a mound whose resulting height would be over 12 feet, plus the capping materials. Based on this, the fact that the whole peninsula sits in the floodplain and the on-going operations of the Village DPW and the ORF, this alternative was not selected for further evaluation in the feasibility study.

COMMENT 17: A minimum 2 foot soil cover should be placed over all lead contaminated areas above 63 ppm, which is the minimum depth prescribed for protection of ecological resources as per DEC. The 1 foot soil cover is a DEC required minimum for human exposure and is not protective of the majority of flora and fauna that utilize the top 12 inches of soil.

RESPONSE 17: The placement of 1 foot of soil cover above the bankfull elevation and the ten foot buffer zone, along with the management of the area as a landfill cover will meet the SCOs in Part 375 for the protection of public health for commercial use, which is consistent with operations on-going on this portion of the site (DPW and ORF). On-site biota monitoring (baseline and post- remediation) will be performed in order to assess the effectiveness of the cover in eliminating, to the extent practical, adverse impacts to burrowing wildlife. Both the landfill cover, which will be restored by hydroseeding and the buffer zone, which will be restored with shrubs and meadow grasses will be managed to preclude the growth of large trees and other deep rooted vegetation which may penetrate into the contaminated fill material. Additionally, the existing chemical form of the lead contamination would typically preclude the uptake of lead across the plant-root barrier of the on-site flora.

COMMENT 18: Full floodplain removal to toe of the secondary floodplain bench which is most likely a 5 to 25 year event, not the 1.3 year bankfull event and not DEC recommended “floodway”, of all contaminated soil over 63 ppm lead is recommended. For example, the fact that the true frequency of the 1.3 year bankfull event is occurring multiple times a year and the local bankfull event may be more similar to a 5 year or even greater event. Bioengineering and natural stabilization techniques (such as stone toe protection, low flow weir structures, woody debris, willow dikes and native plantings) should be maximized during stream bank stabilization, to provide stability and habitat.

RESPONSE 18: Based upon the document cited in RESPONSE 20, the calculated recurrance interval of the bankfull flow for this creek is 1.12 years or an 89% probability in any one year. The bankfull flow, based upon the combination of it’s energy and recurrance interval, exerts the highest average forces (shear) on the banks around the site, carries the highest average sediment load and is thus responsible for most of the stream bank erosion. Once the flow overtops the banks onto the floodplain, the stream energy normally dissipates. Thus, designing to other recurrance intervals (5 or 25 year event) in which the stream overtops its banks onto the floodplain, would not provide significant additional erosion control for the

banks. Additionally, the proposed buffer zone will also provided stability and energy dissipation above the bankfull elevation. Also, see RESPONSE 20.

The Department did not recommend a "floodway" for the site. There is a FEMA designated floodplain and its associated floodway at and around the site. Floodplain development and floodway encroachment regulations will be considered in the hydrologic and hydraulic analysis and remedy design process.

Erosion control measures would include combinations of non-structural measures (slope grading and re-vegetating), bioengineering (brush matting, tree root wads), biotechnical (erosion control mats, vegetated structures), and structural (riprap, boulders, weirs, toe protection) features where applicable.

COMMENT 19: It was stated at the public meeting that high levels of lead from the site (in some cases up to 40,000 ppm) were found in the creek all the way to 1,000 feet below the Borden Road bridge. These levels are alarmingly high and again even more reason to remediate the lead contamination in the floodplain.

RESPONSE 19: The 40,000 ppm concentration of lead was found at one location in the stream at a point adjacent to the site along the northwest side where sediment deposition occurs. Lead concentrations in the creek sediments downstream of the Borden Road bridge range from 7.0 to 474 ppm. Further investigation of the downstream sediments is on-going as part of OU-02 of the site. The source of the lead contamination in the sediments appears to be the erosion of the exposed contaminated fill materials along the creek banks and not erosion of the floodplain. Thus, complete removal of the exposed fill materials along the creek bank, coupled with bank stabilization and restoration as proposed, is the critical measure needed to control the source of the lead to the creek.

(IV) REMEDY CONSTRUCTION and SITE RESTORATION ISSUES

COMMENT 20: How did the DEC come up with the bankfull elevations? It was stated by DEC that the bankfull delineation was estimated using the USGS gaging station at Como Park. The bankfull estimation in the remedy seems to be dramatically undersized. We suggest that the hydrologic and hydraulic study to be performed as part of the remedial design take into account the regional and temporal variances.

RESPONSE 20: The basis for the estimate of the bankfull elevation at the site was the U.S. Geological Survey publication entitled: "Regionalized Equations for Bankfull Discharge and Channel Characteristics of Streams in New York State: Hydrologic Region 6 in the Southern Tier of New York". One of the overlying fundamental reasons for utilizing the approach as presented

in the above reference document is that it considers the regional hydrologic, climatic and physiographic conditions. In addition, Cayuga Creek itself, was one of the streams whose survey data and historical gaging station discharge records were utilized to develop the regionalized equations presented in the above document. The specific bankfull elevation estimate was further refined using the historical gaging station discharge records, actual drainage basin size upstream from the site (~114 square miles), the site survey and actual stream cross-sections at the tip of the peninsula. The bankfull elevation presented in the documents and at the public meeting was a depiction of its location based upon determinations as performed above, at the tip of the peninsula. The bankfull elevation varies around the site based upon stream gradient in the area. A complete hydrologic and hydraulic (H&H) analysis will be completed as part of the remedy design. Also, see RESPONSE 21.

COMMENT 21: How far inland does the bankfull elevation extend?

RESPONSE 21: The horizontal inland extent of the bankfull elevation at the site varies. A conservative estimate of 25 feet around the whole site was utilized in the development of the remedy in order to calculate soil volumes. Its more likely that the horizontal extent will average approximately 10 feet. The actual extent will be determined as part of the hydrologic and hydraulic analysis. Also, see RESPONSE 20.

COMMENT 22: The tip of the landfill was under water recently during a period of high flows (a photo of the creek, taken on 2/5/08 accompanied this comment). According to local citizens the full peninsula is submerged multiple times a year.

RESPONSE 22: Flow data, as measured at the upstream gaging station for a recent storm event on February 2, 2008, indicates that the creek flow went from approximately 850 cubic feet per second (cfs) to a peak near 4,500 cfs, and then back to near 1,500 cfs over a 24 hour period as measured at the upstream gaging station. This event is an indication of the highly energetic nature of the creek and thus the need for bank stabilization at the site. Some 68 photographs taken by the Department on this day (am and pm) at and around the site, indicates that the creek flowrate and subsequent water elevations at the tip of the peninsula, may have been close to a bankfull event.

In accordance with the existing FEMA Flood Insurance Study and the associated FIRM and Floodway maps, in order for the whole peninsula to be submerged it would take an event at least close to the 100 year flood (~ 13,000 cfs at Transit Road) for this to occur. Recent historical records do not show this.

COMMENT 23: Will the invasive species (Japanese knotweed) be removed?

RESPONSE 23: This plant is predominately located along the shoreline in areas where excavation of the contamination will occur. Therefore, it is anticipated that it will be removed during this activity, utilizing acceptable procedures.

COMMENT 24: Can trees be planted in the proposed buffer zone instead of just shrubs, in order to help screen the view of the retention facility from the residences located along Zurbrick Road?

RESPONSE 24: The objective of the creation and integration of the buffer strip into the creek bank stabilization is to provide additional natural stability to the restored areas and to re-establish stream side habitat. The buffer strip will be planted with local native species of shrubs, grasses and possibly small trees. However, the buffer area will be managed to precluded the growth of large trees and other deep rooted vegetation which could penetrate into the remaining contaminated areas and/or compromise the stream bank restoration and cover systems. The plant communities to be utilized at the site will be determined during the design phase of the remedy.

COMMENT 25: The FS document discusses removing the contaminated soils to an upland location and replacing the excavated material with clean fill. I would recommend against a complete replacement. Areas along the creek bank should be left unfilled, particularly at the southern portion of the peninsula. Excavation should take place to native soils and these soils should be allowed to redevelop as a bottomland wetland habitat. This area would provide additional floodwater flow area, thereby reducing the velocity of the water rounding the bend in the creek and partially mitigating the erosive force on the south bank along Zurbrick Road.

RESPONSE 25: The historical landfilling operation at the site has resulted in the placement of fill materials above the original natural stream bank elevations. The design of backfilling of the excavated areas along the stream banks will be based upon a hydrologic and hydraulic analysis of the stream. This will provide the information and data, in order to insure that the requirements of both 6NYCRR Part 608 “Use and Protection of Water” and Part 500 “Floodplain Management Regulations Development Permits” are meet. A floodway encroachment analysis incorporating a cut and fill approach will be utilized to determine locations and volumes of backfilling in order to maintain or improve the floodwater conveyance of the stream in this area. If feasible, based upon the analysis, sections of the banks may be restored to the original slopes and elevations.

COMMENT 26: Where will be the location where the excavated soils are placed and covered? I had an idea that the soils on the southernmost point could be excavated and placed along the bank of the slope surrounding the ORF. Final elevation could be at or above the elevation of the retention facility bank, and an erosive barrier could be installed along the toe of the covered contaminated fill. Placement above ORF grade could serve as the beginning of a visual barrier (more below.) Of course, if there is a

restriction on the replacement of the contaminated soils in the flood plain, then total removal would be necessary.

RESPONSE 26: The ORF proper is not part of the site, thus placing soils up to it are not practical. The contaminated soils from along the stream banks will be moved to the upland portion of the site and spread over an area of approximately 7 acres and covered. The soil cover area includes the tip of the peninsula, along the sides of and to the north of the ORF. The cover system design will incorporate the requirements of Part 500 "Floodplain Management Regulations Development Permits.

COMMENT 27: Excavation of the contaminated soils will require removal of all of the trees and other vegetation surrounding the site, thereby eliminating the natural visual barrier between the residents of Borden and Zurbrick Roads and the ORF. The facility is an eyesore, and its lights cast shadows on the south bank of the creek at night. Odor releases are another problem, but that is an issue that is not in your department. I'm not sure how much of this issue can be addressed within the scope of the remediation, but ideas regarding the creation of a new visual barrier between the residents and the ORF should be considered without us having to wait 25 years for new trees to grow.

RESPONSE 27: See RESPONSE 24. Issues related directly to the ORF are outside the scope of this project and should be taken up with Erie County.

COMMENT 28: Wetland redevelopment should be undertaken such that native species (including trees) are replanted and maintained in the area.

RESPONSE 28: See RESPONSE 9 and 24.

(V) OTHER ISSUES

COMMENT 29: The Village of Depew sees the biggest issue to be the cost of the proposed remedy and what role the Village will play in dealing with that cost. The Village currently has a Consent Order with the NYSDEC to deal with sewer issues, and also has other substantial financial issues in the Village and will have to deal with them one at a time.

RESPONSE 29: The Department has determined that the Village of Depew is a responsible party because of having been the operator of the site at the time of hazardous waste disposal. Accordingly, it is responsible for the remedial program costs. 6NYCRR Part 375-2, "Inactive Hazardous Waste Disposal Site Remedial Program", outlines the conditions and limitations whereupon a Municipality may be eligible for State assistance to implement a remedial program.

COMMENT 30: The total present worth cost for Alternative 5 in the PRAP is $2.3 MM (million), while the total present worth cost for Alternative 5 presented at

the PRAP public meeting was $2.2 MM (million), which is correct?

RESPONSE 30: The correct estimated total present worth cost for Alternative 5 is $2.3 MM (million) as presented in the PRAP document. The cost for Alternative 5, presented on a slide at the PRAP public meeting of $2.2 MM (million), which left out costs associated with monitoring activities in the proposed remedy was incorrect.

COMMENT 31: Shouldn't the primary concern be to address the bank erosion on the Zurbrick Road area of the creek before someone drives over the bank and into the creek?

RESPONSE 31: The responsibility for the erosion control of the creek bank on the south side of the tip of the peninsula and the stability and protection of the Zurbrick Road lies with the Village of Depew. This was outlined in a letter from the Department to the Village dated November 14, 2006. If the Village determines that the situation requires immediate attention, the Village would need to insure that the contamination below Zurbrick Road which is part of OU-02, is adequately addressed, and that any plans for stabilizing the creek bank and road are compatible with the remedy for OU-01.

COMMENT 32: Although through the years, records have been stored or lost, other companies, Towns and Villages did dump at the site. Personally, as a child I did see West Seneca, Lancaster and Tree Pickle Company, dump in this area. We ask that you prompt the Village to try and find any and all of these records naming others in the dumping.

RESPONSE 32: The Village was encouraged in a meeting held in August 2003 to perform a Potential Responsible Party (PRP) investigation for the site. At this time they were advised that, the Interagency Task Force and Community Right-to-Know surveys of the late 1970s and 1980s may be a starting point for such information. The Village is once again encouraged to make this effort.

COMMENT 33: A Natural Resource Damage (NRD) assessment and claim investigation into potential responsible parties, should be performed to assure proper accountability, damage claims and restoration.

RESPONSE 33: The environmental and ecological resource near the landfill is the Cayuga Creek environment. A remedial investigation/feasibility study of the Cayuga Creek environment is currently underway as part of OU-02 of the site. The need for remediation of OU-02 and any justification for performing an NRD assessment will be based upon the results of this RI/FS.

COMMENT 34: If this PRAP is implemented the very substantial investment already made in the Emergency Streambank Protection Project" to stabilize the south

bank of Cayuga Creek adjacent to Zurbrick Road will be lost and the matching funds will also be lost.

RESPONSE 34: See RESPONSE 31. Additionally, it's the Departments understanding that the Project Cooperation Agreement (PCA) for the Zurbrick Road project between the Department of the Army and the Village of Depew was suspended in accordance with Article XV - Hazardous Substances, when hazardous waste was discovered on the tip of the peninsula. Thus, the availability of federal funding is an issue between the Department of the Army and the Village of Depew. However, as was mentioned in the meeting of 6/25/07 (as referred to in the Mayor's letter), at the PRAP public meeting, and in RESPONSE 31, the remedy for OU-01 and any Zurbrick Road project must be considered in the hydrologic and hydraulic analysis. Based upon this fact, the Department will work with the Village and/or the USACOE to meet this requirement.

COMMENT 35: The cost of the PRAP is prohibitive.

RESPONSE 35: On the issue of project costs and funding - See RESPONSE 29 to the Deputy Mayor's comments.

COMMENT 36: We are spending millions of dollars dealing with a lead problem that is merely theoretical.

RESPONSE 36: See RESPONSEs 11 and 14.

ATTACHMENT

Letter dated February 22, 2008, from Barbara A. Alberti, Mayor, Village of Depew, Depew, NY

NYSDEC Central Office
c/o Randy Hough, Project Manager
625 Broadway 12th Floor
Albany, NY 12233

RE: Site # 915105 PRAP Depew Village Landfill

Gentlemen:

I regret that I was unable to attend the public presentation concerning the Proposed Remedial Action Plan (PRAP) prepared by the New York State Department of Environmental Conservation (NYSDEC) for the Depew Landfill. Fortunately I was able to attend the briefing for Village officials the day before the public presentation and I have the benefit of input from some of those who were able to attend the public presentation.

The following comments are submitted on behalf of the Village of Depew (Village).

The PRAP is problematic for the Village for two principal reasons. First, it does not address the Zurbrick Road bank stabilization. Second, the cost of the PRAP is prohibitive. The balance of this submission will deal with those issues in more detail.

Village representatives met with Randy Hough, Marti Doster and David Locey of NYSDEC, Matthew Forcucci of the New York State Department of Health and Philip Berkeley of the United States Army Corps of Engineers (Corps) in my office months ago with a view toward explaining, scoping and planning the PRAP.

As I understand the history, the Village and the Corps developed an "Emergency Streambank Protection Project" to stabilize the south bank of Cayuga Creek adjacent to Zurbrick Road and directly across the Creek from the Depew Landfill. The Village and the Corps entered into a Project Cooperation Agreement in 2001 for the Project and in connection with the implementation of that Project lead contamination was discovered along the south bank and the Project was halted. The Village had deposited substantial monies with the Corps. My general understanding is that the Village paid approximately

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$180,000.00 to the Corps and the Corps had secured federal matching funds in a like amount. The combined funds were thought to be adequate to complete the work.

During our planning meeting we discussed the need to stabilize the bank adjacent to Zurbrick Road as a public safety issue, and the need to preserve the Federal matching funds as a matter of vital economic concern to the Village. At that time NYSDEC representatives expressed a willingness to make the Village Project with the Corps a priority. We discussed the Project as a "Phase I" of any PRAP. The Village agreed to contact our representatives in Congress to preserve the matching fund and Mr. Berkeley agreed to try to do the same through channels within the Corps. My understanding is that those contacts where made and the matching funds are available, at least at the moment.

The PRAP presented last week is in no way consistent with discussions at the planning meeting. Implementation not only fails to make preservation of Federal matching funds a priority, the bank stabilization Project is in no way a part of the PRAP and no effort is made to preserve the Federal matching funds. If this PRAP is implemented the very substantial investment already made in the Project will be lost and the matching funds will also be lost.

The Village cannot help but question the purpose of the NYSDEC in holding a planning meeting if the essential consensus of the planning meeting does not then become part of the PRAP.

This is a logical segue to the second major Village comment: the cost of the PRAP is prohibitive.

NYSDEC is proposing a course of conduct which not only deprives the Village of Federal matching funds, but also imposes yet another in what is now a series of wholly unfunded mandates. The Village is a party to an Order on Consent with the NYSDEC relating to the Village Sewer System. Because that Order on Consent is open ended in that it requires "approvable" and "acceptable" remedies, any realistic estimate of the cost imposed upon the Village as a consequence of that Consent Order is highly problematic. It is not unreasonable, however, to expect that cost to exceed Ten Million Dollars. Most recently, NYSDEC mandated that the Village enact Local Laws. One shifting the burden for management of Stormwater Pollution Prevention Plans from NYSDEC to the Village. The second limiting discharges into Village sewers and again imposing enforcement obligations on the Village. Again, it is largely impossible to estimate the cost of implementing the laws NYSDEC has mandated. What is crystal clear, however, is that no funding whatsoever accompanies any of these mandates.

The Village is an old, fully developed, and formerly industrial municipality. Much of the infrastructure is old. A significant proportion of the housing is old. The average age of its residents is increasing. Many are on fixed incomes. In these circumstances the Village has reduced the size of its Board by two Trustees. The Village is studying the merger of its sewer systems with Erie County Sewer District No. 4, and the merger of its assessing function with the Towns of Lancaster and Cheektowaga. We

have a serious and expanding problem with neglected or abandoned structures. We have a problem with other abandoned and potentially polluted industrial sites. The Village is in no position to increase the tax burden which is already oppressive.

Against this back-drop, the PRAP which is expected to cost 2.2 Million Dollars is financially irresponsible. As Mayor, I am required to prioritize what is of necessity, a limited budget. The Village does not see this as a 2.2 Million Dollar priority. More to the point, the funds are simply not available in this financially struggling community.

Village representatives tell me that in the words of the NYSDEC presenter, "lead is not being mobilized to the ground water". I am not a scientist but cannot help but wonder if the standards developed for remediation of environmental lead contamination were developed with lead which was not being mobilized to the groundwater in mind. I cannot help but think that if there is no detectible lead in the groundwater, then there is little likelihood that the lead is readily absorbable by plants or animals. If that is the case, we are spending millions of dollars dealing with a lead problem that is merely theoretical. The issue of methane at the site is certainly manageable at minimal cost, and may be the only practical environmental issue at the Landfill.

Between 1961, when the Landfill closed, and today, I am unaware that either the lead at the site or the methane escaping has presented any practical problem whatsoever. By contrast, the erosion which threatens Zurbrick Road is demonstrated by NYSDEC pictures displayed at the Public Hearing.

The NYSDEC is chasing the theoretical and ignoring the real and the practical while it seeks to impose financial demands that the Village is simply unable to meet.

Respectfully submitted,

Barbara A. Alberti

Barbara A. Alberti
Mayor

APPENDIX B

Administrative Record

Administrative Record

Depew Village Landfill
Operable Unit No. 01
Site No. 915105

1. Proposed Remedial Action Plan for the Depew Village Landfill site, Operable Unit No. 01, dated January 2008, prepared by the Department.

2. "Engineering Invesigations at Inactive Hazardous Waste Sites, Phase I Investigation, Village of Depew, Site No. 915105, Erie County", January 1988, prepared by Engineering-Science, for the NYSDEC.

3. "Site Investigation/Remedial Report", June 2004, prepared by Panamerican Environmental, Inc. and URS Corporation, Inc., for the Village of Depew.

4. "Technical Workplan for the Remedial Investigation and Feasibility Study at the Depew Village Landfill Site No. 9-15-105 Depew, New York", November 2005, prepared by Ecology and Environment Engineering, P.C., for the NYSDEC.

5. "Remedial Investigation Report for the Depew Village Landfill Site Operable Unit - 01, Site No. 9-15-105, Depew, New York, Volume I", March 2007, prepared by Ecology and Environment Engineering, P.C., for the NYSDEC.

6. "Remedial Investigation Report for the Depew Village Landfill Site Operable Unit - 01, Site No. 9-15-105, Depew, New York, Volume II", March 2007, prepared by Ecology and Environment Engineering, P.C., for the NYSDEC.

7. "Final Feasibility Study for the Depew Village Landfill Site Operable Unit - 01, Site No. 9-15-105, Depew, New York, July 2007, prepared by Ecology and Environment Engineering, P.C., for the NYSDEC.

8. Referral Memorandum dated July 27, 2004 for Remedial Investigation/Feasibility Study and interim remedial program.

9. Fact Sheet: Proposed Remedial Action Plan (PRAP) and citizen participation process for the Village of Depew Operable Unit - 01 site, dated January 29, 2008.

10. Letter dated February 22, 2008, from Barbara A. Alberti, Mayor, Village of Depew, Depew, NY;

11. Letter dated March 14, 2008, from Jill Jedlicka, Director of Ecological Programs, Buffalo Niagara Riverkeeper, Niagara Street, Buffalo, NY;