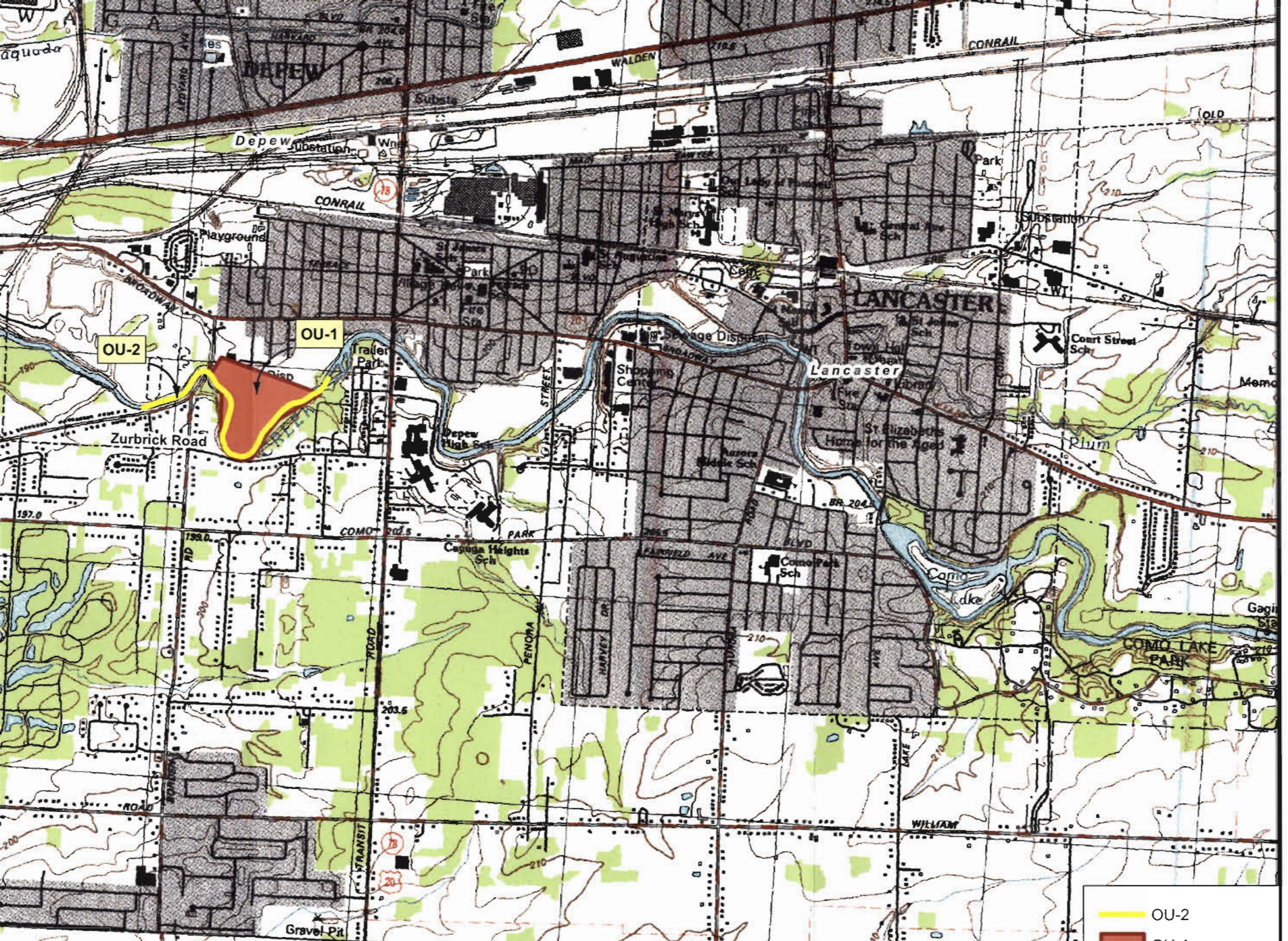
OU-1
OU-2
Zurbrick Road
DEPEW
LANCASTER
Depew Substation
Lancaster
Como Lake
COMO LAKE PARK
Gravel Pit
CONRAIL
WALDEN
Playground
Trailer Park
Shopping Center
Depew High Sch
Cayuga Heights Sch
Como Park Sch
Court Street Sch
St Elizabeths Home for the Aged
Sewage Disposal
Rhum
OU-2

Technical Work Plan for the Remedial Investigation and Feasibility Study of Operable Unit 2 at the Depew Village Landfill Site No. 9-15-105 Depew, New York

August 2007

Prepared for:

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List of Acronyms

ADR	Automatic Data Review
ASP	Analytical Services Protocol
AVS	acid volatile sulfides
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	chain-of-custody
DER	Division of Environmental Remediation
DO	dissolved oxygen
DOT	(United States) Department of Transportation
DUSR	Data Usability Summary Report
EDD	electronic data deliverable
EEEPC	Ecology and Environment Engineering, P.C.
ELAP	Environmental Laboratories Approval Program
EPA	United States Environmental Protection Agency
FID	flame ionization detector
FS	feasibility study
FWRIA	Fish and Wildlife Resources Impact Analysis
GFAA	graphite furnace atomic adsorption
GPS	global positioning system
HASP	Health and Safety Plan
HEERA	Health and Environmental Exposure Risk Assessment

List of Acronyms (Cont.)

IDW	investigation-derived waste
IRM	interim remedial measure
µg/L	micrograms per liter
mL	milliliter
MS/MSD	matrix spike/matrix spike duplicate
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORF	overflow retention facility
ORP	oxygen reduction potential
OU	operable unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
PM	project manager
PPE	personal protective equipment
PRAP	Proposed Remedial Action Plan
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RAO	remedial action objective
RBC	risk-based concentration
RI	Remedial Investigation
ROD	Record of Decision
SCG	Standards, Criteria, and Guidelines

List of Acronyms (Cont.)

SCO	Standard Cleanup Objective
SEM	simultaneously extracted metals
SI	site investigation
SVOC	semivolatile organic compound
TAGM	Technical Administrative Guidance Memorandum
TAL	Target Analyte List
TBC	to be considered
TCL	Target Compound List
TCLP	toxicity characteristic leaching procedure
TOC	total organic carbon
USACE	United States Army Corps of Engineers
USGS	United State Geological Survey
VCP	voluntary cleanup program
VOA	volatile organic analysis
VOC	volatile organic compound
yd^3	cubic yard

1 Introduction

Pursuant to Work Assignment No. D004435-21 accepted on May 24, 2007, Ecology and Environment Engineering, P.C. (EEEPC) has prepared this work plan on behalf of the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation (DER), for remedial investigation (RI)/feasibility study (FS) services at the of the Depew Village Landfill Site Operable Unit (OU) - 02 (Site No. 9-15-105, also known as the Depew DPW/Cayuga Creek Site or Zurbrick Road Site), located off of Rutherford Road in the village of Depew, Erie County, New York. OU-1 is a landfill located to the north of Cayuga Creek and OU-2 is the adjacent reach of this creek (see Figure 1-1).

The objectives of the RI/FS are to:

- Fill data gaps in the nature and three-dimensional extent of contamination in Cayuga Creek sediments and surface water;
- Define the nature and extent of the soil contamination along Cayuga Creek bank below Zurbrick Road;
- Qualitatively evaluate ecological and possible human health risks associated with the contamination;
- Evaluate site remediation alternatives; and
- Provide sufficient information for NYSDEC to develop a Proposed Remedial Action Plan (PRAP) and issue a Record of Decision (ROD).

To meet these project objectives, the RI/FS described herein has been designed in accordance with NYSDEC Technical Administrative Guidance Memorandum (TAGM) number HWR-89-4025, "Guidelines for Remedial Investigations/Feasibility Studies," and TAGM number HWR-90-4030, "Selection of Remedial Actions at Inactive Hazardous Waste Sites."

EEEPC assumes NYSDEC has obtained all necessary permission for EEEPC to access all properties involved under this RI/FS.

2 Background Information

2.1 Site Description

2.1.1 Site Location

The Depew Village Landfill site is located in the village of Depew, Erie County, New York. The names "Depew DPW/Cayuga Creek" site and "Zurbrick Road" were utilized when this site was in the Voluntary Cleanup Program (VCP) and during the United States Army Corps of Engineers (USACE) activities at the site, respectively. The site has been listed previously (in the 1980s) and is currently listed on the NYSDEC Registry of Hazardous Waste Sites as the "Depew Village Landfill," No. 9-15-105; this name will be utilized for work under this RI/FS program.

The portion of the Depew Village Landfill labeled in the early 1980s as Site No. 9-15-105, consisted of approximately 1.3 acres located on a peninsula of an oxbow of Cayuga Creek. The peninsula encompasses the southern tip of the former landfill area. It is bounded on the south, east, and west by Cayuga Creek, and on the north by the Overflow Retention Facility (ORF) for Erie County Sewer District No. 4. Across Cayuga Creek to the south of the landfill lies Zurbrick Road (see Figure 1-1).

An RI/FS conducted in 2006 by EEEPC showed the fill area dimensions to be significantly more than the 1.3-acre tip. Figure 2-1 shows the OU-1 landfill study area. It contains the registry site itself, and extends north to the Village of Depew Department of Public Works parking lot, which abuts Rutherford Road. The northern boundary extends to Cayuga Creek to both the east and west. The eastern, southern, and western landfill boundaries follow the southern shore of Cayuga Creek. The fill area was determined to be approximately 2.8 acres containing lead in soil at concentrations greater than 1,000 mg/kg.

The RI showed a narrow strip of land along the southern bank of Cayuga Creek, paralleling the peninsula shoreline, and extending up toward Zurbrick Road containing soil which contains lead at concentrations exceeding cleanup criteria.

This RI/FS addresses OU-2 of the Depew Village Landfill Site. OU-2 consists of a segment of the Cayuga Creek extending from 500 feet north of the landfill to

1,000 feet downstream of the Borden Road Bridge. This RI/FS will include studying the surface water, stream sediments, floodplain sediments, and off-bank soils of an approximately 4,700-foot creek segment.

2.1.2 Site Geology

Cayuga Creek flows on a combination of alluvial sediments and exposed Devonian-aged Onondaga limestone. Bedrock is exposed along much of the eastern creek, which it is generally fractured and jointed.

Sediment sampling of Cayuga Creek completed during the OU-1 RI showed the sediment to be relatively thin (<1 foot) along much of the northern creek shoreline.

NYSDEC classifies Cayuga Creek as a Class C surface waterbody. Class C surface waters are not used as potable water sources, but can be used for fishing. Creek flows vary during storm events. Stream bank erosion is evident along both shores of the creek, and floodplain vegetation bent over following storm events is evidence of periodic floodplain submergence.

2.2 Site History

The Depew Village Landfill was operated by the Village of Depew between 1940 and 1961. As previously noted, the exact dimensions of the landfill are not known. It is believed to have originally consisted of approximately 20 acres. During operation, it received approximately 10,000 tons per year of municipal waste. In addition to bulk waste, municipal waste was also reportedly incinerated on the site; the resulting ash was disposed of at the landfill. Spent foundry sand from Dresser Industries was reportedly utilized at one time as daily cover material at the landfill. In 1983 Erie County acquired 14.5 acres from the Village of Depew, including the registry area for the ORF project. During ORF construction activities, approximately 60,000 cubic yards (yds^3) of waste were removed from the middle of the peninsula and disposed of in the BFI landfill in Tonawanda, New York. Subsequent to ORF construction, the Village of Depew re-acquired approximately 9.5 acres of the 14.5 acres sold to Erie County; the County retained the 5 acres on which the ORF is located. This 9.5-acre re-acquired property includes the registry site, as well as much of the RI/FS study area.

In 2001, the Village of Depew contracted with USACE to perform a stream bank stabilization project on a section of Cayuga Creek abutted by Zurbrick Road (see Figure 1-1). USACE completed preliminary planning and was excavating soils on the creek's north side (within the registry site area) when fill material was noticed. Ensuing sampling and analysis of soils from this fill area indicated high total lead concentrations, as well as exceedances of the United States Environmental Protection Agency's (EPA's) toxicity characteristic leaching procedure (TCLP) regulatory limits for lead. This resulted in classification of the fill material as hazardous waste. USACE operations were suspended based on the presence of

hazardous waste together with the requirements of a "Project Cooperation Agreement" with New York State (NYS).

With the determination of hazardous waste presence at the site, NYSDEC offered the Village of Depew entry into the VCP to address OU-1.

In July 2004, the village of Depew opted out of the VCP and the Voluntary Cleanup Agreement concerning OU-1 was formally terminated. The listing package for the OU-1 site was circulated and the site was re-listed in the New York State Registry of Inactive Hazardous Waste Sites as a Class 2 site. In addition, a DER referral was made for the site to conduct a remedial investigation/feasibility study under the state Superfund program.

The following is a chronological site history of the Depew Landfill:

- **Approximately 1983.** he site is listed as a Class 2a site in the Registry of Inactive Hazardous Waste Sites.

- **March 1983.** A site investigation of subsurface conditions is completed by Drill & Test, Inc., and Krehbiel Associates, for Erie County Sewer District No. 4 in conjunction with the overflow retention facility construction. No laboratory analysis was conducted.

- **1985.** The Erie County Department of Environment and Planning prepares a "Hazardous Waste Site Profile Report," which concludes that no hazardous material was land filled at the site.

- **January 1988.** A Phase I Investigation is completed by Engineering-Science for NYSDEC. This report recommends conducting a Phase II investigation of the site.

- **October 1990.** NYSDEC de-lists the site from the Registry of Inactive Hazardous Waste Disposal Sites, based upon the determination that no hazardous wastes have been identified at the site.

- **Fall 2001.** USACE analytical results of site fill material indicate high total lead concentrations and exceedances of the TCLP regulatory limits for leachable lead, resulting in classification of the material as hazardous.

- **June 2004.** The SI/Remedial Report prepared by PanAmerican Environmental, Inc., for the Village of Depew under the VCP is finalized and released. This report confirms that past total lead concentrations and TCLP results exceed regulatory criteria. It also indicates that metals contamination may be fairly extensive at the site. Data from four surface and six subsurface soil samples analyzed for semivolatile organic compounds (SVOCs) indicate

low polynuclear aromatic hydrocarbon (PAH) concentrations are also present at the site.

- **2006.** EEEPC conducts an RI on the site; determines that the landfill area consists of approximately 20 acres; and determines lead concentrations in various areas of the site exceed Part 375 Standard Cleanup Objectives (SCOs) for commercial/industrial settings. Some creek sediments are determined to contain lead at concentrations exceeding regulatory criteria. Also, sampling confirms that fill is present along the Zurbrick Road hillside. An FS is drafted to address the soils of the main landfill.

  Based on the RI findings, NYSDEC decided to break the site into two operable units. OU-1 will consist of the main landfill area north of the creek. OU-2 will consist of the creek (surface water), creek sediments, floodplain soils and off-bank soils 500 feet upstream of the site and 1,000 feet downstream of the site, excluding floodplain and upland soils located along OU-1. Fill located along the Zurbrick Road hillside is also included in OU-2.

2.3 OU-2 Conceptual Site Model

Based on existing sediment chemistry data, geologic data collected from previous site studies, as well as site geomorphology, lead-enriched fill present in landfill soils exposed to the creek, as well as in the Zurbrick Road hillside are being eroded by the flow of Cayuga Creek, then being deposited as sediments and possibly as floodplain deposits in Cayuga Creek. Lead in these sediments may then be available for uptake by creek fauna.

Previous studies, have not fully characterized the extent and potential impact of lead contamination in sediment and floodplain deposits in Cayuga Creek adjacent to and downstream from the landfill. Upstream/background samples will also be collected to evaluate the potential for off-site or upstream contaminant sources.

2.4 Known Environmental Concerns and Potential Remedial Alternatives

OU-1 RI data shows some sediment of Cayuga Creek contains lead concentrations exceeding regulatory criteria. The most likely remedial alternative to address the lead-contaminated sediment is either excavation/dredging or institutional control use. Other remedial alternatives such as capping or vitrification are not typically done in creeks because sediments are extremely mobile and are submerged.

3 Remedial Investigation and Feasibility Study Tasks

The tasks and requirements of this work assignment are specified in Schedule 1 of EEEPC's contract D004435 *Work Element II - Remedial Investigation/Feasibility Study*. The following is a summary of the work assignment scope.

3.1 Task 1: Work Plan

3.1.1 Work Plan Development

3.1.1.1 Scope of Work Development

EEEPC reviewed site records and conducted a scoping teleconference with NYSDEC's project manager on May 17, 2007. After reviewing existing site documentation, EEEPC held further discussions with NYSDEC regarding the draft work scope.

3.1.1.2 Background Research

EEEPC reviewed various available reports from previous site investigation activities at OU-1. Minimal data was available on the Cayuga Creek. EEEPC reviewed its 2006 OU-1 RI and the draft OU-1 FS to determine what previous investigative activities of the creek surface water and sediment had shown.

3.1.1.3 Health and Safety Plan Preparation

A site-specific health and safety plan (HASP) pertaining to this investigation was prepared. It is included in Appendix A of this work plan.

3.1.1.4 Quality Assurance Project Plan Preparation

EEEPC has a master Quality Assurance Program Plan that was approved by NYSDEC under previous site investigation projects under this contract. A project-specific Quality Assurance Project Plan (QAPP) was prepared and is included in Appendix B.

3.1.1.5 Base Map Development

The site base map developed during the RI/FS of OU-01 was amended to include proposed creek sediment, and soil data collection locations proposed under this OU-2 RI/FS (see Figure 3-1). Horizontal positions of field sampling points will be determined using a portable global positioning system (GPS) unit during the field sampling efforts. The GPS will be accurate to within one meter. Following

completion of the field sampling program, the GPS data will be plotted on the site base map and an updated map showing actual sample locations will be developed and presented in the RI report.

3.2 Field Investigation

Following work plan approval, EEEPC will begin field activities per the schedule provided in Section 4 of the work plan. The RI proposed for the Depew Landfill OU-02 will include an investigation of off-bank surface and subsurface soils, surface water, and sediments (centerline and bank) and determination of sediment thickness. It will also include updating the OU-1 Fish and Wildlife Resource Impact Assessment and the OU-1 Health and Environmental Exposure Risk Assessment (HEERA). Fieldwork will be performed by one field team under the direction of the EEEPC Project Manager (PM). Soil and sediment sampling and sediment thickness determination will be conducted by EEEPC staff using various tools depending on the sample location.

Laboratory analysis of environmental and investigation-derived waste (IDW) sample analyses will be performed by Mitkem Corporation, a subcontracted laboratory certified by the NYSDOH Environmental Laboratory Approval Program (ELAP) for the EPA solid and hazardous waste methods and meet NYSDEC Analytical Services Protocol (ASP) deliverable requirements. Table 3-1 summarizes the proposed sampling and analysis for each medium. Sample containers, preservatives, and holding times and the complete analyte list are presented in Tables 3-2 and 3-3. Analytical data will be presented in the final report.

Table 3-1 Proposed Chemical Analysis, Depew Village Landfill OU-2, Depew, New York

Analysis	Method	Number of Field Samples	Field Duplicates	QA/QC Samples		MS	MSD	Total Number of Samples
				Trip Blanks	Rinsate Blank			
Floodplain and Off-Bank Soils								
TAL Metals (+Mercury)	SW6010B/7471A	32	2	0	1	2	2	39
Percent Solids	ASTM D2216-80	32	2	0	1	2	2	39
TOC	Lloyd Kahn	32	2	0	1	2	2	39
Total Volatile Solids	EPA 160.4	32	2	0	1	2	2	39
Zurbrick Road Hillside Soils								
TAL Metals (+Mercury)	SW6010B/7471A	24	2	0	1	2	2	31
Surface Water Samples								
TAL Metals (+Mercury)	SW6010B/7470A	8	1	0	0	1	1	11
Alkalinity	EPA 310.1	8	1	0	0	1	1	11
Chloride	EPA 325.1 or 325.2 or 325.3	8	1	0	0	1	1	11
Sulfate	EPA 375.1 or 375.2 or 375.3	8	1	0	0	1	1	11
TDS	EPA 160.1	8	1	0	0	1	1	11

Table 3-1 Proposed Chemical Analysis, Depew Village Landfill OU-2, Depew, New York

Analysis	Method	Number of Field Samples	QA/QC Samples					Total Number of Samples
			Field Duplicates	Trip Blanks	Rinsate Blank	MS	MSD	
Lead by ICP-AES	SW6010B	8	1	0	0	1	1	11
Sediment Samples								
Total Sulfides	EPA 376.2	6	0	0	0	0	0	6
TAL Metals (+Mercury)	SW6010B/7471A	94	5	0	0	5	5	109
Total Solids	EPA 160.3	94	5	0	0	5	5	109
TOC	Lloyd Kahn	94	5	0	0	5	5	109
Total Volatile Solids	EPA 160.4	94	5	1	0	5	5	109
Extended Sediment Sample Analysis								
TCL Semivolatiles	SW8270C	6	1	0	0	1	1	9
TCL Pesticide/ PCB	SW8081A/8082	6	1	0	0	1	1	9
TAL Metals(+Mercury)	SW6010B/7471A	6	1	0	0	1	1	9
Total Solids	EPA 160.3	6	1	0	0	1	1	9
TOC	Lloyd Kahn	6	1	0	0	1	1	9
Total Volatile Solids	EPA 160.4	6	1	1	0	1	1	9
Acid Volatile Sulfides	EPA 821-R-91-100	6	1	0	0	1	1	9
SEM of Cd, Cu, Ni, Pb, and Zn	EPA 821-R-91-100	6	1	0	0	1	1	9

Notes: Analytical methods reference the most current United States Environmental Protection Agency (EPA Contract Laboratory Program (CLP) Statement of Work (SOW). The general quality assurance and reporting requirements must follow the NYSDEC Analytical Services Protocol, July 2005.

Key:

ICP-AES=Inductively coupled plasma/atomic emission spectroscopy.
MS = Matrix spike.
MSD = Matrix spike duplicate.
PCB = Polychlorinated biphenyl.
PP = Priority Pollutant.
QA = Quality Assurance.
QC = Quality Control.
SEM = Simultaneously Extracted Metals.
SVOC = semivolatile organic compound.
TAL = Target Analyte List.
TCL = Target Compound List.
TCLP = Toxicity Characteristic Leaching Procedure.
TOC = Total organic carbon.
TDS = Total Dissolved Solids.

Table 3-2 Sampling Containers, Volumes, Preservation, and Holding Times for Soil and Sediment Samples, Depew Village Landfill OU-2, Depew, New York

Parameter	Method	Containers for Solid Samples	Preservation[a]	Holding Time[a]
Metals (TAL/ Mercury)	SW6010B/7471A	One 8-oz. glass jar	Cool to 4°C	26 days for mercury, 180 days for all other metals
Extractable Organics (SVOCs, Pesticides, PCBs)	SW8270, SW8081, SW8082	One 8-oz. glass jar	Cool to 4°C	5 days for extraction, 40 days for analysis
Total Solids	EPA160.3	One 4-oz. glass jar	Cool to 4°C	5 Days
Total Volatile Solids	EPA 160.4	One 4-oz. glass jar	Cool to 4°C	5 Days
TOC	Lloyd Kahn	One 4-oz. glass jar	Cool to 4°C	26 days

Table 3-2 Sampling Containers, Volumes, Preservation, and Holding Times for Soil and Sediment Samples, Depew Village Landfill OU-2, Depew, New York

Parameter	Method	Containers for Solid Samples	Preservation[a]	Holding Time[a]
Acid Volatile Sulfides (only)	EPA 821-R-91-100	One 4-oz. glass jar	Cool to 4°C	12 Days
AVS/SEM of Cd, Cu, Ni, Pb, and Zn	EPA821-R-91-100	One 4-oz. glass jar	Cool to 4°C	12 Days

[a] All samples to be cooled to 4°C. Holding times are based on verified times of sample receipt and are consistent with NYSDEC requirements.

[b]

Key:
AVS = Avid Volatile Sulfides.
°C = Degrees Celsius.
mL = Milliliter.
oz. = Ounce.
PCB = Polychlorinated biphenyl.
PP = Priority Pollutant.
SEM = Simultaneously Extracted Metals.
SVOC = Semivolatile organic compound.
TAL = Target Analyte List.
TCL = Target Compound List.
TOC = Total organic carbon.
VOC = Volatile organic compounds.

Table 3-3 Sample Containers, Volumes, Preservation, and Holding Times for Aqueous Samples, Depew Village Landfill OU-2, Depew, New York

Parameter	Method	Containers for Aqueous Samples	Preservation[a]	Holding Time[a]
TAL Metals/ Mercury	SW6010B/7470A	One 500-mL HDPE bottle	HNO_3 pH< 2	26 days for mercury, 180 days for metals
Alkalinity	EPA 310.1	One 500-mL HDPE bottle	Cool to 4°C	12 Days
Chloride	EPA 325.1or 325.2 or 325.3	One 500-mL HDPE bottle	Cool to 4°C	26 Days
Sulfate	EPA 375.1 or 375.2 or 375.3	One 500-mL HDPE bottle	Cool to 4°C	26 Days
TDS	EPA 160.1	One 500-mL HDPE bottle	Cool to 4°C	5 Days
Lead by ICP-AES	SW6010B	One 500-mL HDPE bottle	HNO_3 pH< 2	180 Days

[a] All samples to be cooled to 4°C. Holding times are based on verified times of sample receipt and are consistent with NYSDEC requirements.

Key:
°C = Degrees Celsius.
HDPE = High-density polyethylene.
L = Liter.
mL = Milliliter.
PCB = Polychlorinated biphenyl.
SVOC = Semivolatile organic compound.
TAL = Target Analyte List.
TCL = Target Compound List.
TDS = Total Dissolved Solids.
VOC = Volatile organic compounds.

All field activities are expected to be conducted by personnel wearing Level D personal protective equipment (PPE). However, field team members will maintain Level C PPE on site, and will use it, should the need arise.

To achieve the RI/FS objectives, EEEPC will perform the following field tasks:

- Surface water sampling, including measurement of water quality parameters;
- Sediment thickness measurements along transects within Cayuga Creek; and
- Coring and sampling (sediment and soil) along transects established mostly perpendicular to Cayuga Creek (although some transects may be located at other angles to capture sediments in deposition areas).

The sampling approach and rationale are presented in Sections 3.2.1 through 3.2.4.

3.2.1 Mobilization

This task includes all preparation and pre-fieldwork activities including:

- Administrative and General Mobilization Tasks. Efforts to be conducted under this task include subcontract preparation, scheduling, and equipment rental and purchase.
- Underground Utility Notification. EEEPC will contact the Underground Facilities Protection Organization five days in advance of any subsurface field investigation activities to alert them that the proposed subsurface investigation will take place. Once utilities on site have been marked, EEEPC will modify any subsurface exploration points to be certain that none are within 25 feet of any underground or overhead utility location. The only utility currently known to exist in the study area is the sewer line crossing Cayuga Creek. However, other buried utilities may exist within the study area, particularly along the south side of Zurbrick Road.
- Transects will be staked prior to mobilization of the sampling crew. Transect locations will be established by the EEEPC and NYSDEC PM using a tape measure. It is expected that proposed core locations and transect locations will be adjusted based on field conditions so as to maximize the value of all sediment and soil sampling locations selected.
- Sampling activities will be scheduled to occur during average or low-flow conditions within the creek.

3.2.2 Sediment Thickness Evaluation

One of the critical outcomes of this RI is an understanding of the sediment thickness. Sediment thickness readings will be recorded approximately every 200

feet along both creek shores, and in the middle of the creek where bedrock is not exposed. The position of each sediment thickness reading will be recorded via a GPS unit. This effort will likely be conducted in conjunction with either the initial transect location selection effort, or the surface water sampling effort.

Methodology

EEEPC will use a graduated steel rod, rigid carpenter's rule, or other means to evaluate the sediment thickness in the creek. The measuring device will be pushed into the sediment until refusal is reached, and the recording will be made. The device will then be extracted from the sediment. The device(s) used will be decontaminated using the methods described in Section 3.2.11 at the end of the sediment thickness evaluation.

3.2.3 Surface Water Sampling

Surface water samples will be collected from eight locations. Two locations upstream, four at contiguous locations along the OU-1 frontage, and two downstream of the site. Individual surface water samples will be co-located with collected sediment samples. Proposed surface water sampling locations are shown in Figure 3-1. All proposed locations will be field-verified and marked by EEEPC's PM and NYSDEC's PM prior to sampling.

All surface water samples will be analyzed for Target Analyte List (TAL) metals, alkalinity, chloride, sulfate, and dissolved solids. Hardness in the surface water will be determined by the calculation method using the calcium and magnesium results. Lead analysis in all surface water samples will be conducted utilizing graphite furnace atomic adsorption (GFAA) or other acceptable methodology, in order to achieve a detection limit of at least 0.5 micrograms per liter (µg/L) or lower. Surface water field chemical and physical parameters including, pH, oxygen reduction potential (ORP), temperature, dissolved oxygen (DO), turbidity, and conductivity will also be measured and recorded at each location.

3.2.3.1 Surface Water Sampling Methodology

Surface water samples will be collected at the same locations as the sediment samples. They will be collected first, followed by sediment sample collection, to minimize turbidity in the water samples. The Cayuga Creek sample location sequence will start at the most downgradient point and progress upstream so as to prevent the sampling process from adversely impacting the collection of future samples. Equipment and sampling procedures are described below.

Equipment and Supplies

- pH, temperature, specific conductance, ORP, DO, and turbidity meters;
- Dedicated stainless-steel or glass beakers (500 milliliter [mL] minimum volume), or 8-ounce glass jars;

- Appropriate sample containers and sample preservation solutions (see Table 3-3); and
- A cooler with ice.

Surface Water Sampling Procedures

- Submerge a dedicated beaker, glass jar, or the appropriate sample container into the water. If a beaker or glass jar is used, slowly pour the contents into the appropriate sample containers;
- Add preservatives (if necessary) as indicated in Table 3-3 and label the sample containers as specified in Section 3.2.8;
- Measure pH, temperature, specific conductance, ORP, DO, and turbidity from another (unpreserved) aliquot;
- Place samples in a cooler maintained with ice at 4 °C; and
- Label, package, and ship samples in accordance with the procedure specified in Section 3.2.8.

3.2.4 Sediment Sample Location Establishment

Soils near and sediments within Cayuga Creek will be characterized by sampling along a series of transects to determine the nature and extent of contaminated sediment and soil along and within the creek. Figure 3-1 shows proposed transect locations. Table 3-4 lists the proposed transect, surface soil, and sediment sample quantity. Prior to the EEEPC field team collecting samples, the EEEPC PM and NYSDEC PM will conduct a site walkover and mark the transect positions, and make any field adjustments, as necessary. Field adjustments will be made to bias the sampling effort to sediment depositional areas, as sediments are the primary concern.

Table 3-4 Proposed Core and Sample Quantities, Depew Landfill OU-2, Depew, New York

Stream Reach	Sample Location Area	Transects To Be Sampled	Sediment Core Locations	Sediment Sample Quantities	Soil Sample Locations	Soil Sample Quantities
Upgradient	In-stream sediment	U-1, U-2	5	10	0	0
	Floodplain soils	U1, U-2	0	0	0	0
	Upland soils	U1, U-2	0	0	0	0
Landfill	In-stream sediment area with exposed bedrock	D-02 through D-04	6	18	0	0

Table 3-4 Proposed Core and Sample Quantities, Depew Landfill OU-2, Depew, New York

Stream Reach	Sample Location Area	Transects To Be Sampled	Sediment Core Locations	Sediment Sample Quantities	Soil Sample Locations	Soil Sample Quantities
	In-stream sediments with exposed bedrock	D-01, D5 through D-08	10	30	0	0
	Zurbrick Road Hillside soils	Z-1, Z-2, Z3, Z4	0	0	12	24
Below Bridge	In-stream sediment	D09 through D-12	12	36	0	0
	Floodplain soils	D09 through D-12	0	0	8	16
	Upland soils	D09 through D-12	0	0	8	16
Total Coring Locations			**33**		**28**	
Total Sediment Samples				**94**		
Total Soil Samples						**56**

Note: Sample point quantities are estimated based on available information. Actual quantity will depend on prevailing field characteristics at the time of sampling.

3.2.4.1 Coring and Sampling in and around Cayuga Creek

For planning purposes, the creek portion under study in this RI/FS has been divided into three segments. The background segment consists of the stream portion extending approximately 500 feet north of the sewer force main that traverses the Cayuga Creek. The landfill segment consists of the entire frontage of the OU-1 landfill study area, extending from the landfill's northeast corner to the Borden Road bridge. This segment measures approximately 3,000 feet. The third creek segment consists of approximately the first 1,000 feet of creek extending south (downstream) of the Borden Road bridge over Cayuga Creek.

Fourteen transects will be established at along Cayuga Creek. Two upgradient transects will be approximately 250 feet apart. The eight transects along the OU-1 landfill area will start approximately just upstream of where the force main sewer line travels beneath the creek, and extend to just upstream of the Borden Road bridge; they will be spaced approximately 400 feet apart. The four transects downstream of the Borden Road bridge will start approximately on the south side of the Bridge and extend for approximately 1,000 feet; they will be spaced approximately 400 feet apart. Transect locations are shown in Figure 3-1. Note that the exact position of transects will be established during the pre-sampling site visit.

As shown in Figure 3-2, a maximum of seven locations will be cored along each transect. The quantity of coring locations depends on the transect position relative to the landfill, presence of sediment, and the presence of a floodplain. The seven core transect locations consist of three sediment cores from within the creek (one center and one core each from the northern and southern shores, respectfully); one core from within the floodplain of each shore, if floodplains are present; and two

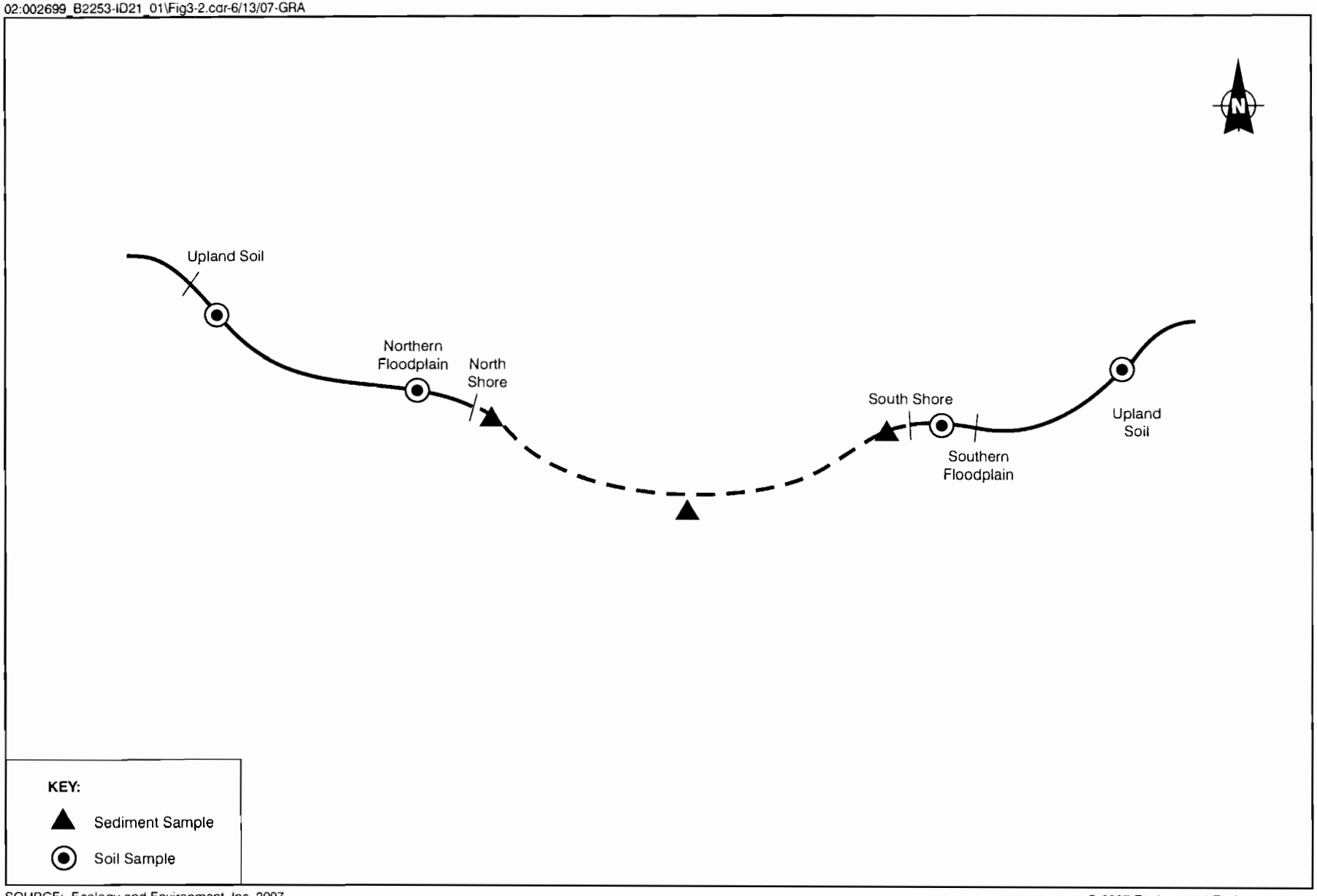

Figure 3-2 Proposed Sediment and Soil Sampling Along Transects
Depew Village Landfill Site, OU-2
Depew, New York

off-bank (also termed upland) cores located at least 5 feet above the nearest high-water mark on each shore. Sediment samples will characterize the creek sediment, floodplain samples will characterize the soils that consist of silt deposits from flood stage flow, and off-bank samples will be collected to define the outermost limit of elevated lead concentrations in soil along the creek valley.

Upstream samples will be collected along two transects (U-1 and U-2) located to provide background conditions. Transects downstream of the sewer force main are numbered D-1 through D12.

Upstream sample locations will be selected to provide the 10 sediment/floodplain samples needed to define background sediment conditions. Soil data from OU-1 will be used to determine background soil conditions. On the downstream side, OU-1 landfill floodplain and off-bank soils have been characterized along the landfill frontage. Furthermore, sampling of the floodplain across from OU-1 showed no lead concentrations exceeding regulatory criteria except in the area of the Zurbrick Road hillside. Therefore, sampling along transects D01 through D08 will consist of only sampling the sediment. The Zurbrick Road hillside soils will be characterized by additional sampling, as described below.

Transects downstream of OU-1 (D9 through D12) will have both north and south floodplain locations drilled, if such features are present. Off-bank (upland) cores will be drilled from all of these locations, regardless of whether floodplains are present.

Soil and sediment collection will be conducted using a combination of soil coring via a Macrocore® sampler, hand auger, shovel, or other possible device. Sediment texture, presence or absence of sheens and odors, potential contamination sources, and other visually observable characteristics will be recorded for each core. Samples will be collected for the analyses listed on Table 3-1.

Landfill and Downstream Sediment Core Samples

Sediment sampling will include approximately centerline samples and shoreline samples. At each location, one sample will be collected from the surface (0 to 6 inches) and one from the 6 to 12-inch interval. If core refusal is reached at 1-foot penetration or less, no other samples will be collected. If core penetration is more than 1 foot, continuous additional samples will be collected at 1-foot intervals until refusal is reached. For cost estimating purposes, it is assumed that a maximum of three sediment samples will be collected from all sediment sample points except the creek centerline on the east side of OU-1. No samples are planned for those four transects because the creek flows on exposed bedrock and there is no sediment present to sample. In addition, duplicate samples will also be collected in the field at a rate of 5% (one per 20 field samples). Matrix spike/matrix spike duplicate (MS/MSD) samples also will be collected at a rate of 5% (see Table 3-1).

Sediment cores will be advanced to refusal or to a 4-foot limit; whichever is reached first. Samples will be collected from the 0 to 6-inch, 6 to 12-inch, and 12 to 24-inch depth intervals. A maximum average sample quantity of three samples per location is assumed for cost planning purposes. At all floodplain and off-bank core locations, cores will be drilled to a maximum depth of 4 feet; however, samples will be collected from the 0 to 6-inch and 6 to 12-inch depth intervals only. EEEPC has not added a contingency factor for the number of samples in the event; the total quantities for each analysis stated in Table 3-1 is the total quantity budgeted. Sampling methodologies are presented in Section 3.2.4.2.

All sediment samples will be submitted for total analyte list (TAL) metals, total organic carbon (TOC), total solids, and total volatile solids. Six samples will also be submitted for acid volatile sulfides analysis. In addition, another six representative sediment samples will also be analyzed for polychlorinated biphenyls (PCB)/pesticides, total compound list (TCL) SVOCs, total sulfides and simultaneously extracted metals (SEM). SEM metals will include cadmium, copper, nickel, lead, and zinc.

Samples will be collected, labeled, packaged, and shipped according to procedures outlined in Section 3.2.8.

Floodplain and Off-Bank Soil Samples

Floodplain and off-bank (upland) soil samples will be collected to accurately define an outer limit of the horizontal extent of lead contamination beyond the edges of stream banks, including in the floodplains an in the uplands. Floodplain and off-bank soil sampling will not be collected at transects D01 through D09, as they are located along OU-1 and were previously characterized.

At each location, one sample will be collected from the near surface (0 to 6 inches) and one from the 6 to 12-inch interval. If core refusal is reached at a 1-foot penetration or less, no other samples will be collected. If core penetration is more than 1 foot down, the sampling core will continue to be advanced to refusal to determine the sediment lithology. However, no additional samples will be collected.

Floodplain and off-bank soil samples will be submitted for TAL metals and total solids only. Samples will be collected, labeled, packaged, and shipped according to procedures outlined below.

Zurbrick Road Hillside Soils

Soils along the Zurbrick Road Hillside will be sampled at three locations along each of four transects (numbered Z-1 through Z-4) located in the area between Zurbrick Road and the Cayuga Creek to quantify the horizontal extent of

contamination, and to the extent feasible, to quantify the vertical contamination. At each sample point along the transects, the coring device will be advanced until native materials are reached, or until the refusal is reached, or until the depth limit of the sampling method is reached; whichever occurs first. One sample will be collected from the 0 to 6-inch depth interval, and one sample will be collected from the first interval below any black fill that is present. If no such fill is present, then the sample will be collected at the 6 to 12-inch depth interval. Soil sampling on the hillside is expected to be done using a Macrocore® sampler.

Upstream Sediment Core Samples

Ten upstream sediments will be collected to provide data essential to conducting a statistical analysis of the background lead concentrations that can be used for comparison to adjacent and downstream levels. Upstream sediment samples will be submitted for the same analyses as downstream sediment samples. At least one of the upstream samples among the six representative sediment samples will also be analyzed for PCB/pesticides, TCL SVOCs, AVS, and SEM. SEM metals will include cadmium, copper, nickel, lead, and zinc.

Samples will be collected in the general area of transects U-1 and U-2 shown on Figure 3-1. Exact locations will be selected in the field by NYSDEC and EEEPC project managers during the initial transect selection process.

3.2.4.2 Sediment/Soil Coring and Sampling Methodology

A sediment coring device (Macrocore® sampler with acetate liners, hand auger, shovel, or equivalent) will be driven via a tripod, slam bar, or sledge hammer. Although coring is the preferred method, in areas where coring is not possible based upon the nature of the deposits, other techniques such as using a shovel or other hand implements may be used.

Equipment

- Coring equipment;
- Standard or digital camera;
- GPS;
- Photoionization detector (PID) or flame ionization detector (FID);
- Dedicated stainless-steel spoons;
- Dedicated plastic and stainless-steel bowls;
- Measuring tape (100-foot or longer);

- Field notebook;
- Appropriate sample containers (see QAPP in Appendix B); and
- Coolers with ice.

Procedures

- Collect soil cores from grade to refusal, or to a maximum depth of 4 feet; whichever is first attained;
- Using a GPS unit, one EEEPC team member shall identify and record the sample position;
- Following extraction of each sample core, the core sampler shall place the core on a sheet of plastic and cut open the acetate liner, exposing the soil core. Use a stainless-steel spoon to penetrate into the soil and scan the core with a PID or FID to evaluate the presence and concentration of organic vapors;
- Record the lithologic description and air monitoring equipment readings in the field notebook;
- Identify the appropriate sample interval (e.g., 0 to 6 inches, 6 to 12 inches) and analyses for the location, collect the appropriate sample volume, and place directly into a dedicated stainless-steel or plastic bowl (for samples not submitted for organic analyses). Mix the sample portions thoroughly, removing all stones and debris, and fill the appropriate sample containers (see Table 3-2);
- Fill appropriate sample container(s) (see QAPP in Appendix B). Place the sample in a cooler maintained with ice at 4°C;
- Decant excess liquid as necessary and secure jar;
- Label, package, and ship samples according to procedures described in Section 3.2.8;
- Decontaminate the down-hole coring equipment according to the procedures described in Section 3.2.11, while IDW shall be managed as described in Section 3.2.12; and
- Place a wooden stake or pin flag back at the sample location if the core location is at off-bank and floodplain core location.

3.2.5 Stream Data Collection

The field team shall also collect the following creek physical characteristic at each surface water sampling point:

- **Water Depth.** Read at sample locations using a carpenter's rigid ruler; and
- **Water Flow Rate.** Using a flow meter, measure the flow at each sample point.

The following shall be recorded at each sediment core location:

- **Sediment Depth.** Read at sample locations by measuring the sediment core length, or by inserting a graduated steel rod of carpenter's rigid ruler into the sediment;
- **Substrate Composition.** Describe the material comprising the substrate;
- **Streambed Morphology.** Describe morphology, including characteristics and configuration of Cayuga Creek streambed exposed bedrock and the transport and deposition of sediments occurring along the eastern, southern, and western creek segments of the site study area;
- **Water Flow Rate.** Using a flow meter, measure the flow at each sample point. Flow rate measurements shall be read at three stream locations to the northeast and south sides of the creek and at the middle of the creek; and
- **Other Significant Characteristics.** Record any other significant stream characteristics observed, such as the presence of leachate outbreaks along the stream banks, presence of oil sheens or discoloration, or visible fill presence. Any aquatic biota presence observed also shall be noted.

The overall hydraulic characteristics of the creek prevailing at the time of sampling will be evaluated and recorded. Additionally, stream gauging data from the United States Geological Survey location near Lancaster will also be obtained for the sampling effort time interval.

3.2.6 Sample Point Surveying

EEEPC will use a hand-held GPS unit to determine the latitude and longitudinal locations of each sediment sampling point. (Surface water points will be co-located with sediment points; thus separate location measurement of them will not be necessary.)

Survey data will be used to develop an updated site base map; a copy of which will be presented in the RI report.

3.2.7 Air Monitoring

The site safety officer will perform air monitoring for organic vapors during sample collection to characterize airborne contaminant concentrations. Air monitoring will be conducted for the protection of site workers and the community and to characterize environmental samples. The HASP (see Appendix A) specifies the monitoring equipment to be used.

Action levels for each organic vapor monitoring are detailed in the HASP. Organic vapor concentrations will be measured in the workers' breathing zone air.

3.2.8 Sample Containerization, Preservation, Labeling, Packaging, and Shipping

Sample Containers and Preservation

The volumes and containers for soil and water samples as well as sample preservation and holding time requirements are presented in Tables 3-2 and 3-3. Pre-washed sample containers will be provided by the analytical laboratory and prepared in accordance with EPA bottle-washing procedures.

Water sample preservation will consist of using pre-preserved sample containers for sample portions to be submitted for any metals analysis. Soil and water samples will be stored on ice pending delivery to the analytical laboratory.

Sample Labeling

All samples will be assigned a unique sample identifier system, as follows:

Sediment and Soil Samples. Sediment sample will be labeled using the following numbering system:

DL2-M-TXX-PN - AA

Where DL2 = project name abbreviation Depew Landfill OU-2

M = Matrix:
- SD = Sediment
- SS = Surface soil
- SB = Subsurface soil

TXX = Transect number

PP –Node Creek Bank, Node position
- N = North side of creek
- S = South Side of creek
- CC = Creek center
- U = Off-bank (upland)
- F = Floodplain

C = Creek

A – Sample depth interval
A = 0 to 6-inch
B = 6 to 12-inch
C = 12 to 24-inch
D = 24 to 26-inch
E = 36 to 48-inch

For example, a surface soil sample collected from the 0 to 6-inch depth interval from the south side floodplain on transect T12 would be:

DL2-SS-D12-SF-A

Surface Water Samples. Surface water samples will be labeled using the following numbering system:

DL2-SWA

Where DL2 = project name abbreviation Depew Landfill OU-2

SW = Surface Water

A = Surface water sample number
Samples shall be numbered consecutively from downstream to upstream.

For example, a surface water sample collected at location 4 would be numbered:

DL2-SW04

Labels for each sample container will contain the sample identifier, sample collection date, analytical parameters, and type of preservation used, if any. The sampler will initial any change in the label information prepared prior to sample collection.

Sample Packaging and Shipping

Soil and water sample containers will be placed inside sealed plastic bags as a precaution against cross-contamination caused by sample container leakage or breakage. They will be placed in coolers in such a manner as to eliminate the chance of breakage during shipment and ice in plastic bags will be placed in the coolers to keep the samples at 4°C throughout shipment. A temperature blank consisting of a 40-mL volatile organic analysis (VOA) vial half full of water shall be added to each cooler being shipped.

Sample shipment will be performed in strict accordance with all applicable United States Department of Transportation (DOT) regulations. The samples will be

shipped via overnight express to the subcontracted laboratory. Arrangements will be made with the subcontracted laboratory's PM for samples that are to be delivered to a laboratory on a weekend so that holding times are not compromised. The shipping address is as follows:

Mitkem Corporation
175 Metro Center Boulevard
Warwick, RI 02886-1755
Phone: 401-732-3400
Fax: 401-732-3499

Sample Custody

A sample is considered to be in custody under the following conditions:

- The sample is directly in one's possession;
- The sample is clearly in one's view;
- The sample is placed in a locked location; or
- The sample is in a designated secure area.

In order to demonstrate that the samples and coolers have not been tampered with during shipment, adhesive custody seals will be used. The custody seals will be placed across the cooler lids in such a manner that they will be visibly disturbed upon opening the cooler. The seals will be signed or initialed and dated by field personnel at the time they are affixed to the cooler.

Documentation of sample chain of custody (COC) is necessary to demonstrate that the integrity of the samples has not been compromised between collection and delivery to the laboratory. A COC record will accompany each sample cooler to document the transfer of custody from the field to the laboratory. All information requested in the COC record will be completed. One copy of the COC form will be retained by the sampler and placed in the project records file. The remaining pages will be sealed in a plastic bag and placed inside the cooler. Upon receipt at the laboratory, the COC forms will be completed. It is the responsibility of the subcontracted laboratory to document the condition of custody seals and sample integrity upon receipt.

3.2.9 Analytical Program

Table 3-1 provides a summary of sampling and analysis for the Depew Village Landfill OU-2. The laboratory will follow the NYSDEC ASP of June 2000 (or as updated July 2005 when implemented) for all analytical methods, quality assurance (QA)/quality control (QC), holding times, and reporting requirements except as noted below. Laboratory data will be reported with full data package (Level B) and standard laboratory electronic data deliverable (EDD) consistent

with the Automatic Data Review (ADR) program. Sample analytical results will undergo electronic data processing and review for usability by EEEPC. The data reviews (both hard copy and electronic) will follow the NYSDEC Guidance for the Development of Data Usability Summary Reports (DUSRs), June 1999. Electronic data will be reviewed and validated by the ADR program. Project-specific qualifiers and data review requirements are listed in Appendix B.

3.2.10 Field Quality Control Samples

Table 3-1 provides a summary of field QC samples to be collected for the investigation. Field QC samples include field duplicates, rinsate blanks, and additional volume for laboratory MS/MSD analyses. Field duplicates will be collected from both aqueous and solid samples at a frequency of one per 20 samples. One rinsate blanks will be collected from each type of non-dedicated or non-disposable sampling equipment used in the project. Rinsate blanks will be collected by passing deionized water over the equipment after decontamination is complete. One rinsate blank will be collected from each non-dedicated equipment item for every 20 samples collected. The only non-dedicated equipment that may be used during this investigation is the hand auger and the stainless-steel sample mixing bowls. Additional details pertaining to field QC requirements are included in the QAPP in Appendix B.

3.2.11 Decontamination Procedures

Reusable equipment will be decontamination in accordance with NYSDEC-approved procedures. Sampling methods and equipment have been chosen to minimize decontamination requirements and prevent the possibility of cross-contamination. Most all sampling equipment is dedicated; it will be disposed of after use. All intrusive sampling equipment will be decontaminated before each location is cored and sampled. Special attention will be given to all down-hole tooling, which will be decontaminated prior to each use, and following the last use for each day.

The following procedure will be used for sampling equipment:

- Initially remove all foreign matter;
- Scrub with brushes in Alconox solution;
- Rinse with deionized water; and
- Allow to air dry.

3.2.12 Investigation-derived Waste Management

The following types of IDW are expected to be generated: soil cuttings from soil coring, decontamination water from soil and groundwater sampling, groundwater from well development and purging, and spent PPE. Waste streams will be segregated to the maximum extent possible.

In order to minimize the generation of drummed waste, IDW will be handled in the following manner:

- **Soil cuttings from core holes:** Soil cuttings from core holes will be either placed back into the core hole or released to the ground surface. If field volatile organic compound (VOC) readings indicate the core cuttings are contaminated with organic volatiles, or if the core contains black fill, the cuttings will be containerized in a DOT drum and left on site and the NYSDEC PM will be contacted to arrange for proper waste management based on the quantity and contaminant concentrations present. Note that the project cost estimate does not include a hazardous waste management and disposal cost because the quantity and contaminant concentrations are not yet known.

- **Decontamination waters:** Fluids generated during decontamination of coring equipment will be released on site.

- **Used PPE:** Unless field screening indicates that PPE and other solid wastes are contaminated to the level that they can not be disposed of as non-hazardous waste, this material will be double-bagged and disposed of off site as non-regulated solid waste.

3.2.13 Preliminary Data Evaluation and Interim Remedial Measures (IRMs) Recommendations

EEEPC will evaluate the information and data obtained during the field investigation. Based on these evaluations, EEEPC might make recommendations to the NYSDEC project manager to conduct interim remedial measures (IRMs) appropriate for the site.

3.3 Health and Environmental Exposure Risk Assessment

To meet the remaining RI/FS objectives listed in Section 1, EEEPC will conduct an HEERA update. EEEPC generated an HEERA using the information gathered during the OU-1 RI that documented whether conditions at the site posed an actual or potential risk to human health. Under this OU-2 RI, EEEPC will update the existing OU-1 HEERA with the new sediment, surface water, and soil data. The updated HEERA will be presented in the OU-2 RI report.

3.4 Fish and Wildlife Resources Impact Analysis

EEEPC prepared a Fish and Wildlife Resource Impact Analysis (FWRIA) through Step IIA for OU-1. This analysis will be used as the basis to prepare an analysis through Step IIA for the reaches of the Cayuga Creek and its associated embankments that are under study. The FWRIA through Step IIA update will consist of EEEPC using RI data that (1) documents whether conditions at the site pose an actual or potential ecological risk; (2) identifies the contaminants that

pose any actual or potential ecological risk; and (3) provides data and information useful for evaluating remedial alternatives. EEEPC will follow the guidance set forth in the *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites* (NYSDEC 1994) under Step I - Site Description (Section A [Site Maps]; Section B [Description of Fish and Wildlife Resources]; and Section C [Description of Fish and Wildlife Resource Values]) and under Step II - Contaminant-Specific Impact Assessment (Section A [Pathway Analysis], as applicable and appropriate, based on the findings of the RI. The remaining Step II efforts, including Section B [Criteria-Specific Analysis]; and Section C [Toxic Effect Analysis]), will not be conducted under this work scope.

Based upon the nature and extent of the impacted sediments and the surface water analytical results, a determination will be made on the potential bioavailability of lead in the creek. This will include assessment o the AVS/SEM and organic carbon results and comparing them to established equilibrium portioning sediment benchmarks. EEEPC's interpretation of the RI data may result in recommending additional AVS/SEM sampling and analysis.

3.5 Reporting

Per direction of NYSDEC, one combined RI/FS report will be prepared for OU-2. The Report will be developed according to NYSDEC's Draft Department of Environmental Restoration *Technical Guidance for Site Investigation and Remediation*. The RI portion of the report will be prepared as follows:

The draft and final RI sections will include the work plan activities consisting of the site background data compiled during the investigation, investigation procedures undertaken, data gathered, and data interpretation. The draft report will also discuss any additional activities which are required to adequately define the extent of the soil, surface water, and sediment contamination for OU-2. The document will also include a photo log that documents site activities and findings, as well as soil surface water, and sediment sampling logs. All analytical data will be reviewed by an EEEPC data validator who will prepare DUSRs for all analytical data based on the ADR tables. DUSRs for all laboratory chemical analytical data will also be included in the report. The report will also present the updated FWRIA Step IIA findings, as well as the updated HEERA.

An updated conceptual site model representing site sources, affected media, release mechanisms, and potential contamination pathways and receptors will be developed. The analytical data will be screened against New York State Standards, Criteria, and Guidelines (SCGs) or other guidance to be considered (TBC). This shall include *Part 375* for subsurface soils; NYSDEC Class GA and Class C, Ambient Water Quality Standards and Guidance Values for groundwater and surface water, respectively; NYSDEC, Division of Fish, Wildlife, and Marine Resources, Technical Guidance for Screening Contaminated Sediments; and EPA Region III Risk-Based Concentration (RBC) tables.

The final RI/FS report will be completed after comments are received and the final report submitted to NYSDEC in electronic format on a compact disk. The disk will contain a single searchable PDF file and will contain all report appendices, volumes, plans, and drawings together. Non-text based documents may be submitted in their native formats on the file.

3.6 Feasibility Study

This task includes the development of an FS to meet NYSDEC goals to be protective of human health and the environment. The FS report will be included as part of the RI report, but the FS sections will be conducted generally based upon guidance by NYSDEC and EPA for RI/FS work (NYSDEC Final TAGM No. 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites*, and EPA, *Guidance for Conducting Remedial Investigations and Feasibility Studies* under the Comprehensive Environmental Response, Compensation and Liability Act [CERCLA]; and 6 New York Code of Rules and Regulations, Part 375). One draft and one final report have been assumed in the cost estimate.

The process to be followed for the FS section of the report will be:

- Development of remedial alternatives/technologies identification;
- Screening of alternatives;
- Detailed analysis of alternatives/draft FS report; and
- Final FS report, recommendation, and PRAP support.

Each component is discussed in the following subsections.

3.6.1 Development of Remedial Alternatives/Technologies Identification

In order to develop remedial alternatives appropriate to address concerns at the site, remedial action objectives (RAOs) will be identified with the objective to protect human health and the environment and address the contaminants of concern, exposure routes and receptor(s), and proposed cleanup goals.

The first step in the FS process is to determine which areas may require remediation. This is accomplished by first developing proposed cleanup goals set for each media based on media-specific receptors and exposure routes. For this project, proposed cleanup goals will be based on NYS SCGs or other guidance TBC.

Once the proposed cleanup goals have been established, the area and subsequent media volumes requiring remediation will be calculated by comparing RI analytical data to the proposed cleanup goals. Three remedial alternatives and

technologies, including general response actions (i.e., such as treatment, containment, or disposal) will then be identified and evaluated to meet these proposed cleanup goals.

3.6.2 Screening of Alternatives

The alternatives developed in Section 3.6.1 will be screened against the criteria of effectiveness, implementation, and cost to select the most appropriate alternatives for detailed alternative development. Past performance (i.e., demonstrated technology) and operating reliability will also be considered. The initial list of remedial alternatives and the screened list, along with discussion and justifications, will be submitted in the form of a Preliminary Screening of Alternatives Report to the NYSDEC PM for review. After department review, EEEPC will meet with NYSDEC project representatives to assess the process and examine the alternatives that passed the screening.

3.6.3 Detailed Analysis of Alternatives/Draft FS Report

As noted, the RI and FS will be presented in a combined report. The FS sections of the report are described below:

Based on the technology screening in Section 3.6.2, each remedial alternative will be fully evaluated both individually and comparatively based on the following eight criteria:

- Overall protection of human health and the environment;
- Compliance with SCGs and TBCs (as appropriate);
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, and volume;
- Short-term impacts and effectiveness;
- Implementability and technical reliability;
- Community acceptance; and
- Cost.

Based on the evaluation in the detailed analysis, EEEPC will develop draft FS sections for the report for the NYSDEC's review.

3.6.4 Final Feasibility Study Report and PRAP Support

Upon review of the draft RI/FS report by NYSDEC, EEEPC will develop a final RI/FS. EEEPC will provide data, limited to available information, as necessary for NYSDEC to help NYSDEC prepare a PRAP for the site.

3.7 Public Participation

EEEPC will participate in the community involvement process. It is anticipated that the extent of EEEPC's involvement with this process will be limited to attending one public participation meeting, providing copies of the OU-2 RI/FS to the document repositories established for the OU-1 RI/FS, and assisting NYSDEC with preparation of a maximum of two fact sheets. A Citizen Participation Plan is provided in Appendix C.

4 Schedule

The project schedule is presented in Table 4-1.

Table 4-1 Proposed Project Schedule

Milestone	Date	Rationale
WA received	5/24/07	
Acknowledge receipt of WA	5/24/07	Ten days after WA issuance
Scoping session	Previously conducted	If not already conducted, conduct within approximately three weeks of WA receipt
Submit Task 1 work plan	6/14/07	Submit within 21 says of WA receipt, as scoping session was not held
NYSDEC reviews draft WP	6/15 to 7/26/07	Three weeks
NYSDEC submits draft WP review comments; issues NTP* to finalize WP	7/26/07	Six weeks after work plan submittal
Submit final Task 2 RI/FS WP*	8/2/07	One week after NTP
NYSDEC Review	8/3/07 – 8/24/07	Three weeks
NYSDEC Issues NTP for RI/FS	8/24/07	Three weeks following receipt of final WP
EEEPC mobilizes and conducts RI Fieldwork	8/27/13 – 9/14	
Submit IRM recommendation based on investigation data	11/2/07	Within three months after RI/FS NTP (or when deemed necessary by NYSDEC PM)
Submit Preliminary Screening of Alternatives*	11/28/07	
NYSDEC comments on alternatives screening	12/4/07	
Submit draft RI/FS report**	12/21/07	Four months after NTP
NYSDEC comments on draft RI/FS report	1/18/08	Three weeks after receipt of draft RI report
Draft RI/FS report updated	1/21/08 – 2/1/08	Two week period
Submit final RI/FS report*	2/1/08	Two weeks after receipt of NYSDEC comments
Approval of RI/FS report	2/15/08	Two weeks after receipt of final RI/FS report
NYSDEC issues PRAP	2/29/08	Four weeks after receipt of final RI/FS report
PRAP Public Meeting	3/22/08	Three weeks after PRAP issued
NYSDEC issues ROD*	4/15/08	Forty-five days after PRAP issued

Key:

* = Project Milestone.
** = Project Milestone/Performance Evaluation.
EEEPC = Ecology and Environment Engineering, P.C.
IRM = Interim Remedial Measure.
NTP = Notice to proceed.
NYSDEC = New York State Department of Environmental Conservation.
PRAP = Proposed Remedial Action Plan.
RI/FS = Remedial Investigation/Feasibility Study.
ROD = Record of decision.
WA = Work assignment.
WP = Work plan.

5 Staffing Plan

EEEPC proposes the following primary staffing plan for completion of this work assignment:

Contract Manager: David Albers, P.E.; Civil Engineer
Project Manager: Jon Nickerson, CHMM; Geologist

Task 1: Work Plan

Jon Nickerson: Work Plan Preparation
Lea Cervi: Work Plan Preparation
Shawn Gardner: Work Plan Preparation
Marcia Meredith Galloway: Site-specific QAPP Preparation
Tom Siener: Preparation of Site-specific HASP
David Albers, P.E. and George Lukert: Document Review, Costing, and Schedule Development

Task 2: Site Characterization

Alec Humann: Field Team Leaders, Project Geologist
Andrew Francisco, Jim Mays, or Larry Roedl: Field Assistant/Site Safety Officer
Marcia Meredith Galloway: Quality Assurance Officer
Jon Nickerson, CHMM; Brian Cervi; Sara Allen-Mochrie; Allison Wyman: Primary Report Authors
David Albers, P.E., and Gene Florentino, P.G.: RI Report Portion Review

Task 3: FS Report

Shawn Gardner, and Gary Klawinski: Primary Report Authors
David Albers, P.E., and Gene Florentino, P.G.: Report Review

Personnel biographies are available upon request.

6 References

Ecology and Environment, Inc., 2005, *Draft Quality Assurance Project Plan (QAPP) for New York State Department of Environmental Conservation Superfund Projects*, Lancaster, New York.

New York State, 2001, Statewide Digital Orthoimagery Program, 2001, Annual Lot.

NYSDEC, 2000, *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, prepared by the Division of Environmental Remediation, Albany, New York.

A Site-specific Health and Safety Plan

Revision 4
July 2007

ecology and environment, inc.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Project: Depew Village Landfill OU-2 RI/FS

Project No.: 000699.ID21

TDD/PAN No.: n/a

Project Location: Cayuga Creek by Borden Road, Depew, NY

Proposed Date of Field Activities: August-September, 2007

Project Director: G. Florentino

Project Manager: Jon Nickerson

Prepared by: J. Nickerson Date Prepared: July 2007

Approved by: _____ Date Approved: 7-30-07

1. INTRODUCTION

1.1 POLICY

It is E & E's policy to ensure the health and safety of its employees, the public, and the environment during the performance of work it conducts. This site-specific health and safety plan (SHASP) establishes the procedures and requirements to ensure the health and safety of E & E employees for the above-named project. E & E's overall safety and health program is described in *Corporate Health and Safety Program for Toxic and Hazardous Substances* (CHSP). After reading this plan, applicable E & E employees shall read and sign E & E's Site-Specific Health and Safety Plan Acceptance form.

This SHASP has been developed for the sole use of E & E employees and is not intended for use by firms not participating in E & E's training and health and safety programs. Subcontractors are responsible for developing and providing their own safety plans.

This SHASP has been prepared to meet the following applicable regulatory requirements and guidance:

Applicable Regulation/Guidance
29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)
Other:

1.2 SCOPE OF WORK

Description of Work: Conduct a remedial investigation of the Cayuga Creek in a segment extending 500 feet upstream and 1,000 feet downstream of the Depew Village Landfill site. Conduct surface water sampling at 8 points along Creek, as well.

Equipment/Supplies: Attachment 1 contains a checklist of equipment and supplies that will be needed for this work.

The following is a description of each numbered task:

Task Number	Task Description
01	Surface Soil Sampling via hand auger
02	Sediment Sampling in and along Creek
03	Surface Water Sampling

1.3 SITE DESCRIPTION

Site Map: A site map or sketch is attached at the end of this plan.

Site History/Description (see project work plan for detailed description): The Depew Village Landfill received municipal waste as well as foundry waste from approximately 1940 through 1961. Waste ash was also placed along the Zurbrick Road hillside, directly across form

the tip of the landfill. The Cayuga Creek may be receiving influent from this site and/or from waste located along the Zurbrick Road hillside.

Is the site currently in operation?

The landfill is no longer operated. The Creek continues to flow past the site

Locations of Contaminants/Wastes: Buried ash located in the southern end of the site and along the creek banks is of concern. Waste concrete and tires are present in the creek study area.

Types and Characteristics of Contaminants/Wastes:

☐ Liquid	X Solid	☐ Sludge	☐ Gas/Vapor
☐ Flammable/Ignitable	☐ Volatile	☐ Corrosive	☐ Acutely Toxic
☐ Explosive	☐ Reactive	☐ Carcinogenic	☐ Radioactive
☐ Medical/Pathogenic	Other: _____		

2. ORGANIZATION AND RESPONSIBILITIES

E & E team personnel shall have on-site responsibilities as described in E & E's standard operating procedure (SOP) for Site Entry Procedures (GENTECH 2.2) The project team, including qualified alternates, is identified below.

Name	Site Role/Responsibility
Alec Humann	Team Leader
Larry Roedl or Andy Francisco	Site Safety Officer

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3. TRAINING

Prior to work, E & E team personnel shall have received training as indicated below. As applicable, personnel shall have read the project work plan, sampling and analysis plan, and/or quality assurance project plan prior to project work.

Training	Required
40-Hour OSHA HAZWOPER Initial Training and Annual Refresher (29 CFR 1910.120)	X
Annual First Aid/CPR	X
Hazard Communication (29 CFR 1910.1200)	X
40-Hour Radiation Protection Procedures and Investigative Methods	
8-Hour General Radiation Health and Safety	
Radiation Refresher	
DOT and Biannual Refresher	X
Other:	

4. MEDICAL SURVEILLANCE

4.1 MEDICAL SURVEILLANCE PROGRAM

E & E field personnel shall actively participate in E & E's medical surveillance program as described in the CHSP and shall have received, within the past year, an appropriate physical examination and health rating.

E & E's health and safety record (HSR) form will be maintained on site by each E & E employee for the duration of his or her work. E & E employees should inform the site safety officer (SSO) of any allergies, medical conditions, or similar situations that are relevant to the safe conduct of the work to which this SHASP applies.

Is there a concern for radiation at the site? ☐ Yes X No
If no, go to 5.1.

4.2 RADIATION EXPOSURE

4.2.1 External Dosimetry

Thermoluminescent Dosimeter (TLD) Badges: TLD badges are to be worn by all E & E field personnel on certain required sites.

Pocket Dosimeters: _____

_____

Other: _____

_____

4.2.2 Internal Dosimetry

☐ Whole body count ☐ Bioassay ☐ Other

Requirements: _____

_____

4.2.3 Radiation Dose

Dose Limits: E & E's radiation dose limits are stated in the CHSP. Implementation of these dose limits may be designated on a site-specific basis.

Site-Specific Dose Limits: _____

ALARA Policy: Radiation doses to E & E personnel shall be maintained as low as reasonably achievable (ALARA), taking into account the work objective, state of technology available, economics of improvements in dose reduction with respect to overall health and safety, and other societal and socioeconomic considerations.

5. SITE CONTROL

5.1 SITE LAYOUT AND WORK ZONES

Site Work Zones: Work zone is along Cayuga Creek and its creek banks; and along the Zurbrick Road hillside. Refer to the map or site sketch, attached at the end of this plan. .

Site Access Requirements and Special Considerations: Site access is through the gate entry located at the north end of the site. This gate can be accessed either by Village or County personnel. E & E will be given permission by the Village to have the gate remain open after hours, with the requirement that the E & E team will close the gate at the end of each day they are on site.

Illumination Requirements: All site work will be conducted during daylight hours; therefore, artificial illumination at the site is not a concern.

Sanitary Facilities (e.g., toilet, shower, potable water): Field team should use the sanitary facilities at the Burger King restaurant located at the corner of Broadway and Transit roads. Avoid using the sanitary facilities at the Village's Department of Public Works buildings, located on site.

On-Site Communications: Team leader shall be equipped with a cellular telephone. Telephone service is also available at the Village Public works buildings.

Other Site-Control Requirements: Lock gate when leaving if field team is the last one out.

5.2 SAFE WORK PRACTICES

Daily Safety Meeting: A daily safety meeting will be conducted for all E & E personnel and documented on the Daily Safety Meeting Record form or in the field logbook. The information and data obtained from applicable site characterization and analysis will be addressed in the safety meetings and also used to update this SHASP, as necessary.

Work Limitations: Work shall be limited to a maximum of 12 hours per day. If 12 consecutive days are worked, at least one day off shall be provided before work is resumed. Work will be conducted in daylight hours unless prior approval is obtained and the illumination requirements in 29 CFR 1910.120(m) are satisfied.

Weather Limitations: Work shall not be conducted during electrical storms. Work conducted in other inclement weather (e.g., rain, snow) will be approved by project management and the regional safety coordinator or designee.

Other Work Limitations: Cold stress is a concern for work during winter months. Slip/trip/fall hazards a concern due to site terrain and possible presence of ice.

Buddy System: Field work will be conducted in pairs of team members according to the buddy system.

Line of Sight: Each field team member shall remain in the line of sight and within verbal communication of at least one other team member.

Eating, Drinking, and Smoking: Eating, drinking, smoking, and the use of tobacco products shall be prohibited in the exclusion and contamination reduction areas, at a minimum, and shall only be permitted in designated areas.

Contamination Avoidance: Field personnel shall avoid unnecessary contamination of personnel, equipment, and materials to the extent practicable.

Sample Handling: Protective gloves of a type designated in Section 7 will be worn when containerized samples are handled for labeling, packaging, transportation, and other purposes.

Other Safe Work Practices: Watch for slip/trip/fall hazards in wooded areas when walking to creek access points. Watch for vehicle traffic when working at the north end of the site, near any buildings or driveways. Wear life vests when sampling in Creek if water depth is greater than one foot.

6. HAZARD EVALUATION AND CONTROL

6.1 PHYSICAL HAZARD EVALUATION AND CONTROL

Potential physical hazards and their applicable control measures are described in the following table for each task.

Hazard	Task Number	Hazard Control Measures
Biological (flora, fauna, etc.)	All, in summer time	▪ Potential hazard: _ Poison Ivy ▪ Establish site-specific procedures for working around identified hazards. ▪ Other:
Cold Stress	All tasks, if conducted in winter or	▪ Provide warm break area and adequate breaks. ▪ Provide warm noncaffeinated beverages.

Hazard	Task Number	Hazard Control Measures
	during rainy weather	▪ Promote cold stress awareness. ▪ See *Cold Stress Prevention and Treatment* (attached at the end of this plan if cold stress is a potential hazard).
Compressed Gas Cylinders	n/a	▪ Use caution when moving or storing cylinders. ▪ A cylinder is a projectile hazard if it is damaged or its neck is broken. ▪ Store cylinders upright and secure them by chains or other means. ▪ Other:
Confined Space	n/a	▪ Ensure compliance with 29 CFR 1910.146. ▪ See SOP for Confined Space Entry. Additional documentation is required. ▪ Other:
Drilling	03, 04	▪ See SOP for Health and Safety on Drilling Rig Operations. Additional documentation may be required. ▪ Landfill caps will not be penetrated without prior discussions with corporate health and safety staff. ▪ Other:
Drums and Containers	n/a	▪ ▪ Ensure compliance with 29 CFR 1910.120(j). ▪ Consider unlabeled drums or containers to contain hazardous substances and handle accordingly until the contents are identified. ▪ Inspect drums or containers and assure integrity prior to handling. ▪ Move drums or containers only as necessary; use caution and warn nearby personnel of potential hazards. ▪ Open, sample, and/or move drums or containers in accordance with established procedures; use approved drum/container-handling equipment. ▪ Other:
Electrical	03, 04	▪ Ensure compliance with 29 CFR 1910 Subparts J and S. ▪ Locate and mark energized lines. ▪ De-energize lines as necessary. ▪ Ground all electrical circuits. ▪ Guard or isolate temporary wiring to prevent accidental contact. ▪ Evaluate potential areas of high moisture or standing water and define special electrical needs. ▪ Other:
Excavation and Trenching	n/a	▪ Ensure that excavations comply with and personnel are informed of the requirements of 29 CFR 1926 Subpart P.

Hazard	Task Number	Hazard Control Measures
		▪ Ensure that any required sloping or shoring systems are approved as per 29 CFR 1926 Subpart P. ▪ Identify special personal protective equipment (PPE) (see Section 7) and monitoring (see Section 8) needs if personnel are required to enter approved excavated areas or trenches. ▪ Maintain line of sight between equipment operators and personnel in excavations/trenches. Such personnel are prohibited from working in close proximity to operating machinery. ▪ Suspend or shut down operations at signs of cave in, excessive water, defective shoring, changing weather, or unacceptable monitoring results. ▪ Other:
Fire and Explosion	3, 4	▪ Inform personnel of the location(s) of potential fire/explosion hazards. ▪ Establish site-specific procedures for working around flammables. ▪ Ensure that appropriate fire suppression equipment and systems are available and in good working order. ▪ Define requirements for intrinsically safe equipment. ▪ Identify special monitoring needs (see Section 8). ▪ Remove ignition sources from flammable atmospheres. ▪ Coordinate with local fire-fighting groups regarding potential fire/explosion situations. ▪ Establish contingency plans and review daily with team members. ▪ Other:
Heat Stress	All tasks, if conducted when ambient temperatures exceed 75°F.	▪ Provide cool break area and adequate breaks. ▪ Provide cool noncaffeinated beverages. ▪ Promote heat stress awareness. ▪ Use active cooling devices (e.g., cooling vests) where specified. ▪ See *Heat Stress Prevention and Treatment* (attached at the end of this plan if heat stress is a potential hazard).
Heavy Equipment Operation	03 and 04n/a	▪ Define equipment routes, traffic patterns, and site-specific safety measures. ▪ Ensure that operators are properly trained and equipment has been properly inspected and maintained. Verify back-up alarms. ▪ Ensure that ground spotters are assigned and informed of proper hand signals and communication protocols. ▪ Identify special PPE (Section 7) and monitoring (Section 8)

Hazard	Task Number	Hazard Control Measures
		needs. ▪ Ensure that field personnel do not work in close proximity to operating equipment. ▪ Ensure that lifting capacities, load limits, etc., are not exceeded. ▪ Other:
Heights (Scaffolding, Ladders, etc.)	n/a	▪ Ensure compliance with applicable subparts of 29 CFR 1910. ▪ Identify special PPE needs (e.g., lanyards, safety nets, etc.) ▪ Other:
Noise	03 and 04	▪ Establish noise level standards for on-site equipment/operations. ▪ Inform personnel of hearing protection requirements (Section 7). ▪ Define site-specific requirements for noise monitoring (Section 8). ▪ Other:
Overhead Obstructions	3, 4	▪ Wear hard hat. ▪ Other:
Power Tools	n/a	▪ Ensure compliance with 29 CFR 1910 Subpart P. ▪ Other:
Sunburn	All tasks, if conducted during bright sun, in any season	▪ Apply sunscreen. ▪ Wear hats/caps and long sleeves. ▪ Other:
Utility Lines	3, 4	▪ Identify/locate existing utilities prior to work. ▪ Ensure that overhead utility lines are at least 25 feet away from project activities. ▪ Contact utilities to confirm locations, as necessary. ▪ ▪ Other:
Weather Extremes	All tasks, especially if conducted during the winter or summer months	▪ Potential hazards: ▪ Establish site-specific contingencies for severe weather situations. ▪ Provide for frequent weather broadcasts. ▪ Weatherize safety gear, as necessary (e.g., ensure eye wash units cannot freeze, etc.). ▪ Identify special PPE (Section 7) needs.

Hazard	Task Number	Hazard Control Measures
		▪ Discontinue work during severe weather. ▪ Other:
Other:		▪ ▪
Other:		▪ ▪

6.2 CHEMICAL HAZARD EVALUATION AND CONTROL

6.2.1 Chemical Hazard Evaluation

Potential chemical hazards are described by task number in Table 6-1. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Table 6-1

CHEMICAL HAZARD EVALUATION

Task Number	Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/ Description	FID/PID	
		PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
All	Arsenic	0.010 mg/m3	0.002 mg/m3	0.01	Yes	Inhalation, skin absorption, skin and/or eye contract, ingestion	Ulceration of nssal septum, gastrointestinal disturbances, peripheral neuropath, respiratory irritation,	n/a	None	None
All	Lead	0.050 mg/m3	0.01 mg/m3	0.05 mg/m3	Yes	Inhalation, ingestion, eye and/or skin contact	Weakness, exhaustion, eye irritation, hypotension	n/a	None	None
All	Cadmium	0.005 mg/m3	LFC	.01 mg/m3	No	Inhalation, Ingestion	Difficulty breathing; headache, chills, muscle aches, nausea, vomiting, diarrhea, loss of sense of smell	n/a	None	None
All	Nickel	---	0.015 mg/m3	---	Yes	Inhalation, ingestion, eye and/or skin contact	Sensitization dermatitis, allergic asthma, pneumonitis	n/a	None	None

Note: Use an asterisk (*) to indicate known or suspected carcinogens.

6.2.2 Chemical Hazard Control

An appropriate combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below published exposure levels (see Section 6.2.1).

Applicable Engineering/Administrative Control Measures: Establish personal decontamination area within site gates; bag all PPE; site visitors not allowed into study area without wearing proper protection.

PPE: See Section 7.

6.3 RADIOLOGICAL HAZARD EVALUATION AND CONTROL

6.3.1 Radiological Hazard Evaluation

Potential radiological hazards are described below by task number. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Task Number	Radionuclide	DAC (μCi/ml)	Route(s) of Exposure	Major Radiation(s)	Energy(s) (MeV)	Half-Life

6.3.2 Radiological Hazard Control

Engineering/administrative controls and work practices shall be instituted to reduce and maintain employee exposures to a level at or below the permissible exposure/dose limits (see sections 4.2.3 and 6.3.1). Whenever engineering/administrative controls and work practices are not feasible or effective, any reasonable combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below permissible exposure/dose limits.

Applicable Engineering/Administrative Control Measures: _____

PPE: See Section 7.

7. LEVEL OF PROTECTION AND PERSONAL PROTECTIVE EQUIPMENT

7.1 LEVEL OF PROTECTION

The following levels of protection (LOPs) have been selected for each work task based on an evaluation of the potential or known hazards, the routes of potential hazard, and the performance specifications of the PPE. On-site monitoring results and other information obtained from on-site activities will be used to modify these LOPs and the PPE, as necessary, to ensure sufficient personnel protection. The authorized LOP and PPE shall only be changed with the approval of the regional safety coordinator or designee. Level A is not included below because Level A activities, which are performed infrequently, will require special planning and addenda to this SHASP.

Task Number	B	C	D	Modifications Allowed
1		(X)	X	
2		(X)	X	Use of hip waders will replace rubber boot covers
3		(X)	X	Use of hip waders will replace rubber boot covers

Note: Use "X" for initial levels of protection. Use "(X)" to indicate levels of protection that may be used as site conditions warrant.

7.2 PERSONAL PROTECTIVE EQUIPMENT

The PPE selected for each task is indicated below. E & E's PPE program complies with 29 CFR 1910.120 and 29 CFR 1910 Subpart I and is described in detail in the CHSP. Refer to 29 CFR 1910 for the minimum PPE required for each LOP.

PPE	Task Number/LOP					
	1	2	3			
Full-face APR		(X)	(X)			
PAPR						
Cartridges:						
P100						
GMC-P100		(X)	(X)			
GME-P100						
Other:						
Positive-pressure, full-face SCBA						
Spare air tanks (Grade D air)						
Positive-pressure, full-face, supplied-air system						
Cascade system (Grade D air)						
Manifold system						
5-Minute escape mask						
Safety glasses	X	X	X			

PPE	Task Number/LOP					
	1	2	3			
Monogoggles						
Coveralls/clothing						
Protective clothing:						
Tyvek	(X)					
Saranex		(X)	(X)			
Other:						
Splash apron						
Inner gloves:						
Cotton						
Nitrile						
Latex	X	X	X			
Other:						
Outer gloves:						
Viton						
Rubber						
Neoprene	(X)	(X)	(X)			
Nitrile						
Other:						
Work gloves	(X)	(X)	(X)			
Safety boots (as per ANSI Z41)	X	X				
Neoprene safety boots (as per ANSI Z41)	(X)	(X)				
Boot covers (type:)	(X)	Hip Waders	Hip Waders			
Hearing protection (type: ___)						
Hard hat	X	X	X			
Face shield						
Other:						
Other:						

8. HEALTH AND SAFETY MONITORING

Health and safety monitoring will be conducted to ensure proper selection of engineering/administrative controls, work practices, and/or PPE so that employees are not exposed to hazardous substances at levels that exceed permissible exposure/dose limits or published exposure levels. Health and safety monitoring will be conducted using the instruments, frequency, and action levels described in Table 8-1. Health and safety monitoring instruments shall have been appropriately calibrated and/or performance-checked prior to use.

Table 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]	
X PID (e.g., HNu IS-101) ☐ FID (e.g., OVA 128-GC) ☐ TVA	1	Phenol/VOCs	Breathing zone, split spoon or sample tube	Continuous for BZ; sample spoons when opened	**Unknown Vapors** Background to 1 ppm above background: Level D 1 to 5 ppm above background: Level C 5 to 500 ppm above background: Level B >500 ppm above background: Level A	**Contaminant-Specific**
Oxygen Meter/Explosimeter	n/a	Methane	Breathing zone, downhole	Continuous for top of borehole and for downwind of test pits during excavation	**Oxygen** <19.5% or >22.0%: Evacuate area; eliminate ignition sources; reassess conditions. 19.5 to 22.0%: Continue work in accordance with action levels for other instruments.	**Explosivity** ≤10% LEL: Continue work in accordance with action levels for other instruments; monitor continuously for combustible atmospheres. >10% LEL: Evacuate area; eliminate ignition sources; reassess conditions.
Radiation Alert Monitor (Rad-mini or RAM-4)	n/a	Unknown radioactive presence	Breathing zone, split spoon or sample tube	Continuous for BZ; sample spoons when opened, and during pit excavation	<0.1 mR/hr: Continue work in accordance with action levels for other instruments. ≥0.1 mR/hr: Evacuate area; reassess work plan and contact radiation safety specialist.	
Mini-Ram Particulate Monitor	n/a	Particulates	Upwoind and downwind of probe	Continuous	**General/Unknown** Evaluate health and safety measures when dust levels exceed 2.5 milligrams per cubic meter.	**Contaminant-Specific**
HCN/H_2S (Monitox)	n/a		Breathing zone, split spoon or sample tube collected at northwest corner of, by POTW	Continuous for BZ; sample spoons when opened, and during pit excavation	≥4 ppm: Leave area and consult with SSO.	

Table 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]
Draeger Colorimetric Tubes					**Tube** **Action Level** **Action**
Air Monitor/Sampler Type:_____ Sampling medium: _____					**Action Level** **Action**
Personal Sampling Pump Type:_____ Sampling medium: _____					**Action Level** **Action**
Micro R Meter					<2 mR/hr: Continue work in accordance with action levels for other instruments. 2 to 5 mR/hr: In conjunction with a radiation safety specialist, continue work and perform stay-time calculations to ensure compliance with dose limits and ALARA policy. >5 mR/hr: Evacuate area to reassess work plan and evaluate options to maintain personnel exposures ALARA and within dose limits.
Ion Chamber					See micro R meter action levels above.
Radiation Survey Ratemeter/Scaler with External Detector(s)					**Detector** **Action Level** **Action**
Noise Dosimeter (Sound Level Meter)					≤85 decibels as measured using the A-weighed network (dBa): Use hearing protection if exposure will be sustained throughout work shift. >85 dBA: Use hearing protection. >120 dBA: Leave area and consult with safety personnel.
Other:					

Table 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]
Other:					

[a] Unless stated otherwise, airborne contaminant concentrations are measured as a time-weighted average in the worker's breathing zone. Acceptable concentrations for known airborne contaminants will be determined based on OSHA/NIOSH/ACGIH and/or NRC exposure limits. As a guideline, 1/2 the PEL/REL/TLV, whichever is lower should be used.

9. DECONTAMINATION PROCEDURES

All equipment, materials, and personnel will be evaluated for contamination upon leaving the exclusion area. Equipment and materials will be decontaminated and/or disposed and personnel will be decontaminated, as necessary. Decontamination will be performed in the contamination reduction area or any designated area such that the exposure of uncontaminated employees, equipment, and materials will be minimized. Specific procedures are described below.

Equipment/Material Decontamination Procedures (specified by work plan): Most all sampling equipment is either dedicated, or does not contact the site ground. Stainless steel homogenization bowls: Use TSP and water solution to decontaminate.

Ventilation: All decontamination procedures will be conducted in a well-ventilated area.

Personnel Decontamination Procedures: Use PPE. Use alcohol wipes to clean hands and face following on-site activities. Wash hands before eating.

PPE Requirements for Personnel Performing Decontamination: Level D.

Personnel Decontamination in General: Following appropriate decontamination procedures, all field personnel will wash their hands and face with soap and potable water. Personnel should shower at the end of each work shift.

Disposition of Disposable PPE: Disposable PPE must be rendered unusable and disposed as indicated in the work plan.

Disposition of Decontamination Wastes (e.g., dry wastes, decontamination fluids, etc.):

- **Decontamination waters:** These waters will be monitored for organic vapor presence using a PID. If organic vapors are not emitted and there is no visible sheen on the water surface, they will be discharged on site. Decontamination water exhibiting a sheen or emitting PID readings at concentrations above background will be containerized.
- **Used PPE:** Unless field screening indicates that PPE and other solid wastes are contaminated to the level that they can not be disposed of as non-hazardous waste, this material will be double-bagged and disposed of off site as non-regulated solid waste.

10. EMERGENCY RESPONSE

This section contains additional information pertaining to on-site emergency response and does not duplicate pertinent emergency response information contained in earlier sections of this plan (e.g., site layout, monitoring equipment, etc.). Emergency response procedures will be rehearsed regularly, as applicable, during project activities.

10.1 EMERGENCY RESPONSIBILITIES

All Personnel: All personnel shall be alert to the possibility of an on-site emergency; report potential or actual emergency situations to the team leader and SSO; and notify appropriate emergency resources, as necessary.

Team Leader: The team leader will determine the emergency actions to be performed by E & E personnel and will direct these actions. The team leader also will ensure that applicable incidents are reported to appropriate E & E and client project personnel and

government agencies.

SSO: The SSO will recommend health/safety and protective measures appropriate to the emergency.

Other: _____

10.2 LOCAL AND SITE RESOURCES (including phone numbers)

Ambulance: 911

Hospital: St. Joseph's Hospital, Harlem Road, Cheektowaga

Directions to Hospital (map attached at the end of this plan): Depart site via Depew DPW entrance (Rutherford Road). Turn left (west) onto Broadway. Proceed to Dick Road. Turn right (north) on Dick Road. Follow Genesee Street. Turn left on Genessee. Follow to Harlem Road. Turn left on Harlem. Hospital is on left.

Poison Control: 878-7654 or 1-800222-1222

Police Department: 911

Fire Department: 911

Client Contact: Mr. Randy Hough: 518/402-9475

Site Contact: John Wojcik, Superintendent, Village of Depew

On-Site Telephone Number: Team will have a cell phone. Village DPW office on site: 716/683-5700

Cellular Telephone Number: TBD

Radios Available: No

Other: John Wojcik's cell number: 716/912-5288

10.3 E & E EMERGENCY CONTACTS

E & E Emergency Operations Center (24 Hours):	716/684-8060
Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) 716/655-1260 (home)
Regional Office Contact: Tom Siener	716/662-4740 (home)
Other:	716/684-8060 (office)
a. E & E Emergency Response Center:	716/684-8940
b. Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) 716/655-1260 (home)
c. Assistant Corporate Safety Director, Tom Siener:	716/684-8060 (office) 716/662-4740 (home)

10.4 OTHER EMERGENCY RESPONSE PROCEDURES

On-Site Evacuation Signal/Alarm (must be audible and perceptible above ambient noise and light levels): Sound horn of site vehicle 3 times

On-Site Assembly Area: At site entry gate.

Emergency Egress Route to Get Off Site: Take any appropriate path to the site entry gates.

Off-Site Assembly Area: at the wastewater treatment plant parking area north of the site.

Preferred Means of Reporting Emergencies: Use of cellular telephones.

Site Security and Control: In an emergency situation, personnel will attempt to secure the affected area and control site access.

Emergency Decontamination Procedures: Remove all PPE. If boots are soiled, leave them on site. Use alcohol wipes to wash down face and hands.

PPE: Personnel will don appropriate PPE when responding to an emergency situation. The SSO and Section 7 of this plan will provide guidance regarding appropriate PPE.

Emergency Equipment: Appropriate emergency equipment is listed in Attachment 1. Adequate supplies of this equipment shall be maintained in the support area or other approved work location.

Incident Reporting Procedures: Report to Randy Hough, Jon Nickerson, Paul Jonmaire.

ATTACHMENT 1
EQUIPMENT/SUPPLIES CHECKLIST

INSTRUMENTATION	No.
OVA	
Thermal desorber	
O_2/explosimeter w/cal. Kit	
Photovac tip	
MiniRAE w 10.2 ev lamp	1
Magnetometer	
Pipe locator	
Weather station	
Draeger tube kit (tubes: _____)	
Brunton compass	
Real-time cyanide monitor	
Real-time H_2S monitor	
Heat stress monitor	
Noise equipment	
Personal sampling pumps and supplies	
MiniRam dust monitor (Use PM10 monitor)	
Mercury monitor	
Spare batteries (type: _____)	
RADIATION EQUIPMENT/SUPPLIES	
Documentation forms	
Portable ratemeter	
Scaler/ratemeter	
1" NaI gamma probe	
2" NaI gamma probe	
ZnS alpha probe	
GM pancake probe	
Tungsten-shielded GM probe	
Micro R meter	
Ion chamber	
Alert monitor	
Pocket dosimeter	
Dosimeter charger	
Radiation warning tape	
Radiation decon supplies	
Spare batteries (type: _____)	

EMERGENCY EQUIPMENT	No.
First aid kit	1
Stretcher	
Portable eye wash	
Blood pressure monitor	
Fire blanket	
Fire extinguisher	
Thermometer (medical)	
Spill kit	
DECONTAMINATION EQUIPMENT	
Wash tubs	
Buckets	1
Scrub brushes	2
Pressurized sprayer	1
Spray bottle	2
Detergent (type: TSP)	
Solvent (type: _____)	
Plastic sheeting	3
Tarps and poles	
Trash bags	box
Trash cans	
Masking tape	
Duct tape	2
Paper towels	6
Face mask	
Face mask sanitizer	14
Step ladders	
Distilled water	10
Deionized water	

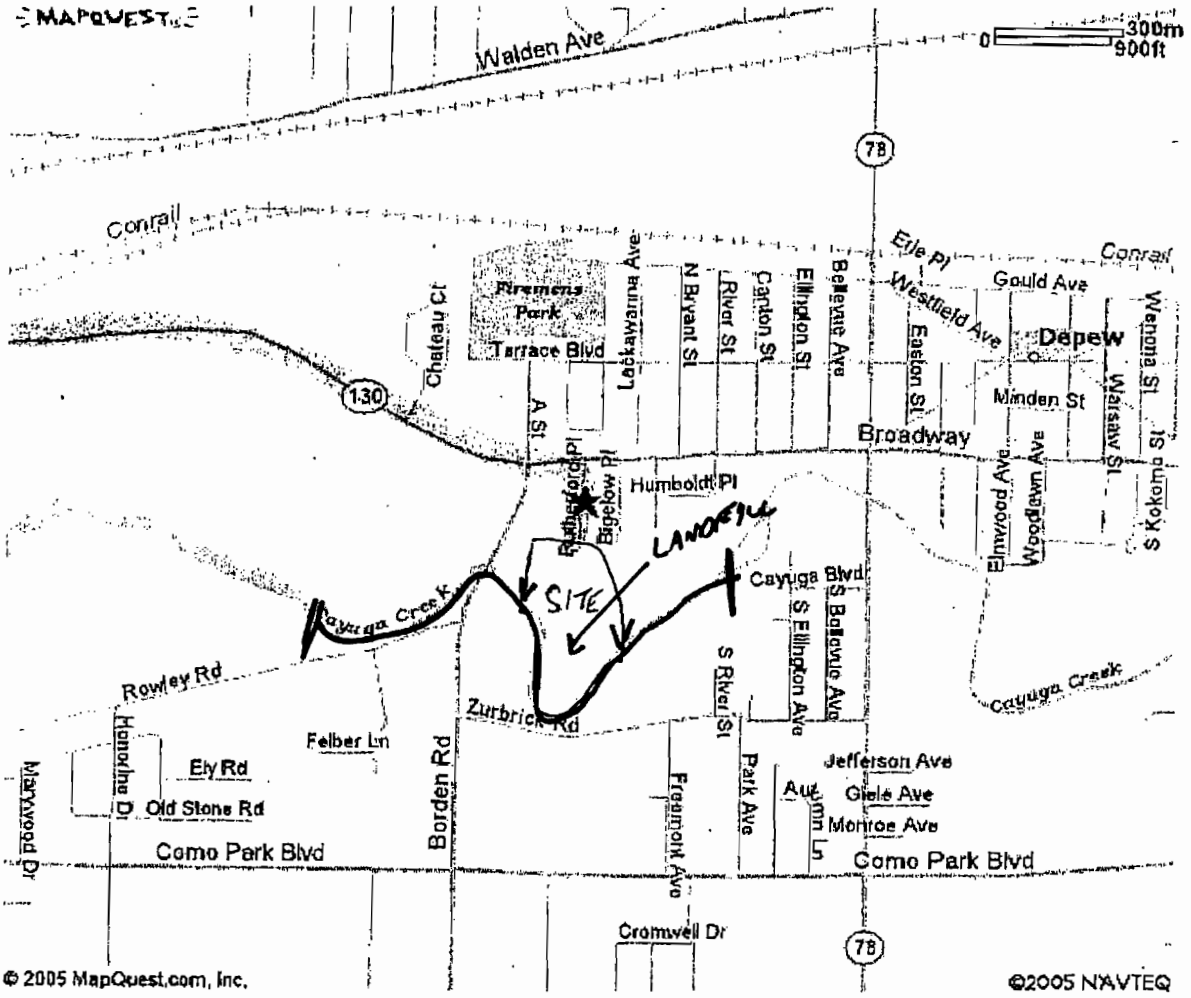
ATTACHMENT 1
EQUIPMENT/SUPPLIES CHECKLIST

SAMPLING EQUIPMENT		MISCELLANEOUS (Cont.)	
8-oz. bottles		Gatorade or equivalent	X
Half-gallon bottles		Tables	
VOA bottles		Chairs	
String		Weather radio	
Hand bailers		Two-way radios	
Thieving rods with bulbs		Binoculars	
Spoons	150	Megaphone	
Knives		Cooling vest	
Filter paper			
Bottle labels	X		
Hand Auger	1		
Macrocore samplinger and sleeves	1		
		SHIPPING EQUIPMENT	
		Coolers	x
MISCELLANEOUS		Paint cans with lids, 7 clips each	
Pump		Vermiculite	
Surveyor's tape		Shipping labels	
100' Fiberglass tape	2	DOT labels:	
300' Nylon rope		"Up"	
Nylon string		"Danger"	
Surveying flags		"Inside Container Complies ..."	
Camera	1	Hazard Group	
Film		Strapping tape	
Bung wrench		Baggies	x
Soil auger		Custody seals	
Pick		Chain-of-custody forms	x
Shovel	1	Express shipment forms	x
Catalytic heater		Clear packing tape	x
Propane gas		Permanent markers	x
Banner tape		Marking paint	X
Surveying meter stick		GPS	X
Chaining pins and ring		Flow meter	X
Logbooks (X large, small)	3	Wood stakes or pin flags	X
Required MSDSs		Deionized water	X
Intrinsically safe flashlight			
Potable water			

MAPQUEST

[200-299] Rutherford Pl
Depew NY
14043 US

Notes:

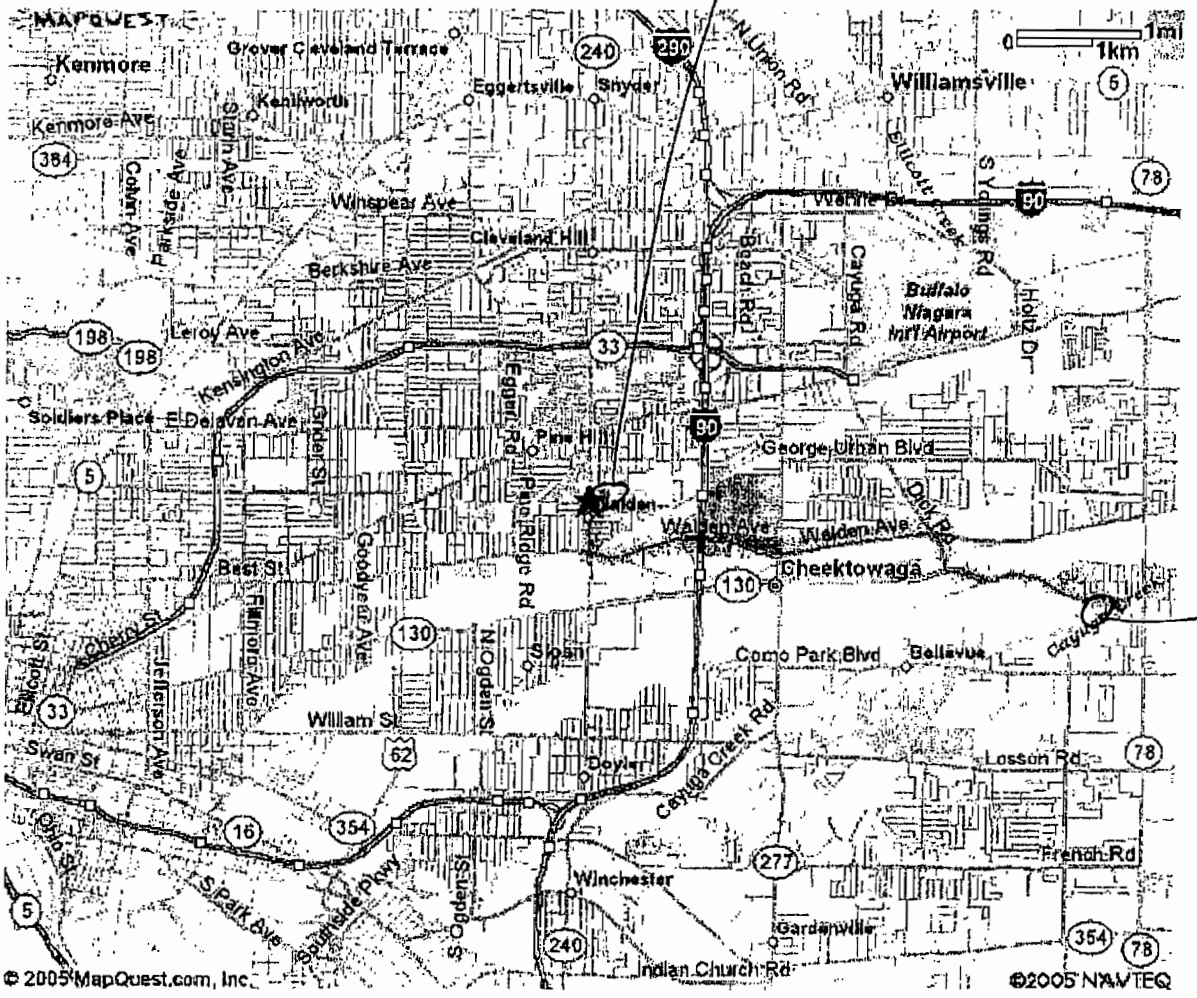


MAPQUEST

2605 Harlem Rd
Cheektowaga NY
14225-4018 US

St. Joseph's Hospital

Notes:

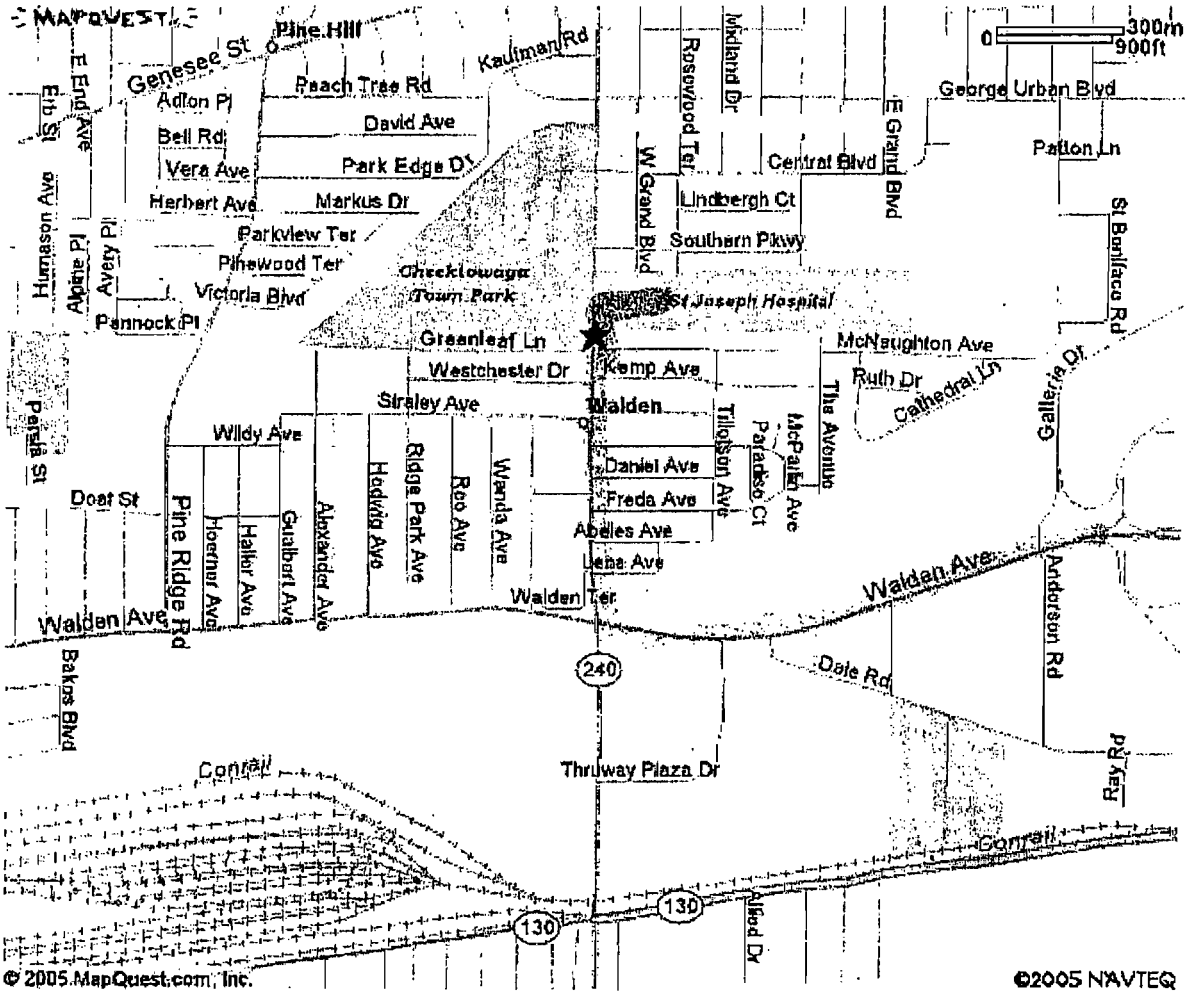


SITE

MAPQUEST

2605 Harlem Rd
Cheektowaga NY
14225-4018 US

Notes:



NIOSH Pocket Guide to Chemical Hazards

Hydrogen sulfide	CAS 7783-06-4
H_2S	RTECS MX1225000
Synonyms & Trade Names Hydrosulfuric acid, Sewer gas, Sulfuretted hydrogen	DOT ID & Guide 1053 117

Exposure Limits	
	NIOSH REL: C 10 ppm (15 mg/m^3) [10-minute]
	OSHA PEL†: C 20 ppm 50 ppm [10-minute maximum peak]

IDLH 100 ppm See: 7783064	Conversion 1 ppm = 1.40 mg/m^3

Physical Description
Colorless gas with a strong odor of rotten eggs. [Note: Sense of smell becomes rapidly fatigued & can NOT be relied upon to warn of the continuous presence of H_2S. Shipped as a liquefied compressed gas.]

MW: 34.1	BP: -77°F	FRZ: -122°F	Sol: 0.4%
VP: 17.6 atm	IP: 10.46 eV	RGasD: 1.19	
Fl.P: NA (Gas)	UEL: 44.0%	LEL: 4.0%	

Flammable Gas

Incompatibilities & Reactivities
Strong oxidizers, strong nitric acid, metals

Measurement Methods
NIOSH 6013; OSHA ID141
See: NMAM or OSHA Methods

Personal Protection & Sanitation	First Aid (See procedures)
Skin: Frostbite Eyes: Frostbite Wash skin: No recommendation Remove: When wet (flammable) Change: No recommendation Provide: Frostbite	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support

Important additional information about respirator selection
Respirator Recommendations NIOSH
Up to 100 ppm: (APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against the compound of concern/(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/(APF = 10) Any supplied-air respirator*/(APF = 50) Any self-contained breathing apparatus with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin and/or eye contact

Symptoms Irritation eyes, respiratory system; apnea, coma, convulsions; conjunctivitis, eye pain, lacrimation (discharge of tears), photophobia (abnormal visual intolerance to light), corneal vesiculation; dizziness, headache, lassitude (weakness, exhaustion), irritability, insomnia; gastrointestinal disturbance; liquid: frostbite

Target Organs Eyes, respiratory system, central nervous system

See also: INTRODUCTION See ICSC CARD: 0165 See MEDICAL TESTS: 0119

NIOSH Pocket Guide to Chemical Hazards

Arsenic (inorganic compounds, as As)

CAS 7440-38-2 (metal)

As (metal)

RTECS CG0525000 (metal)

Synonyms & Trade Names
Arsenic metal: Arsenia
Other synonyms vary depending upon the specific As compound.
[Note: OSHA considers "Inorganic Arsenic" to mean copper acetoarsenite & all inorganic compounds containing arsenic except ARSINE.]

DOT ID & Guide
1558 152 (metal)
1562 152 (dust)

Exposure Limits

NIOSH REL: Ca C 0.002 mg/m^3 [15-minute] See Appendix A

OSHA PEL: [1910.1018] TWA 0.010 mg/m^3

IDLH Ca [5 mg/m^3 (as As)] See: 7440382

Conversion

Physical Description
Metal: Silver-gray or tin-white, brittle, odorless solid.

MW: 74.9	BP: Sublimes	MLT: 1135°F (Sublimes)	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 5.73 (metal)
Fl.P: NA	UEL: NA	LEL: NA	

Metal: Noncombustible Solid in bulk form, but a slight explosion hazard in the form of dust when exposed to flame.

Incompatibilities & Reactivities
Strong oxidizers, bromine azide [Note: Hydrogen gas can react with inorganic arsenic to form the highly toxic gas arsine.]

Measurement Methods
NIOSH 7300, 7900; OSHA ID105
See: NMAM or OSHA Methods

Personal Protection & Sanitation
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily
Provide: Eyewash, Quick drench

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin absorption, skin and/or eye contact ingestion

Symptoms Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin, [potential occupational carcinogen]

Target Organs Liver, kidneys, skin, lungs, lymphatic system

Cancer Site [lung & lymphatic cancer]

See also: INTRODUCTION See ICSC CARD: 0013 See MEDICAL TESTS: 0017

NIOSH Pocket Guide to Chemical Hazards

Cadmium dust (as Cd)	CAS 7440-43-9 (metal)
Cd (metal)	RTECS EU9800000 (metal)
Synonyms & Trade Names Cadmium metal: Cadmium Other synonyms vary depending upon the specific cadmium compound.	**DOT ID & Guide** 2570 154 (compounds)

Exposure Limits	NIOSH REL*: Ca See Appendix A [*Note: The REL applies to all Cadmium compounds (as Cd).]
	OSHA PEL*: [1910.1027] TWA 0.005 mg/m^3 [*Note: The PEL applies to all Cadmium compounds (as Cd).]

IDLH Ca [9 mg/m^3 (as Cd)] See: IDLH INDEX	**Conversion**

Physical Description
Metal: Silver-white, blue-tinged lustrous, odorless solid.

MW: 112.4	BP: 1409°F	MLT: 610°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 8.65 (metal)
Fl.P: NA	UEL: NA	LEL: NA	

Metal: Noncombustible Solid in bulk form, but will burn in powder form.

Incompatibilities & Reactivities
Strong oxidizers; elemental sulfur, selenium & tellurium

Measurement Methods
NIOSH 7048; OSHA ID121, ID125G, ID189, ID206
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: No recommendation Eyes: No recommendation Wash skin: Daily Remove: No recommendation Change: Daily	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, ingestion

Symptoms Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]

Target Organs respiratory system, kidneys, prostate, blood

Cancer Site [prostatic & lung cancer]

See also: INTRODUCTION See ICSC CARD: 0020 See MEDICAL TESTS: 0035

NIOSH Pocket Guide to Chemical Hazards

Lead	CAS 7439-92-1
Pb	RTECS QF7525000
Synonyms & Trade Names Lead metal, Plumbum	**DOT ID & Guide**

Exposure Limits	NIOSH REL*: TWA 0.050 mg/m^3 See Appendix C [*Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.]
	OSHA PEL*: [1910.1025] TWA 0.050 mg/m^3 See Appendix C [*Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.]

IDLH 100 mg/m^3 (as Pb) See: 7439921	**Conversion**

Physical Description
A heavy, ductile, soft, gray solid.

MW: 207.2	BP: 3164°F	MLT: 621°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 11.34
Fl.P: NA	UEL: NA	LEL: NA	

Noncombustible Solid in bulk form.

Incompatibilities & Reactivities
Strong oxidizers, hydrogen peroxide, acids

Measurement Methods
NIOSH 7082, 7105, 7300, 7700, 7701, 7702, 9100, 9105; OSHA ID121, ID125G, ID206
See: NMAM or OSHA Methods

Personal Protection & Sanitation
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: Daily
Remove: When wet or contaminated
Change: Daily

First Aid (See procedures)
Eye: Irrigate immediately
Skin: Soap flush promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH/OSHA

Up to 0.5 mg/m^3: (APF = 10) Any air-purifying respirator with a high-efficiency particulate filter/(APF = 10) Any supplied-air respirator

Up to 1.25 mg/m^3: (APF = 25) Any supplied-air respirator operated in a continuous-flow mode/(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter

Up to 2.5 mg/m^3: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode/(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece

Up to 50 mg/m^3: (APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Up to 100 mg/m^3: (APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes Inhalation, ingestion, skin and/or eye contact

Symptoms Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation

eyes; hypotension
Target Organs Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue
See also: INTRODUCTION See ICSC CARD: 0052 See MEDICAL TESTS: 0127

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NIOSH Pocket Guide to Chemical Hazards

Nickel metal and other compounds (as Ni)

CAS 7440-02-0 (Metal)

Ni (Metal)

RTECS QR5950000 (Metal)

Synonyms & Trade Names
Nickel metal: Elemental nickel, Nickel catalyst
Synonyms of other nickel compounds vary depending upon the specific compound.

DOT ID & Guide

Exposure Limits

NIOSH REL*: Ca TWA 0.015 mg/m^3 See Appendix A [*Note: The REL does not apply to Nickel carbonyl.]

OSHA PEL*†: TWA 1 mg/m^3 [*Note: The PEL does not apply to Nickel carbonyl.]

IDLH Ca [10 mg/m^3 (as Ni)] See: 7440020

Conversion

Physical Description
Metal: Lustrous, silvery, odorless solid.

MW: 58.7	BP: 5139°F	MLT: 2831°F	Sol: Insoluble
VP: 0 mmHg (approx)	IP: NA		Sp.Gr: 8.90 (Metal)
Fl.P: NA	UEL: NA	LEL: NA	

Metal: Combustible Solid; nickel sponge catalyst may ignite SPONTANEOUSLY in air.

Incompatibilities & Reactivities
Strong acids, sulfur, selenium, wood & other combustibles, nickel nitrate

Measurement Methods
NIOSH 7300; OSHA ID121, ID125G
See: NMAM or OSHA Methods

Personal Protection & Sanitation
Skin: Prevent skin contact
Eyes: No recommendation
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily

First Aid (See procedures)

Skin: Water flush immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Important additional information about respirator selection
Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator with a high-efficiency particulate filter/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms Sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]

Target Organs Nasal cavities, lungs, skin

Cancer Site [lung and nasal cancer]

See also: INTRODUCTION See ICSC CARD: 0062 See MEDICAL TESTS: 0156

APPENDIX A—NIOSH Potential Occupational Carcinogens

New Policy

For the past 20 plus years, NIOSH has subscribed to a carcinogen policy that was published in 1976 by Edward J. Fairchild, I Director for Cincinnati Operations, which called for "no detectable exposure levels for proven carcinogenic substances" (Anna York Academy of Sciences, 271:200-207, 1976). This was in response to a generic OSHA rulemaking on carcinogens. Becau in science and in approaches to risk assessment and risk management, NIOSH has adopted a more inclusive policy. NIOSH i exposure limits (RELs) will be based on risk evaluations using human or animal health effects data, and on an assessment of be feasibly achieved by engineering controls and measured by analytical techniques. To the extent feasible, NIOSH will proje effect exposure, but also exposure levels at which there may be residual risks. This policy applies to all workplace hazards, in carcinogens, and is responsive to Section 20(a)(3) of the Occupational Safety and Health Act of 1970, which charges NIOSH exposure levels that are safe for various periods of employment, including but not limited to the exposure levels at which no e suffer impaired health or functional capacities or diminished life expectancy as a result of his work experience."

The effect of this new policy will be the development, whenever possible, of quantitative RELs that are based on human and/c well as on the consideration of technological feasibility for controlling workplace exposures to the REL. Under the old policy, F carcinogens were non-quantitative values labeled "lowest feasible concentration (LFC)." [Note: There are a few exceptions to carcinogens (e.g., RELs for asbestos, formaldehyde, benzene, and ethylene oxide are quantitative values based primarily on of detection or technological feasibility). Also, in 1989, NIOSH adopted several quantitative RELs for carcinogens from OSHA' exposure limit (PEL) update.]

Under the new policy, NIOSH will also recommend the complete range of respirators (as determined by the NIOSH Respirato for carcinogens with quantitative RELs. In this way, respirators will be consistently recommended regardless of whether a sub carcinogen or a non-carcinogen.

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Old Policy

In the past, NIOSH identified numerous substances that should be treated as potential occupational carcinogens even though have identified them as such. In determining their carcinogenicity, NIOSH used the OSHA classification outlined in 29 CFR 19 states in part:

> Potential occupational carcinogen means any substance, or combination or mixture of substances, which causes an ir incidence of benign and/or malignant neoplasms, or a substantial decrease in the latency period between exposure ar of neoplasms in humans or in one or more experimental mammalian species as the result of any oral, respiratory or de exposure, or any other exposure which results in the induction of tumors at a site other than the site of administration. definition also includes any substance which is metabolized into one or more potential occupational carcinogens by m

When thresholds for carcinogens that would protect 100% of the population had not been identified, NIOSH usually recomme occupational exposures to

carcinogens be limited to the lowest feasible concentration. To ensure maximum protection from carcinogens through the use protection, NIOSH also recommended that only the most reliable and protective respirators be used. These respirators includ contained breathing apparatus (SCBA) that has a full facepiece and is operated in a positive-pressure mode, or (2) a supplied that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxilia operated in a pressure-demand or other positive-pressure mode.

Recommendations to be Revised

The RELs and respirator recommendations for carcinogens listed in this edition of the *Pocket Guide* still reflect the old policy. RELs and respirator recommendations that reflect the new policy will be included in future editions.

APPENDIX B—Thirteen OSHA-Regulated Carcinogens

Without establishing PELs, OSHA promulgated standards in 1974 to regulate the industrial use of 13 chemicals identified as p occupational carcinogens.

- 2-acetylaminofluorene
- 4-aminodiphenyl

- benzidine
- bis-chloromethyl ether
- 3,3'-dichlorobenzidine
- 4-dimethylaminoazobenzene
- ethyleneimine
- methyl chloromethyl ether
- alpha-naphthylamine
- beta-naphthylamine
- 4-nitrobiphenyl
- N-nitrosodimethylamine
- beta-propiolactone

Exposures of workers to these 13 chemicals are to be controlled through the required use of engineering controls, work practi personal protective equipment, including respirators. See 29 CFR 1910.1003-1910.1016 for specific details of these requirem

Respirator selections in the Pocket Guide are based on NIOSH policy, which considers the 13 chemicals to be potential occu carcinogens.

APPENDIX C—Supplementary Exposure Limits

Aldehydes (Low-Molecular-Weight)

Exposure to acetaldehyde has produced nasal tumors in rats and laryngeal tumors in hamsters, and exposure to malonaldeh produced thyroid gland and pancreatic islet cell tumors in rats. NIOSH therefore recommends that acetaldehyde and malonal considered potential occupational carcinogens in conformance with the OSHA carcinogen policy.

Testing has not been completed to determine the carcinogenicity of acrolein, butyraldehyde (CAS#: 123-72-8), crotonaldehyd glutaraldehyde, glyoxal (CAS#: 107-22-2), paraformaldehyde (CAS#: 30525-89-4), propionaldehyde (CAS#: 624-67-9), propio (CAS#: 123-38-6), and n-valeraldehyde, nine related low-molecular-weight-aldehydes.

However, the limited studies to date indicate that these substances have chemical reactivity and mutagenicity similar to aceta malonaldehyde. Therefore, NIOSH recommends that careful consideration should be given to reducing exposures to these ni aldehydes.

Further information can be found in the "NIOSH Current Intelligence Bulletin 55: Carcinogenicity of Acetaldehyde and Malonal Mutagenicity of Related Low-Molecular-Weight Aldehydes" [DHHS (NIOSH) Publication No. 91-112.]

B Site-specific Quality Assurance Project Plan (QAPP)

Site-Specific Quality Assurance Project Plan (QAPP) Remedial Investigation and Feasibility Study of OU-2 at the Depew Village Landfill Site No. 9-15-105 Depew, New York

June 2007

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway
Albany, New York 12233

NYSDEC Project Manager	Date	EEEPC Project Manager	Date
NYSDEC QA Officer	Date	EEEPC QA Officer	Date

Table of Contents

List of Tables

List of Acronyms

ADR	Automatic Data Review
ASP	Analytical Services Protocol
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EDD	electronic data deliverable
EEEPC	Ecology and Environment Engineering, P.C.
FS	feasibility study
NYSDEC	New York State Department of Environmental Conservation
OU	operable unit
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RI	remedial investigation
SOW	scope of work

1 Project Management

This site-specific Quality Assurance Project Plan (QAPP) has been prepared by Ecology and Environment Engineering, P.C. (EEEPC) for the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation (DER), under Work Assignment No. D004435-21 accepted on May 24, 2007. The site-specific QAPP is for remedial investigation (RI)/feasibility study (FS) services of Operable Unit (OU)-2 at the Depew Village Landfill site (Site No. 9-15-105), located off of Rutherford Road in the village of Depew, Erie County, New York. EEEPC personnel will implement this site-specific QAPP for all activities conducted for the Depew Village Landfill site.

This QAPP has been prepared as part of the work plan for the project and is an addendum to the master NYSDEC QAPP (E & E 2004). This addendum documents changes, modifications, or new procedures and practices to be used that are applicable to activities anticipated under this investigation. This site-specific QAPP is formatted to address the four major sections listed in the master Quality Assurance Program Plan: Project Management, Data Generation and Acquisition, Assessment and Oversight, and Data Validation and Usability. The information provided only covers deviations or new procedures for implementing the project. Any subsection that is not changed is not included in this QAPP. General tables with site-specific information have been added to this QAPP for easier review of site-specific requirements.

1.1 Project Organization

The project team for this site is listed on Table B1-1.

1.2 Problem Definition/Background

The problem and background for this work assignment are defined in Section 2 of the work plan.

Table B1-1 Project Organization, Depew Village Landfill Site

Key Team Member	Contact Name and Telephone	
NYSDEC Project Manager	Randy Hough	518-402-9475
NYSDEC QA Officer	Tim LeBarron	518-402-9549
EEEPC Program Manager	David Albers	716-684-8060
EEEPC QA Officer	Marcia Meredith Galloway	716-684-8060
EEEPC Project Manager	Jon Nickerson	716-684-8060
EEEPC Field Team Leader	Brian Cervi	716-684-8060
EEEPC Project Chemist	Barbara Krajewski	716-684-8060
Laboratory	Mitkem Corporation 175 Metro Center Boulevard Warwick, RI 02886-1755	401-732-3400
NYSDOH Oversight	Matt Forcucci	716-847-4385

1.3 Project Description

The specific scope of work (SOW) for the current activities is defined in the work plan, Section 3, and includes the following areas:

- Problem(s) to be resolved;
- Direct and indirect measurements required;
- Applicable technical or regulatory quality assurance/quality control (QA/QC) standards or criteria;
- Any special resources (e.g., personnel or equipment) needed for the site;
- Scope and schedule of the project deliverables; and
- Any special assessment or oversight procedures necessary to verify site-specific quality objectives are met.

1.4 Quality Objectives and Criteria

General quality objectives and performance criteria for NYSDEC projects are applicable to this project. These general objectives can be found in the master NYSDEC Quality Assurance Program Plan.

1.5 Special Training/Certification

There are no site-specific training requirements for this work assignment.

1.6 Documents and Records

Sample identification will be the same as the master Quality Assurance Program Plan with the exception that the three-letter sample prefix is not required and the following matrix codes will be used:

- SS = Surface soil;
- SB = Subsurface soil;
- SW = Surface water; and
- SD = Sediment.

The sample prefix for this site will be "DL."

The laboratory will provide a hard-copy deliverable that contains the information specified for NYSDEC Analytical Services Protocol (ASP) Category B. Electronic data must be provided in accordance the standard laboratory electronic data deliverable (EDD) format for the Automatic Data Review (ADR) program. EEEPC will use only the electronic data for evaluation and reporting. The laboratory must certify that the electronic data match the hard copy reported for each package.

The following records and reports will be produced as part of this project:

- Work plan;
- Site-specific Health and Safety Plan;
- Site-specific QAPP;
- Field logbook;
- Geotechnical logbooks;
- Chain-of-custody form;
- Laboratory data package – Category B;
- Data usability summary report (DUSR);
- Draft report; and
- Final report.

2 Data Generation and Acquisition

The samples and analytical methods planned for this site are provided on Table 3-1 of the work plan. Table B2-1 lists all analyses that may be performed for this project. Laboratory target compounds, reporting limits, and current control limits have been entered into the ADR program. Printouts of these limits are provided in Appendix A for the soil and water methods listed on Table B2-1. All additional QC information pertaining to the methods can be found in NYSDEC's ASP (July 2005).

Table B2-1 Required Analytical Methods for OU-2 at the Depew Village Landfill Site

Method Number	Description
8270C, 8081A, and 8082	TCL SVOCs, pesticides, and PCBs
SW6010B,7470/71	TAL Metals/Mercury
Lloyd Kahn	Total organic carbon
EPA 821-R-91-100	AVS/SEM
EPA 160.4	TVS
EPA 160.3	TS
EPA 160.1	TDS
EPA 310.1	Alkalinity
EPA 325.1, 325.2, 325.3	Chloride
EPA 376.1. 376.2, 376.3	Sulfate

Key:

AVS = Acid volatile sulfides.
PCB = Polychlorinated biphenyls.
SEM = Simultaneously extracted metals.
SVOC = Semivolatile organic compound.
TAL = Target analyte list.
TCL = Target compound list.
TDS = Total dissolved solids.
TS = Total solids.
TVS = Total volatile solids.

The collection of field QC samples follows the master Quality Assurance Program Plan and is summarized on Table B2-2.

Table B2-2 Field Quality Control Guidelines, NYSDEC Projects

QC Sample	Description
Field Duplicate	One per matrix per 20 samples for each analysis.
Field Equipment Blank	One per equipment set per day for each analysis. Only equipment sets that are subject to decontamination require equipment blanks. Dedicated or disposal equipment does not require an equipment blank.
Trip Blank	One per shipment for each cooler in which samples for VOC analysis are shipped. Trip blanks are analyzed for all VOC methods designated for samples. Trip blanks are shipped only for aqueous matrices.
Filter Blank	One per batch of filters used. Preserve with HNO_3 to pH<2 following collection.

Key:

VOC = Volatile organic compound.

The laboratory QC sample requirements follow the master Quality Assurance Program Plan and are summarized on Table B2-3.

Table B2-3 Laboratory Quality Control Sample Guidelines, NYSDEC Projects

QC Sample	Description
MB	One per matrix per preparation batch for each analysis.
MSB	One per matrix per preparation batch for each analysis. The MSB must contain all target analytes of concern at the site or as specified by the CLP method.
Surrogate Spikes	All samples analyzed for organic methods.
MS/MSD	One per matrix per SDG for each analysis. The spike solution must contain a broad range of the analytes of concern at the site or as specified by the CLP method. The overall frequency of MS/MSD on project samples must be at least one set per 20 samples.
MS/MD	One per matrix per SDG for TAL metals and general chemistry methods. The spike solution must contain a broad range of analytes of concern at the site or as specified by the CLP method. The overall frequency of MS/MD on the project samples must be at least one set per 20 samples.

Key:

CLP = Contract Laboratory Program.
MB = Method Blank.
MS/MD = Matrix Spike/Matrix Duplicate.
MS/MSD = Matrix Spike/Matrix Spike Duplicate.
MSB = Matrix Spike Blank.
SDG = Sample Delivery Group.
TAL = Target Analyze List.

3 Assessment and Oversight

EEEPC's assessment and oversight procedures for the project activities are the same as the master Quality Assurance Program Plan. There are no additional procedures to meet the quality objectives for these work assignment activities.

3.1 Assessment and Response Actions

Planned assessment activities for these work assignment activities are as follows:

Field Audits

No field audits are planned.

Field Inspections

The EEEPC project manager will conduct at least one site visit for the purpose of inspecting the activities of all personnel including subcontractors and subconsultants.

Laboratory Audits

A laboratory audit of Mitkem was conducted in March 2006 by EEEPC. No project-specific audits are planned.

3.2 Reports to Management

The reports to management are specified the same as in the master Quality Assurance Program Plan. No additional reports are required for this project.

4 Data Validation and Usability

EEEPC will implement the general procedures for data validation and usability described in the master Quality Assurance Program Plan for data validation activities.

4.1 Data Review, Validation, and Verification Requirements

There are no additional data review criteria for this project. The laboratory is responsible for reviewing data in accordance with their approved QA manual. These procedures are approved as part of the New York State certification process.

EEEPC will process all electronic data through the ADR. Specifications for EDD are provided in Appendix B. Sample analysis results for the site characterization will undergo electronic data processing and review for usability by EEEPC. EEEPC will determine any deviations from the Quality Control Program Plan limits and assign qualifiers based on guidelines identified in the master Quality Control Program Plan. Data for investigation-derived waste soil and water disposal will not be reviewed. The data reviews both hard copy and electronic will follow the NYSDEC Guidance for the Development of DUSRs, June 1999.

4.2 Verification and Validation Methods

Data validation requirements are the same as specified in the master Quality Assurance Program Plan.

4.3 Reconciliation with User Requirements

The data assessment procedures listed in the master Quality Assurance Program Plan are applicable to this project. There are no additional data assessment procedures.

A Method Target Compounds, Reporting Limits, and Quality Control Limits

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : AQ

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
160.1	TDS	TOTAL DISSOLVED SOLIDS	10	PQL	mg/L
310.1	ALK	ALKALINITY, TOTAL	6000	PQL	ug/L
325.2	16887-00-6	CHLORIDE	5.0	PQL	mg/L
375.2	14808-79-8	SULFATE AS SO4	5.0	PQL	mg/L
6010B	7429-90-5	ALUMINUM	200	PQL	ug/L
	7440-36-0	ANTIMONY	50	PQL	ug/L
	7440-38-2	ARSENIC	10	PQL	ug/L
	7440-39-3	BARIUM	50	PQL	ug/L
	7440-41-7	BERYLLIUM	4	PQL	ug/L
	7440-43-9	CADMIUM	5	PQL	ug/L
	7440-70-2	CALCIUM	1000	PQL	ug/L
	7440-47-3	CHROMIUM	10	PQL	ug/L
	7440-48-4	COBALT	50	PQL	ug/L
	7440-50-8	COPPER	10	PQL	ug/L
	7439-89-6	IRON	100	PQL	ug/L
	7439-92-1	LEAD	0.5	PQL	ug/L
	7439-95-4	MAGNESIUM	1000	PQL	ug/L
	7439-96-5	MANGANESE	10	PQL	ug/L
	7440-02-0	NICKEL	20	PQL	ug/L
	7440-09-7	POTASSIUM	1000	PQL	ug/L
	7782-49-2	SELENIUM	30	PQL	ug/L
	7440-22-4	SILVER	10	PQL	ug/L
	7440-23-5	SODIUM	1000	PQL	ug/L
	7440-28-0	THALLIUM	10	PQL	ug/L
	7440-62-2	VANADIUM	10	PQL	ug/L
	7440-66-6	ZINC	20	PQL	ug/L
7470A	7439-97-6	MERCURY	0.2	PQL	ug/L
8081B	72-54-8	4,4'-DDD	0.05	PQL	ug/L
	72-55-9	4,4'-DDE	0.05	PQL	ug/L
	50-29-3	4,4'-DDT	0.2	PQL	ug/L
	309-00-2	ALDRIN	0.05	PQL	ug/L
	319-84-6	ALPHA-BHC	0.05	PQL	ug/L
	5103-71-9	ALPHA-CHLORDANE	0.05	PQL	ug/L
	319-85-7	BETA-BHC	0.2	PQL	ug/L
	319-86-8	DELTA-BHC	0.05	PQL	ug/L
	60-57-1	DIELDRIN	0.05	PQL	ug/L
	959-98-8	ENDOSULFAN I	0.05	PQL	ug/L
	33213-65-9	ENDOSULFAN II	0.05	PQL	ug/L
	1031-07-8	ENDOSULFAN SULFATE	0.05	PQL	ug/L
	72-20-8	ENDRIN	0.05	PQL	ug/L
	7421-93-4	ENDRIN ALDEHYDE	0.05	PQL	ug/L
	53494-70-5	ENDRIN KETONE	0.05	PQL	ug/L
	58-89-9	GAMMA-BHC	0.05	PQL	ug/L
	5103-74-2	GAMMA-CHLORDANE	0.05	PQL	ug/L
	76-44-8	HEPTACHLOR	0.05	PQL	ug/L
	1024-57-3	HEPTACHLOR EPOXIDE	0.05	PQL	ug/L
	72-43-5	METHOXYCHLOR	0.50	PQL	ug/L
	8001-35-2	TOXAPHENE	0.5	PQL	ug/L
8082	12674-11-2	AROCLOR 1016	0.5	PQL	ug/L

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : AQ

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
8082	11104-28-2	AROCLOR 1221	0.5	PQL	ug/L
	11141-16-5	AROCLOR 1232	0.5	PQL	ug/L
	53469-21-9	AROCLOR 1242	0.5	PQL	ug/L
	12672-29-6	AROCLOR 1248	0.5	PQL	ug/L
	11097-69-1	AROCLOR 1254	0.5	PQL	ug/L
	11096-82-5	AROCLOR 1260	0.5	PQL	ug/L
8260B	71-55-6	1,1,1-TRICHLOROETHANE	1	PQL	ug/L
	79-34-5	1,1,2,2-TETRACHLOROETHANE	1	PQL	ug/L
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHAN	1	PQL	ug/L
	79-00-5	1,1,2-TRICHLOROETHANE	1	PQL	ug/L
	75-34-3	1,1-DICHLOROETHANE	1	PQL	ug/L
	75-35-4	1,1-DICHLOROETHENE	1	PQL	ug/L
	120-82-1	1,2,4-TRICHLOROBENZENE	1	PQL	ug/L
	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	PQL	ug/L
	106-93-4	1,2-DIBROMOETHANE	1	PQL	ug/L
	95-50-1	1,2-DICHLOROBENZENE	1	PQL	ug/L
	107-06-2	1,2-DICHLOROETHANE	1	PQL	ug/L
	78-87-5	1,2-DICHLOROPROPANE	1	PQL	ug/L
	541-73-1	1,3-DICHLOROBENZENE	1	PQL	ug/L
	106-46-7	1,4-DICHLOROBENZENE	1	PQL	ug/L
	78-93-3	2-BUTANONE	1	PQL	ug/L
	591-78-6	2-HEXANONE	1	PQL	ug/L
	108-10-1	4-METHYL-2-PENTANONE	1	PQL	ug/L
	67-64-1	ACETONE	5	PQL	ug/L
	71-43-2	BENZENE	1	PQL	ug/L
	75-27-4	BROMODICHLOROMETHANE	1	PQL	ug/L
	75-25-2	BROMOFORM	1	PQL	ug/L
	74-83-9	BROMOMETHANE	1	PQL	ug/L
	75-15-0	CARBON DISULFIDE	1	PQL	ug/L
	56-23-5	CARBON TETRACHLORIDE	1	PQL	ug/L
	108-90-7	CHLOROBENZENE	1	PQL	ug/L
	75-00-3	CHLOROETHANE	1	PQL	ug/L
	67-66-3	CHLOROFORM	1	PQL	ug/L
	74-87-3	CHLOROMETHANE	1	PQL	ug/L
	156-59-2	CIS-1,2-DICHLOROETHENE	1	PQL	ug/L
	10061-01-5	CIS-1,3-DICHLOROPROPENE	1	PQL	ug/L
	110-82-7	Cyclohexane	1	PQL	ug/L
	124-48-1	DIBROMOCHLOROMETHANE	1	PQL	ug/L
	75-71-8	DICHLORODIFLUOROMETHANE	1	PQL	ug/L
	100-41-4	ETHYLBENZENE	1	PQL	ug/L
	98-82-8	ISOPROPYLBENZENE	1	PQL	ug/L
	126777-61-2	m/p-Xylenes	1	PQL	ug/L
	79-20-9	Methyl Acetate	1	PQL	ug/L
	1634-04-4	METHYL TERT-BUTYL ETHER	1	PQL	ug/L
	108-87-2	METHYLCYCLOHEXANE	1	PQL	ug/L
	75-09-2	METHYLENE CHLORIDE	1	PQL	ug/L
	95-47-6	O-XYLENE	1	PQL	ug/L
	100-42-5	STYRENE	1	PQL	ug/L
	127-18-4	TETRACHLOROETHENE	1	PQL	ug/L

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : AQ

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
8260B	108-88-3	TOLUENE	1	PQL	ug/L
	156-60-5	TRANS-1,2-DICHLOROETHENE	1	PQL	ug/L
	10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	PQL	ug/L
	79-01-6	TRICHLOROETHENE	1	PQL	ug/L
	75-69-4	TRICHLOROFLUOROMETHANE	1	PQL	ug/L
	75-01-4	VINYL CHLORIDE	1	PQL	ug/L
8270C	92-52-4	1,1'-Biphenyl	10	PQL	ug/L
	108-60-1	2,2-oxybis(1-Chloropropane)	10	PQL	ug/L
	95-95-4	2,4,5-TRICHLOROPHENOL	10	PQL	ug/L
	88-06-2	2,4,6-TRICHLOROPHENOL	10	PQL	ug/L
	120-83-2	2,4-DICHLOROPHENOL	10	PQL	ug/L
	105-67-9	2,4-DIMETHYLPHENOL	10	PQL	ug/L
	51-28-5	2,4-DINITROPHENOL	10	PQL	ug/L
	121-14-2	2,4-DINITROTOLUENE	10	PQL	ug/L
	606-20-2	2,6-DINITROTOLUENE	10	PQL	ug/L
	91-58-7	2-CHLORONAPHTHALENE	10	PQL	ug/L
	95-57-8	2-CHLOROPHENOL	10	PQL	ug/L
	91-57-6	2-METHYLNAPHTHALENE	10	PQL	ug/L
	95-48-7	2-METHYLPHENOL	10	PQL	ug/L
	88-74-4	2-NITROANILINE	10	PQL	ug/L
	88-75-5	2-NITROPHENOL	10	PQL	ug/L
	91-94-1	3,3'-DICHLOROBENZIDINE	10	PQL	ug/L
	99-09-2	3-NITROANILINE	10	PQL	ug/L
	534-52-1	4,6-DINITRO-2-METHYLPHENOL	10	PQL	ug/L
	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	PQL	ug/L
	59-50-7	4-CHLORO-3-METHYLPHENOL	10	PQL	ug/L
	106-47-8	4-CHLOROANILINE	10	PQL	ug/L
	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	PQL	ug/L
	106-44-5	4-METHYLPHENOL	10	PQL	ug/L
	100-01-6	4-NITROANILINE	10	PQL	ug/L
	100-02-7	4-NITROPHENOL	10	PQL	ug/L
	83-32-9	ACENAPHTHENE	10	PQL	ug/L
	208-96-8	ACENAPHTHYLENE	10	PQL	ug/L
	98-86-2	ACETOPHENONE	10	PQL	ug/L
	120-12-7	ANTHRACENE	10	PQL	ug/L
	1912-24-9	ATRAZINE	10	PQL	ug/L
	100-52-7	BENZALDEHYDE	10	PQL	ug/L
	56-55-3	BENZO(A)ANTHRACENE	10	PQL	ug/L
	50-32-8	BENZO(A)PYRENE	10	PQL	ug/L
	205-99-2	BENZO(B)FLUORANTHENE	10	PQL	ug/L
	191-24-2	BENZO(G,H,I)PERYLENE	10	PQL	ug/L
	207-08-9	BENZO(K)FLUORANTHENE	10	PQL	ug/L
	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	PQL	ug/L
	111-44-4	BIS(2-CHLOROETHYL) ETHER	10	PQL	ug/L
	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	10	PQL	ug/L
	85-68-7	BUTYLBENZYL PHTHALATE	10	PQL	ug/L
	105-60-2	Caprolactam	10	PQL	ug/L
	86-74-8	CARBAZOLE	10	PQL	ug/L
	218-01-9	CHRYSENE	10	PQL	ug/L

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : AQ

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
8270C	53-70-3	DIBENZ(A,H)ANTHRACENE	10	PQL	ug/L
	132-64-9	DIBENZOFURAN	10	PQL	ug/L
	84-66-2	DIETHYL PHTHALATE	10	PQL	ug/L
	131-11-3	DIMETHYL PHTHALATE	10	PQL	ug/L
	84-74-2	DI-N-BUTYL PHTHALATE	10	PQL	ug/L
	117-84-0	DI-N-OCTYL PHTHALATE	10	PQL	ug/L
	206-44-0	FLUORANTHENE	10	PQL	ug/L
	86-73-7	FLUORENE	10	PQL	ug/L
	118-74-1	HEXACHLOROBENZENE	10	PQL	ug/L
	87-68-3	HEXACHLOROBUTADIENE	10	PQL	ug/L
	77-47-4	HEXACHLOROCYCLOPENTADIENE	10	PQL	ug/L
	67-72-1	HEXACHLOROETHANE	10	PQL	ug/L
	193-39-5	INDENO(1,2,3-CD)PYRENE	10	PQL	ug/L
	78-59-1	ISOPHORONE	10	PQL	ug/L
	91-20-3	NAPHTHALENE	10	PQL	ug/L
	98-95-3	NITROBENZENE	10	PQL	ug/L
	621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10	PQL	ug/L
	86-30-6	N-NITROSODIPHENYLAMINE	10	PQL	ug/L
	87-86-5	PENTACHLOROPHENOL	25	PQL	ug/L
	85-01-8	PHENANTHRENE	10	PQL	ug/L
	108-95-2	PHENOL	10	PQL	ug/L
	129-00-0	PYRENE	10	PQL	ug/L

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : SED

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
160.3	TSO	TOTAL SOLIDS	10	PQL	mg/Kg
EPA 821-R-91-100 A	AVS	Acid Volatile Sulfide	10	PQL	mk/Kg
EPA 821-R-91-100 S	7440-43-9	CADMIUM	0.015	PQL	mg/Kg
	7440-50-8	COPPER	0.02	PQL	mg/Kg
	7439-92-1	LEAD	0.15	PQL	mg/Kg
	7440-02-0	NICKEL	0.1	PQL	mg/Kg
	7440-66-6	ZINC	0.025	PQL	mg/Kg

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : SO

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
160.4	TVS	TOTAL VOLATILE SOLIDS	10	PQL	mg/Kg
415.1_LK	ADR-04-005	Total Organic Carbon	100	PQL	mg/Kg
6010B	7429-90-5	ALUMINUM	5	PQL	mg/Kg
	7440-36-0	ANTIMONY	2	PQL	mg/Kg
	7440-38-2	ARSENIC	1	PQL	mg/Kg
	7440-39-3	BARIUM	2	PQL	mg/Kg
	7440-41-7	BERYLLIUM	0.4	PQL	mg/Kg
	7440-43-9	CADMIUM	0.5	PQL	mg/Kg
	7440-70-2	CALCIUM	100	PQL	mg/Kg
	7440-47-3	CHROMIUM	0.5	PQL	mg/Kg
	7440-48-4	COBALT	1	PQL	mg/Kg
	7440-50-8	COPPER	5	PQL	mg/Kg
	7439-89-6	IRON	10	PQL	mg/Kg
	7439-92-1	LEAD	0.3	PQL	mg/Kg
	7439-95-4	MAGNESIUM	50	PQL	mg/Kg
	7439-96-5	MANGANESE	0.5	PQL	mg/Kg
	7440-02-0	NICKEL	2	PQL	mg/Kg
	7440-09-7	POTASSIUM	100	PQL	mg/Kg
	7782-49-2	SELENIUM	3	PQL	mg/Kg
	7440-22-4	SILVER	0.5	PQL	mg/Kg
	7440-23-5	SODIUM	100	PQL	mg/Kg
	7440-28-0	THALLIUM	1	PQL	mg/Kg
	7440-62-2	VANADIUM	1	PQL	mg/Kg
	7440-66-6	ZINC	2	PQL	mg/Kg
6010B_PP	7440-36-0	ANTIMONY	2	PQL	mg/Kg
	7440-38-2	ARSENIC	1	PQL	mg/Kg
	7440-41-7	BERYLLIUM	0.4	PQL	mg/Kg
	7440-43-9	CADMIUM	0.5	PQL	mg/Kg
	7440-47-3	CHROMIUM	0.5	PQL	mg/Kg
	7440-50-8	COPPER	5	PQL	mg/Kg
	7439-92-1	LEAD	0.3	PQL	mg/Kg
	7440-02-0	NICKEL	2	PQL	mg/Kg
	7782-49-2	SELENIUM	3	PQL	mg/Kg
	7440-22-4	SILVER	0.5	PQL	mg/Kg
	7440-28-0	THALLIUM	1	PQL	mg/Kg
	7440-66-6	ZINC	2	PQL	mg/Kg
7471A	7439-97-6	MERCURY	0.01	PQL	mg/Kg
8081B	72-54-8	4,4'-DDD	3	PQL	ug/Kg
	72-55-9	4,4'-DDE	3	PQL	ug/Kg
	50-29-3	4,4'-DDT	3	PQL	ug/Kg
	309-00-2	ALDRIN	3	PQL	ug/Kg
	319-84-6	ALPHA-BHC	3	PQL	ug/Kg
	5103-71-9	ALPHA-CHLORDANE	3	PQL	ug/Kg
	319-85-7	BETA-BHC	3	PQL	ug/Kg
	319-86-8	DELTA-BHC	3	PQL	ug/Kg
	60-57-1	DIELDRIN	3	PQL	ug/Kg
	959-98-8	ENDOSULFAN I	3	PQL	ug/Kg
	33213-65-9	ENDOSULFAN II	3	PQL	ug/Kg
	1031-07-8	ENDOSULFAN SULFATE	3	PQL	ug/Kg

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : SO

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
8081B	72-20-8	ENDRIN	3	PQL	ug/Kg
	7421-93-4	ENDRIN ALDEHYDE	3	PQL	ug/Kg
	53494-70-5	ENDRIN KETONE	3	PQL	ug/Kg
	58-89-9	GAMMA-BHC	3	PQL	ug/Kg
	5103-74-2	GAMMA-CHLORDANE	3	PQL	ug/Kg
	76-44-8	HEPTACHLOR	3	PQL	ug/Kg
	1024-57-3	HEPTACHLOR EPOXIDE	3	PQL	ug/Kg
	72-43-5	METHOXYCHLOR	3	PQL	ug/Kg
	8001-35-2	TOXAPHENE	17	PQL	ug/Kg
8082	12674-11-2	AROCLOR 1016	17	PQL	ug/Kg
	11104-28-2	AROCLOR 1221	17	PQL	ug/Kg
	11141-16-5	AROCLOR 1232	17	PQL	ug/Kg
	53469-21-9	AROCLOR 1242	17	PQL	ug/Kg
	12672-29-6	AROCLOR 1248	17	PQL	ug/Kg
	11097-69-1	AROCLOR 1254	17	PQL	ug/Kg
	11096-82-5	AROCLOR 1260	17	PQL	ug/Kg
8260B	71-55-6	1,1,1-TRICHLOROETHANE	5	PQL	ug/Kg
	79-34-5	1,1,2,2-TETRACHLOROETHANE	5	PQL	ug/Kg
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHAN	5	PQL	ug/Kg
	79-00-5	1,1,2-TRICHLOROETHANE	5	PQL	ug/Kg
	75-34-3	1,1-DICHLOROETHANE	5	PQL	ug/Kg
	75-35-4	1,1-DICHLOROETHENE	5	PQL	ug/Kg
	120-82-1	1,2,4-TRICHLOROBENZENE	5	PQL	ug/Kg
	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	5	PQL	ug/Kg
	106-93-4	1,2-DIBROMOETHANE	5	PQL	ug/Kg
	95-50-1	1,2-DICHLOROBENZENE	5	PQL	ug/Kg
	107-06-2	1,2-DICHLOROETHANE	5	PQL	ug/Kg
	78-87-5	1,2-DICHLOROPROPANE	5	PQL	ug/Kg
	541-73-1	1,3-DICHLOROBENZENE	5	PQL	ug/Kg
	106-46-7	1,4-DICHLOROBENZENE	5	PQL	ug/Kg
	78-93-3	2-BUTANONE	25	PQL	ug/Kg
	591-78-6	2-HEXANONE	25	PQL	ug/Kg
	108-10-1	4-METHYL-2-PENTANONE	25	PQL	ug/Kg
	67-64-1	ACETONE	25	PQL	ug/Kg
	71-43-2	BENZENE	5	PQL	ug/Kg
	75-27-4	BROMODICHLOROMETHANE	5	PQL	ug/Kg
	75-25-2	BROMOFORM	5	PQL	ug/Kg
	74-83-9	BROMOMETHANE	5	PQL	ug/Kg
	75-15-0	CARBON DISULFIDE	5	PQL	ug/Kg
	56-23-5	CARBON TETRACHLORIDE	5	PQL	ug/Kg
	108-90-7	CHLOROBENZENE	5	PQL	ug/Kg
	75-00-3	CHLOROETHANE	5	PQL	ug/Kg
	67-66-3	CHLOROFORM	5	PQL	ug/Kg
	74-87-3	CHLOROMETHANE	5	PQL	ug/Kg
	156-59-2	CIS-1,2-DICHLOROETHENE	5	PQL	ug/Kg
	10061-01-5	CIS-1,3-DICHLOROPROPENE	5	PQL	ug/Kg
	110-82-7	Cyclohexane	5	PQL	ug/Kg
	124-48-1	DIBROMOCHLOROMETHANE	5	PQL	ug/Kg
	75-71-8	DICHLORODIFLUOROMETHANE	5	PQL	ug/Kg

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : SO

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
8260B	100-41-4	ETHYLBENZENE	5	PQL	ug/Kg
	98-82-8	ISOPROPYLBENZENE	5	PQL	ug/Kg
	126777-61-2	m/p-Xylenes	10	PQL	ug/Kg
	79-20-9	Methyl Acetate	5	PQL	ug/Kg
	1634-04-4	METHYL TERT-BUTYL ETHER	5	PQL	ug/Kg
	108-87-2	METHYLCYCLOHEXANE	5	PQL	ug/Kg
	75-09-2	METHYLENE CHLORIDE	5	PQL	ug/Kg
	95-47-6	O-XYLENE	5	PQL	ug/Kg
	100-42-5	STYRENE	5	PQL	ug/Kg
	127-18-4	TETRACHLOROETHENE	5	PQL	ug/Kg
	108-88-3	TOLUENE	5	PQL	ug/Kg
	156-60-5	TRANS-1,2-DICHLOROETHENE	5	PQL	ug/Kg
	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5	PQL	ug/Kg
	79-01-6	TRICHLOROETHENE	5	PQL	ug/Kg
	75-69-4	TRICHLOROFLUOROMETHANE	5	PQL	ug/Kg
	75-01-4	VINYL CHLORIDE	5	PQL	ug/kg
8270C	92-52-4	1,1'-Biphenyl	330	PQL	ug/Kg
	108-60-1	2,2-oxybis(1-Chloropropane)	330	PQL	ug/Kg
	95-95-4	2,4,5-TRICHLOROPHENOL	800	PQL	ug/Kg
	88-06-2	2,4,6-TRICHLOROPHENOL	330	PQL	ug/Kg
	120-83-2	2,4-DICHLOROPHENOL	330	PQL	ug/Kg
	105-67-9	2,4-DIMETHYLPHENOL	330	PQL	ug/Kg
	51-28-5	2,4-DINITROPHENOL	830	PQL	ug/Kg
	121-14-2	2,4-DINITROTOLUENE	330	PQL	ug/Kg
	606-20-2	2,6-DINITROTOLUENE	330	PQL	ug/Kg
	91-58-7	2-CHLORONAPHTHALENE	330	PQL	ug/Kg
	95-57-8	2-CHLOROPHENOL	330	PQL	ug/Kg
	91-57-6	2-METHYLNAPHTHALENE	330	PQL	ug/Kg
	95-48-7	2-METHYLPHENOL	330	PQL	ug/Kg
	88-74-4	2-NITROANILINE	800	PQL	ug/Kg
	88-75-5	2-NITROPHENOL	330	PQL	ug/Kg
	91-94-1	3,3'-DICHLOROBENZIDINE	330	PQL	ug/Kg
	99-09-2	3-NITROANILINE	800	PQL	ug/Kg
	534-52-1	4,6-DINITRO-2-METHYLPHENOL	330	PQL	ug/Kg
	101-55-3	4-BROMOPHENYL PHENYL ETHER	330	PQL	ug/Kg
	59-50-7	4-CHLORO-3-METHYLPHENOL	330	PQL	ug/Kg
	106-47-8	4-CHLOROANILINE	330	PQL	ug/Kg
	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	330	PQL	ug/Kg
	106-44-5	4-METHYLPHENOL	330	PQL	ug/Kg
	100-01-6	4-NITROANILINE	800	PQL	ug/Kg
	100-02-7	4-NITROPHENOL	800	PQL	ug/Kg
	83-32-9	ACENAPHTHENE	330	PQL	ug/Kg
	208-96-8	ACENAPHTHYLENE	330	PQL	ug/Kg
	98-86-2	ACETOPHENONE	330	PQL	ug/Kg
	120-12-7	ANTHRACENE	330	PQL	ug/Kg
	1912-24-9	ATRAZINE	330	PQL	ug/Kg
	100-52-7	BENZALDEHYDE	330	PQL	ug/Kg
	56-55-3	BENZO(A)ANTHRACENE	330	PQL	ug/Kg
	50-32-8	BENZO(A)PYRENE	330	PQL	ug/Kg

Library Data Review Criteria: Reporting and Detection Limits

Library Group ID : Depew Landfill RI — All Methods

Sample Matrix : SO

Analytical Method	Client Analyte ID	Analyte Name	Reporting Limit Criteria	Reporting Limit Type	Units
8270C	205-99-2	BENZO(B)FLUORANTHENE	330	PQL	ug/Kg
	191-24-2	BENZO(G,H,I)PERYLENE	330	PQL	ug/Kg
	207-08-9	BENZO(K)FLUORANTHENE	330	PQL	ug/Kg
	111-91-1	BIS(2-CHLOROETHOXY)METHANE	330	PQL	ug/Kg
	111-44-4	BIS(2-CHLOROETHYL) ETHER	330	PQL	ug/Kg
	117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	330	PQL	ug/Kg
	85-68-7	BUTYLBENZYL PHTHALATE	330	PQL	ug/Kg
	105-60-2	Caprolactam	330	PQL	ug/Kg
	86-74-8	CARBAZOLE	330	PQL	ug/kg
	218-01-9	CHRYSENE	330	PQL	ug/Kg
	53-70-3	DIBENZ(A,H)ANTHRACENE	330	PQL	ug/Kg
	132-64-9	DIBENZOFURAN	330	PQL	ug/Kg
	84-66-2	DIETHYL PHTHALATE	330	PQL	ug/Kg
	131-11-3	DIMETHYL PHTHALATE	330	PQL	ug/Kg
	84-74-2	DI-N-BUTYL PHTHALATE	330	PQL	ug/Kg
	117-84-0	DI-N-OCTYL PHTHALATE	330	PQL	ug/Kg
	206-44-0	FLUORANTHENE	330	PQL	ug/Kg
	86-73-7	FLUORENE	330	PQL	ug/Kg
	118-74-1	HEXACHLOROBENZENE	330	PQL	ug/Kg
	87-68-3	HEXACHLOROBUTADIENE	330	PQL	ug/Kg
	77-47-4	HEXACHLOROCYCLOPENTADIENE	330	PQL	ug/Kg
	67-72-1	HEXACHLOROETHANE	330	PQL	ug/Kg
	193-39-5	INDENO(1,2,3-CD)PYRENE	330	PQL	ug/Kg
	78-59-1	ISOPHORONE	330	PQL	ug/Kg
	91-20-3	NAPHTHALENE	330	PQL	ug/Kg
	98-95-3	NITROBENZENE	330	PQL	ug/Kg
	621-64-7	N-NITROSO-DI-N-PROPYLAMINE	330	PQL	ug/Kg
	86-30-6	N-NITROSODIPHENYLAMINE	330	PQL	ug/Kg
	87-86-5	PENTACHLOROPHENOL	800	PQL	ug/Kg
	85-01-8	PHENANTHRENE	330	PQL	ug/Kg
	108-95-2	PHENOL	330	PQL	ug/Kg
	129-00-0	PYRENE	330	PQL	ug/Kg

B Specifications for Electronic Data Deliverables

ADR Electronic Data Deliverable (EDD) File Specifications

The ADR EDD consists of three separate, comma-delimited ASCII text files or Excel CSV files (two, if instrument calibration information is not required by the project). Each file corresponds to a table in the ADR application. These tables are identified as the Analytical Results Table (A1), Laboratory Instrument Table (A2), and Sample Analysis Table (A3). Each file follows the naming convention of using the Laboratory Reporting Batch ID (SDG Number or some other identifier for the EDD) followed by the table identifier (A1, A2, or A3), and then a ".txt" or ".csv" extension. For example, the EDD file names for a laboratory reporting batch identified as SDG001 that includes instrument calibration data would be as follows.

SDG001A1.txt or SDG001A1.csv
SDG001A2.txt or SDG001A2.csv (A2 file is optional)
SDG001A3.txt or SDG001A3.csv

Analytical Results Table (A1 File)

The Analytical Results table contains analytical results and related information on an analyte level for field samples and associated laboratory quality control samples (excluding calibrations and tunes). Field QC blanks and laboratory method blanks must report a result record for each analyte reported within a method. The method target analyte list is matrix dependent and specified in the project library. Laboratory control samples (LCS and LCSD) and matrix spike samples (MS and MSD) must report a result record for every analyte specified as a spiked analyte in the project library. The project library is a reference table ADR uses for both EDD error checking and automated data review. The project library is populated with information from the project QAPP. Refer to the User Manual for detailed information on project libraries. Table 1 in this document lists all field names and their descriptions for the Analytical Results Table (A1).

Laboratory Instrument Table (A2 File)

The Laboratory Instrument table contains results and related information on an analyte level for instrument initial calibration standards, initial calibration verification standards, continuing calibration standards, and GC/MS tunes. A record must exist for each target analyte reported in a method (specified in the project library), for every calibration type (the field named QCType) associated to samples reported in the EDD. Initial calibrations, initial calibration verifications, and associated samples are linked to each other using a unique Run Batch ID for every distinct initial calibration within a method. Continuing calibrations and associated samples are linked to each other using a unique Analysis Batch ID for every distinct continuing calibration within a method. GC/MS tunes are linked to initial and continuing calibrations (and hence samples) using the Run Batch and Analysis Batch IDs respectively. The Laboratory Instrument Table (A2) is optional. Depending on the level of validation required by the data user, the Laboratory Instrument table may not be requested in the deliverable. Table 2 in this document lists field names and descriptions for the Laboratory Instrument Table (A2).

Sample Analysis Table (A3 File)

The Sample Analysis table contains information on a sample level for field samples and laboratory quality control analyses (excluding calibrations and tunes). A sample record exists for each sample/method/matrix/analysis type combination. Table 3 in this document lists field names and descriptions for the Sample Analysis Table (A3).

EDD Field Properties

Tables 1, 2, and 3 in this document specify the EDD field properties for each file. These include the field name and sequence, field name description, data type and length for each field, and whether or not a particular field requires a standard field. Field elements in the EDD must be sequenced according to the order they appear in Tables 1, 2, and 3. For example, in the Analytical Result table (the A1 file), the field "ClientSampleID" will always be the first piece of information to start a new line of data (or database record), followed by the fields "LabAnalysisRefMethodID", "AnalysisType", and so on.

Table 4 in this document lists standard values for those fields that hold standard values. Required field constraints depend on the combination of sample, matrix, method, analyte type, and calibration or QC type information reported in a record. Tables 5 through 9 in this document indicate required fields for each EDD file (table) according to the method category, matrix, analyte type, sample, and QC or calibration type reported in a record.

When creating an EDD as a text file, use the ASCII character set in a file of lines terminated by a carriage return and line feed. No characters are allowed after the carriage return and line feed. Enclose each data set in double quotes (") and separate each field by a comma (comma delimited). Data fields with no information (null) may be represented by two consecutive commas. For example, in the Sample Analysis table, since the "Collected", "ShippingBatchID", and "Temperature" fields do not apply to laboratory generated QA/QC samples, the record for a Laboratory Control Sample by Method 8270C would be entered as follows. Note that the first two fields ("ProjectNumber" and "ProjectName") are omitted in this example.

...“LCSW100598”,,”AQ”,”LCSW100598”,”LCS”,,”8270C”,... (and so on)

Do not pad fields with leading or trailing spaces if a field is populated with less than the maximum allowed number of characters. In the above example, although the "MatrixID" field can accommodate up to 10 characters, only 2 characters were entered in this field.

The EDD can be constructed within Excel and saved as .csv file for import into the application. Be sure to format all cells as text beforehand, otherwise Excel will reformat entered values in some cases.

Table 1
Field Descriptions for the Analytical Results Table (A1 file)

Contains laboratory test results and related information for field and QC samples (excluding instrument calibrations) on an analyte level for environmental chemistry including radiochemistry

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
ClientSampleID	Client or contractor's identifier for a field sample as reported on the chain-of-custody If a sample is analyzed as a laboratory duplicate, matrix spike, or matrix spike duplicate, append suffixes DUP, MS and MSD respectively to the Client Sample ID with no intervening spaces or hyphens (i.e. MW01DUP, MW01MS, and MW01MSD). For Method Blanks, LCS, and LCSD enter the unique LaboratorySampleID into this field Do not append suffixes to the ClientSampleID for dilutions, reanalyses, or re-extracts (the AnalysisType field is used for this distinction). For example, MW01DL and MW01RE are not allowed Parent sample records must exist for each MS and MSD. If an MS/MSD is shared between two EDDs, records for the MS/MSD and its parent sample must exist in the Analytical Results table for both EDDs.	Text	25	NO
LabAnalysisRefMethodID	Laboratory reference method ID. The method ID may be an EPA Method number or a Lab Identifier for a method such as a SOP Number, however; method ID is specified by the project. The method ID must be entered into the standard list.	Text	25	YES (specified in project plan)
AnalysisType	Defines the analysis type (i.e., Dilution, Reanalysis, etc.). This field provides distinction for sample result records when multiple analyses are submitted for the same sample, method, and matrix; for example dilutions, re-analyses, and re-extracts.	Text	10	YES (See Table 4)
LabSampleID	Laboratory tracking number for field samples and lab generated QC samples such as method blank, LCS, and LCSD. There are no restrictions for the LabSampleID except for field length and that the LabSampleID must be distinct for a given field sample or lab QC sample and method. Suffixes may be applied to the LabSampleID to designate dilutions, reanalysis, etc.	Text	25	NO
LabID	Identification of the laboratory performing the analyses.	Text	7	NO
ClientAnalyteID	CAS Number or unique client identifier for an analyte or isotope. If a CAS Number is not available, use a unique identifier provided by the client or contractor. The ClientAnalyteID for a particular target analyte or isotope should be specified by the project and must exist in the standard value tables for Analytes. For the LCS, LCSD, MS, and MSD, it is only necessary to report the compounds designated as spikes in the library (and surrogates for organic methods.) For TICs from GC/MS analyses, enter the retention time in decimal minutes as the Client Analyte ID.	Text	12	YES (specified by project)

Table 1
Field Descriptions for the Analytical Results Table (A1 file)

Contains laboratory test results and related information for field and QC samples (excluding instrument calibrations) on an analyte level for environmental chemistry including radiochemistry

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
AnalyteName	Chemical name for the analyte or isotope. The project specifies how an analyte or isotope is named. The analyte name must be associated to a ClientAnalyteID in the standard values table for Analytes (excluding compounds designated as TIC's).	Numeric	60	YES (specified by project)
Result	Result value for the analyte or isotope. Entries must be numeric. For non-detects of target analytes or isotopes and spikes, do not enter "ND" or leave this field blank. If an analyte or spike was not detected, enter the reporting limit value corrected for dilution and percent moisture as applicable. Do not enter "0"	Text	10	NO
ResultUnits	The units defining how the values in the Result, DetectionLimit, and ReportingLimit fields are expressed. For radiochemistry this also includes how the value in the Error field is expressed.	Text	10	YES (specified by project in the library)
LabQualifiers	A string of single letter result qualifiers assigned by the lab based on client-defined rules and values. The "U" Lab Qualifier must be entered for all non-detects. Other pertinent lab qualifiers may be entered with the "U" qualifier. Order is insignificant. Lab qualifiers other than those listed in the standard values table may be used. If so, these must be added to the standard value table in the application.	Text	7	YES (See Table 4)
DetectionLimit	For radiochemistry methods, the minimum detectable activity for the isotope being measured. For all other methods: The minimum detection limit value for the analyte being measured.	Numeric	10	NO
DetectionLimitType	Specifies the type of detection limit (i.e., MDA, MDL, IDL, etc.).	Text	10	YES (See Table 4)
RetentionTime or Error	For radiochemistry methods only, enter the 2 Sigma Counting Error. The units for error are entered in the ResultUnits field. For GC/MS methods only, enter the time expressed in decimal minutes between injection and detection for GC/MS TICs only For target analytes in all other methods, leave this field blank. Note: GC retention times are not evaluated at this time.	Text	5	NO
AnalyteType	Defines the type of result, such as tracer, surrogate, spike, or target compound.	Text	7	YES (See Table 4)
PercentRecovery	For radiochemistry methods: The tracer yield, if applicable. For all other analytical methods: The percent recovery value of a spiked compound or surrogate. If the spike or surrogate was not recovered because of dilution, enter "DIL". If a spike or surrogate was not recovered because of matrix interference, enter "INT". If a spike or surrogate was not recovered because it was not added to the sample, enter "NS".	Numeric	5	NO

Table 1
Field Descriptions for the Analytical Results Table (A1 file)

Contains laboratory test results and related information for field and QC samples (excluding instrument calibrations) on an analyte level for environmental chemistry including radiochemistry

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
RelativePercentDifference	The relative percent difference (RPD) of two QC results, such as MS/MSD, LCS/LCSD, and Laboratory Duplicates. Report RPD in Laboratory Duplicate, LCSD, and MSD records only.	Numeric	5	NO
ReportingLimit	Reporting limit value for the measured analyte or isotope Factor in the dilution factor and percent moisture correction, if applicable. The Reporting Limit for each analyte and matrix in a given method is specified in the project library or QAPP.	Numeric	10	NO
ReportingLimitType	Specifies the type of reporting limit (i.e., CRQL, PQL, SQL, RDL, etc). The Reporting Limit Type for each method and matrix is specified in the project library or QAPP.	Text	10	YES (specified by the project)
ReportableResult	This field indicates whether or not the laboratory chooses an individual analyte or isotope result as reportable. Enter "YES" if the result is reportable. Enter "NO" if the result is not reportable. This field applies to target analytes only. If only one analysis is submitted for a particular sample and method, enter "YES" for all target compounds (where Analyte Type = TRG). For GC/MS methods enter yes for tentatively identified compounds (where Analyte Type = TIC). If two or more analyses are submitted for a particular sample and method (i.e. initial analysis, reanalysis and/or dilutions), enter "YES" from only <u>one</u> of the analyses for each target compound. For example: a sample was run a second time at dilution because benzene exceeded the calibration range in the initial, undiluted analysis. All target analytes are reported in each analysis. For the initial analysis, (Analysis Type = RES), enter "NO" for benzene and enter "YES" for all other compounds. For the diluted analysis (Analysis Type = DL), enter "YES" for benzene and enter "NO" for all other compounds. For TICs (Analyte Type = TIC), if more than one analysis is submitted for a particular sample and method, choose only one of the analyses where Reportable Result = YES for <u>all</u> TICs. For example, a sample was run a second time because one or more target compounds exceeded the calibration range in the undiluted analysis. Choose a particular analysis and enter "YES" for all TICS. In the other analysis enter "NO" for all TICs. Note that it is not necessary to report the full target analyte list for the initial result, dilution, re-analysis, or re-extraction. However, each target analyte must be reported YES once and once only in the case of multiple analyses for a given sample, method, and matrix. In the case of organics, all surrogates must be reported for all analyses submitted for a given sample, method, and, matrix.	Text	3	YES (See Table 4)

Table 2
Field Descriptions for the Laboratory Instrument Table (A2 file)

Contains related to laboratory instrument calibration on an analyte level and GC/MS Tune information. This table is optional depending on project requirements. Do not report Table A2 for radiochemistry methods.

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
InstrumentID	Laboratory instrument identification.	Text	15	NO
QCType	Type of instrument QC (i.e., Instrument_Performance_Check or type of calibration standard).	Text	10	YES (See Table 4)
Analyzed	Analysis date/time for BFB, DFTPP, initial calibration verification standards, calibration verification standards, and continuing calibration standards. For the initial calibration, enter date and time of the last standard analyzed. Also, see comments about initial calibrations in the Alternate_Lab_Analysis_ID field name description.	Date/ Time	*	NO
AlternateLab_AnalysisID	Common laboratory identification used for standards (i.e., VOA STD50, CCAL100, BFB50, etc). For initial calibration, enter ICAL. Information from the initial calibration is entered as one record for each analyte that summarizes the results of the initial calibration (i.e. %RSD, correlation coefficient, and avg RF). Records are not entered for each individual standard within the initial calibration.	Text	12	NO
LabAnalysisID	Unique identification of the raw data electronic file associated with the calibration standard or tune (i.e., 9812I01MS.DV). Leave this field blank for the initial calibration. See comments about initial calibrations in the Alternate_Lab_Analysis_ID field description. This field is only applicable where an electronic instrument file is created as part of the analysis.	Text	15	NO
LabAnalysisRefMethodID	Laboratory reference method ID (i.e., 8260B, 8270C, 6010B, etc.). The method ID is specified by the project. The LabAnalysisRefMethodID must be in the standard value list for Method IDs.	Text	25	YES (specified by the project)
ClientAnalyteID	CAS number or unique client identifier for an analyte. If a CAS number is not available, use a unique identifier provided by the client. The unique identifier for a particular analyte should be specified by the project and must exist in the standard value list for ClientAnalyteID. Records for each calibration must report the full target analyte list including surrogates as applicable. The target analyte list is specified for each method and matrix in the project	Text	12	YES (specified by the project)
AnalyteName	The chemical name for the analyte. The project specifies how an analyte is named. The AnalyteName must be associated to a ClientAnalyteID in the standard values.	Text	60	YES (specified by the project)

Table 2
Field Descriptions for the Laboratory Instrument Table (A2 file)

Contains related to laboratory instrument calibration on an analyte level and GC/MS Tune information. This table is optional depending on project requirements. Do not report Table A2 for radiochemistry methods.

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
RunBatch	Unique identifier for a batch of analyses performed on one instrument under the control of one initial calibration and initial calibration verification. The Run Batch ID links both the initial calibration and initial calibration verification to subsequently analyzed and associated continuing calibrations, field samples, and QC analyses. For GC/MS methods, the Run_Batch ID also links a BFB or DFTPP tune and the initial calibration and initial calibration verification standards to associated samples and method QC analyses. A new and unique Run Batch ID must be used with every new initial calibration.	Text	12	NO
AnalysisBatch	Unique laboratory identifier for a batch of analyses performed on one instrument and under the control of a continuing calibration or continuing calibration verification. The Analysis Batch ID links the continuing calibration or calibration verification to subsequently analyzed and associated field sample and QC analyses. For GC/MS methods, the Analysis Batch ID also links the BFB or DFTPP tune. A new and unique Analysis Batch ID must be used with every new continuing calibration or continuing calibration verification. For GC methods, only report opening standards, do not include closing standards (unless the closing standard functions as the opening standard for a subsequent set of analyses, in which case a new and unique Analysis Batch ID is assigned). When dual or confirmation columns/detectors are used, enter results from the primary column/detector only (this is similar to CLP Pesticide reporting).	Text	12	NO
LabReportingBatch	Unique laboratory identifier for a batch of samples including associated calibrations and method QC, reported as a group by the lab (i.e., lab work order #, log-in #, or SDG). Links all instrument calibrations, samples, and method QC reported as a group or SDG.	Text	12	NO
PercentRelativeStandard Deviation	The standard deviation relative to the mean used to evaluate initial calibration linearity. Organic methods may use either %RSD or Correlation Coefficient. If applicable, enter the %RSD. Leave this field blank if the Correlation Coefficient is used.	Numeric	5	NO
CorrelationCoefficient	The correlation coefficient resulting from linear regression of the initial calibration. For metals by ICAP, enter '1.0' if a two-point initial calibration was analyzed. Organic methods may use either %RSD or Correlation Coefficient. If applicable, enter the Correlation Coefficient. Leave this field blank if the %RSD is used	Numeric	5	NO
RelativeResponseFactor	This field applies to GC/MS only. For continuing calibration enter the relative response factor. For initial calibration enter the average relative response factor. Refer to comments about initial calibration records in the field description for Alternate_Lab_Analysis_ID.	Numeric	5	NO

Table 2
Field Descriptions for the Laboratory Instrument Table (A2 file)

Contains related to laboratory instrument calibration on an analyte level and GC/MS Tune information. This table is optional depending on project requirements. Do not report Table A2 for radiochemistry methods.

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
Percent_Difference (or Percent Recovery)	For organic methods, this field is the difference between 2 measured values expressed as a percentage. If %RSD is reported, enter the % difference between the average response factor of the initial calibration (IC) and the response factor of the initial calibration verification (ICV) or continuing calibration (CCV). If correlation coefficient is used, enter the % difference between the true value and the measured value. The Percent_Difference is expressed as a negative or positive value. Do not express Percent_Difference as an absolute value. Use a negative value if the CCV or ICV response factor is less than the IC average response factor or, in the case of correlation coefficient, the CCV or ICV measured value is less than the true value. Use a positive value if the CCV or ICV response factor is greater than the IC average response factor, or in the case of correlation coefficient, the CCV or ICV measured value is greater than the true value. For inorganic methods, this field is the recovery of an analyte expressed relative to the true amount (i.e., %R for a metal in the continuing calibration or initial calibration verification by Method 6010B).	Numeric	5	NO
PeakID01	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 50, for DFTPP enter 51.	Numeric	10	NO
PercentRatio01	For BFB enter the relative percent abundance of m/z 50 measured relative to the raw abundance of m/z 95. For DFTPP enter the relative percent abundance of m/z 51 measured relative to the raw abundance of m/z 198.	Numeric	10	NO
PeakID02	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 75, for DFTPP enter 68.	Numeric	10	NO
PercentRatio02	For BFB enter the relative percent abundance of m/z 75 measured relative to the raw abundance of m/z 95. For DFTPP enter the relative percent abundance of m/z 68 measured relative to the raw abundance of m/z 69.	Numeric	10	NO
PeakID03	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 95, for DFTPP enter 69.	Numeric	10	NO
PercentRatio03	For BFB enter the ion abundance of m/z 95 as 100 percent. For DFTPP enter the relative percent abundance of m/z 69 measured relative to the raw abundance of m/z 198.	Numeric	10	NO
PeakID04	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 96, for DFTPP enter 70.	Numeric	10	NO

Table 2
Field Descriptions for the Laboratory Instrument Table (A2 file)

Contains related to laboratory instrument calibration on an analyte level and GC/MS Tune information. This table is optional depending on project requirements. Do not report Table A2 for radiochemistry methods.

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
PercentRatio04	For BFB enter the relative percent abundance of m/z 96 measured relative to the raw abundance of m/z 95. For DFTPP enter the relative percent abundance of m/z 70 measured relative to the raw abundance of m/z 69	Numeric	10	NO
PeakID05	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 173, for DFTPP enter 127.	Numeric	10	NO
PercentRatio05	For BFB enter the relative percent abundance of m/z 173 measured relative to the raw abundance of m/z 174. For DFTPP enter the relative percent abundance of m/z 127 measured relative to the raw abundance of m/z 198	Numeric	10	NO
PeakID06	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 174, for DFTPP enter 197.	Numeric	10	NO
PercentRatio06	For BFB enter the relative percent abundance of m/z 174 measured relative to the raw abundance of m/z 95. For DFTPP enter the relative percent abundance of m/z 197 measured relative to the raw abundance of m/z 198.	Numeric	10	NO
PeakID07	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 175, for DFTPP enter 198.	Numeric	10	NO
PercentRatio07	For BFB enter the relative percent abundance of m/z 175 measured relative to the raw abundance of m/z 174. For DFTPP enter the ion abundance of m/z 198 as 100 percent.	Numeric	10	NO
PeakID08	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 176, for DFTPP enter 199.	Numeric	10	NO
PercentRatio08	For BFB enter the relative percent abundance of m/z 176 measured relative to the raw abundance of m/z 174. For DFTPP enter the relative percent abundance of m/z 199 measured relative to the raw abundance of m/z 198.	Numeric	10	NO
PeakID09	Identifies individual m/z ions for GC/MS tuning compounds. For BFB enter 177, for DFTPP enter 275.	Numeric	10	NO
PercentRatio09	For BFB enter the relative percent abundance of m/z 177 measured relative to the raw abundance of m/z 176. For DFTPP enter the relative percent abundance of m/z 275 measured relative to the raw abundance of m/z 198.	Numeric	10	NO
PeakID10	Identifies individual m/z ions for GC/MS tuning compounds. For BFB leave blank, for DFTPP enter 365.	Numeric	10	NO

Table 2
Field Descriptions for the Laboratory Instrument Table (A2 file)

Contains related to laboratory instrument calibration on an analyte level and GC/MS Tune information. This table is optional depending on project requirements. Do not report Table A2 for radiochemistry methods.

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
PercentRatio10	For BFB leave blank. For DFTPP enter the relative percent abundance of m/z 365 measured relative to the raw abundance of m/z 198.	Numeric	10	NO
PeakID11	Identifies individual m/z ions for GC/MS tuning compounds. For BFB leave blank, for DFTPP enter 441.	Numeric	10	NO
PercentRatio11	For BFB leave blank. For DFTPP the percent abundance of m/z 441 measured relative to the raw abundance of m/z 443	Numeric	10	NO
PeakID12	Identifies individual m/z ions for GC/MS tuning compounds. For BFB leave blank, for DFTPP enter 442.	Numeric	10	NO
PercentRatio12	For BFB leave blank. For DFTPP enter the relative percent abundance of m/z 442 measured relative to the raw abundance of m/z 198.	Numeric	10	NO
PeakID13	Identifies individual m/z ions for GC/MS tuning compounds. For BFB leave blank, for DFTPP enter 443.	Numeric	10	NO
PercentRatio13	For BFB leave blank. For DFTPP enter the relative percent abundance of m/z 443 measured relative to the raw abundance of m/z 442.	Numeric	10	NO

* Date/time format is: MM/DD/YYYY hh:mm where MM = month, DD = day, YYYY = four digits of the year, hh = hour in 24 hour format, and mm = minutes.

Table 3
Field Description for the Sample Analysis (A3 file)

This table contains information related to analyses of field samples and laboratory QC samples (excluding calibrations and tunes) on a sample level for environmental chemical analyses including radiochemistry

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
ProjectNumber	Project number assigned by the client.	Text	30	YES (specified by project)
ProjectName	Project name assigned by the client.	Text	90	YES (specified by project)
ClientSampleID	Client or contractor's identifier for a field sample If a sample is analyzed as a laboratory duplicate, matrix spike, or matrix spike duplicate, append suffixes DUP, MS and MSD respectively to the Client Sample ID with no intervening spaces or hyphens (i.e. MW01DUP, MW01MS, and MW01MSD). For Method Blanks, LCS, and LCSD enter the unique LaboratorySampleID into this field Do not append suffixes to the ClientSampleID for dilutions, reanalyses, or re-extracts (the Analysis_Type field is used for this distinction). For example, MW01DL and MW01RE are not allowed Parent sample records must exist for each MS and MSD. If an MS/MSD is shared between two EDDs, records for the MS/MSD and its parent sample must exist in the Sample Analysis table for both EDDs.	Text	25	NO
Collected	For radiochemistry methods the Date of sample collection. Refer to the date format for radiochemistry methods at the end of this table. For all other methods the Date and Time of sample collection. Refer to the date/time format at the end of this table. Leave this field blank for Method Blank, LCS, and LCSD	Date/ Time	16*	NO
MatrixID	Sample matrix (i.e., AQ, SO, etc.)	Text	10	YES (See Table 4)
LabSampleID	Laboratory tracking number for field samples and lab generated QC samples such as method blank, LCS, and LCSD. There are no restrictions for the LabSampleID except field length and that the LabSampleID must be unique for a given field sample or lab QC sample and method.	Text	25	NO
QCType	This record identifies the type of quality control sample QC (i.e., Duplicate, LCS, Method Blank, MS, or MSD). For regular samples, leave this field blank.	Text	10	YES (See Table 4)
ShippingBatchID	Unique identifier assigned to a cooler or shipping container used to transport client or field samples. Links all samples to a cooler or shipping container. No entry for method blanks, LCS, and LCSD. This field is optional.	Text	25	NO
Temperature	Temperature (in centigrade degrees) of the sample as received. This field is not required for radiochemistry methods.	Numeric	10	NO

Table 3
Field Description for the Sample Analysis (A3 file)

This table contains information related to analyses of field samples and laboratory QC samples (excluding calibrations and tunes) on a sample level for environmental chemical analyses including radiochemistry

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
LabAnalysisRefMethodID	Laboratory reference method ID. The method ID may be an EPA Method number or laboratory identifier for a method such as a SOP number, however; values used for Laboratory Method IDs are specified by the project and must in the in standard value list for method IDs.	Text	25	YES (Specified by the project)
PreparationType	Preparation Method Number (i.e., 3010A, 3510C, 3550C, 5030B, etc.) For analytical procedures that do not have a specific preparation method number, use "Gen Prep".	Text	25	YES (See Table 4)
AnalysisType	Defines the type of analysis such as initial analysis, dilution, re-analysis, etc. This field provides distinction for sample records when multiple analyses are submitted for the same sample, method, and matrix, for example: dilutions, re-analyses, and re-extracts.	Text	10	YES (See Table 4)
Prepared	For radiochemistry leave this field blank. For all other methods enter the date and time of sample preparation or extraction. Refer to the date/time format at the end of this table.	Date/ Time	16*	NO
Analyzed	For radiochemistry methods the date of sample analysis. Refer to the date format for radiochemistry methods at the end of this table. For all other methods the date and time of sample analysis. Refer to the date and time format at the end of this table.	Date/ Time	*	NO
LabID	Identification of the laboratory performing the analysis.	Text	7	NO
QCLevel	The level of laboratory QC associated with the analysis reported in the EDD. If only the Analytical Results Table (A1) and the Sample Analysis Table (A3) information are submitted for the sample, enter "COA". If the Laboratory Instrument Table (A2) information is also submitted for the sample, enter "COCAL"	Text	6	YES (See Table 4)
ResultBasis	Indicates whether results associated with this sample records are reported as wet or percent moisture corrected. This field is only required for soils and sediments. Enter "WET" if results are not corrected for percent moisture. Enter "DRY" if percent moisture correction is applied to results.	Text	3	YES (See Table 4)
TotalOrDissolved	This field indicates if the results related to this sample record are reported as a total or dissolved fraction. This field is only required for metal methods. For all other methods leave this field blank.	Text	3	YES (See Table 4)
Dilution	Dilution of the sample aliquot. Enter "1" for method blanks, LCS, and LCSD, or if the field samples was analyzed without dilution.	Numeric	10	NO
HandlingType	Indicates the type of leaching procedure, if applicable (i.e., SPLP, TCLP, WET). Leave this field blank if the sample analysis was not performed on a leachate.	Text	10	YES (See Table 4)

Table 3
Field Description for the Sample Analysis (A3 file)

This table contains information related to analyses of field samples and laboratory QC samples (excluding calibrations and tunes) on a sample level for environmental chemical analyses including radiochemistry

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
HandlingBatch	Unique laboratory identifier for a batch of samples prepared together in a leaching procedure (i.e., SPLP, TCLP, or WET preparation). The HandlingBatch links samples with leaching blanks. Leave this field blank if the sample analysis was not performed on a leachate	Text	12	NO
LeachateDate	Date and time of leaching procedure (i.e., date for SPLP, TCLP, or WET preparation). Refer to the date and time format at the end of this table. Leave this field blank if the sample analysis was not performed on a leachate	Date /Time	16*	NO
Percent_Moisture	Percent of sample composed of water. Enter for soil and sediment samples only.	Numeric	10	NO
MethodBatch	Unique laboratory identifier for a batch of samples of similar matrices analyzed by one method and treated as a group for matrix spike, matrix spike duplicate, or laboratory duplicate association The method batch links the matrix spike and/or matrix spike duplicate or laboratory duplicates to associated samples. Note, the MethodBatch association may coincide with the PreparationBatch association. The MethodBatch is specifically used to link the MS/MSD and/or DUP to associated samples.	Text	12	NO
PreparationBatch	Unique laboratory identifier for a batch of samples prepared together for analysis by one method and treated as a group for method blank, LCS and LCSD association. The PreparationBatch links method blanks and laboratory control samples (blank spikes) to associated samples. Note, the PreparationBatch association may coincide with the MethodBatch association but the PreparationBatch specifically links the Method Blank and LCS to associated samples.	Text	12	NO
RunBatch	For radiochemistry methods leave this field blank. For all other methods the RunBatch is the unique identifier for a batch of analyses performed on one instrument under the control of one initial calibration and initial calibration verification. The RunBatch links both the initial calibration and initial calibration verification to subsequently analyzed and associated continuing calibrations, field samples, and QC analyses. For GC/MS methods, the RunBatch also links a BFB or DFTPP tune. A distinct RunBatch must used with every new initial calibration within a method The value entered in this field links a particular sample/method/analysis type record to a set of associated initial calibration and initial calibration verification records from Table A2. This field is only required if the A2 table is included with the EDD.	Text	12	NO

Table 3
Field Description for the Sample Analysis (A3 file)

This table contains information related to analyses of field samples and laboratory QC samples (excluding calibrations and tunes) on a sample level for environmental chemical analyses including radiochemistry

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
AnalysisBatch	For radiochemistry methods leave this field blank. For all other methods the AnalysisBatch is the unique identifier for a batch of analyses performed on one instrument and under the control of a continuing calibration or continuing calibration verification. The AnalysisBatch links the continuing calibration or calibration verification to subsequently analyzed and associated field sample and QC analyses. For GC/MS methods, the AnalysisBatch also links the BFB or DFTPP tune. A distinct AnalysisBatch must be used with every new continuing calibration or continuing calibration verification within a method The value entered in this field links a particular sample/method/analysis type record to a set of associated continuing calibration records in the Laboratory Instrument table. This field is only required if the A2 table is included with the EDD.	Text	12	NO
LabReportingBatch	Unique laboratory identifier for the EDD. This is equivalent to the sample delivery group, lab work number, login ID, etc. The LabReportingBatch links all records in the EDD reported as one group. The value entered in this field must be the same in all records.	Text	12	NO
LabReceipt	Date and time the sample was received in the lab. A time value of 00:00 may be entered. Refer to the date/time format at the end of this table.	Date/ Time	16*	
LabReported	Date and time hard copy reported delivered by the lab. A time value of 00:00 may be entered. Refer to the date/time format at the end of this table.	Date/ Time	16*	

* For radiochemistry methods format Date as MM/DD/YYYY (where MM = two digit month, DD = two digit day, and YYYY = four digit year)

For all other methods format Date and Time as MM/DD/YYYY hh:mm YYYY (where MM = two digit month, DD = two digit day, and YYYY = four digit year, hh = hour in 24 hour format, and mm = minutes)

Table 4
Standard Value List

Field Name	Standard Value	Standard Value Description
Analysis_Type	DL	Dilution of the original sample
	DL2	Second dilution of the original sample
	DL3	Third dilution of the original sample
	DL4	Fourth dilution of the original sample
	RE	Reanalysis/re-extraction of sample
	RE2	Second reanalysis/re-extraction of sample
	RE3	Third reanalysis/re-extraction of sample
	RE4	Fourth reanalysis/re-extraction of the original sample
	RES	The initial or original sample.
Analyte_Name	Refer to QAPP and Project Library	Analyte names are specified by the project and entered into the library for each method and matrix. Analyte Names used in project libraries must first exist in the standard value table. The same holds true for the ClientAnalyteID
Analyte_Type	IS	Internal standard as defined per CLP usage
	SPK	Spiked analyte
	SURR	Surrogate as defined as per CLP usage
	TIC	Tentatively identified compound for GC/MS analysis
	TRG	Target compound
Detection_Limit_Type [1]	CRDL	Contract required detection limit
	IDL	Instrument detection limit
	MDA	Minimum detectable activity
	MDL	Method detection limit
Handling_Type [2]	WET	Wet leaching procedure
	SPLP	Synthetic Precipitation Leaching Procedure
	TCLP	Toxicity Characteristic Leaching Procedure
Lab_Analysis_Ref_Method_ID	Refer to QAPP and Project Library	Method IDs are specified by the project and entered into the library. Methods used in project libraries must first exist in the standard value table
Lab_Qualifiers [3]	*	INORG: Duplicate analysis was not within control limits
	*	ORG: Surrogate values outside of contract required QC limits
	+	INORG: Correlation coefficient for the method of standard additions (MSA) was less than 0.995
	A	ORG: Tentatively identified compound (TIC) was a suspected aldol-condensation product
	B	INORG: Value less than contract required detection limit, but greater than or equal to instrument detection limit
	B	ORG: Compound is found in the associated blank as well as in the sample
	C	ORG: Analyte presence confirmed by GC/MS
	D	Result from an analysis at a secondary dilution factor
	E	INORG: Reported value was estimated because of the presence of interference
	E	ORG: Concentrations exceed the calibration range of the instrument
	H	Analysis performed outside method or client-specified holding time requirement
	J	Estimated value
	M	INORG: Duplicate injection precision was not met
	N	INORG: Spiked sample recovery was not within control limits
	N	ORG: Presumptive evidence of a compound
	P	ORG: Difference between results from two GC columns unacceptable (>25% Difference)
	S	Reported value was determined by the method of standard additions (MSA)
	U	Compound was analyzed for, but not detected. Analyte result was below the Reporting Limit.
	W	INORG: Post digestion spike was out of control limits
	X	Reserved for a lab-defined data qualifier
	Y	Reserved for a lab-defined data qualifier
	Z	Reserved for a lab-defined data qualifier
Matrix_ID	AIR	Air
	AQ	Water
	ASH	Ash

Table 4
Standard Value List

Field Name	Standard Value	Standard Value Description
Matrix_ID (continued)	BIOTA	Biological matter
	FILTER	Filter
	LIQUID	Non-aqueous liquid
	OIL	Oil
	SED	Sediment
	SLUDGE	Sludge
	SO	Soil
	SOLID	Non-soil/sediment solid
	TISSUE	Tissue
	WASTE	Waste
	WIPE	Wipe
Preparation_Type [4]	3005A	Acid Digestion of Waters for Total Recoverable or Dissolved Metals by FLAA or ICP
	3010A	Acid of Aqueous Samples and Extracts for Total Metals by FLAA or ICP
	3015	Microwave Assisted Acid Digestion of Aqueous Samples and Extracts
	3020A	Acid Digestion of Aqueous Samples and Extracts for Total Metals by GFAA
	3031	Acid Digestion of Oils for Metals Analysis by AA or ICP
	3050B	Acid Digestion of Sediments, Sludges, and Soils
	3051	Microwave Assisted Acid Digestion of Sediments, Sludges, Soils and Oils
	3052	Microwave Assisted Acid Digestion of Siliceous and Organically Based Matrices
	3060A	Alkaline Digestion for Hexavalent Chromium
	3510C	Separatory Funnel Liquid-Liquid Extraction
	3520C	Continuous Liquid-Liquid Extraction
	3535	Solid Phase Extraction
	3540C	Soxhlet Extraction
	3541	Automated Soxhlet Extraction
	3545	Pressurized Fluid Extraction
	3550B	Ultrasonic Extraction
	3560	Supercritical Fluid Extraction of Total Recoverable Petroleum Hydrocarbons
	5030B	Purge and Trap for Aqueous Samples
	5035	Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples
	7470A	Acid digestion of waters for Mercury analysis
	7471A	Acid digestion of soils and solids for Mercury analysis
	Gen Prep	Generic preparation type when a preparation method ID does not exist (used mostly for general chemistry methods)
QC_Level	COA	Certificate of Analysis (accuracy and precision, no calibration)
	COACAL	Certificate of Analysis (accuracy and precision including calibration)
QC_Type	MB	Analytical control consisting of all reagents and standards that is carried through the entire procedure (Method Blank)
	CV	(Calibration Verification) Analytical standard run at a specified frequency to verify the calibration of the analytical system
	CCV	(Continuing Calibration Verification) Analytical standard run every 12 hours to verify the calibration of the GC/MS system
	DUP	A second aliquot of a sample that is treated the same as the original aliquot to determine the precision of the method
	IC	(Initial Calibration) Analysis of analytical standards for a series of different specified concentrations
	ICV	(Initial Calibration Verification) Analytical standard run at a specified frequency to verify the accuracy of the initial calibration of the analytical system
	IPC	(Instrument Performance Check) Analysis of DFTPP or BFB to evaluate the performance of the GC/MS system
	LCS	(Laboratory Control Sample) A control sample of known composition
	LCSD	(Laboratory Control Sample Duplicate) A duplicate control sample of known composition
	MS	(Matrix Spike) Aliquot of a matrix spiked with known quantities and subjected to the entire analytical procedure to measure recovery
	MSD	(Matrix Spike Duplicate) A second aliquot of the same matrix as the matrix spike that is spiked in order to determine the precision of the method
Reporting_Limit_Type [1]	CRDL	Contract- required detection limit
	CRQL	Contract- required quantitation limit

Table 4
Standard Value List

Field Name	Standard Value	Standard Value Description
Reporting_Limit_Type (continued)	PQL	Practical quantitation limit
	SQL	Sample quantitation limit
	RDL	Reportable detection limit
Result_Basis	DRY	Result was calculated on a dry weight basis
	WET	Result was calculated on a wet weight basis
Result_Units [5]	ug/L	Micrograms per liter
	mg/L	Milligrams per liter
	ug/Kg	Micrograms per kilogram
	mg/Kg	Milligrams per kilogram
	pg/L	Picograms per liter
	ng/Kg	Nanograms per kilogram
Total_Or_Dissolved	DIS	Dissolved
	TOT	Total

1 **Additional Detection Limit Types and Reporting Limit Types may be used. These must be added to the application standard values.**
2 **Additional Handling Types (leachate procedures) may be used. These must be added to the application standard values**
3 **Additional Lab Qualifiers may be used, or listed Lab Qualifiers may be used in a different manner than described in this table. New lab qualifiers must be added to the application standard value tables. NOTE: The "U" Lab Qualifier must be used for all non-detects.**
4 **Additional Preparation Types may be used. These must be added to the application standard value tables.**
5 **Additional Result Units may be used. The project library specifies the reporting limit used for each method and matrix**

Note: if new standard values are used then these standard values must be entered in the software standard values for both the lab and contractor. The application will automatically update the standard values tables if an importing library contains standard values (method, client analyte ID, and analyte name) that do not exist in the software importing the new library.

Table 5
Required Fields in the Analytical Results Table for GC/MS, GC, and HPLC Methods

	GC/MS Methods			GC and HPLC Methods		
Field	Regular Sample*	MS/MSD	Method Blank, LCS/LCSD	Regular Sample*	MS/MSD	Method Blank, LCS/LCSD
Client_Sample_ID	X	X	X	X	X	X
Lab_Analysis_Ref_Method_ID	X	X	X	X	X	X
Analysis_Type	X	X	X	X	X	X
Lab_Sample_ID	X	X	X	X	X	X
Lab_ID	X	X	X	X	X	X
Client_Analyte_ID	X	X	X	X	X	X
Analyte_Name	X	X	X	X	X	X
Result	X	X	X	X	X	X
Result_Units	X	X	X	X	X	X
Lab_Qualifiers	Q	Q	Q	Q	Q	Q
Detection Limit	X	X	X	X	X	X
Detection_Limit_Type	X	X	X	X	X	X
Retention_Time	T		T			
Analyte_Type	X	X	X	X	X	X
Percent_Recovery	S	R	R	S	R	R
Relative_Percent_Difference		D	D		D	D
Reporting_Limit	X	X	X	X	X	X
Reporting_Limit_Type	X	X	X	X	X	X
Reportable_Result	X	X	X	X	X	X

Key

- X Required Field
- D Required field for spiked compounds in the LCSD and MSD only
- Q Required field if laboratory has qualified result. The "U" qualifier MUST be entered if the result is non-detect.
- R Required field if Analyte_Type = "SPK" or "SURR"
- S Required field for surrogate compounds only
- T Required field for tentatively identified compounds by GC/MS only
- * Also includes Equipment Blanks, Field Blanks, and Trip Blanks

Table 6
Required Fields in the Analytical Results Table for ICAP, AA, and IC Methods

	ICAP and AA Methods			IC and Wet Chemistry Methods		
Field	Regular Sample*	Sample Duplicate, MS/MSD	Method Blank, LCS/LCSD	Regular Sample*	Sample Duplicate MS/MSD	Method Blank, LCS/LCSD
Client_Sample_ID	X	X	X	X	X	X
Lab_Analysis_Ref_Method_ID	X	X	X	X	X	X
Analysis_Type	X	X	X	X	X	X
Lab_Sample_ID	X	X	X	X	X	X
Lab_ID	X	X	X	X	X	X
Client_Analyte_ID	X	X	X	X	X	X
Analyte_Name	X	X	X	X	X	X
Result	X	X	X	X	X	X
Result_Units	X	X	X	X	X	X
Lab_Qualifiers	Q	Q	Q	Q	Q	Q
Detection Limit	X	X	X	X	X	X
Detection_Limit_Type	X	X	X	X	X	X
Retention_Time						
Analyte_Type	X	X	X	X	X	X
Percent_Recovery		S	S		S	S
Relative_Percent_Difference		R	R		R	R
Reporting_Limit	X	X	X	X	X	X
Reporting_Limit_Type	X	X	X	X	X	X
Reportable_Result	X	X	X	X	X	X

Key

- X Required field
- Q Required field if laboratory has qualified result. The "U" qualifier MUST be entered if the result is non-detect
- R Required field for spiked compounds in LCSD or MSD, or target compounds in the Sample Duplicate only
- S Required field if Analyte_Type = "SPK"
- * Also includes Trip Blanks, Equipment Blanks, and Field Blanks

Table 7
Required Fields in the Laboratory Instrument Table

	GC/MS Tunes		Initial Calibration				Initial Calibration Verification				Calibration Verification, Continuing Calibration
Field	VOA	SVOA	GC/MS	GC HPLC	ICP/AA	IC*	GC/MS	GC HPLC	ICP/AA	IC*	ALL METHODS
Instrument_ID	X	X	X	X	X	X	X	X	X	X	X
QC_Type	X	X	X	X	X	X	X	X	X	X	X
Analyzed	X	X	X	X	X	X	X	X	X	X	X
Alternate_Lab_Analysis_ID	X	X	X	X	X	X	X	X	X	X	X
Lab_Analysis_ID	X	X					X	X	X	X	X
Lab_Analysis_Ref_Method_ID	X	X	X	X	X	X	X	X	X	X	X
Client_Analyte_ID	X	X	X	X	X	X	X	X	X	X	X
Analyte_Name	X	X	X	X	X	X	X	X	X	X	X
Run_Batch	X	X	X	X	X	X	X	X	X	X	X
Analysis_Batch	C	C									X
Lab_Reporting_Batch	X	X	X	X	X	X	X	X	X	X	X
Percent_Relative_Standard_Deviation			X	X							
Correlation_Coefficient			B	B	X	X					
Relative_Response_Factor			X				X				M
Percent_Difference							X	X	X	X	X
Peak_ID_01	X	X									
Percent_Ratio_01	X	X									
Peak_ID_02	X	X									
Percent_Ratio_02	X	X									
Peak_ID_03	X	X									
Percent_Ratio_03	X	X									
Peak_ID_04	X	X									
Percent_Ratio_04	X	X									
Peak_ID_05	X	X									
Percent_Ratio_05	X	X									
Peak_ID_06	X	X									
Percent_Ratio_06	X	X									
Peak_ID_07	X	X									
Percent_Ratio_07	X	X									
Peak_ID_08	X	X									
Percent_Ratio_08	X	X									
Peak_ID_09	X	X									
Percent_Ratio_09	X	X									
Peak_ID_10		X									
Percent_Ratio_10		X									
Peak_ID_11		X									
Percent_Ratio_11		X									
Peak_ID_12		X									
Percent_Ratio_12		X									
Peak_ID_13		X									
Percent_Ratio_13		X									

Key

X Required field (some fields are not applicable to some General (Wet) Chemistry tests)

B Required field if reporting best fit

C Required field if BFB or DFTPP associated with a continuing calibration only

M Required field for GC/MS continuing calibration only

*IC Includes Ion Chromatography and Classical or Wet Chemistry methods. Methods such as pH, Conductivity, and others do not use traditional calibration procedures, ; therefore, some fields marked as a required field under the "IC" column do not apply for these methods.

Table 8
Required Fields in the Sample Analysis Table

	GC, GC/MS, HPLC Methods		ICAP and AA Methods		IC and Wet Chemistry Methods	
Field	Method Blanks, LCS/LCSD	Regular Samples*, Sample Duplicate, MS/MSD	Method Blanks, LCS/LCSD	Regular Samples*, Sample Duplicate, MS/MSD	Method Blanks, LCS/LCSD	Regular Samples*, Sample Duplicate, MS/MSD
Client_Sample_ID	X	X	X	X	X	X
Collected		X		X		X
Matrix_ID	X	X	X	X	X	X
Lab_Sample_ID	X	X	X	X	X	X
QC_Type	X	Q	X	Q	X	X
Shipping_Batch_ID		X		X		X
Temperature		X				X
Lab_Analysis_Ref_Method_ID	X	X	X	X	X	X
Preparation_Type	X	X	X	X	X	X
Analysis_Type	X	X	X	X	X	X
Prepared	A	A	X	X	N	N
Analyzed	X	X	X	X	X	X
Lab_ID	X	X	X	X	X	X
QC_Level	X	X	X	X	X	X
Results_Basis		S		S		S
Total_Or_Dissolved			W	W		
Dilution	X	X	X	X	X	X
Handling_Type	L	L	L	L	L	L
Handling_Batch	L	L	L	L	L	L
Leachate_Date	L	L	L	L	L	L
Percent Moisture		S		S		S
Method_Batch	X	X	X	X	X	X
Preparation_Batch	X	X	X	X	X	X
Run_Batch	C	C	C	C	C	C
Analysis_Batch	C	C	C	C	C	C
Lab_Reporting_Batch	X	X	X	X	X	X
Lab_Receipt		X		X		X
Lab_Reported	X	X	X	X	X	X

Key

X Required field
A Required field for samples prepared by methanol extraction
C Required field if Instrument Calibration Table (A2) is included in EDD
L Required field if analysis performed on SPLP, TCLP, or WET extracts
N Required field only for samples that require preparation before analysis
Q Required field for Sample Duplicate, MS, and MSD only
S Required field if "Matrix_ID" = "SO" or "SED"
W Required field for aqueous samples only
* Includes Trip Blanks, Equipment Blanks, and Field Blanks

C Citizen Participation Program

Introduction

The Citizen Participation (CP) program provides a means to create open communication and mutual trust between the community, New York State Department of Environmental Conservation (NYSDEC), and other regulatory agencies. Citizen input will aid NYSDEC in the selection of a remedial alternative that is cost-effective, environmentally sound, and has widespread public acceptance. The CP program will include the following components:

- Preparation and distribution of one fact sheet discussing remedial investigation activities;
- Establishment of two repositories for site-related plans and reports;
- Preparation and posting of one set of announcements regarding the convening of a public meeting; and
- Holding one public meeting to present the draft reports and solicit comments.

Each item is discussed in further detail in Sections 1 and 2.

1.0 Citizen Participation Program Elements

1.1 Task 1: First Fact Sheet Preparation

An initial fact sheet will be developed before the start of field investigations to inform the community of upcoming site activities. The fact sheet will include discussions regarding the purpose and objectives of the site characterization (SC), the site's background and history, a site map, and a description of SC field investigations to be conducted. The fact sheet will be produced by NYSDEC, with Ecology and Environment Engineering, P.C. (EEEPC) providing some input.

1.2 Task 2: Repository Establishment

EEEPC will re-establish two document repositories for this project; repositories used for the OU-1 project. Relevant documents, including fact sheets, a technical work plan, and the site report (when completed) will be made available for public viewing at this location. The village municipal building and one other location to be selected are being considered, as they are both relatively nearby to the areas residents.

1.3 Task 3: Contact List Development

EEEPC will provide input into a contact list that NYSDEC developed for OU-1. NYSDEC will use this for mailing meeting notices and fact sheets, as well as other pertinent documents. Initially, this list is expected to include:

- Commercial business located within 0.5 mile of the site;
- Adjacent landowners;

- Other interested parties, such as the Village of Depew;
- Local elected officials (city, county, and state); and
- Other government agencies, including the New York State Department of Health and Rensselaer County Health Department.

EEEPC will provide names of persons such as those encountered during field operations who are not already included among the above groups.

This contact list can be expanded as necessary during the project.

1.4 Task 4: Second Fact Sheet Preparation

Upon completion of the Proposed Remedial Action Plan (PRAP), NYSDEC may choose to prepare and distribute a second fact sheet. This fact sheet will present findings and conclusions of the remedial investigation/feasibility study (RI/FS), and will note that the reports are available for public comment at listed public repositories. If prepared, EEEPC will review NYSDEC's draft fact sheet and will distribute the final fact sheet to the project document repositories.

1.5 Task 5: Preparation and Announcement of the Public Meeting

A public meeting will held following completion of the RI/FS and PRAP. The meeting announcement will contain the following information: the date, time, and location of the public meeting; the purpose of the meeting; identification of the report repository; the contact person(s); and the topics to be discussed. The announcement will be mailed with, or included on, the second fact sheet. It will be developed by NYSDEC with EEEPC's input. NYSDEC will send meeting announcements to those on the contact list developed in CP Task 3.

1.6 Task 6: Public Meeting

A public meeting will be conducted upon completion of the PRAP. The purpose of the meeting will be to inform the community of the purpose for, and results of, the RI/FS. In addition, the remedial alternatives evaluated to address site contamination found during the RI/FS will be presented in a brief, summary manner. The PRAP will be available to the public for a comment period, and NYSDEC will account for the comments received when finalizing the remedial alternative selection. EEEPC will provide input to the public meeting, which will be chaired and organized by NYSDEC.

2.0 Public Inquiries

The EEEPC Project Manager will be the principal point of contact during the project. He will rely mainly on the fact sheet as a standard set of facts to be released to the public. If inquiries are made of the EEEPC staff by the public on site, EEEPC will distribute the fact sheet to those making the inquiries. If inquiries on topics not addressed by the fact sheet are made by the same party, EEEPC will direct these questions to the NYSDEC Project Manager.