



# **FINAL REPORT DRUM REMOVAL ACTION**

**PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

**Prepared on behalf of the PAS Irwin Joint Defense Group**

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**Prepared by:  
Conestoga-Rovers  
& Associates**

651 Colby Drive  
Waterloo, Ontario  
Canada N2V 1C2

Office: (519) 884-0510  
Fax: (519) 884-0525

web: <http://www.CRAworld.com>

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## 1.0 INTRODUCTION

This Final Report has been prepared by Conestoga-Rovers & Associates (CRA) on behalf of the PAS Irwin Joint Defense Group (Group) pursuant to Paragraph 68 of the Administrative Settlement Agreement and Order on Consent for a Removal Action (Index No. CERCLA-02-2008-2018) (Order) for the Pollution Abatement Services (PAS) Irwin Dump Superfund Site (Site). As further detailed in Paragraph 68, the purpose of the Final Report is to summarize the actions taken to comply with the Order, which includes the following: a synopsis of all work performed under the Settlement Agreement, United States Environmental Protection Agency (USEPA)-approved modifications to the Site Operating Plan (SOP), quantities and types of materials removed from the Site, a discussion of removal and disposal actions taken, a listing of the ultimate destination of those materials, analytical results for all sampling and analysis performed, and relevant appendices. This Final Report documents satisfactory completion of all requirements of the Site Operating Plan, amendments thereto, and the Order, as approved by USEPA.

### 1.1 SITE DESCRIPTION

The Site presented on Figure 1.1 is located along Byer Road, in the City of Oswego, Oswego County, New York. Site as defined in the Order is the PAS Irwin Dump Superfund Site which includes but is not limited to, an approximately 4-acre improved parcel of land identified as parcel 145.50-01-08 on the tax maps of the City of Oswego and an approximately 1-acre parcel of open land identified as parcel 145.50-01-04.1 on the tax maps of the City of Oswego, as depicted on Figure 1.2, and which are located north of 70 Byer Road, in the City of Oswego, Oswego County, New York, as well as any areas necessary for implementation of response actions and any surrounding areas to which contamination has migrated. The Site consists of a drum burial area (Drum Area) located in part of a construction and demolition debris landfill (C & D Landfill) created in the 1970s. The Site is bounded to the east and west by commercial businesses (residential properties are present further to the west along Byer Road), to the south by Byer Road and immediately to the north by woodlands. A Site plan is presented on Figure 1.2.

## 1.2 SITE HISTORY

The Site is part of a 4-acre construction debris landfill created in the 1970s. Reportedly, approximately 200 drums from the PAS site located on E. Seneca Street in the City of Oswego were transported to and buried on the Site by Richard Irwin in the mid-1970s. Drums were observed at the Site by the Oswego County Department of Health and City of Oswego officials in 1976.

Several field investigations have been undertaken at the Site beginning in 1983. A Phase I investigation (1983) and a Phase II investigation (1986) were completed at the Site by New York State Department of Environmental Conservation (NYSDEC) and reported no significant contamination. Buried drums were discovered on the Site during an expanded NYSDEC Phase II investigation in 1991. Waste from one of the drums failed Extraction Procedure Toxicity Test (EP-TOX) for ignitability. At least six drums were uncovered and all were reportedly in poor condition. Samples from groundwater wells installed around the landfill did not indicate significant levels of contamination. Due to the presence of an unknown number of drums buried on the Site, the NYSDEC listed the Site on its Class 2 Registry of Inactive Hazardous Waste Disposal Sites on March 31, 1994.

In 1998, in response to a referral from NYSDEC, USEPA's Region II removal program performed a removal assessment at the Site. USEPA excavated 15 trenches and collected five soil samples during the assessment. Groundwater samples were also collected and analyzed from the six existing monitoring wells around the Site. No cache of buried drums was located on the Site during the 1998 assessment and the results of the samples did not indicate any significant contamination.

NYSDEC returned to the Site in 1999 to confirm the presence of the drum burial area. The excavation work at this time revealed more than 25 drums buried in the same area previously identified in 1991. At least one of these drums contained an ignitable material and was overpacked and removed from the Site.

In 2007, a Site Removal Assessment was performed by USEPA. The Site Removal Assessment identified a drum burial area located near the embankment that was approximately 40 feet by 60 feet and approximately 15 feet deep. During the assessment, USEPA observed damaged and corroded buried drums. The drums contained clear liquids, colored solids, brown and black resinous material, viscous tarry liquids, clear silicone-like gels and rubbery textured brown/orange solids. Of the 24 samples EPA collected during the assessment, four samples were collected from the stockpile and the 20 remaining samples were collected from the drums or directly from



the trackhoe bucket. Samples were analyzed for an extensive parameter list including Resource Conservation and Recovery Act (RCRA) characteristics, Toxicity Characteristic Leaching Procedure (TCLP) Volatile Organic Carbons (VOCs), TCLP Semi-Volatile Organic Carbons (SVOCs), TCLP metals, TCLP pesticides, Polychlorinated Biphenyls (PCBs), pesticides, Target Analyte List (TAL) metals, cyanide, Target Compound List (TCL) VOCs, and TCL SVOCs. Results from the analysis of these samples concluded that hazardous substances as defined by CERCLA were present in the drums and soil from the drum area and remained at the Site. An unknown number of drums remained in the drum burial area along contaminated soil impacted by releases from these drums. At the completion of the Site Removal Assessment, approximately 150 drums and 200 cubic yards of contaminated soil excavated from this area were staged on the surface of the Site.

### **1.3 SITE OPERATING PLAN**

In accordance with paragraph 45 of the Order, a SOP including Site Work Plan (SWP), Health & Safety Plan, Transportation and Disposal (T&D) Plan, and Quality Assurance Project Plan (QAPP) was submitted to USEPA on September 8, 2008 and approved by USEPA on September 12, 2008.

The SOP provided a plan to address the following: proper characterization, transportation and off-Site disposal of drums and containers already excavated and staged at the Site; proper characterization, transportation and disposal of contaminated soil already staged at the Site; determination of the extent of soil contamination associated with the Drum Area; excavation of any other buried drums and/or other containers in the Drum Area; excavation of contaminated soil in the Drum Area; proper characterization, transportation and off-Site disposal of additional excavated drums and soil associated with the Drum Area; appropriate post-excavation soil sampling and analysis in the excavation area to document the adequacy of the soil removal; further investigation to determine the potential extent of groundwater contamination associated with the Drum Area; appropriate backfilling of the excavation and Site restoration.

Modifications to the SOP during field activities are described in Section 2.1.

## **1.4**        **FINAL REPORT ORGANIZATION**

In addition to this introduction, this final report includes the following sections:

Section 2.0    Summary of Work Completed;

Section 3.0    Materials Handling;

Section 4.0    Sampling and Analysis;

Section 5.0    Groundwater Investigation;

Section 6.0    Transportation and Disposal of Waste Streams; and

Section 7.0    Project Restoration and Closeout.

## 2.0 SUMMARY OF WORK COMPLETED

All property access agreements were obtained as required by the Order prior to site mobilization. The field work activities identified in the SOP were completed at the Site between September 8, 2008 and December 3, 2008. Figure 2.1 presents the actual dates of when the work at the Site was completed.

The following presents a summary of work completed at the Site:

- Mobilization of construction equipment;
- Establishment of temporary facilities (i.e., site trailer, generator, staging pads, temporary roads, water handling system, site security fencing, etc) and work zones as identified in the approved Health and Safety Plan which was part of the SOP;
- Collection of representative samples of proposed imported material to be used as backfill. Virgin crusher run stone did not require analysis. Topsoil and gravel was sampled and determined to be acceptable. For the purpose of this project, all gravel is material that meets unwashed State specification Item 4;
- Collection of reference samples to characterize the material in the C&D landfill in order to develop Site-Specific Cleanup criteria. Ten fill samples were collected from seven soil borings and submitted for chemical analysis;
- The soil staged at the Site by USEPA in the December 2007 Site Removal Assessment was placed on the "potentially impacted" soil staging pad. The drums staged at the Site by USEPA in the December 2007 Site Removal Assessment remained on the USEPA pad until all the drums, previously excavated and recently excavated, were numbered, logged, labeled, photographed, and sampled for compatibility testing and waste characterization. Some of the drums from the 2007 removal were relocated to the new drum staging pad during this activity to provide room for access to the drums;
- Excavation of Drum Area. Potentially impacted soil (as described in the SOP) removed from the excavation were staged in a separate pile from "potentially unimpacted" soil. Both soil stockpiles were sampled for disposal and were determined to be a non-hazardous waste. Stockpiles were covered at the end of each day. A large piece of concrete was encountered and removed from the excavation. The concrete was broken into smaller pieces and placed in a roll-off box for disposal. A concrete sample was collected for waste characterization analysis. The characterization indicated that the concrete was a non-hazardous waste. The excavation continued until no more drums or impacted soil associated with the drums were encountered;

- Drums encountered during excavation activities were inspected to determine whether contents were liquid or solid. If liquid, drums were overpacked, however, if solid, the drum was staged on the drum pad pending compatibility testing. Empty drums, drum carcasses, and drum remnants were placed in a roll-off box for disposal. Drums were covered at the end of each day. Eighty-four drums were removed from the excavation during this work;
- Twenty post-excavation verification samples were collected from the sidewalls and floor of the excavation for chemical analysis. Based on the post-excavation sampling results the excavation was deemed complete by the Group and USEPA. The excavation limits were surveyed and the excavation area then backfilled and compacted with clean imported fill. In addition, 6 inches of topsoil was placed over the backfilled area and seeded;
- Completed compatibility testing of drums excavated and drums staged from previous work (182 total drums). Based on compatibility testing, drums were organized into 24 groupings. A representative composite waste sample was collected from each grouping for waste characterization. Eight drum groupings (representing 45 drums) were reported as hazardous for ignitability and all other drum groupings (representing 137 drums) were reported as a non-hazardous waste;
- Wastewater from runoff collected from the staging pads (drum and soil) was placed in 20,000-gallon tanks. A representative sample was collected of the wastewater and analyzed for waste characterization. The results indicated that the water was a non-hazardous waste;
- Characterization, transportation and disposal of waste streams as follows:
  - Drum carcasses in one roll-off to High Acres Landfill in Fairport, New York,
  - Concrete in one roll-off to High Acres Landfill,
  - 1,652 tons of soil to High Acres Landfill,
  - Two roll-off boxes of drums with non-hazardous waste solids (123 drums) to Republic Landfill in New Boston, MI,
  - One drum of ignitably hazardous waste (liquids) to Waste Management in Model City, NY who accepted title and shipped to Ross Incineration Services in Grafton, Ohio,
  - 44 drums of ignitably hazardous waste (solids) to Waste Management in Model City, NY who accepted title and shipped to Ross Incineration Services in Grafton, Ohio,
  - 14 drums of non-hazardous waste liquid waste to Waste Management in Model City, NY who accepted title and shipped to Ross Incineration Services, and
  - 51,250 gallons of wastewater to the Watertown Treatment Plant in Watertown, New York;

- Installation and sampling of groundwater monitoring wells;
- Site restoration;
- Demobilization of equipment; and
- Final seeding will be required in the spring of 2009.

Appendix A presents the photographs that were taken at the Site to document this work (select photographs presented in hardcopy and all photographs included on CD provided as part of Appendix A).

## **2.1 MODIFICATIONS TO APPROVED SOP**

The following sections provide details on USEPA approved modifications that were made during implementation of the approved SOP.

### **2.1.1 STAGING OF DRUMS WITH SOLIDS**

A proposed SOP modification was submitted to USEPA on September 26, 2008 so that excavated drums containing solids would be kept in the drum staging area for future compatibility testing without overpacking. Drums containing liquid, viscous or semi solid material would continue to be overpacked at the point of excavation. Following completion of the excavation, all drums would undergo compatibility testing, grouping, and waste characterization sampling. This allowed for bulk disposal of non-hazardous waste drums with solid contents. USEPA provided verbal approval to this SOP modification.

### **2.1.2 DRUMMED WASTE COMPATIBILITY TESTING PROCEDURES**

On October 16, 2008, a request to modify the SOP Drummed Waste Compatibility Testing procedures from Section 5.0 of Appendix A of the USEPA approved SOP was submitted to USEPA. The letter included revised language for the SWP. The modification incorporated the use of Spilfyter Test Strips instead of the originally proposed test methods. USEPA approved the modification on October 23, 2008.

### **2.1.3 SUPPLEMENTAL INFORMATION FOR PROPOSED MONITORING WELL DEVELOPMENT AND SAMPLING**

At the request of USEPA, supplemental information was provided in a letter to USEPA on November 19, 2008 to complement the SOP associated with the development and sampling of the two new and six existing groundwater monitoring wells at the Site. Section 8.2 of Appendix A (Site Work Plan) and Sections 3.11 and 5.0 of Attachment 1 of Appendix D (QAPP) present the development and sampling procedures.

The following modifications were applied:

The two new monitoring wells were installed using hollow stem augers. Figure 5.1 presents the locations of the two new monitoring wells and the existing monitoring wells. Development and sampling were completed using a bladder pump with polyethylene tubing. The same equipment was used for sampling the two new wells as well as the six existing wells, which was completed using low-flow procedures. Field measurements were collected using a multi-meter (pH, temperature, conductivity, ORP, DO, and turbidity). During development of the new wells, field measurements were collected after each well volume evacuated until two consecutive readings were consistent (within 10 percent). During low flow purging of the two new wells as well as the six existing wells for sampling (flow rate between 100 and 500 mL/min), field measurements were collected every 5 to 10 minutes with a flow-through cell until three consecutive readings were within the limits specified in the groundwater monitoring plan.

Well development was initiated 24 hours following completion of well installation. Well sampling was initiated approximately 72 hours following completion of well development.

USEPA approved the modification on November 19, 2008.

### **2.2 COORDINATION OF FIELD WORK WITH AGENCIES**

The Group and its representatives worked closely with USEPA and NYSDEC and their representatives to complete the work required in the SOP. Table 2.1 presents a summary of the correspondence prior to and during field work between the parties involved in the project. A copy of the correspondence is presented in Appendix B. Weekly scheduled calls were conducted every Wednesday to update the agencies on the progress of the work and to identify/resolve any coordination issues. Monthly progress reports, and

weekly summary reports prepared during the course of field activities, documented the progress of the work (see Appendix C). The progress reports contained updated project schedules showing completed and planned work activities.

### **2.3        HEALTH AND SAFETY**

All work at the Site was conducted consistent with the HASP developed for the Site (Appendix B of the SOP). During excavation and initial drum handling activities, Level B PPE was utilized. Following receipt of waste characterization sample results, the required PPE was reduced to modified Level C for loading soils and drums.

### 3.0 MATERIALS HANDLING

In order to manage the material being handled at the Site, two separate staging facilities were constructed for drums, soils, and roll-off containers in accordance with the SOP.

1. An equipment decontamination facility (Decon facility) was constructed prior to initiating the handling of waste materials. The drum staging facility consisted of an extension to the Decon Facility.
2. Two separate staging areas were constructed, one for potentially unimpacted soil and one for potentially impacted soil.

Each staging area included a sump to collect rainwater falling on the staging area, wash water, and potentially, any spilled liquids. The wastewater collected in the sumps was then pumped to the wastewater holding tank on an as-needed basis. Ultimately three 20,000-gallon tanks were necessary to hold the wastewater generated at the Site.

Table 3.1 presents a summary of the quantities of the material that were managed at the Site.

#### 3.1 SOIL

Clean imported gravel was used to construct the material handling facilities; Decon facility, drum staging pads, and two separate soil staging areas.

During the excavation of drums potentially impacted and potentially unimpacted soils were separated and placed on separate staging pads. As soil was excavated, the buckets of soil were evaluated visually and with a photoionization detector (PID). If visual impacts and/or elevated PID readings (at or above 4 part per million) were identified, the soil in the bucket was transferred to a loader bucket and placed in the potentially impacted soil stockpile. Alternatively, it was placed in the loader bucket and placed in the potentially unimpacted soil stockpile. Photographs are presented in Appendix A. As described in Section 4.2.1, the two soil stockpiles were sampled and characterized. The results of the samples analyzed indicated that both soil stockpiles were a non-hazardous waste. The total amount of soil excavated was approximately 931 cubic yards. Figure 3.1 presents the surveyed limits of the excavation as well as cross-sections through the excavated area. The average depth of the excavation was 13 feet.

Following submittal of the validated post-excavation sampling results (see Section 4.1.3) on November 5, 2008, USEPA approved the completion of the excavation on



November 7, 2008. The excavation was backfilled and compacted with clean imported gravel. Approximately 6 inches of clean imported topsoil was placed over the excavation area and seeded.

### **3.2 DRUMS**

In December 2007 USEPA previously excavated and staged 97 drums. The remainder of the approximately 150 drums reported by USEPA consisted of empty drums and drum fragments. The drums staged at the Site by USEPA as part the December 2007 Site Removal Assessment were logged, photographed, and sampled (for compatibility and waste characterization) following excavation of the remaining drums. Excavation of the drums as part of the 2008 Drum Removal started on September 29, 2008 and was completed on October 3, 2008. An excavator with a sling was used to remove drums from the excavation. Drums removed from the excavation were staged on a temporary pad beside the excavation then relocated to the drum staging pad. A total of 84 drums were removed from the excavation. Figure 3.2 presents the pre- to post-2008 drum removal excavation limits. One additional drum was generated as part of the drum bulking exercise when semi-liquids were encountered from a drum and the contents were recovered. Drums containing liquids were overpacked at the point of excavation, then staged on the drum staging pad. Once all drums had been removed from the excavation, they were logged, photographed, and sampled for compatibility and waste characterization testing. Drum carcasses were placed into a roll-off box. All workers within the exclusion zone were in Level B PPE including supplied air.

The drum log and drum photographs are presented in Appendix D.

### **3.3 WASTEWATER**

Precipitation runoff collected from the staging areas, Decontamination facility, monitoring well development/sampling purge water, and decontamination wash water was collected and pumped into three 20,000-gallon tanks that were brought to the Site.

### 3.4 CONCRETE

A large piece of concrete was encountered and removed from the excavation. The concrete was broken into smaller pieces and placed in a roll-off box for disposal. A concrete sample was collected for waste characterization analysis. The characterization indicated that the concrete was a non-hazardous waste.

## **4.0 SAMPLING AND ANALYSES**

### **4.1 INVESTIGATIVE SAMPLING SUMMARY**

#### **4.1.1 IMPORTED MATERIAL SAMPLES**

On September 10, 2008 a four-point composite was collected from each of the topsoil and gravel piles separated specifically for this Site from the Gramby Pit owned by Riccelli Enterprise's located across from 458 County Rd. 85, Oswego, NY. In addition, a third imported material consisted of virgin crusher run stone. It was determined by USEPA that no chemical analysis was required of the crusher run virgin material.

On September 19, 2008 a letter with the analytical results for the imported gravel and topsoil was submitted to USEPA requesting approval to utilize the material. Appendix E presents the laboratory analytical reports of the samples collected from the gravel and topsoil.

The results of the gravel sample (sample ID SO-630609-091008-05) were all below the NYSDEC Part 375 Restricted Residential cleanup objectives. The results of the topsoil samples (sample ID SO-630609-091008-01 and SO-630609-091008-03) were also below the NYSDEC Part 375 Unrestricted Residential cleanup objectives.

USEPA approved the use of the gravel and topsoil on September 29, 2008. The gravel was used to fill in the excavation in the Drum Area following completion and 6 inches of topsoil was placed above the gravel. The crusher run material was used to construct the staging pads and temporary roads.

#### **4.1.2 LANDFILL REFERENCE SAMPLES**

In accordance with the SOP, a total of ten fill samples were collected as part of the Landfill Reference sampling on September 18 and 19, 2008. Seven boreholes were advanced at reference sampling locations selected in conjunction with USEPA with a total of ten samples being collected at these locations in consultation with USEPA. In accordance with Section 7.1 of Appendix A of the SOP, one sample was collected from each of the seven boreholes at what appeared to be the most impacted zone as determined based on visual and PID readings. However, since there were minimal to no observed impacts, samples were collected to represent the expected depth range of the excavation. In addition, one surface sample [0 to 2 feet below ground surface (ft bgs)] was collected from each of the following boreholes; SBH-1, SBH-2, and SBH-3.

Figure 4.1 presents the locations of the seven boreholes and Table 4.1 presents a summary of the reference sample analytical results. Appendix F presents the borehole logs.

Appendix E presents the laboratory analytical reports for the ten samples that were collected as part of the Landfill Reference sampling and the associated data validation memorandum.

#### **4.1.2.1 CLEANUP CRITERIA DEVELOPMENT**

In accordance with the USEPA approved SOP, Site-Specific Cleanup Criteria were developed from and submitted to USEPA on October 16, 2008. Two Site-Specific Cleanup Criteria were developed, one for surface soil (0 to 2 ft bgs) and one for subsurface soil (2 ft bgs and greater). The Site-Specific Cleanup criteria were developed for each analyte using the Landfill Reference Sample results and the NYSDEC Part - 375 Cleanup Objectives (Restricted Residential for surface soils and Industrial for subsurface soils (below 2 feet).

Table 4.2 presents the NYSDEC Part - 375 Restricted Residential, Restricted Industrial cleanup objectives, and the maximum concentration for each analyte reported in the Landfill Reference sampling results.

Table 4.2 also presents the Site-Specific Cleanup Criteria for surface soil (0 to 2 ft bgs) for each analyte. The Site-Specific Cleanup Criteria for surface soil for each analyte was determined by taking the higher value of: (1) the NYSDEC Part - 375 Residential Restricted Cleanup Objectives; and (2) the Landfill Reference Concentrations, as shown in Table 4.2.

Table 4.2 also presents the Site-Specific Cleanup Criteria for subsurface soil (2 ft bgs and greater) for each analyte. The Site-Specific Cleanup Criteria for surface soil for each analyte was determined by taking the higher value of: (1) the NYSDEC Part - 375 Industrial Cleanup Objectives and (2) the Landfill Reference Concentrations, as shown in Table 4.2.

USEPA approved the Site-Specific Cleanup Criteria on October 21, 2008.

### **4.1.3 POST-EXCAVATION VERIFICATION SAMPLING**

In accordance with the SOP, post-excavation soil verification samples (12 sidewall and 7 floor, plus a duplicate QA/QC sample) were collected in consultation with USEPA on October 6, 2008. Figure 4.2 presents the final surveyed excavation limits, which were surveyed on October 22, 2008 and confirmed on October 30, 2008, and the locations of the post-excavation verification samples. Table 4.3 presents a summary of the final validated analytical data for subsurface post-excavation verification samples (deeper than 2 ft bgs). Table 4.4 presents a summary of the final validated analytical data for surficial sidewall post-excavation verification samples (0 to 2 ft bgs). Both tables present the respective Site-Specific Cleanup criteria. Marginal exceedances of the criteria have been identified and are discussed below.

Appendix E presents the laboratory analytical reports and the associated data validation report.

#### **4.1.3.1 EVALUATION OF POST-EXCAVATION SAMPLING RESULTS**

Two of the post-excavation samples marginally exceeded the Site-Specific Cleanup criteria.

Subsurface sample BPS-014 (bottom - center location) exceeded the Site-Specific Cleanup criteria for:

- Methyl Acetate: 0.0165 mg/kg vs. 0.024 mg/kg (Cleanup Criteria vs. Sampling Result).

Surficial Sample BPS-029 (sidewall - east location) exceeded the Site-Specific Cleanup criteria for:

- Benzo(a)anthracene: 1.00 mg/kg vs. 1.12 mg/kg (Cleanup Criteria vs. Sampling Result);
- Chrysene: 1.00 mg/kg vs. 1.13 mg/kg (Cleanup Criteria vs. Sampling Result); and
- Heptachlor Epoxide: 0.0018 mg/kg vs. 0.002 mg/kg (Cleanup Criteria vs. Sampling Result).

The post-excavation verification sampling results along with a waiver request for the marginal exceedances of the Site-Specific Cleanup criteria was submitted to USEPA on November 5, 2008. On November 7, 2008, USEPA approved the waiver and provided concurrence that the excavation activities at the Site were complete.

## **4.2 WASTE CHARACTERIZATION SAMPLING**

Prior to disposing of each waste stream, they were characterized to ensure appropriate disposal. Waste characterization sampling and analysis was performed in consultation with the disposal facilities as well as utilizing available Site information and knowledge, including analytical results from the Site Removal Assessment.

### **4.2.1 SOIL STOCKPILES**

On October 6, 2008, four representative four-point composite samples were collected from each of the potentially impacted soil stockpile and the potentially unimpacted soil stockpile. The sample identification codes are identified below:

- WS-630609-100608-BPS-001 (potentially unimpacted stockpile "west");
- WS-630609-100608-BPS-002 (potentially unimpacted stockpile "west");
- WS-630609-100608-BPS-003 (potentially unimpacted stockpile "east");
- WS-630609-100608-BPS-004 (potentially unimpacted stockpile "east");
- WS-630609-100608-BPS-006 (potentially impacted stockpile "south");
- WS-630609-100608-BPS-007 (potentially impacted stockpile "south");
- WS-630609-100608-BPS-008 (potentially impacted stockpile "north"); and
- WS-630609-100608-BPS-009 (potentially impacted stockpile "north").

The samples were analyzed for TCLP VOCs, TCLP Metals, RCRA Characteristics, and PCBs. The results of the analysis indicated that both soil stockpiles were a non-hazardous waste. Table 4.5 presents a summary of the results. Appendix E presents the laboratory analytical reports.

### **4.2.2 WASTEWATER**

On October 7, 2008, one wastewater sample was collected from one of the 20,000-gallon tanks and on October 9, 2008, an additional wastewater sample was collected from the same 20,000-gallon tank. The sample identification codes are identified below:

- WW-630609-100708-BPS-032; and
- WW-630609-100908-LN-033.

The sample collected on October 7, 2008 was analyzed for TCL VOCs, TCL SVOCs, TAL Metals, pesticides, PCBs, and RCRA Characteristics. The sample collected on October 9, 2008 was collected and analyzed for hexavalent and total chromium as the holding time for the original sample had expired. The results of the analysis were forwarded to the Watertown POTW. USEPA approved the Watertown POTW on November 10, 2008. On November 13, 2008 the Watertown POTW agreed to accept the wastewater. Table 4.6 presents a summary of the results. Appendix E presents the laboratory analytical reports.

#### **4.2.3      CONCRETE**

On October 7, 2008, a representative concrete sample was collected from the large concrete block that was removed from the excavation. The sample identification code is identified below:

- CC-630609-100708-BPS-031.

The sample was analyzed for TCLP VOCs, TCLP Metals, RCRA Characteristics, and PCBs. The results of the analysis indicated that the concrete was a non-hazardous waste. Table 4.7 presents a summary of the results. Appendix E presents the laboratory analytical reports.

#### **4.2.4      DRUMS**

Based on the work completed in 2007 and the 2008 excavation activities, 182 drums were staged for further testing.

##### **4.2.4.1      COMPATIBILITY TESTING AND GROUPING**

During the week of October 20, 2008 each drum was screened for the following to allow for grouping of drums with similar characteristics:

- Phase (solid/liquid);
- PID readings;
- pH;
- Water soluble;
- Oxidizer;

- Fluoride;
- Petroleum Solvent;
- Iodine, Bromine, Chlorine; and
- Ignitability.

Table 4.8 presents the drum log as well as a summary of the compatibility testing. Based on the results and professional judgment, 24 drum groupings were identified.

#### **4.2.4.2 DRUMMED MATERIAL SAMPLING**

A representative sample aliquot was collected from each drum. On October 20 and 21, 2008 one representative composite waste characterization sample was prepared using the aliquots from the respective drums from each of the 24 drum grouping. The sample identification numbers are identified below:

- 630609-102008-BS-01;
- 630609-102008-BS-02;
- 630609-102008-BS-03;
- 630609-102008-BS-04;
- 630609-102008-BS-05;
- 630609-102008-BS-06;
- 630609-07;
- 630609-08;
- 630609-09;
- 630609-10;
- 630609-11;
- 630609-12;
- 630609-13;
- 630609-14;
- 630609-15;
- 630609-16;
- 630609-17;
- 630609-18;
- 630609-19;
- 630609-20;
- 630609-21;
- 630609-22;
- 630609-23; and
- 630609-24.



The samples were analyzed for TCLP VOCs, TCLP Metals, RCRA Characteristics, and PCBs. Table 4.9 presents a summary of the results. Table 4.10 presents individual drum analyses for one drum grouping for PCBs to ensure no single drum exceeded the regulatory limits. Appendix E presents the laboratory analytical reports.

#### **4.2.4.3      DRUMMED MATERIAL SAMPLING - SELECT IGNITABILITY RE-ANALYSIS**

On November 6, 2008 the following samples were re-analyzed for ignitability. These samples were re-analyzed for confirm the original analysis. The re-analysis confirmed the original analysis. The sample identification codes are identified below:

- 630609-14;
- 630609-16;
- 630609-20;
- 630609-21; and
- 630609-23.

Table 4.11 presents a summary of the results. Appendix E presents the laboratory analytical reports.

#### **4.2.4.4      SUMMARY OF DRUM WASTE CHARACTERIZATION ANALYSES**

Based on the sample results, it was identified that eight drum groupings (Grouping 9, 11, 12, 14, 16, 20, 22, and 24) representing 45 drums were hazardous for ignitability. All other groupings were non-hazardous waste.

## 5.0 GROUNDWATER INVESTIGATION

### 5.1 INVESTIGATIVE ACTIVITIES

In accordance with Section 8.1 of Appendix A of the SOP, the six previously in place monitoring wells were inspected, surveyed, and a round of water levels were collected on September 23, 2008. All wells were determined to be in competent condition and therefore proposed for future sampling. Please note that consistent with information provided by USEPA and NYSDEC, monitoring well CW-5 could not be located and is assumed to have been destroyed. It was determined that replacement of monitoring well CW-5 was not warranted since there are other wells in the vicinity. Figure 5.1 presents the groundwater contour figure for the September 23, 2008 water levels. The direction of groundwater flow follows the topographic relief east towards the creek.

On November 17, 2008, a letter was submitted to USEPA proposing the locations (see Figure 5.1) of the two new monitoring wells (one immediately upgradient and one on the downgradient side of the former Drum Area excavation) based on the groundwater flow direction. USEPA verbally approved the proposed locations on November 17, 2008. The two new monitoring wells (MW-4 and MW-5) were installed on November 20 and 21, 2008 and surveyed. The new wells were left for 24 hours before being developed then left for 72 hours prior to initiating sampling using low flow procedures. The well completion details and stratigraphic logs are presented in Appendix F. The well development and purge records are presented in Appendix G. A full round of water levels was collected on November 25, 2008. Figure 5.2 presents the shallow groundwater contours for the November 25, 2008 water levels.

The two new and six existing monitoring wells were purged using low flow procedures and sampled between November 20 and 25, 2008. Groundwater samples were analyzed for TCL VOCs, TCL SVOCs, Pesticides, PCBs, and TAL metals.

### 5.2 SAMPLE RESULTS AND ANALYSES

The groundwater data has been screened against the NYSDEC New York State Ambient Water Quality Standards and Guidance Values. The most stringent criteria has been selected for screening purposes. The following presents a summary of the groundwater sample results:

- VOCs were reported above detection limits in groundwater samples from two monitoring wells (CW-4 for methyl tertiary butyl ether and MW-4 for benzene,

chlorobenzene, 1,2-dichlorobenzene). The result for benzene (1.5 µg/L) is marginally above the screening criteria (1 µg/L). All other VOC results were non-detect or estimated below reporting limits;

- One SVOC was reported above detection limits in a groundwater sample from monitoring well (CW-4 for caprolactam at 47.6 µg/L). There is no screening criteria for this compound. All other SVOC results were non-detect or estimated below reporting limits;
- All sample results were non-detect for PCBs and pesticides; and
- Metals were reported above screening criteria in groundwater samples from six monitoring wells (CW-2, CW-4, MW-1, MW-3, MW-4, and MW-5). Screening criteria were exceeded for aluminum, iron, magnesium, manganese, and sodium.

Table 5.1 presents a summary of the groundwater sample results.

### 5.3 CONCLUSIONS AND RECOMMENDATIONS

The purpose of the groundwater investigation was to identify whether the former Drum Area had adversely impacted groundwater quality beneath and downgradient of the former Drum Area. Monitoring well MW-5 is screened below the bottom of the former Drum Area excavation and is on the downgradient side of the former Drum Area excavation.

Sample results from the monitoring wells upgradient (CW-3, CW-4, and MW-4) and side gradient (MW-3) of the former Drum Area are generally consistent with the sample results from monitoring well (MW-5) installed through the former excavation.

The results of past groundwater investigations at the Site (Section 1.2) and the groundwater investigation performed during this removal action reveal no significant contamination. Therefore, it appears that groundwater has not been adversely impacted by the drum burial area and no further investigations under this Order are anticipated.

## 6.0 TRANSPORTATION AND DISPOSAL OF WASTE STREAMS

In accordance with Section 6.0 of Appendix A of the SOP, once the specific requirements of the disposal facility have been confirmed, an addendum to the T&D Plan was to be provided to USEPA. The addendum to the T&D Plan was submitted to USEPA on December 17, 2008 and included waste characterization data, transporter information, disposal facility approved waste profiles, and disposal facility information. The addendum to the T&D Plan was approved by USEPA on December 29, 2008.

The following waste streams were transported and disposed off Site as follows:

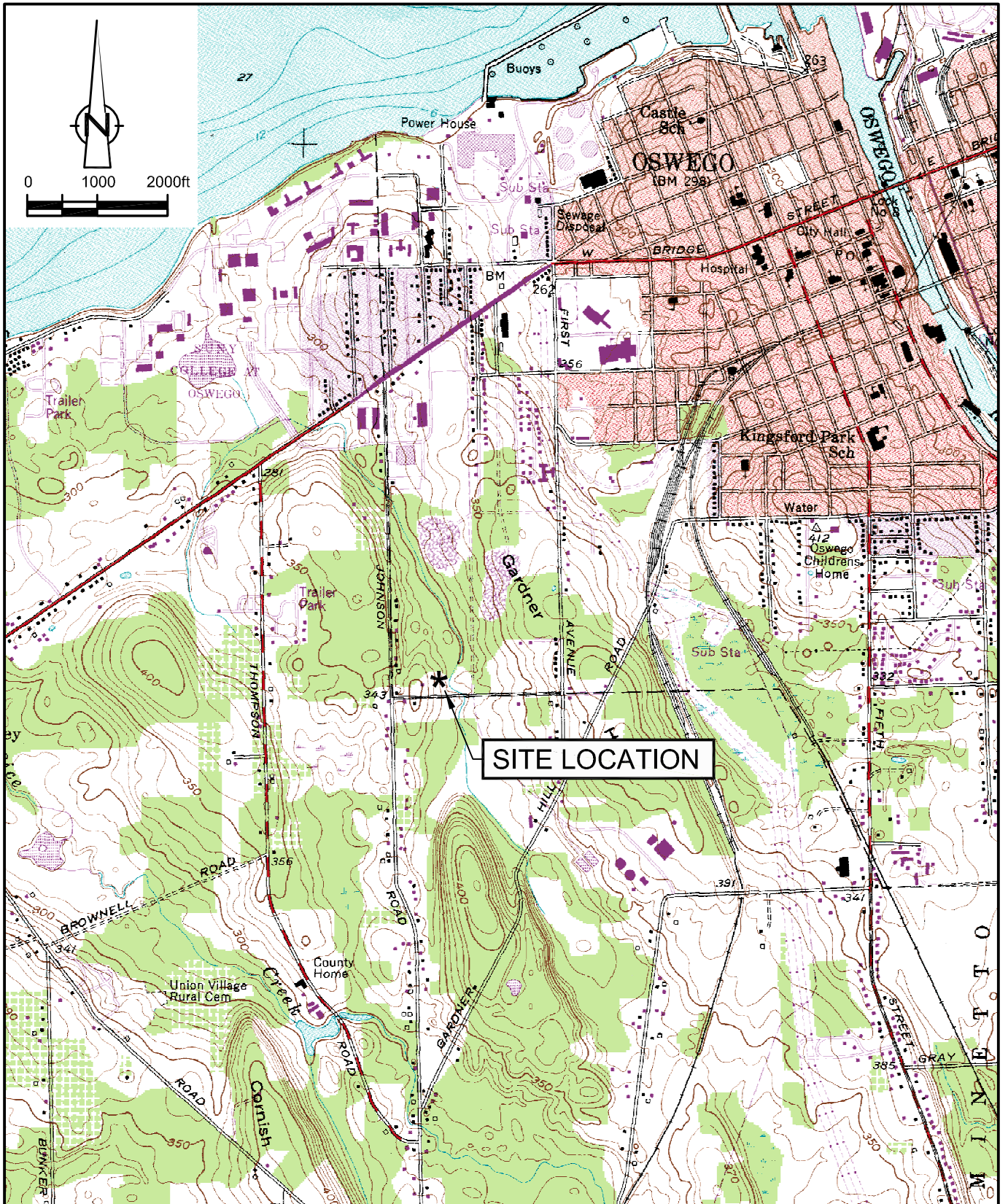
- one roll-off box of drum carcasses was transported on October 29, 2008 by Silverole Trucking, Inc. to High Acres Landfill in Fairport, NY;
- 1,652 tons of non-hazardous waste soil was transported from October 28, 2008 to November 17, 2008 by Silverole Trucking, Inc. to High Acres Landfill in Fairport, NY;
- one roll-off box of non-hazardous waste concrete was transported on November 5, 2008 by Tonawanda Tank Transport to High Acres Landfill in Fairport, NY;
- two roll-off boxes of non-hazardous waste drums with solid contents were transported on November 17, 2008 by Hazmat Environmental Group to Republic Landfill in New Boston, MI;
- One hazardous drum in an overpack (ignitable liquids) was transported on December 1, 2008 by Franks Vacuum Truck Service to Waste Management in Model City, NY who accepted title and shipped to Ross Incineration Services in Grafton, OH;
- 44 hazardous waste drums (ignitable solids) in overpacks were transported on December 1, 2008 by Franks Vacuum Truck Service to Waste Management in Model City, NY who accepted title and shipped to Ross Incineration Services in Grafton, OH;
- 14 non-hazardous waste drums with liquid contents in overpacks were transported from December 1, 2008 to December 2, 2008 by Franks Vacuum Truck Service to Waste Management in Model City, NY who accepted title and shipped to Ross Incineration Services in Grafton, OH; and
- 51,250 gallons of non-hazardous wastewater was transported from November 19, 2008 to November 26, 2008 by Riccelli Enterprise, Inc. to William T. Field Memorial Pollution Control Plant in Watertown, NY.

Based on the waste characterization conducted on the various waste streams, as outlined above, Table 6.1 presents each waste stream, the corresponding disposal facility selected, disposal facility information, and disposal quantities. Table 3.1 presents each waste stream and the total quantity shipped for disposal. Appendix H includes the waste profiles for the different waste streams, waste manifests, shipping records, and disposal certifications.

## 7.0 PROJECT RESTORATION AND CLOSEOUT

All equipment was decontaminated prior to demobilizing from the Site. All temporary facilities (i.e., office trailers, personal hygiene trailer, equipment storage) were removed from the Site. Other materials which may have contacted waste materials (e.g., decontamination pad, drum staging pad) were disposed off Site with the appropriate waste streams. Demobilization from the Site occurred on December 3, 2008. Figure 2.1 presents the actual project schedule for field activities.

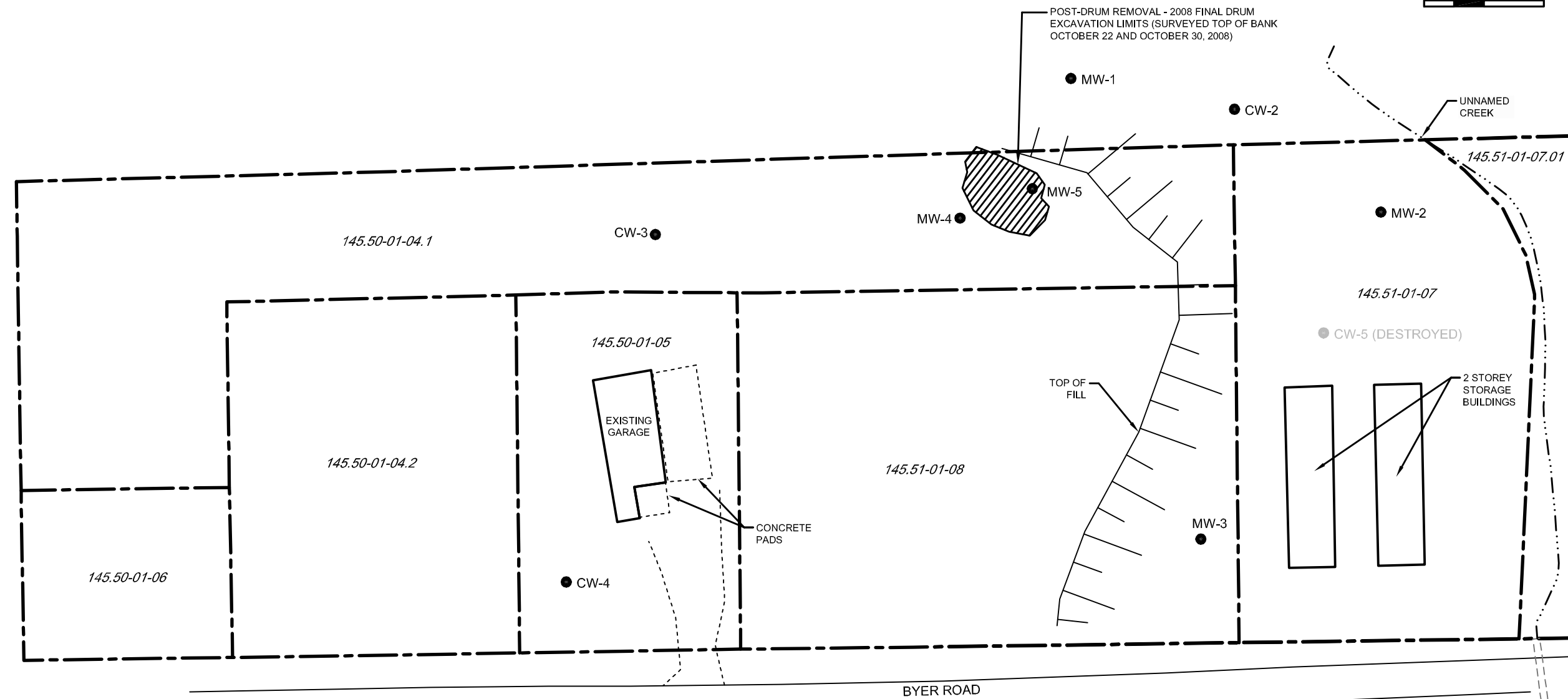
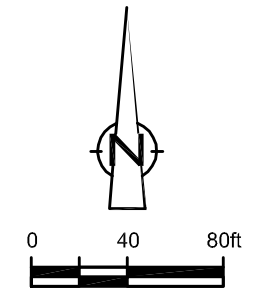
Prior to demobilization, the entire work area was graded and the area of excavation received topsoil and seed. The need for additional restoration work will be assessed in the spring of 2009 and will be made in consultation with the property owner and EPA during the mobilization for silt fence removal.



SOURCE: OSWEGO WEST U.S.G.S.  
QUADRANGLE MAP

figure 1.1  
**SITE LOCATION**  
**PAS IRWIN DUMP SUPERFUND SITE**  
*Oswego, New York*





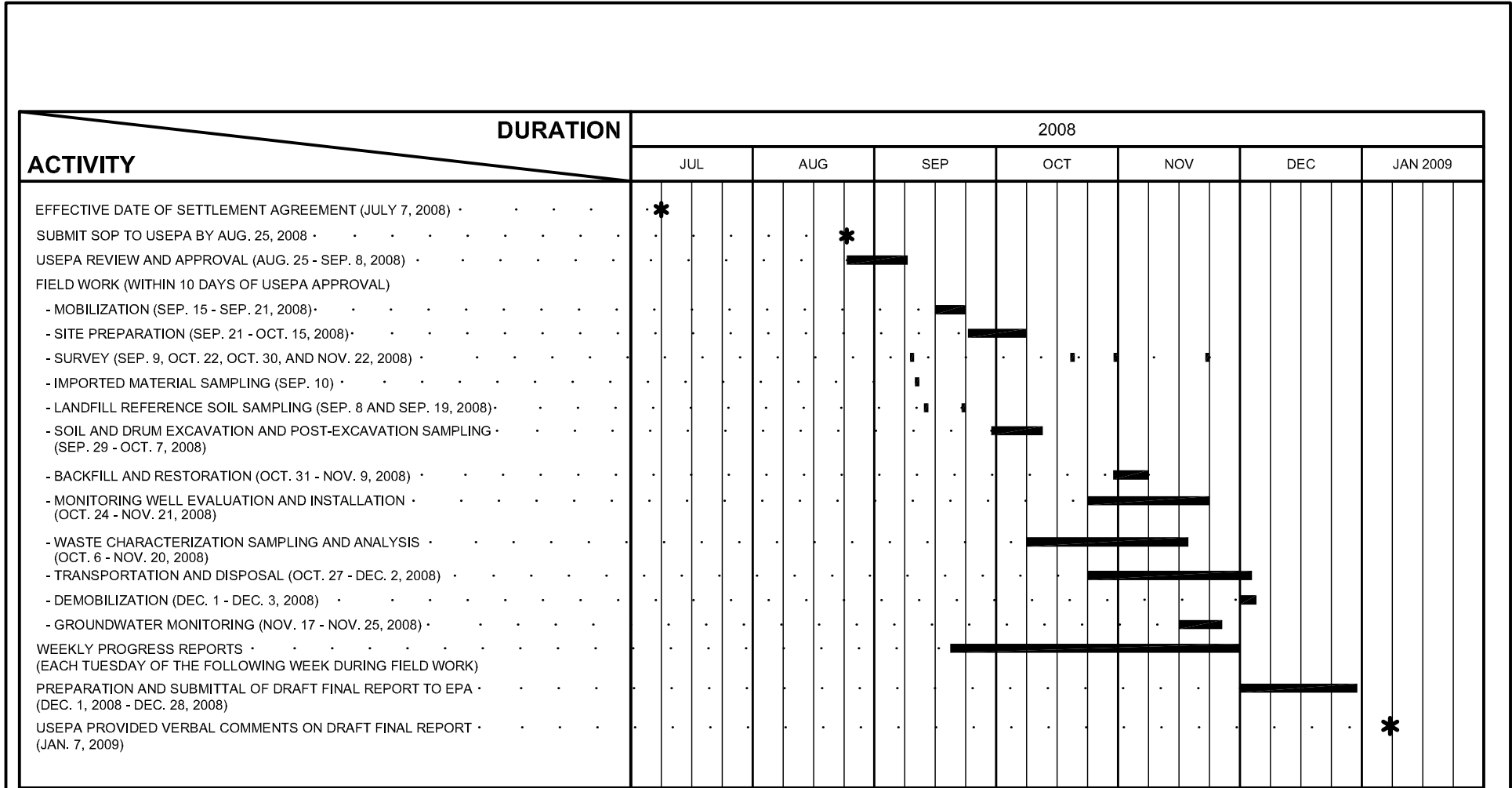
**LEGEND**  
 ● EXISTING MONITORING WELL LOCATION  
 - - - PROPERTY BOUNDARY  
 145.50-01-06 TAX PARCEL IDENTIFICATION

figure 1.2  
 SITE PLAN  
 PAS IRWIN DUMP SUPERFUND SITE  
 Oswego, New York



SOURCE: CRA SURVEY, 2008.





LEGEND

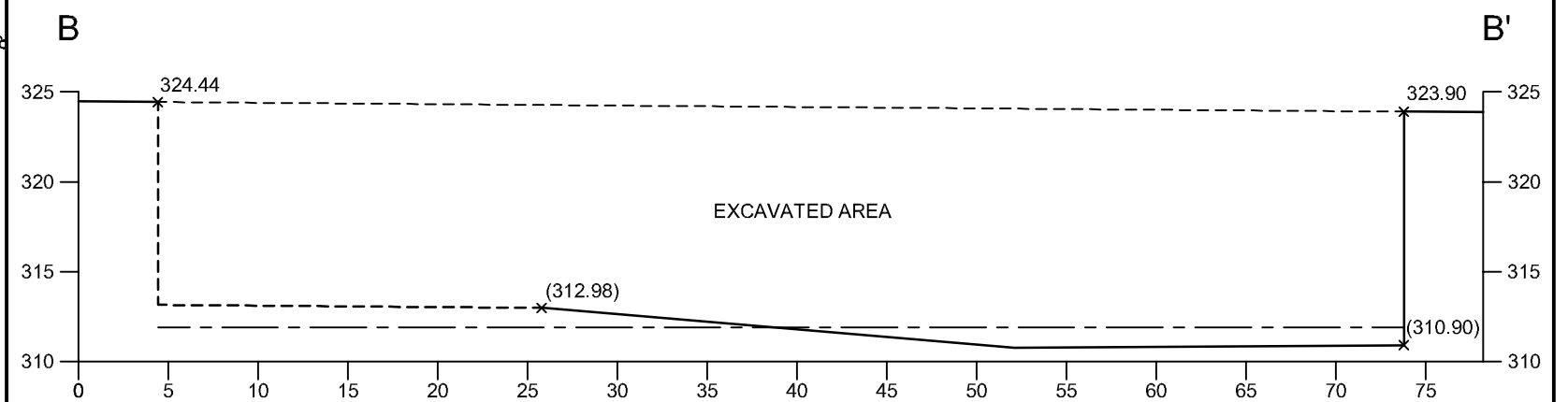
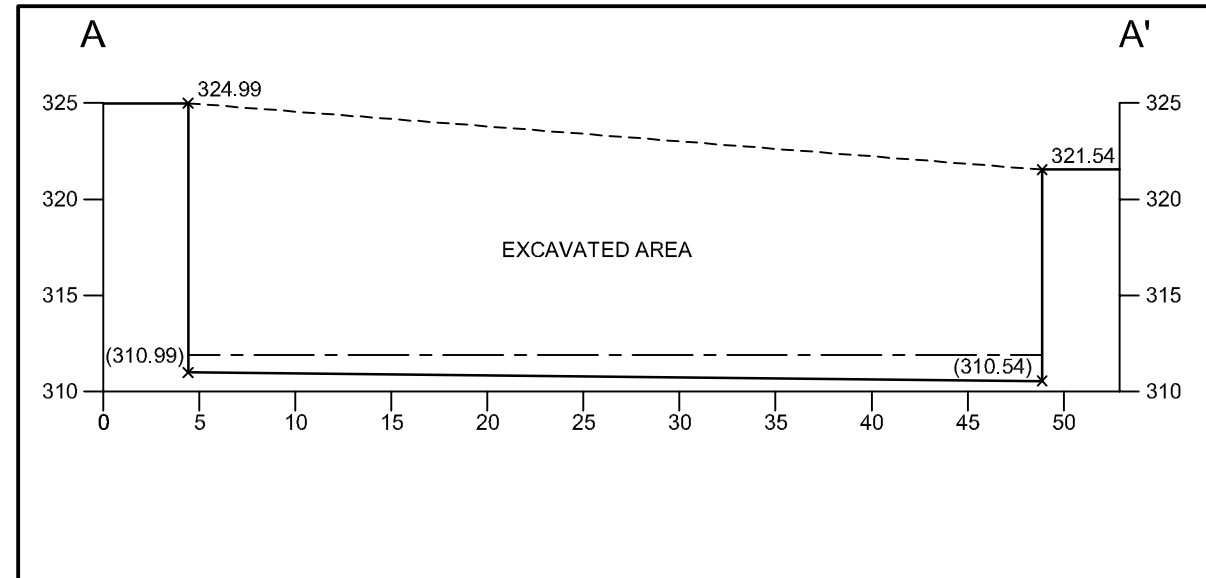
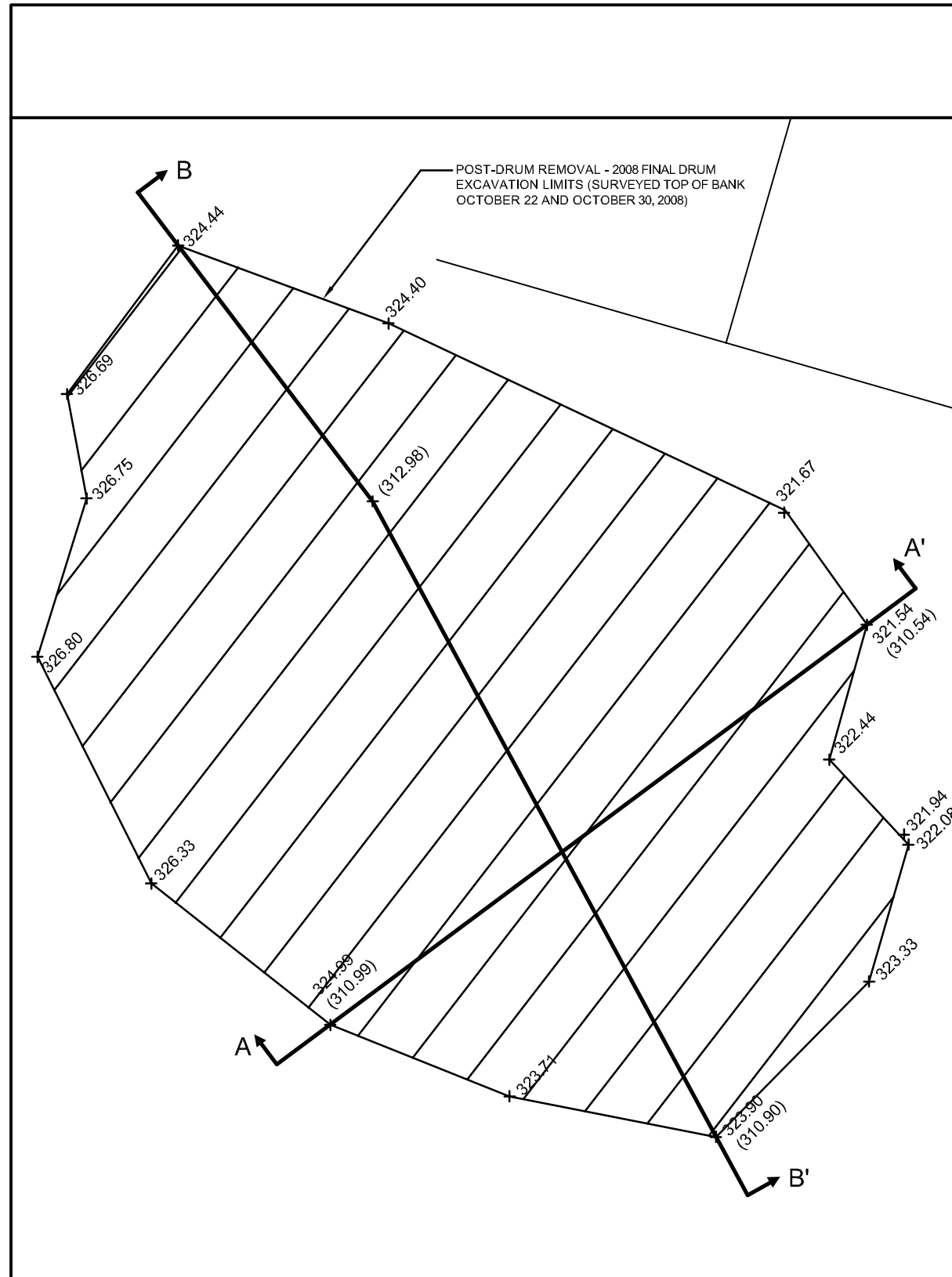
- \* MILESTONE EVENT
- CONTINUOUS EVENT

NOTE

PROJECT SCHEDULE MAY BE ADJUSTED TO REFLECT ACTUAL TIMEFRAME OF USEPA REVIEW. SCHEDULE WILL BE UPDATED AS NECESSARY AND SUBMITTED TO USEPA PERIODICALLY.



figure 2.1  
**ACTUAL PROJECT SCHEDULE**  
**PAS IRWIN DUMP SUPERFUND SITE**  
*Oswego, New York*



**LEGEND**

- 324.99 x LIMITS OF EXCAVATION (ft. AMSL)
- (310.99) EXCAVATION FLOOR ELEVATION (ft. AMSL)
- APPROXIMATE
- AVERAGE ELEVATION OF EXCAVATION FLOOR USED IN VOLUME CALCULATIONS (311.90 ft AMSL)

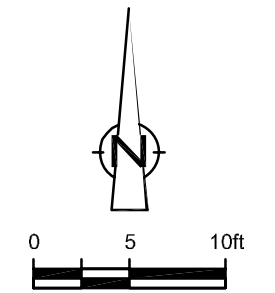


figure 3.1  
**FINAL EXCAVATION SURVEY AND CROSS-SECTIONS**  
**PAS IRWIN DUMP SUPERFUND SITE**  
*Oswego, New York*



SOURCE: CRA SURVEY, 2008.

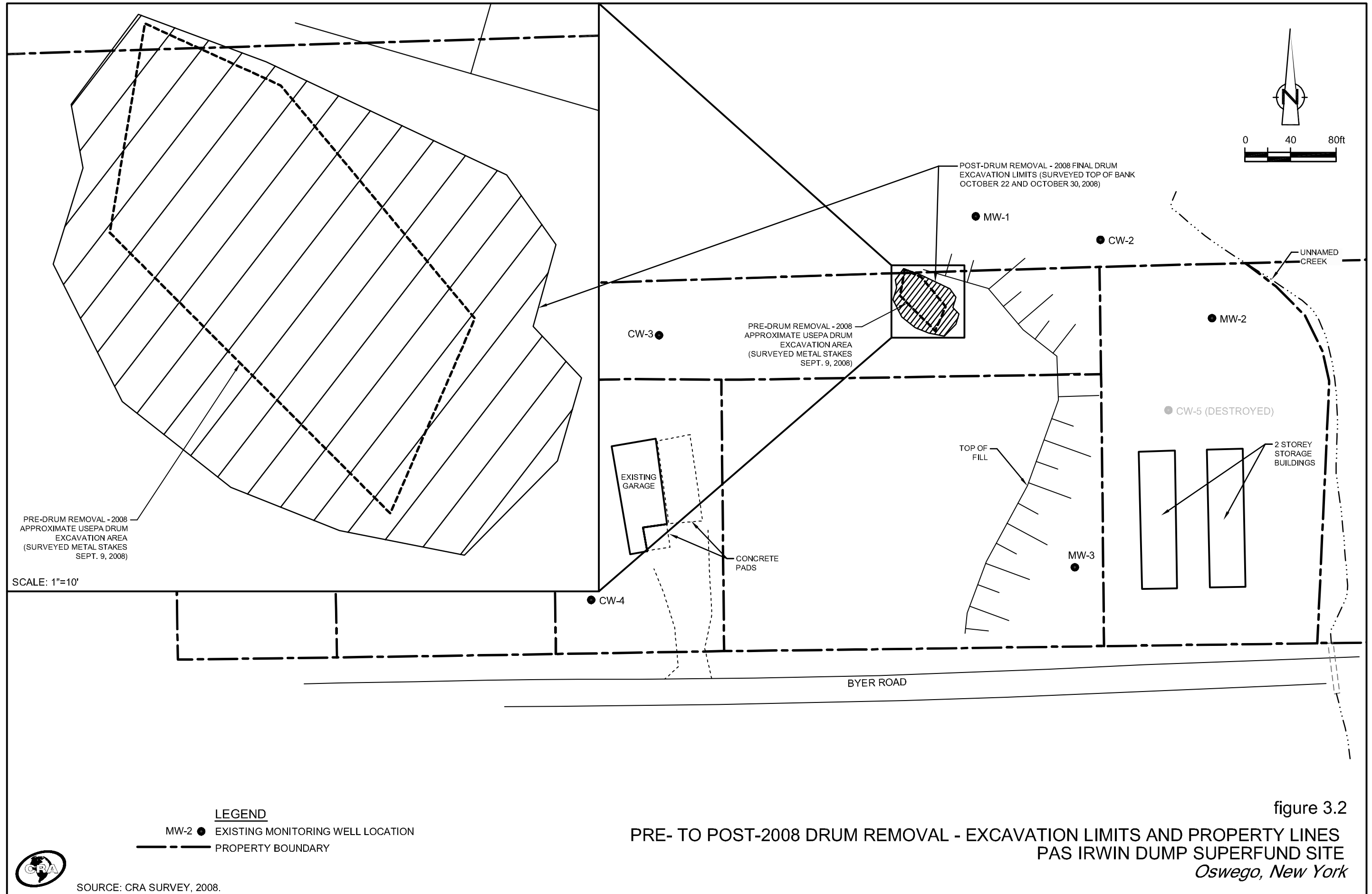
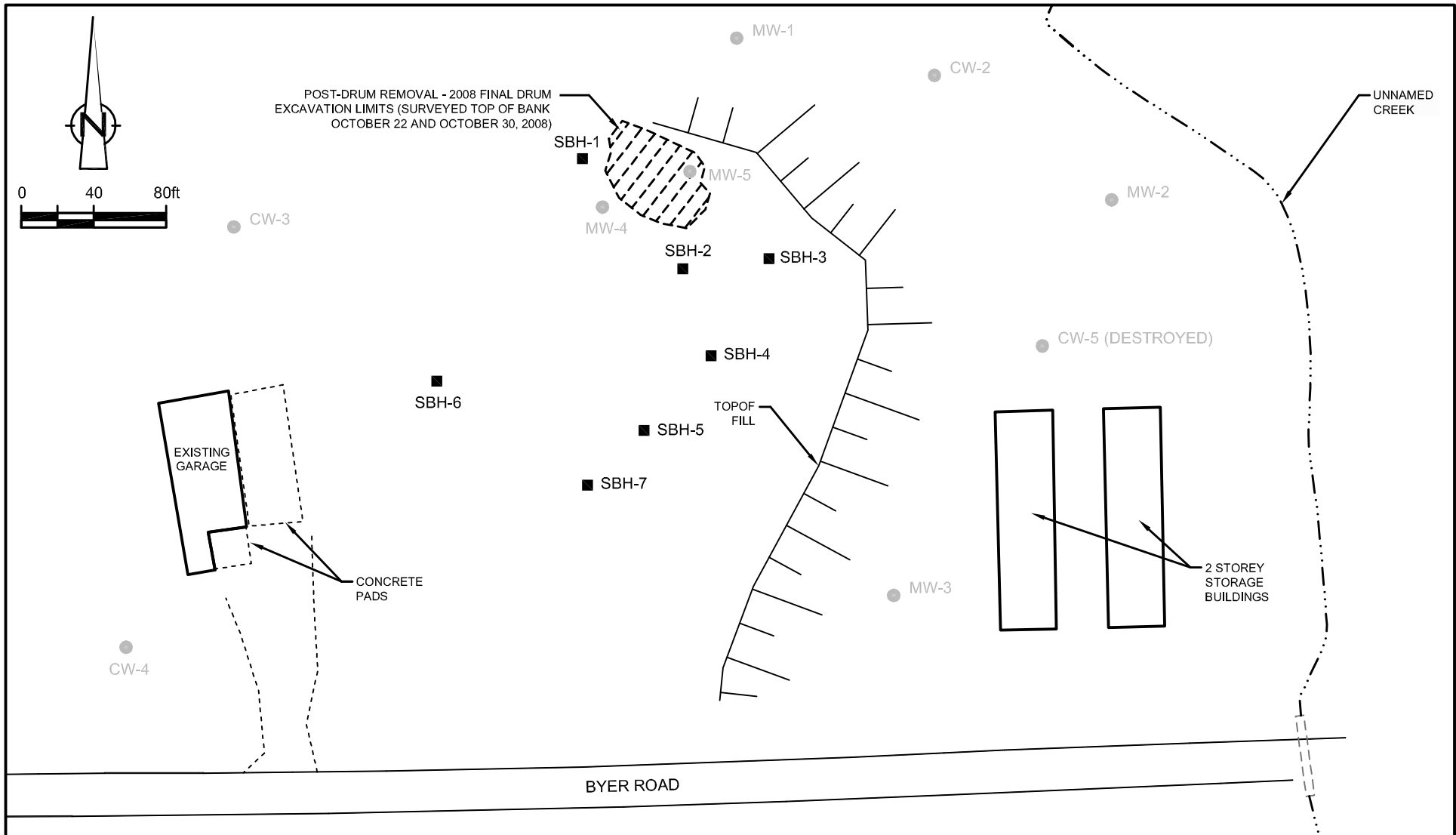


figure 3.2  
 PRE- TO POST-2008 DRUM REMOVAL - EXCAVATION LIMITS AND PROPERTY LINES  
 PAS IRWIN DUMP SUPERFUND SITE  
 Oswego, New York



**LEGEND**

- MW-2 ● EXISTING MONITORING WELL
- SBH-1 ■ LANDFILL REFERENCE SAMPLING LOCATION



SOURCE: CRA SURVEY, 2008.

figure 4.1  
**LANDFILL REFERENCE BORING LOCATIONS**  
**PAS IRWIN DUMP SUPERFUND SITE**  
*Oswego, New York*

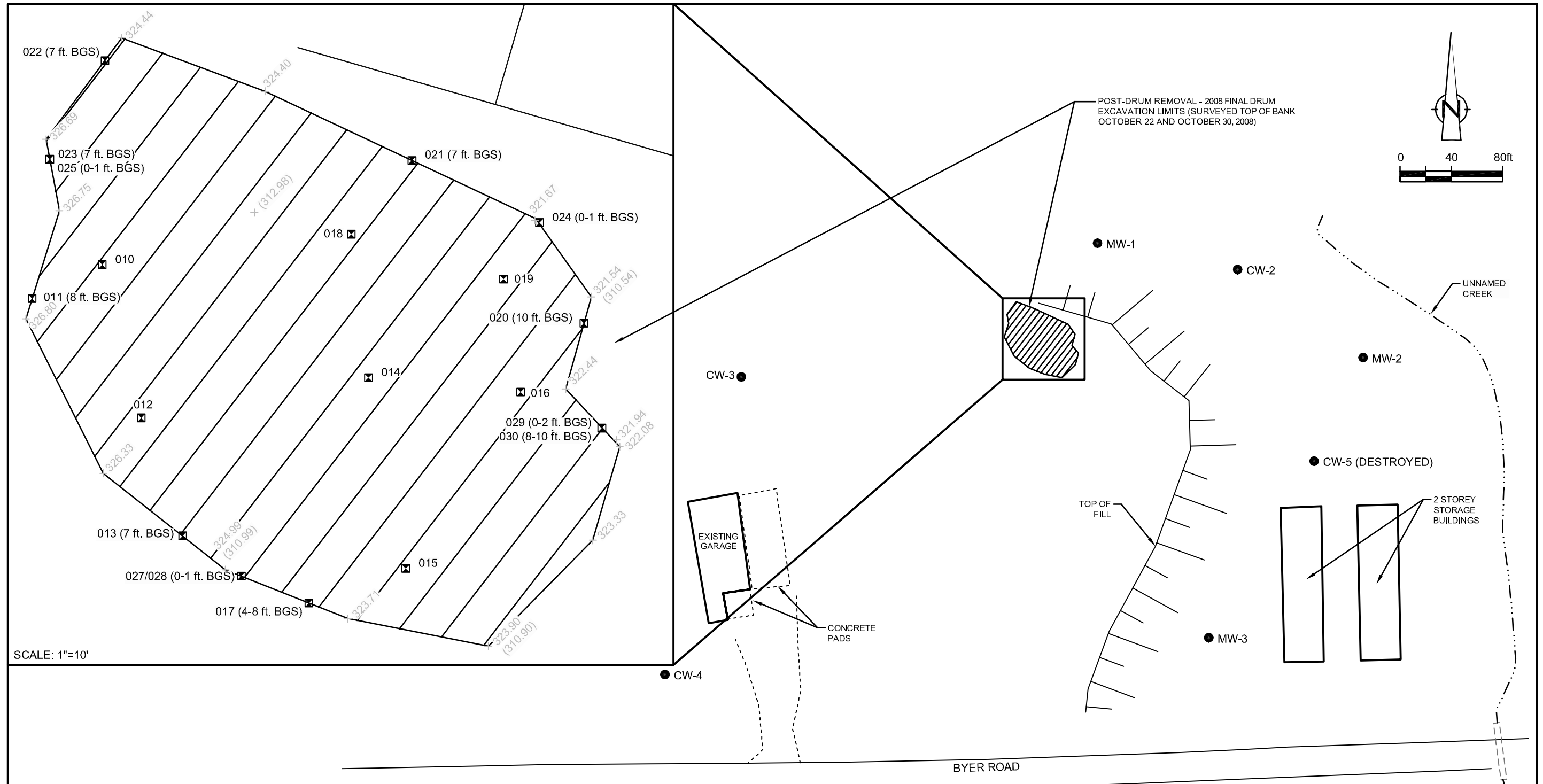
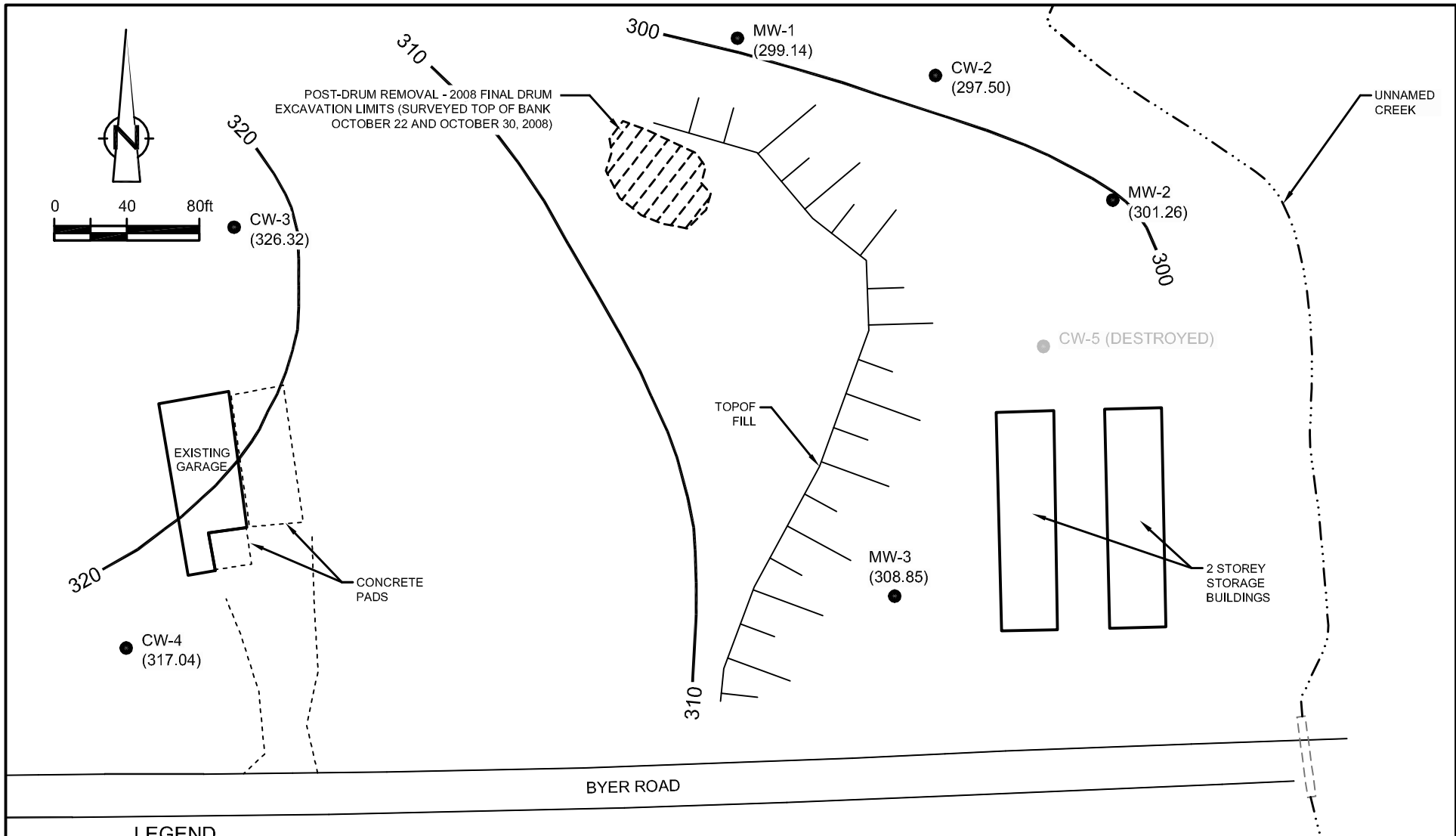


figure 4.2  
**FINAL EXCAVATION LIMITS AND POST-EXCAVATION VERIFICATION SAMPLE LOCATIONS**  
**PAS IRWIN DUMP SUPERFUND SITE**  
*Oswego, New York*



SOURCE: CRA SURVEY, 2008.



**LEGEND**

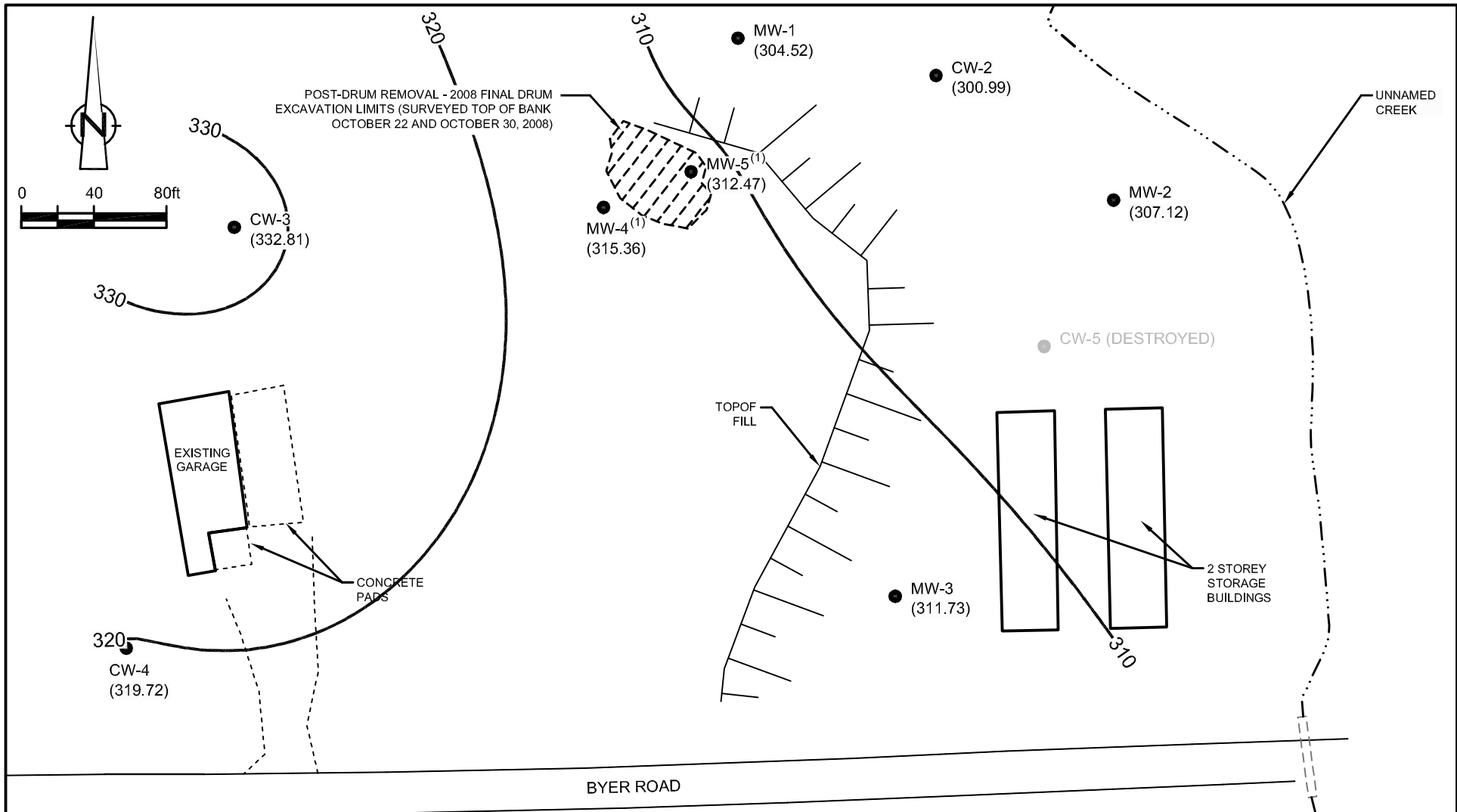
- MW-2 ● PREVIOUSLY IN PLACE MONITORING WELL LOCATION  
(301.26) GROUNDWATER ELEVATION - SEPTEMBER 23, 2008 (FT. AMSL)
- 300— GROUNDWATER CONTOUR (FT. AMSL)

figure 5.1

**SHALLOW GROUNDWATER CONTOURS - SEPTEMBER 23, 2008  
PAS IRWIN DUMP SUPERFUND SITE  
Oswego, New York**



SOURCE: CRA SURVEY, 2008.



**LEGEND**

- MW-2 ● EXISTING MONITORING WELL LOCATION  
(301.26) GROUNDWATER ELEVATION - NOVEMBER 25, 2008 (FT. AMSL)
- 300— GROUNDWATER CONTOUR (FT. AMSL)

**NOTE:**

- (1) THE LOCATIONS OF THE TWO NEW MONITORING WELLS WERE SURVEYED ON NOVEMBER 22, 2008.

figure 5.2

**SHALLOW GROUNDWATER CONTOURS - NOVEMBER 25, 2008  
PAS IRWIN DUMP SUPERFUND SITE  
Oswego, New York**



SOURCE: CRA SURVEY, 2008.

TABLE 2.1

**SUMMARY OF CORRESPONDENCE  
PAS IRWIN DUMP SUPERFUND SITE, OSWEGO, NEW YORK**

1. *de maximis* letter dated January 29, 2009, Non-CLP Superfund Analytical Services Tracking System.
2. USEPA letter dated January 7, 2009, approving the Completion Extension Request.
3. *de maximis* letter dated January 6, 2009, Completion Extension Request (45-day extension from January 7, 2009).
4. *de maximis* letter dated January 12, 2009, Progress Report for December 2008.
5. USEPA provided verbal comments on draft Final Report on January 7, 2009.
6. *de maximis* transmitted draft Final Report via email on December 28, 2008.
7. USEPA letter dated December 29, 2008, approving the Addendum to the Transportation and Disposal Plan submittal from CRA dated December 17, 2008.
8. CRA letter dated December 17, 2008, Addendum to the Transportation and Disposal Plan.
9. *de maximis* letter dated December 10, 2008, Progress Report for November 2008.
10. CRA Weekly Summary Report dated November 25, 2008, covering November 17 to November 21, 2008.
11. USEPA letter dated November 21, 2008, approving the Proposed Monitoring Well Location submittal from CRA dated November 17, 2008.
12. USEPA letter dated November 21, 2008, approving the Proposed Monitoring Well Development and Sampling submittal from CRA dated November 19, 2008.
13. CRA letter dated November 19, 2008, Supplemental Information for Proposed Monitoring Well Development and Sampling.
14. CRA letter dated November 17, 2008, Proposed Monitoring Well Locations.
15. CRA Weekly Summary Report dated November 17, 2008, covering November 10 to November 14, 2008.
16. *de maximis* letter dated November 10, 2008, Progress Report for October 2008.
17. CRA Weekly Summary Report dated November 10, 2008, covering November 3 to November 7, 2008.
18. USEPA letter dated November 7, 2008, EPA Notification of Excavation Completion.
19. CRA letter dated November 5, 2008, Post-Excavation Verification Sampling Results and Waiver Request.
20. CRA Weekly Summary Report dated November 4, 2008, covering October 27 to October 31, 2008.
21. CRA letter dated November 3, 2008, Proposed Monitoring Well Locations.
22. CRA Weekly Summary Report dated October 28, 2008, covering October 20 to October 24, 2008.



## TABLE 2.1

SUMMARY OF CORRESPONDENCE  
PAS IRWIN DUMP SUPERFUND SITE, OSWEGO, NEW YORK

23. USEPA email dated October 24, 2008, requesting additional information in the Addendum to the Transportation and Disposal Plan.
24. CRA letter dated October 24, 2008, Addendum to the Transportation and Disposal Plan.
25. USEPA letter dated October 23, 2008, EPA Approval of the Proposed Modification to Drummed Waste Compatability Testing Procedures.
26. USEPA letter dated October 21, 2008, EPA Approval of the Site Specific Cleanup Criteria.
27. CRA letter dated October 21, 2008, Proposed Modification to Drummed Waste Compatability Testing Procedures.
28. CRA Weekly Summary Report dated October 20, 2008, covering October 13 to October 17, 2008.
29. CRA letter dated October 16, 2008, Proposed Modification to Drummed Waste Compatability Testing Procedures.
30. CRA letter dated October 16, 2008, Site-Specific Cleanup Criteria (Surface and Subsurface).
31. CRA Weekly Summary Report dated October 13, 2008, covering October 6 to October 10, 2008.
32. *de maximis* letter dated October 10, 2008, Progress Report for September 2008.
33. CRA Weekly Summary Report dated October 8, 2008, covering September 29 to October 3, 2008.
34. USEPA email dated September 29, 2008, EPA Approval of Gravel for use at the Site.
35. CRA Weekly Summary Report dated September 29, 2008, covering September 22 to September 26, 2008.
36. CRA Weekly Summary Report dated September 25, 2008, covering September 15 to September 19, 2008.
37. CRA letter dated September 19, 2008, Request for Approval for Imported Gravel to be used at the Site.
38. USEPA letter dated September 12, 2008, EPA approval of the Site Operating Plan.
39. *de maximis* letter dated September 10, 2008, Progress Report for August 2008.
40. *de maximis* letter dated September 8, 2008, final Site Operating Plan submittal.
41. *de maximis* letter dated August 20, 2008, Site Operating Plan submittal.
42. *de maximis* letter dated August 11, 2008, Progress Report for July 2008.
43. *de maximis* letter dated July 21, 2008, Notification of Removal Action Contractor.

**TABLE 3.1**  
**MATERIAL DISPOSAL**  
**SUMMARY**  
**PAS IRWIN DUMP SUPERFUND SITE**  
**OSWEGO, NEW YORK**

<b>Waste Stream</b>	<b>Units</b>	<b>Loads</b>	<b>Units</b>	<b>Quantity</b>
Drum Carcasses (non-hazardous)	rolloff box	1	tons	3.56
Soil (non-hazardous)	dump truck		tons	1,651.67
Concrete (non-hazardous)	rolloff box	1	tons	5.9
<b>Drums</b>				
- non-hazardous bulk solids	rolloff box	2	tons	16.86
- hazardous ignitable solids	box van	2 (1)	overpack	44
- hazardous ignitable liquids	box van	(1)	overpack	1
- non-hazardous liquids/solids	box van	(1)	overpack	14
Wastewater (non-hazardous)	tanker	10	gallons	51,250

Note:

(1) All overpacked drums were shipped together in 2 box vans, 1 large took 54 drums and 1 small took 5 drums.

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>SBH-1</i>	<i>SBH-1</i>	<i>SBH-2</i>	<i>SBH-2</i>	<i>SBH-3</i>	<i>SBH-3</i>
<i>Sample Depth</i>			<i>(0-2')</i>	<i>(4-6')</i>	<i>(0-2')</i>	<i>(8-10')</i>	<i>(0-2')</i>	<i>(10-12')</i>
<i>Sample ID</i>			<i>S-630609-091908-BP-008</i>	<i>S-630609-091808-BP-001</i>	<i>S-630609-091908-BP-009</i>	<i>S-630609-091808-BP-002</i>	<i>S-630609-091908-BP-010</i>	<i>S-630609-091808-BP-003</i>
<i>Sample Date</i>			<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>						
<b>VOCs</b>								
Acetone	67-64-1	µg/kg	ND	37.7	ND	110	ND	63.4
Benzene	71-43-2	µg/kg	0.74 J	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	µg/kg	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	µg/kg	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	µg/kg	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3	µg/kg	ND	ND	ND	14.6	ND	ND
Carbon disulfide	75-15-0	µg/kg	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	µg/kg	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	µg/kg	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	µg/kg	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	µg/kg	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	µg/kg	ND	ND	ND	ND	ND	ND
Cyclohexane	110-82-7	µg/kg	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	µg/kg	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	106-93-4	µg/kg	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	µg/kg	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	µg/kg	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	µg/kg	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	µg/kg	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	µg/kg	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	µg/kg	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	µg/kg	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	µg/kg	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	µg/kg	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	µg/kg	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	µg/kg	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	µg/kg	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	µg/kg	ND	ND	ND	ND	ND	ND
Freon 113	76-13-1	µg/kg	ND	ND	ND	ND	ND	ND
2-Hexanone	591-78-6	µg/kg	ND	ND	ND	ND	ND	ND
Methyl Acetate	79-20-9	µg/kg	16.5	ND	ND	ND	15.6	ND
Methylcyclohexane	108-87-2	µg/kg	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether	1634-04-4	µg/kg	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone(MIBK)	108-10-1	µg/kg	ND	ND	ND	ND	ND	ND
Methylene chloride	75-09-2	µg/kg	5.1 J	4.3 J	3.7 J	6.3 J	1.6 J	7.3 J
Styrene	100-42-5	µg/kg	ND	ND	ND	ND	ND	ND

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>SBH-1</i>	<i>SBH-1</i>	<i>SBH-2</i>	<i>SBH-2</i>	<i>SBH-3</i>	<i>SBH-3</i>
<i>Sample Depth</i>			<i>(0-2')</i>	<i>(4-6')</i>	<i>(0-2')</i>	<i>(8-10')</i>	<i>(0-2')</i>	<i>(10-12')</i>
<i>Sample ID</i>			<i>S-630609-091908-BP-008</i>	<i>S-630609-091808-BP-001</i>	<i>S-630609-091908-BP-009</i>	<i>S-630609-091808-BP-002</i>	<i>S-630609-091908-BP-010</i>	<i>S-630609-091808-BP-003</i>
<i>Sample Date</i>			<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>
<b>Parameters</b>	<b>CAS Number</b>	<b>Units</b>						
1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	µg/kg	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	µg/kg	3.1	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	µg/kg	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	µg/kg	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	µg/kg	ND	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	µg/kg	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	µg/kg	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	µg/kg	ND	ND	ND	ND	ND	ND
m,p-Xylene		µg/kg	ND	ND	ND	ND	ND	ND
o-Xylene	95-47-6	µg/kg	ND	ND	ND	ND	ND	ND
Xylene (total)	1330-20-7	µg/kg	ND	ND	ND	ND	ND	ND
<b>SVOCs</b>								
2-Chlorophenol	95-57-8	µg/kg	ND	ND	ND	ND	ND	ND
4-Chloro-3-methyl phenol	59-50-7	µg/kg	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2	µg/kg	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	105-67-9	µg/kg	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	51-28-5	µg/kg	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	µg/kg	ND	ND	ND	ND	ND	ND
2-Methylphenol	95-48-7	µg/kg	ND	ND	ND	ND	ND	ND
3&4-Methylphenol		µg/kg	ND	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5	µg/kg	ND	ND	ND	ND	ND	ND
4-Nitrophenol	100-02-7	µg/kg	ND	ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	µg/kg	ND	ND	ND	ND	ND	ND
Phenol	108-95-2	µg/kg	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	µg/kg	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	µg/kg	ND	ND	ND	ND	ND	ND
Acenaphthene	83-32-9	µg/kg	ND	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	µg/kg	23.0 J	ND	24.0 J	ND	22.1 J	ND
Acetophenone	98-86-2	µg/kg	ND	ND	ND	ND	ND	ND
Anthracene	120-12-7	µg/kg	36.4	21.9 J	41.9	ND	39	ND
Atrazine	1912-24-9	µg/kg	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	56-55-3	µg/kg	137	49.2	224	ND	120	ND
Benzo(a)pyrene	50-32-8	µg/kg	137	47.3	200	ND	114	ND
Benzo(b)fluoranthene	205-99-2	µg/kg	132	39.0 J	203	ND	99.5	ND
Benzo(g,h,i)perylene	191-24-2	µg/kg	96.3	36.7 J	126	ND	76.9	ND

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>SBH-1</i>	<i>SBH-1</i>	<i>SBH-2</i>	<i>SBH-2</i>	<i>SBH-3</i>	<i>SBH-3</i>
<i>Sample Depth</i>			<i>(0-2')</i>	<i>(4-6')</i>	<i>(0-2')</i>	<i>(8-10')</i>	<i>(0-2')</i>	<i>(10-12')</i>
<i>Sample ID</i>			<i>S-630609-091908-BP-008</i>	<i>S-630609-091808-BP-001</i>	<i>S-630609-091908-BP-009</i>	<i>S-630609-091808-BP-002</i>	<i>S-630609-091908-BP-010</i>	<i>S-630609-091808-BP-003</i>
<i>Sample Date</i>			<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>						
Benzo(k)fluoranthene	207-08-9	µg/kg	120	42.5 J	133	ND	100	ND
4-Bromophenyl phenyl ether	101-55-3	µg/kg	ND	ND	ND	ND	ND	ND
Butyl benzyl phthalate	85-68-7	µg/kg	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	92-52-4	µg/kg	ND	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7	µg/kg	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7	µg/kg	ND	ND	ND	ND	ND	ND
4-Chloroaniline	106-47-8	µg/kg	ND	ND	ND	ND	ND	ND
Carbazole	86-74-8	µg/kg	ND	ND	ND	ND	ND	ND
Caprolactam	105-60-2	µg/kg	ND	ND	ND	ND	ND	ND
Chrysene	218-01-9	µg/kg	130	48.2	217	ND	118	ND
bis(2-Chloroethoxy)methane	111-91-1	µg/kg	ND	ND	ND	ND	ND	ND
bis(2-Chloroethyl)ether	111-44-4	µg/kg	ND	ND	ND	ND	ND	ND
bis(2-Chloroisopropyl)ether	108-60-1	µg/kg	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	µg/kg	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2	µg/kg	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	µg/kg	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	µg/kg	36.8	ND	54.6	ND	32.6 J	ND
Dibenzofuran	132-64-9	µg/kg	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	84-74-2	µg/kg	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	117-84-0	µg/kg	ND	ND	ND	ND	ND	ND
Diethyl phthalate	84-66-2	µg/kg	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	µg/kg	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	117-81-7	µg/kg	556	634	46.2	93.8	43.5 J	90.3 J
Fluoranthene	206-44-0	µg/kg	212	86.8	300	ND	195	ND
Fluorene	86-73-7	µg/kg	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	118-74-1	µg/kg	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	µg/kg	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	µg/kg	ND	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	µg/kg	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	90.1	31.5 J	115	ND	70.7	ND
Isophorone	78-59-1	µg/kg	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	91-57-6	µg/kg	ND	ND	ND	ND	ND	ND
2-Nitroaniline	88-74-4	µg/kg	ND	ND	ND	ND	ND	ND
3-Nitroaniline	99-09-2	µg/kg	ND	ND	ND	ND	ND	ND
4-Nitroaniline	100-01-6	µg/kg	ND	ND	ND	ND	ND	ND
Naphthalene	91-20-3	µg/kg	ND	ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	µg/kg	ND	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	621-64-7	µg/kg	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	µg/kg	ND	ND	ND	ND	ND	ND
Phenanthrene	85-01-8	µg/kg	108	79.9	80.7	ND	129	ND
Pyrene	129-00-0	µg/kg	186	81.9	362	ND	186	ND

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>SBH-1</i>	<i>SBH-1</i>	<i>SBH-2</i>	<i>SBH-2</i>	<i>SBH-3</i>	<i>SBH-3</i>
<i>Sample Depth</i>			<i>(0-2')</i>	<i>(4-6')</i>	<i>(0-2')</i>	<i>(8-10')</i>	<i>(0-2')</i>	<i>(10-12')</i>
<i>Sample ID</i>			<i>S-630609-091908-BP-008</i>	<i>S-630609-091808-BP-001</i>	<i>S-630609-091908-BP-009</i>	<i>S-630609-091808-BP-002</i>	<i>S-630609-091908-BP-010</i>	<i>S-630609-091808-BP-003</i>
<i>Sample Date</i>			<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>						
<b>Pesticides</b>								
Aldrin	309-00-2	ug/kg	ND	ND	ND	ND	ND	ND
alpha-BHC	319-84-6	µg/kg	ND	ND	ND	ND	ND	ND
beta-BHC	319-85-7	µg/kg	ND	ND	ND	ND	ND	ND
delta-BHC	319-86-8	µg/kg	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	58-89-9	µg/kg	ND	ND	ND	ND	ND	ND
alpha-Chlordane	5103-71-9	µg/kg	ND	ND	13.6	2.7	ND	ND
gamma-Chlordane	5103-74-2	µg/kg	ND	ND	23.1	4.6	ND	ND
Dieldrin	60-57-1	µg/kg	ND	ND	ND	ND	ND	ND
4,4'-DDD	72-54-8	µg/kg	ND	ND	ND	ND	1.8	ND
4,4'-DDE	72-55-9	µg/kg	ND	ND	ND	ND	1.8	ND
4,4'-DDT	50-29-3	µg/kg	2.2	ND	2.7	ND	12.8	ND
Endrin	72-20-8	µg/kg	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	1031-07-8	µg/kg	ND	ND	ND	ND	ND	ND
Endrin aldehyde	7421-93-4	µg/kg	ND	ND	ND	ND	ND	ND
Endosulfan-I	959-98-8	µg/kg	ND	ND	ND	ND	ND	ND
Endosulfan-II	33213-65-9	µg/kg	ND	ND	ND	ND	ND	ND
Heptachlor	76-44-8	µg/kg	ND	ND	4.1	ND	ND	ND
Heptachlor epoxide	1024-57-3	µg/kg	ND	ND	1.8	ND	ND	ND
Methoxychlor	72-43-5	µg/kg	ND	ND	ND	ND	ND	ND
Endrin ketone	53494-70-5	µg/kg	ND	ND	ND	ND	ND	ND
Toxaphene	8001-35-2	µg/kg	ND	ND	ND	ND	ND	ND
<b>PCBs</b>								
Aroclor 1016	12674-11-2	µg/kg	ND	ND	ND	ND	ND	ND
Aroclor 1221	11104-28-2	µg/kg	ND	ND	ND	ND	ND	ND
Aroclor 1232	11141-16-5	µg/kg	ND	ND	ND	ND	ND	ND
Aroclor 1242	53469-21-9	µg/kg	ND	ND	ND	ND	ND	ND
Aroclor 1248	12672-29-6	µg/kg	ND	ND	ND	ND	ND	ND
Aroclor 1254	11097-69-1	µg/kg	ND	ND	ND	ND	ND	ND
Aroclor 1260	11096-82-5	µg/kg	ND	ND	ND	ND	ND	ND
<b>Metals</b>								
Aluminum		mg/kg	7160	9110	7150	7330	7860	11700
Antimony		mg/kg	<2.1	<2.5	<2.2	<2.5	<2.3	<2.9
Arsenic		mg/kg	3.7	3.6	3.7	3.5	5.5	3.9
Barium		mg/kg	71.7	56.5	53	56.7	75.7	47.1
Beryllium		mg/kg	<0.52	<0.64	<0.54	<0.62	<0.58	<0.73
Cadmium		mg/kg	<0.52	<0.64	<0.54	<0.62	<0.58	<0.73
Calcium		mg/kg	14800	17100	57300	1240	12000	2190
Chromium		mg/kg	12.1	18.3	13.7	9.7	13	11.3
Cobalt		mg/kg	<5.2	<6.4	<5.4	<6.2	<5.8	<7.3
Copper		mg/kg	23.5	21.8	23.4	14.3	37.3	6.9
Iron <small>CRA 630609 (3)</small>		mg/kg	14700	13900	11900	14400	15900	13300

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>		<i>SBH-1</i>	<i>SBH-1</i>	<i>SBH-2</i>	<i>SBH-2</i>	<i>SBH-3</i>	<i>SBH-3</i>	
<i>Sample Depth</i>		<i>(0-2')</i>	<i>(4-6')</i>	<i>(0-2')</i>	<i>(8-10')</i>	<i>(0-2')</i>	<i>(10-12')</i>	
<i>Sample ID</i>		<i>S-630609-091908-BP-008</i>	<i>S-630609-091808-BP-001</i>	<i>S-630609-091908-BP-009</i>	<i>S-630609-091808-BP-002</i>	<i>S-630609-091908-BP-010</i>	<i>S-630609-091808-BP-003</i>	
<i>Sample Date</i>		<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>18-Sep-08</i>	
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>						
Lead		mg/kg	37.6	17.5	31.2	<2.5	209	7.9
Magnesium	4980	mg/kg	4980	4130	5220	2310	3380	2120
Manganese		mg/kg	466	326	373	456	433	180
Mercury		mg/kg	0.083	0.069	0.094	<0.035	0.14	<0.046
Nickel		mg/kg	11.2	11.1	11.4	10.9	13.9	9
Potassium		mg/kg	<1000	<1300	1170	<1200	<1200	<1500
Selenium		mg/kg	<2.1	<2.5	<2.2	<2.5	<2.3	<2.9
Silver		mg/kg	<1.0	<1.3	<1.1	<1.2	<1.2	<1.5
Sodium		mg/kg	<1000	<1300	<1100	<1200	<1200	<1500
Thallium		mg/kg	<1.0	<1.3	<1.1	<1.2	<1.2	<1.5
Vanadium		mg/kg	15.1	16.9	17.3	14.5	17.9	21
Zinc		mg/kg	45.4	95.2	45.4	23.5	98.9	37.8

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>SBH-3</i>	<i>SBH-4</i>	<i>SBH-5</i>	<i>SBH-6</i>	<i>SBH-7</i>
<i>Sample Depth</i>			<i>(10-12')</i>	<i>(4-6')</i>	<i>(6-8')</i>	<i>(6-8')</i>	<i>(8-10')</i>
<i>Sample ID</i>			<i>S-630609-091808-BP-011</i>	<i>S-630609-091908-BP-004</i>	<i>S-630609-091908-BP-005</i>	<i>S-630609-091908-BP-007</i>	<i>S-630609-091908-BP-006</i>
<i>Sample Date</i>			<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>
			Duplicate				
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
<b>VOCs</b>							
Acetone	67-64-1	µg/kg	88.7	ND	86.8	47.4	39.8
Benzene	71-43-2	µg/kg	ND	ND	0.79 J	ND	ND
Bromodichloromethane	75-27-4	µg/kg	ND	ND	ND	ND	ND
Bromoform	75-25-2	µg/kg	ND	ND	ND	ND	ND
Bromomethane	74-83-9	µg/kg	ND	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3	µg/kg	21.8	ND	22.2	8.7 J	ND
Carbon disulfide	75-15-0	µg/kg	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	µg/kg	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	µg/kg	ND	ND	ND	ND	ND
Chloroethane	75-00-3	µg/kg	ND	ND	ND	ND	ND
Chloroform	67-66-3	µg/kg	ND	ND	ND	ND	ND
Chloromethane	74-87-3	µg/kg	ND	ND	ND	ND	ND
Cyclohexane	110-82-7	µg/kg	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	µg/kg	ND	ND	ND	ND	ND
1,2-Dibromoethane	106-93-4	µg/kg	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	µg/kg	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	µg/kg	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	µg/kg	ND	ND	ND	ND	ND
Dichlorodifluoromethane	75-71-8	µg/kg	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	µg/kg	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	µg/kg	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	µg/kg	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	µg/kg	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	µg/kg	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	µg/kg	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	µg/kg	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	µg/kg	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	µg/kg	ND	ND	ND	ND	ND
Freon 113	76-13-1	µg/kg	ND	ND	ND	ND	ND
2-Hexanone	591-78-6	µg/kg	ND	ND	ND	ND	ND
Methyl Acetate	79-20-9	µg/kg	ND	12.3	ND	ND	ND
Methylcyclohexane	108-87-2	µg/kg	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether	1634-04-4	µg/kg	ND	ND	ND	ND	ND
4-Methyl-2-pentanone(MIBK)	108-10-1	µg/kg	ND	ND	ND	ND	ND
Methylene chloride	75-09-2	µg/kg	1.2 J	4.0 J	4.3 J	4.2 J	3.2 J
Styrene	100-42-5	µg/kg	ND	ND	ND	ND	ND



TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>SBH-3</i>	<i>SBH-4</i>	<i>SBH-5</i>	<i>SBH-6</i>	<i>SBH-7</i>
<i>Sample Depth</i>			<i>(10-12')</i>	<i>(4-6')</i>	<i>(6-8')</i>	<i>(6-8')</i>	<i>(8-10')</i>
<i>Sample ID</i>			<i>S-630609-091808-BP-011</i>	<i>S-630609-091908-BP-004</i>	<i>S-630609-091908-BP-005</i>	<i>S-630609-091908-BP-007</i>	<i>S-630609-091908-BP-006</i>
<i>Sample Date</i>			<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>
			Duplicate				
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	µg/kg	ND	ND	ND	ND	ND
Toluene	108-88-3	µg/kg	1.4	2.0	ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	µg/kg	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	µg/kg	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	µg/kg	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	µg/kg	ND	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	µg/kg	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	µg/kg	ND	ND	ND	ND	ND
m,p-Xylene		µg/kg	ND	ND	ND	ND	ND
o-Xylene	95-47-6	µg/kg	ND	ND	ND	ND	ND
Xylene (total)	1330-20-7	µg/kg	ND	ND	ND	ND	ND
<b>SVOCs</b>							
2-Chlorophenol	95-57-8	µg/kg	ND	ND	ND	ND	ND
4-Chloro-3-methyl phenol	59-50-7	µg/kg	ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2	µg/kg	ND	ND	ND	ND	ND
2,4-Dimethylphenol	105-67-9	µg/kg	ND	ND	ND	ND	ND
2,4-Dinitrophenol	51-28-5	µg/kg	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	µg/kg	ND	ND	ND	ND	ND
2-Methylphenol	95-48-7	µg/kg	ND	ND	ND	ND	ND
3&4-Methylphenol		µg/kg	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5	µg/kg	ND	ND	ND	ND	ND
4-Nitrophenol	100-02-7	µg/kg	ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	µg/kg	ND	ND	ND	ND	ND
Phenol	108-95-2	µg/kg	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	µg/kg	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	µg/kg	ND	ND	ND	ND	ND
Acenaphthene	83-32-9	µg/kg	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	µg/kg	ND	ND	20.4 J	ND	ND
Acetophenone	98-86-2	µg/kg	ND	ND	ND	ND	ND
Anthracene	120-12-7	µg/kg	ND	ND	40.9	ND	29.5 J
Atrazine	1912-24-9	µg/kg	ND	ND	ND	ND	ND
Benzo(a)anthracene	56-55-3	µg/kg	ND	ND	97.2	ND	67.1
Benzo(a)pyrene	50-32-8	µg/kg	ND	17.4 J	88.4	ND	57.2
Benzo(b)fluoranthene	205-99-2	µg/kg	ND	ND	80.0	ND	49.7
Benzo(g,h,i)perylene	191-24-2	µg/kg	ND	ND	65.1	ND	38.1

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>SBH-3</i>	<i>SBH-4</i>	<i>SBH-5</i>	<i>SBH-6</i>	<i>SBH-7</i>
<i>Sample Depth</i>			<i>(10-12')</i>	<i>(4-6')</i>	<i>(6-8')</i>	<i>(6-8')</i>	<i>(8-10')</i>
<i>Sample ID</i>			<i>S-630609-091808-BP-011</i>	<i>S-630609-091908-BP-004</i>	<i>S-630609-091908-BP-005</i>	<i>S-630609-091908-BP-007</i>	<i>S-630609-091908-BP-006</i>
<i>Sample Date</i>			<i>18-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>	<i>19-Sep-08</i>
			Duplicate				
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
Benzo(k)fluoranthene	207-08-9	µg/kg	ND	ND	76.8	ND	56.7
4-Bromophenyl phenyl ether	101-55-3	µg/kg	ND	ND	ND	ND	ND
Butyl benzyl phthalate	85-68-7	µg/kg	ND	ND	ND	ND	ND
1,1'-Biphenyl	92-52-4	µg/kg	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7	µg/kg	ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7	µg/kg	ND	ND	ND	ND	ND
4-Chloroaniline	106-47-8	µg/kg	ND	ND	ND	ND	ND
Carbazole	86-74-8	µg/kg	ND	ND	ND	ND	ND
Caprolactam	105-60-2	µg/kg	ND	ND	ND	ND	ND
Chrysene	218-01-9	µg/kg	ND	ND	102	ND	67.6
bis(2-Chloroethoxy)methane	111-91-1	µg/kg	ND	ND	ND	ND	ND
bis(2-Chloroethyl)ether	111-44-4	µg/kg	ND	ND	ND	ND	ND
bis(2-Chloroisopropyl)ether	108-60-1	µg/kg	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	µg/kg	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2	µg/kg	714	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	µg/kg	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	µg/kg	ND	ND	23.5 J	ND	ND
Dibenzofuran	132-64-9	µg/kg	ND	ND	ND	ND	ND
Di-n-butyl phthalate	84-74-2	µg/kg	ND	ND	ND	ND	ND
Di-n-octyl phthalate	117-84-0	µg/kg	ND	ND	ND	ND	ND
Diethyl phthalate	84-66-2	µg/kg	ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	µg/kg	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	117-81-7	µg/kg	217	169	4760	68.4 J	198
Fluoranthene	206-44-0	µg/kg	ND	25.2 J	195	ND	114
Fluorene	86-73-7	µg/kg	ND	ND	ND	ND	ND
Hexachlorobenzene	118-74-1	µg/kg	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	µg/kg	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	µg/kg	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	µg/kg	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	ND	ND	57.2	ND	33.8 J
Isophorone	78-59-1	µg/kg	ND	ND	ND	ND	ND
2-Methylnaphthalene	91-57-6	µg/kg	ND	ND	ND	ND	ND
2-Nitroaniline	88-74-4	µg/kg	ND	ND	ND	ND	ND
3-Nitroaniline	99-09-2	µg/kg	ND	ND	ND	ND	ND
4-Nitroaniline	100-01-6	µg/kg	ND	ND	ND	ND	ND
Naphthalene	91-20-3	µg/kg	ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	µg/kg	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	621-64-7	µg/kg	336	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	µg/kg	ND	ND	ND	ND	ND
Phenanthrene	85-01-8	µg/kg	ND	ND	154	ND	89.5
Pyrene	129-00-0	µg/kg	ND	22.6 J	177	ND	102

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

Sample Location			SBH-3 (10-12')	SBH-4 (4-6')	SBH-5 (6-8')	SBH-6 (6-8')	SBH-7 (8-10')
Sample Depth			S-630609-091808-BP-011	S-630609-091908-BP-004	S-630609-091908-BP-005	S-630609-091908-BP-007	S-630609-091908-BP-006
Sample ID			18-Sep-08	19-Sep-08	19-Sep-08	19-Sep-08	19-Sep-08
Sample Date			Duplicate				
Parameters	CAS Number	Units					
<b>Pesticides</b>							
Aldrin	309-00-2	ug/kg	ND	ND	ND	ND	ND
alpha-BHC	319-84-6	µg/kg	ND	ND	ND	ND	ND
beta-BHC	319-85-7	µg/kg	ND	ND	ND	ND	ND
delta-BHC	319-86-8	µg/kg	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	58-89-9	µg/kg	ND	ND	ND	ND	ND
alpha-Chlordane	5103-71-9	µg/kg	ND	ND	ND	ND	ND
gamma-Chlordane	5103-74-2	µg/kg	2.4	ND	ND	ND	ND
Dieldrin	60-57-1	µg/kg	ND	2.6	ND	ND	ND
4,4'-DDD	72-54-8	µg/kg	ND	1.9	ND	ND	ND
4,4'-DDE	72-55-9	µg/kg	ND	2.9	ND	ND	ND
4,4'-DDT	50-29-3	µg/kg	ND	5.9	2.0	ND	ND
Endrin	72-20-8	µg/kg	ND	ND	ND	ND	ND
Endosulfan sulfate	1031-07-8	µg/kg	ND	ND	ND	ND	ND
Endrin aldehyde	7421-93-4	µg/kg	ND	ND	ND	ND	ND
Endosulfan-I	959-98-8	µg/kg	ND	ND	ND	ND	ND
Endosulfan-II	33213-65-9	µg/kg	ND	ND	ND	ND	ND
Heptachlor	76-44-8	µg/kg	ND	ND	ND	ND	ND
Heptachlor epoxide	1024-57-3	µg/kg	ND	ND	ND	ND	ND
Methoxychlor	72-43-5	µg/kg	ND	ND	ND	ND	ND
Endrin ketone	53494-70-5	µg/kg	ND	ND	ND	ND	ND
Toxaphene	8001-35-2	µg/kg	ND	ND	ND	ND	ND
<b>PCBs</b>							
Aroclor 1016	12674-11-2	µg/kg	ND	ND	ND	ND	ND
Aroclor 1221	11104-28-2	µg/kg	ND	ND	ND	ND	ND
Aroclor 1232	11141-16-5	µg/kg	ND	ND	ND	ND	ND
Aroclor 1242	53469-21-9	µg/kg	ND	ND	ND	ND	ND
Aroclor 1248	12672-29-6	µg/kg	ND	ND	ND	ND	ND
Aroclor 1254	11097-69-1	µg/kg	ND	ND	ND	ND	ND
Aroclor 1260	11096-82-5	µg/kg	ND	ND	ND	ND	ND
<b>Metals</b>							
Aluminum		mg/kg	8700	7380	6860	8770	6040
Antimony		mg/kg	<2.3	<2.3	<2.3	<2.3	<2.3
Arsenic		mg/kg	4.6	4.4	3.6	7.2	3.6
Barium		mg/kg	94.5	62.7	61.3	45	55
Beryllium		mg/kg	<0.59	<0.57	<0.57	<0.57	<0.57
Cadmium		mg/kg	<0.59	<0.57	<0.57	<0.57	<0.57
Calcium		mg/kg	979	13200	17400	2330	19700
Chromium		mg/kg	11.3	11	15.6	10.5	10.2
Cobalt		mg/kg	<5.9	<5.7	<5.7	5.9	<5.7
Copper		mg/kg	5.8	30.3	29.4	24.6	29.6
Iron		mg/kg	17600	12700	13500	16400	11300

TABLE 4.1

SUMMARY OF SAMPLE RESULTS FOR LANDFILL REFERENCE SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>		<i>SBH-3</i>	<i>SBH-4</i>	<i>SBH-5</i>	<i>SBH-6</i>	<i>SBH-7</i>	
<i>Sample Depth</i>		(10-12')	(4-6')	(6-8')	(6-8')	(8-10')	
<i>Sample ID</i>		S-630609-091808-BP-011	S-630609-091908-BP-004	S-630609-091908-BP-005	S-630609-091908-BP-007	S-630609-091908-BP-006	
<i>Sample Date</i>		18-Sep-08 Duplicate	19-Sep-08	19-Sep-08	19-Sep-08	19-Sep-08	
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
Lead		mg/kg	6.3	38.2	32.1	4	12.8
Magnesium		mg/kg	3100	4700	4510	2930	5060
Manganese		mg/kg	246	408	355	1940	384
Mercury		mg/kg	<0.0333	0.071	0.066	0.038	<0.036
Nickel		mg/kg	12.7	10.8	10.5	17.8	11.3
Potassium		mg/kg	<1200	<1100	<1100	<1100	<1100
Selenium		mg/kg	<2.3	<2.3	<2.3	<2.3	<2.3
Silver		mg/kg	<1.2	<1.1	<1.1	<1.1	<1.1
Sodium		mg/kg	<1200	<1100	<1100	<1100	<1100
Thallium		mg/kg	<1.2	<1.1	<1.1	<1.1	<1.1
Vanadium		mg/kg	15.9	15.1	15.0	15.4	23.5
Zinc		mg/kg	28.9	47.8	49.9	48.7	28.6

TABLE 4.2

**SITE-SPECIFIC CLEANUP CRITERIA  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Parameters</i>	<i>CAS Number</i>	<i>Residential<sup>(1)</sup> (mg/kg)</i>	<i>Maximum Reference Concentration<sup>(2)</sup> (mg/kg)</i>	<i>Surface Criteria (maximum of residential/reference)</i>		<i>Maximum Reference Concentration<sup>(2)</sup> (mg/kg)</i>	<i>Subsurface Criteria (maximum of industrial/reference) (mg/kg)</i>
				<i>Industrial<sup>(1)</sup> (mg/kg)</i>	<i>Industrial<sup>(1)</sup> (mg/kg)</i>		
<b><i>Metals</i></b>							
Arsenic	7440-38-2	16	7.2	16	16	7.2	16
Barium	7440-39-3	350	94.5	350	10,000	94.5	10000
Beryllium	7440-41-7	14	ND	14	2,700	ND	2700
Cadmium	7440-43-9	2.5	ND	2.5	60	ND	60
Chromium, hexavalent	18540-29-9	22	18.3	22	800	18.3	800
Chromium, trivalent	16065-83-1	36	-	36	6,800	-	6800
Copper	7440-50-8	270	37.3	270	10,000	37.3	10000
Total Cyanide		27	-	27	10,000	-	10000
Lead	7439-92-1	400	209	400	3,900	209	3900
Manganese	7439-96-5	2,000	1940	2000	10,000	1940	10000
Total Mercury		0.81	0.14	0.81	5.7	0.14	5.7
Nickel	7440-02-0	140	17.8	140	10,000	17.8	10000
Selenium	7782-49-2	36	ND	36	6,800	ND	6800
Silver	7440-22-4	36	ND	36	6,800	ND	6800
Zinc	7440-66-6	2200	98.9	2200	10,000	98.9	10000
<b><i>Pesticides/PCBs</i></b>							
2,4,5-TP Acid (Silvex)	93-72-1	58	-	58	1,000	-	1000
4,4'-DDE	72-55-9	1.8	0.0029	1.8	120	0.0029	120
4,4'-DDT	50-29-3	1.7	0.0128	1.7	94	0.0128	94
4,4'-DDD	72-54-8	2.6	0.0019	2.6	180	0.0019	180
Aldrin	309-00-2	0.019	ND	0.019	1.4	ND	1.4
alpha-BHC	319-84-6	0.097	ND	0.097	6.8	ND	6.8
beta-BHC	319-85-7	0.072	ND	0.072	14	ND	14
Chlordane (alpha)	5103-71-9	0.91	0.0136	0.91	47	0.0136	47
Chlordane (gamma)			0.0231	0.0231		0.0231	0.0231
delta-BHC	319-86-8	100	ND	100	1,000	ND	1000
Dibenzofuran	132-64-9	14	ND	14	1,000	ND	1000
Dieldrin	60-57-1	0.039	0.0026	0.039	2.8	0.0026	2.8
Endosulfan I	959-98-8	4.8	ND	4.8	920	ND	920
Endosulfan II	33213-65-9	4.8	ND	4.8	920	ND	920
Endosulfan sulfate	1031-07-8	4.8	ND	4.8	920	ND	920
Endrin	72-20-8	2.2	ND	2.2	410	ND	410
Heptachlor	76-44-8	0.42	0.0041	0.42	29	0.0041	29
Heptachlor epoxide			0.0018	0.0018		0.0018	0.0018
Lindane	58-89-9	0.28	ND	0.28	23	ND	23
Polychlorinated biphenyls	1336-36-3	1	ND	1	25	ND	25

TABLE 4.2

**SITE-SPECIFIC CLEANUP CRITERIA  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Parameters</i>	<i>CAS Number</i>	<i>Residential<sup>(1)</sup> (mg/kg)</i>	<i>Maximum Reference Concentration<sup>(2)</sup> (mg/kg)</i>	<i>Surface Criteria (maximum of residential/reference) (mg/kg)</i>	<i>Industrial<sup>(1)</sup> (mg/kg)</i>	<i>Maximum Reference Concentration<sup>(2)</sup> (mg/kg)</i>	<i>Subsurface Criteria (maximum of industrial/reference) (mg/kg)</i>
<i>Semi-Volatiles</i>							
2,6-Dinitrotoluene			0.714	0.714		0.714	0.714
Acenaphthene	83-32-9	100	ND	100	1,000	ND	1000
Acenaphthylene	208-96-8	100	0.024 J	100	1,000	0.024 J	1000
Anthracene	120-12-7	100	0.0419	100	1,000	0.0419	1000
Benz(a)anthracene	56-55-3	1	0.224	1	11	0.224	11
Benzo(a)pyrene	50-32-8	1	0.2	1	1.1	0.2	1.1
Benzo(b)fluoranthene	205-99-2	1	0.203	1	11	0.203	11
Benzo(g,h,i)perylene	191-24-2	100	0.126	100	1,000	0.126	1000
Benzo(k)fluoranthene	207-08-9	1	0.133	1	110	0.133	110
bis(2-Ethylhexyl)phthalate			4.76	4.76		4.76	4.76
Chrysene	218-01-9	1	0.217	1	110	0.217	110
Dibenz(a,h)anthracene	53-70-3	0.33	0.0546	0.33	1.1	0.0546	1.1
Fluoranthene	206-44-0	100	0.3	100	1,000	0.3	1000
Fluorene	86-73-7	100	ND	100	1,000	ND	1000
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.115	0.5	11	0.115	11
m-Cresol	108-39-4	100	-	100	1,000	-	1000
Naphthalene	91-20-3	100	ND	100	1,000	ND	1000
N-Nitroso-di-n-propylamine			0.336	0.336		0.336	0.336
o-Cresol	95-48-7	100	ND	100	1,000	ND	1000
p-Cresol	106-44-5	34	-	34	1,000	-	1000
Pentachlorophenol	87-86-5	2.4	ND	2.4	55	ND	55
Phenanthrene	85-01-8	100	0.154	100	1,000	0.154	1000
Phenol	108-95-2	100	ND	100	1,000	ND	1000
Pyrene	129-00-0	100	0.362	100	1,000	0.362	1000
<i>Volatiles</i>							
1,1,1-Trichloroethane	71-55-6	100	ND	100	1,000	ND	1000
1,1-Dichloroethane	75-34-3	19	ND	19	480	ND	480
1,1-Dichloroethene	75-35-4	100	ND	100	1,000	ND	1000
1,2-Dichlorobenzene	95-50-1	100	ND	100	1,000	ND	1000
1,2-Dichloroethane	107-06-2	2.3	ND	2.3	60	ND	60
cis-1,2-Dichloroethene	156-59-2	59	ND	59	1,000	ND	1000
trans-1,2-Dichloroethene	156-60-5	100	ND	100	1,000	ND	1000
1,3-Dichlorobenzene	541-73-1	17	ND	17	560	ND	560
1,4-Dichlorobenzene	106-46-7	9.8	ND	9.8	250	ND	250
1,4-Dioxane	123-91-1	9.8	-	9.8	250	-	250
Acetone	67-64-1	100	0.11	100	1,000	0.11	1000
Benzene	71-43-2	2.9	0.00079 J	2.9	89	0.00079 J	89
Butylbenzene	104-51-8	100	-	100	1,000	-	1000

TABLE 4.2

**SITE-SPECIFIC CLEANUP CRITERIA  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Parameters</i>	<i>CAS Number</i>	<i>Residential<sup>(1)</sup> (mg/kg)</i>	<i>Maximum Reference Concentration<sup>(2)</sup> (mg/kg)</i>	<i>Surface Criteria (maximum of residential/reference) (mg/kg)</i>	<i>Industrial<sup>(1)</sup> (mg/kg)</i>	<i>Maximum Reference Concentration<sup>(2)</sup> (mg/kg)</i>	<i>Subsurface Criteria (maximum of industrial/reference) (mg/kg)</i>
<i>Volatiles Continued</i>							
Carbon tetrachloride	56-23-5	1.4	ND	1.4	44	ND	44
Chlorobenzene	108-90-7	100	ND	100	1,000	ND	1000
Chloroform	67-66-3	10	ND	10	700	ND	700
Ethylbenzene	100-41-4	30	ND	30	780	ND	780
Hexachlorobenzene	118-74-1	0.33	ND	0.33	12	ND	12
Methyl Acetate			0.0165	0.0165		0.0165	0.0165
Methyl ethyl ketone	78-93-3	100	0.0222	100	1,000	0.0222	1000
Methyl tert-butyl ether	1634-04-4	62	ND	62	1,000	ND	1000
Methylene chloride	75-09-2	51	0.0073 J	51	1,000	0.0073 J	1000
n-Propylbenzene	103-65-1	100	-	100	1,000	-	1000
sec-Butylbenzene	135-98-8	100	-	100	1,000	-	1000
tert-Butylbenzene	98-06-6	100	-	100	1,000	-	1000
Tetrachloroethene	127-18-4	5.5	ND	5.5	300	ND	300
Toluene	108-88-3	100	0.0031	100	1,000	0.0031	1000
Trichloroethene	79-01-6	10	ND	10	400	ND	400
1,2,4-Trimethylbenzene	95-63-6	47	-	47	380	-	380
1,3,5- Trimethylbenzene	108-67-8	47	-	47	380	-	380
Vinyl chloride	75-01-4	0.21	ND	0.21	27	ND	27
Xylene (mixed)	1330-20-7	100	ND	100	1,000	ND	1000

## Notes:

(1) Reference <http://www.dec.ny.gov/regs/15507.html> - NYSDEC Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

(2) Reference samples were collected on September 18 and 19, 2008

TABLE 4.3

**SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Subsurface Criteria</i>	<i>Bottom of Excavation - Northwest</i>	<i>Sidewall - West</i>	<i>Bottom of Excavation - Southwest</i>	<i>Sidewall - Southwest</i>
<i>Sample Depth</i>			<i>(maximum of</i>		<i>(8 ft bgs)</i>		
<i>Sample ID</i>			<i>industrial/reference)(1)</i>	<i>BH-630609-100608-BPS-010</i>	<i>BH-630609-100608-BPS-011</i>	<i>BH-630609-100608-BPS-012</i>	<i>BH-630609-100608-BPS-013</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
<b>Metals</b>							
Arsenic	7440-38-2	mg/kg	16	2.9	<2.4	2.8	3.7
Barium	7440-39-3	mg/kg	10000	52.8	<24	45	231
Beryllium	7440-41-7	mg/kg	2700	<0.63	<0.59	<0.63	<0.64
Cadmium	7440-43-9	mg/kg	60	<0.63	<0.59	<0.63	<0.64
Chromium, hexavalent (2)	18540-29-9	mg/kg	800	8.5	6.4	8.9	10.8
Chromium, trivalent (2)	16065-83-1	mg/kg	6800	8.5	6.4	8.9	10.8
Copper	7440-50-8	mg/kg	10000	20	6.5	19.7	24.3
Cyanide (Total)		mg/kg	10000	<0.29	<0.26	<0.26	<0.31
Lead	7439-92-1	mg/kg	3900	3.4	<2.4	<2.5	36.5
Manganese	7439-96-5	mg/kg	10000	194	85	437 J	291
Mercury (Total)		mg/kg	5.7	<0.038	<0.038	<0.039	0.12
Nickel	7440-02-0	mg/kg	10000	9.6	8	11.7	10.4
Selenium	7782-49-2	mg/kg	6800	<2.5	<2.4	<2.5	<2.6
Silver	7440-22-4	mg/kg	6800	<1.3	<1.2	<1.3	<1.3
Zinc	7440-66-6	mg/kg	10000	21.8	15.1	25	56.7
<b>Pesticides/PCBs</b>							
2,4,5-TP Acid (Silvex) (3)	93-72-1	mg/kg	1000	(3)	(3)	(3)	(3)
4,4'-DDD	72-54-8	mg/kg	180	ND	ND	ND	ND
4,4'-DDE	72-55-9	mg/kg	120	ND	ND	ND	ND
4,4'-DDT	50-29-3	mg/kg	94	ND	ND	ND	ND
Aldrin	309-00-2	mg/kg	1.4	ND	ND	ND	ND
alpha-BHC	319-84-6	mg/kg	6.8	ND	ND	ND	ND
beta-BHC	319-85-7	mg/kg	14	ND	ND	ND	ND
Chlordane (alpha)	5103-71-9	mg/kg	47	ND	ND	ND	ND
Chlordane (gamma) (4)	5103-74-2	mg/kg	0.0231	ND	ND	ND	ND
delta-BHC	319-86-8	mg/kg	1000	ND	ND	ND	ND
Dibenzofuran	132-64-9	mg/kg	1000	ND	ND	ND	ND
Dieldrin	60-57-1	mg/kg	2.8	ND	ND	ND	ND
Endosulfan I	959-98-8	mg/kg	920	ND	ND	ND	ND
Endosulfan II	33213-65-9	mg/kg	920	ND	ND	ND	ND
Endosulfan sulfate	1031-07-8	mg/kg	920	ND	ND	ND	ND
Endrin	72-20-8	mg/kg	410	ND	ND	ND	ND
Heptachlor	76-44-8	mg/kg	29	ND	ND	ND	ND
Heptachlor epoxide (4)	1024-57-3	mg/kg	0.0018	ND	ND	ND	ND
Lindane	58-89-9	mg/kg	23	ND	ND	ND	ND
Polychlorinated biphenyls	1336-36-3	mg/kg	25	ND	ND	ND	ND



TABLE 4.3

**SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>	<i>Subsurface Criteria</i>	<i>Bottom of Excavation - Northwest</i>	<i>Sidewall - West</i>	<i>Bottom of Excavation - Southwest</i>	<i>Sidewall - Southwest</i>
<i>Sample Depth</i>	<i>(maximum of</i>		<i>(8 ft bgs)</i>		
<i>Sample ID</i>	<i>industrial/reference)(1)</i>	<i>BH-630609-100608-BPS-010</i>	<i>BH-630609-100608-BPS-011</i>	<i>BH-630609-100608-BPS-012</i>	<i>BH-630609-100608-BPS-013</i>
<i>Sample Date</i>		<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>			
<b><i>Semi-Volatiles</i></b>					
2,6-Dinitrotoluene (4)	606-20-2	mg/kg	0.714	ND	ND
Acenaphthene	83-32-9	mg/kg	1000	ND	ND
Acenaphthylene	208-96-8	mg/kg	1000	ND	ND
Anthracene	120-12-7	mg/kg	1000	ND	ND
Benz(a)anthracene	56-55-3	mg/kg	11	ND	ND
Benzo(a)pyrene	50-32-8	mg/kg	1.1	ND	ND
Benzo(b)fluoranthene	205-99-2	mg/kg	11	ND	ND
Benzo(g,h,i)perylene	191-24-2	mg/kg	1000	ND	ND
Benzo(k)fluoranthene	207-08-9	mg/kg	110	ND	ND
bis(2-Ethylhexyl)phthalate (4)	117-81-7	mg/kg	4.76	ND	ND
Chrysene	218-01-9	mg/kg	110	ND	ND
Dibenz(a,h)anthracene	53-70-3	mg/kg	1.1	ND	ND
Fluoranthene	206-44-0	mg/kg	1000	ND	ND
Fluorene	86-73-7	mg/kg	1000	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	11	ND	ND
m-Cresol (5)	108-39-4	mg/kg	1000	ND	ND
Naphthalene	91-20-3	mg/kg	1000	ND	ND
N-Nitroso-di-n-propylamine (4)	621-64-7	mg/kg	0.336	ND	ND
o-Cresol	95-48-7	mg/kg	1000	ND	ND
p-Cresol (5)	106-44-5	mg/kg	1000	ND	ND
Pentachlorophenol	87-86-5	mg/kg	55	ND	ND
Phenanthrene	85-01-8	mg/kg	1000	ND	ND
Phenol	108-95-2	mg/kg	1000	ND	ND
Pyrene	129-00-0	mg/kg	1000	ND	ND
<b><i>Volatiles</i></b>					
1,1,1-Trichloroethane	71-55-6	mg/kg	1000	ND	ND
1,1-Dichloroethane	75-34-3	mg/kg	480	ND	ND
1,1-Dichloroethene	75-35-4	mg/kg	1000	ND	ND
1,2,4-Trimethylbenzene	95-63-6	mg/kg	380	ND	ND
1,2-Dichlorobenzene	95-50-1	mg/kg	1000	ND	ND
1,2-Dichloroethane	107-06-2	mg/kg	60	ND	ND
1,3,5- Trimethylbenzene	108-67-8	mg/kg	380	ND	ND
1,3-Dichlorobenzene	541-73-1	mg/kg	560	ND	ND
1,4-Dichlorobenzene	106-46-7	mg/kg	250	ND	ND
1,4-Dioxane	123-91-1	mg/kg	250	ND	ND
Acetone	67-64-1	mg/kg	1000	0.0203	0.0086 J
Benzene	71-43-2	mg/kg	89	ND	ND
Butylbenzene	104-51-8	mg/kg	1000	ND	ND

TABLE 4.3

SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
 PAS IRWIN DUMP SUPERFUND SITE  
 OSWEGO, NEW YORK

Sample Location	Subsurface Criteria	Bottom of Excavation - Northwest	Sidewall - West	Bottom of Excavation - Southwest	Sidewall - Southwest	
Sample Depth	(maximum of		(8 ft bgs)			
Sample ID	industrial/reference)(1)	BH-630609-100608-BPS-010	BH-630609-100608-BPS-011	BH-630609-100608-BPS-012	BH-630609-100608-BPS-013	
Sample Date		October 6, 2008	October 6, 2008	October 6, 2008	October 6, 2008	
Parameters	CAS Number	Units				
<b>Volatiles Continued</b>						
Carbon tetrachloride	56-23-5	mg/kg	44	ND	ND	ND
Chlorobenzene	108-90-7	mg/kg	1000	ND	ND	ND
Chloroform	67-66-3	mg/kg	700	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	mg/kg	1000	ND	ND	ND
Ethylbenzene	100-41-4	mg/kg	780	0.00056 J	ND	ND
Hexachlorobenzene	118-74-1	mg/kg	12	ND	ND	ND
Methyl Acetate (4)	79-20-9	mg/kg	0.0165	0.0057 J	ND	0.0106
Methyl ethyl ketone	78-93-3	mg/kg	1000	ND	ND	ND
Methyl tert-butyl ether	1634-04-4	mg/kg	1000	ND	ND	ND
Methylene chloride	75-09-2	mg/kg	1000	ND	ND	ND
n-Propylbenzene	103-65-1	mg/kg	1000	ND	ND	ND
sec-Butylbenzene	135-98-8	mg/kg	1000	ND	ND	ND
tert-Butylbenzene	98-06-6	mg/kg	1000	ND	ND	ND
Tetrachloroethene	127-18-4	mg/kg	300	ND	ND	ND
Toluene	108-88-3	mg/kg	1000	0.00059 J	0.0016	ND
trans-1,2-Dichloroethene	156-60-5	mg/kg	1000	ND	ND	ND
Trichloroethene	79-01-6	mg/kg	400	ND	ND	ND
Vinyl chloride	75-01-4	mg/kg	27	ND	ND	ND
Xylene (mixed)	1330-20-7	mg/kg	1000	0.0046	0.0015 J	ND

Notes:

- J Estimated value.
  - (1) Subsurface criteria was developed using the maximum of the NYSDEC Table 375-6.8(b): Restricted Use Soil Cleanup Objectives (Reference <http://www.dec.ny.gov/regs/15507.html>) and the Landfill Reference Sampling Results collected on September 18 and 19, 2008 .
  - (2) The concentrations of chromium identified are for Total Chromium.
  - (3) "3. The verification samples were analyzed for TCL VOCs, TCL SVOCs, Pesticides, TAL Metals, and PCBs in accordance with the SOP. Since 2,4,5-TP Acid (Silvex) is a herbicide and therefore not a part of the above analysis, it was not analyzed, yet it has a Site-Specific Cleanup Criteria. As discussed and agreed upon in a phone call with USEPA on October 22, 2008, samples do not need to be reanalyzed for Silvex."
  - (4) Compound was detected in the samples collected from the Landfill Reference Sampling Event but was not included in the NYSDEC 375 criteria.
  - (5) The concentrations of m-Cresol and p-Cresol identified are for m and p-Cresol together.
- Exceeds criteria.

TABLE 4.3

**SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Subsurface Criteria</i>	<i>Bottom of Excavation- Center</i>	<i>Bottom of Excavation - South</i>	<i>Bottom of Excavation - East</i>	<i>Sidewall - Southwest</i>
<i>Sample Depth</i>			<i>(maximum of</i>				<i>(4-8' ft bgs)</i>
<i>Sample ID</i>			<i>industrial/reference)(1)</i>	<i>BH-630609-100608-BPS-014</i>	<i>BH-630609-100608-BPS-015</i>	<i>BH-630609-100608-BPS-016</i>	<i>BH-630609-100608-BPS-017</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
<b>Metals</b>							
Arsenic	7440-38-2	mg/kg	16	2.6	2.8	<2.3	2.7
Barium	7440-39-3	mg/kg	10000	56.8	54.8	<23	74.8
Beryllium	7440-41-7	mg/kg	2700	<0.62	<0.61	<0.58	<0.58
Cadmium	7440-43-9	mg/kg	60	<0.62	<0.61	<0.58	<0.58
Chromium, hexavalent (2)	18540-29-9	mg/kg	800	8.7	9.6	6.5	10.7
Chromium, trivalent (2)	16065-83-1	mg/kg	6800	8.7	9.6	6.5	10.7
Copper	7440-50-8	mg/kg	10000	16	19.8	7.9	22.9
Cyanide (Total)		mg/kg	10000	<0.26	<0.26	<0.27	<0.28
Lead	7439-92-1	mg/kg	3900	2.8	3.9	2.6	39.6
Manganese	7439-96-5	mg/kg	10000	200	281	177	269
Mercury (Total)		mg/kg	5.7	<0.036	<0.037	<0.034	0.13
Nickel	7440-02-0	mg/kg	10000	10	11.5	7.6	10.2
Selenium	7782-49-2	mg/kg	6800	<2.5	<2.4	<2.3	<2.3
Silver	7440-22-4	mg/kg	6800	<1.2	<1.2	<1.2	<1.2
Zinc	7440-66-6	mg/kg	10000	25	29.5	15.8	57.3
<b>Pesticides/PCBs</b>							
2,4,5-TP Acid (Silvex) (3)	93-72-1	mg/kg	1000	(3)	(3)	(3)	(3)
4,4'-DDD	72-54-8	mg/kg	180	ND	ND	ND	ND
4,4'-DDE	72-55-9	mg/kg	120	ND	ND	ND	ND
4,4'-DDT	50-29-3	mg/kg	94	ND	ND	ND	ND
Aldrin	309-00-2	mg/kg	1.4	ND	ND	ND	ND
alpha-BHC	319-84-6	mg/kg	6.8	ND	ND	ND	ND
beta-BHC	319-85-7	mg/kg	14	ND	ND	ND	ND
Chlordane (alpha)	5103-71-9	mg/kg	47	ND	ND	ND	ND
Chlordane (gamma) (4)	5103-74-2	mg/kg	0.0231	ND	ND	ND	ND
delta-BHC	319-86-8	mg/kg	1000	ND	ND	ND	ND
Dibenzofuran	132-64-9	mg/kg	1000	ND	ND	ND	ND
Dieldrin	60-57-1	mg/kg	2.8	ND	ND	ND	ND
Endosulfan I	959-98-8	mg/kg	920	ND	ND	ND	ND
Endosulfan II	33213-65-9	mg/kg	920	ND	ND	ND	ND
Endosulfan sulfate	1031-07-8	mg/kg	920	ND	ND	ND	ND
Endrin	72-20-8	mg/kg	410	ND	ND	ND	ND
Heptachlor	76-44-8	mg/kg	29	ND	ND	ND	ND
Heptachlor epoxide (4)	1024-57-3	mg/kg	0.0018	ND	ND	ND	ND
Lindane	58-89-9	mg/kg	23	ND	ND	ND	ND
Polychlorinated biphenyls	1336-36-3	mg/kg	25	ND	ND	ND	ND

TABLE 4.3

**SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Subsurface Criteria</i>	<i>Bottom of Excavation- Center</i>	<i>Bottom of Excavation - South</i>	<i>Bottom of Excavation - East</i>	<i>Sidewall - Southwest</i>
<i>Sample Depth</i>			<i>(maximum of</i>				<i>(4-8' ft bgs)</i>
<i>Sample ID</i>			<i>industrial/reference)(1)</i>	<i>BH-630609-100608-BPS-014</i>	<i>BH-630609-100608-BPS-015</i>	<i>BH-630609-100608-BPS-016</i>	<i>BH-630609-100608-BPS-017</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
<b><i>Semi-Volatiles</i></b>							
2,6-Dinitrotoluene (4)	606-20-2	mg/kg	0.714	ND	ND	ND	ND
Acenaphthene	83-32-9	mg/kg	1000	ND	ND	ND	ND
Acenaphthylene	208-96-8	mg/kg	1000	ND	ND	ND	ND
Anthracene	120-12-7	mg/kg	1000	ND	ND	ND	0.0291 J
Benz(a)anthracene	56-55-3	mg/kg	11	ND	ND	ND	0.0901
Benzo(a)pyrene	50-32-8	mg/kg	1.1	ND	ND	ND	0.0874
Benzo(b)fluoranthene	205-99-2	mg/kg	11	ND	ND	ND	0.0727
Benzo(g,h,i)perylene	191-24-2	mg/kg	1000	ND	ND	ND	0.061
Benzo(k)fluoranthene	207-08-9	mg/kg	110	ND	ND	ND	0.0602
bis(2-Ethylhexyl)phthalate (4)	117-81-7	mg/kg	4.76	ND	3.18	ND	ND
Chrysene	218-01-9	mg/kg	110	ND	ND	ND	0.0939
Dibenz(a,h)anthracene	53-70-3	mg/kg	1.1	ND	ND	ND	ND
Fluoranthene	206-44-0	mg/kg	1000	ND	ND	ND	0.199
Fluorene	86-73-7	mg/kg	1000	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	11	ND	ND	ND	0.052
m-Cresol (5)	108-39-4	mg/kg	1000	ND	ND	ND	ND
Naphthalene	91-20-3	mg/kg	1000	ND	ND	ND	ND
N-Nitroso-di-n-propylamine (4)	621-64-7	mg/kg	0.336	ND	ND	ND	ND
o-Cresol	95-48-7	mg/kg	1000	ND	ND	ND	ND
p-Cresol (5)	106-44-5	mg/kg	1000	ND	ND	ND	ND
Pentachlorophenol	87-86-5	mg/kg	55	ND	ND	ND	ND
Phenanthrene	85-01-8	mg/kg	1000	ND	ND	ND	0.15
Phenol	108-95-2	mg/kg	1000	ND	ND	ND	ND
Pyrene	129-00-0	mg/kg	1000	ND	ND	ND	0.154
<b><i>Volatiles</i></b>							
1,1,1-Trichloroethane	71-55-6	mg/kg	1000	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	mg/kg	480	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	mg/kg	1000	ND	ND	ND	ND
1,2,4-Trimethylbenzene	95-63-6	mg/kg	380	0.00056 J	0.00052 J	ND	ND
1,2-Dichlorobenzene	95-50-1	mg/kg	1000	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	mg/kg	60	ND	ND	ND	ND
1,3,5- Trimethylbenzene	108-67-8	mg/kg	380	0.0056 J	0.0027 J	ND	ND
1,3-Dichlorobenzene	541-73-1	mg/kg	560	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	mg/kg	250	ND	ND	ND	ND
1,4-Dioxane	123-91-1	mg/kg	250	ND	ND	ND	ND
Acetone	67-64-1	mg/kg	1000	0.0447	0.0301	0.0347	ND
Benzene	71-43-2	mg/kg	89	0.00049 J	ND	ND	ND
Butylbenzene	104-51-8	mg/kg	1000	ND	ND	ND	ND

TABLE 4.3

SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

Sample Location	Subsurface Criteria	Bottom of Excavation- Center	Bottom of Excavation - South	Bottom of Excavation - East	Sidewall - Southwest	
Sample Depth	(maximum of				(4-8' ft bgs)	
Sample ID	industrial/reference)(1)	BH-630609-100608-BPS-014	BH-630609-100608-BPS-015	BH-630609-100608-BPS-016	BH-630609-100608-BPS-017	
Sample Date		October 6, 2008	October 6, 2008	October 6, 2008	October 6, 2008	
Parameters	CAS Number	Units				
<b>Volatiles Continued</b>						
Carbon tetrachloride	56-23-5	mg/kg	44	ND	ND	ND
Chlorobenzene	108-90-7	mg/kg	1000	ND	ND	ND
Chloroform	67-66-3	mg/kg	700	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	mg/kg	1000	ND	ND	ND
Ethylbenzene	100-41-4	mg/kg	780	ND	0.00089 J	ND
Hexachlorobenzene	118-74-1	mg/kg	12	ND	ND	ND
Methyl Acetate (4)	79-20-9	mg/kg	0.0165	0.024	0.012	0.0119
Methyl ethyl ketone	78-93-3	mg/kg	1000	ND	ND	ND
Methyl tert-butyl ether	1634-04-4	mg/kg	1000	ND	ND	ND
Methylene chloride	75-09-2	mg/kg	1000	ND	ND	ND
n-Propylbenzene	103-65-1	mg/kg	1000	ND	ND	ND
sec-Butylbenzene	135-98-8	mg/kg	1000	ND	ND	ND
tert-Butylbenzene	98-06-6	mg/kg	1000	ND	ND	ND
Tetrachloroethene	127-18-4	mg/kg	300	ND	ND	ND
Toluene	108-88-3	mg/kg	1000	0.00061 J	0.00076 J	0.0044
trans-1,2-Dichloroethene	156-60-5	mg/kg	1000	ND	ND	ND
Trichloroethene	79-01-6	mg/kg	400	ND	ND	ND
Vinyl chloride	75-01-4	mg/kg	27	ND	ND	ND
Xylene (mixed)	1330-20-7	mg/kg	1000	0.0047	0.0071	0.00087 J

Notes:

J Estimated value.

- (1) Subsurface criteria was developed using the maximum of the NYSDEC Table 375-6.8(b): Restricted Use Soil Cleanup Objectives (Reference <http://www.dec.ny.gov/regs/15507.html>) and the Landfill Reference Sampling Results collected on September 18 and 19, 2008 .
- (2) The concentrations of chromium identified are for Total Chromium.
- (3) "3. The verification samples were analyzed for TCL VOCs, TCL SVOCs, Pesticides, TAL Metals, and PCBs in accordance with the SOP. Since 2,4,5-TP Acid (Silvex) is a herbicide and therefore not a part of the above analysis, it was not analyzed, yet it has a Site-Specific Cleanup Criteria. As discussed and agreed upon in a phone call with USEPA on October 22, 2008, samples do not need to be reanalyzed for Silvex."
- (4) Compound was detected in the samples collected from the Landfill Reference Sampling Event but was not included in the NYSDEC 375 criteria.
- (5) The concentrations of m-Cresol and p-Cresol identified are for m and p-Cresol together.

Exceeds criteria.

TABLE 4.3

**SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Subsurface Criteria</i>	<i>Bottom of Excavation - North</i>	<i>Bottom of Excavation - Northeast</i>	<i>Sidewall - East</i>	<i>Sidewall - North</i>
<i>Sample Depth</i>			<i>(maximum of</i>			<i>(10 ft bgs)</i>	<i>(7 ft bgs)</i>
<i>Sample ID</i>			<i>industrial/reference)(1)</i>	<i>BH-630609-100608-BPS-018</i>	<i>BH-630609-100608-BPS-019</i>	<i>BH-630609-100608-BPS-020</i>	<i>BH-630609-100608-BPS-021</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
<b>Metals</b>							
Arsenic	7440-38-2	mg/kg	16	3.1	2.8	3	3
Barium	7440-39-3	mg/kg	10000	43.6	37.6	102	43.9
Beryllium	7440-41-7	mg/kg	2700	<0.56	<0.56	<0.62	<0.64
Cadmium	7440-43-9	mg/kg	60	<0.56	<0.56	<0.62	<0.64
Chromium, hexavalent (2)	18540-29-9	mg/kg	800	10.6	9	14.1	9.9
Chromium, trivalent (2)	16065-83-1	mg/kg	6800	10.6	9	14.1	9.9
Copper	7440-50-8	mg/kg	10000	12.8	16	18.2	6
Cyanide (Total)		mg/kg	10000	<0.27	<0.25	<0.27	<0.29
Lead	7439-92-1	mg/kg	3900	5	3.5	26	8.9
Manganese	7439-96-5	mg/kg	10000	473	327	381	84.5
Mercury (Total)		mg/kg	5.7	<0.036	<0.035	0.078	0.1
Nickel	7440-02-0	mg/kg	10000	15.2	11	9.5	7.3
Selenium	7782-49-2	mg/kg	6800	<2.2	<2.2	<2.5	<2.6
Silver	7440-22-4	mg/kg	6800	<1.1	<1.1	<1.2	<1.3
Zinc	7440-66-6	mg/kg	10000	33.4	24.3	64	43.8
<b>Pesticides/PCBs</b>							
2,4,5-TP Acid (Silvex) (3)	93-72-1	mg/kg	1000	(3)	(3)	(3)	(3)
4,4'-DDD	72-54-8	mg/kg	180	ND	0.0018	ND	ND
4,4'-DDE	72-55-9	mg/kg	120	ND	ND	ND	ND
4,4'-DDT	50-29-3	mg/kg	94	ND	ND	ND	0.0038
Aldrin	309-00-2	mg/kg	1.4	ND	ND	ND	ND
alpha-BHC	319-84-6	mg/kg	6.8	ND	ND	ND	ND
beta-BHC	319-85-7	mg/kg	14	ND	ND	ND	ND
Chlordane (alpha)	5103-71-9	mg/kg	47	ND	ND	ND	ND
Chlordane (gamma) (4)	5103-74-2	mg/kg	0.0231	ND	ND	ND	ND
delta-BHC	319-86-8	mg/kg	1000	ND	ND	ND	ND
Dibenzofuran	132-64-9	mg/kg	1000	ND	ND	ND	ND
Dieldrin	60-57-1	mg/kg	2.8	ND	ND	ND	ND
Endosulfan I	959-98-8	mg/kg	920	ND	ND	ND	ND
Endosulfan II	33213-65-9	mg/kg	920	ND	ND	ND	ND
Endosulfan sulfate	1031-07-8	mg/kg	920	ND	ND	ND	ND
Endrin	72-20-8	mg/kg	410	ND	ND	ND	ND
Heptachlor	76-44-8	mg/kg	29	ND	ND	ND	ND
Heptachlor epoxide (4)	1024-57-3	mg/kg	0.0018	ND	ND	ND	ND
Lindane	58-89-9	mg/kg	23	ND	ND	ND	ND
Polychlorinated biphenyls	1336-36-3	mg/kg	25	ND	ND	ND	ND

TABLE 4.3

**SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Subsurface Criteria</i>	<i>Bottom of Excavation - North</i>	<i>Bottom of Excavation - Northeast</i>	<i>Sidewall - East</i>	<i>Sidewall - North</i>
<i>Sample Depth</i>			<i>(maximum of</i>			<i>(10 ft bgs)</i>	<i>(7 ft bgs)</i>
<i>Sample ID</i>			<i>industrial/reference)(1)</i>	<i>BH-630609-100608-BPS-018</i>	<i>BH-630609-100608-BPS-019</i>	<i>BH-630609-100608-BPS-020</i>	<i>BH-630609-100608-BPS-021</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>					
<b><i>Semi-Volatiles</i></b>							
2,6-Dinitrotoluene (4)	606-20-2	mg/kg	0.714	ND	ND	ND	ND
Acenaphthene	83-32-9	mg/kg	1000	ND	ND	ND	ND
Acenaphthylene	208-96-8	mg/kg	1000	ND	ND	ND	ND
Anthracene	120-12-7	mg/kg	1000	ND	ND	ND	ND
Benz(a)anthracene	56-55-3	mg/kg	11	ND	ND	0.0511	ND
Benzo(a)pyrene	50-32-8	mg/kg	1.1	ND	ND	0.0434	ND
Benzo(b)fluoranthene	205-99-2	mg/kg	11	ND	ND	0.0363 J	ND
Benzo(g,h,i)perylene	191-24-2	mg/kg	1000	ND	ND	0.0267 J	ND
Benzo(k)fluoranthene	207-08-9	mg/kg	110	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate (4)	117-81-7	mg/kg	4.76	ND	ND	ND	ND
Chrysene	218-01-9	mg/kg	110	ND	ND	0.0526	ND
Dibenz(a,h)anthracene	53-70-3	mg/kg	1.1	ND	ND	ND	ND
Fluoranthene	206-44-0	mg/kg	1000	ND	ND	ND	ND
Fluorene	86-73-7	mg/kg	1000	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	11	ND	ND	0.0237 J	ND
m-Cresol (5)	108-39-4	mg/kg	1000	ND	ND	ND	ND
Naphthalene	91-20-3	mg/kg	1000	ND	ND	ND	ND
N-Nitroso-di-n-propylamine (4)	621-64-7	mg/kg	0.336	ND	ND	ND	ND
o-Cresol	95-48-7	mg/kg	1000	ND	ND	ND	ND
p-Cresol (5)	106-44-5	mg/kg	1000	ND	ND	ND	ND
Pentachlorophenol	87-86-5	mg/kg	55	ND	ND	ND	ND
Phenanthrene	85-01-8	mg/kg	1000	ND	ND	0.0633	ND
Phenol	108-95-2	mg/kg	1000	ND	ND	ND	ND
Pyrene	129-00-0	mg/kg	1000	ND	ND	0.0876	ND
<b><i>Volatiles</i></b>							
1,1,1-Trichloroethane	71-55-6	mg/kg	1000	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	mg/kg	480	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	mg/kg	1000	ND	ND	ND	ND
1,2,4-Trimethylbenzene	95-63-6	mg/kg	380	0.00085 J	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	mg/kg	1000	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	mg/kg	60	ND	ND	ND	ND
1,3,5-Trimethylbenzene	108-67-8	mg/kg	380	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	mg/kg	560	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	mg/kg	250	ND	ND	ND	ND
1,4-Dioxane	123-91-1	mg/kg	250	ND	ND	ND	ND
Acetone	67-64-1	mg/kg	1000	0.007 J	0.0199	ND	ND
Benzene	71-43-2	mg/kg	89	ND	ND	ND	ND
Butylbenzene	104-51-8	mg/kg	1000	ND	ND	ND	ND

TABLE 4.3

SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

Sample Location	Subsurface Criteria	Bottom of Excavation - North	Bottom of Excavation - Northeast	Sidewall - East	Sidewall - North
Sample Depth	(maximum of			(10 ft bgs)	(7 ft bgs)
Sample ID	industrial/reference)(1)	BH-630609-100608-BPS-018	BH-630609-100608-BPS-019	BH-630609-100608-BPS-020	BH-630609-100608-BPS-021
Sample Date		October 6, 2008	October 6, 2008	October 6, 2008	October 6, 2008
Parameters	CAS Number	Units			
<b>Volatiles Continued</b>					
Carbon tetrachloride	56-23-5	mg/kg	44	ND	ND
Chlorobenzene	108-90-7	mg/kg	1000	ND	ND
Chloroform	67-66-3	mg/kg	700	ND	ND
cis-1,2-Dichloroethene	156-59-2	mg/kg	1000	ND	ND
Ethylbenzene	100-41-4	mg/kg	780	ND	ND
Hexachlorobenzene	118-74-1	mg/kg	12	ND	ND
Methyl Acetate (4)	79-20-9	mg/kg	0.0165	0.0127	0.0124
Methyl ethyl ketone	78-93-3	mg/kg	1000	ND	ND
Methyl tert-butyl ether	1634-04-4	mg/kg	1000	ND	ND
Methylene chloride	75-09-2	mg/kg	1000	ND	ND
n-Propylbenzene	103-65-1	mg/kg	1000	0.00063 J	ND
sec-Butylbenzene	135-98-8	mg/kg	1000	ND	ND
tert-Butylbenzene	98-06-6	mg/kg	1000	ND	ND
Tetrachloroethene	127-18-4	mg/kg	300	ND	ND
Toluene	108-88-3	mg/kg	1000	0.00039 J	0.00043 J
trans-1,2-Dichloroethene	156-60-5	mg/kg	1000	ND	ND
Trichloroethene	79-01-6	mg/kg	400	ND	ND
Vinyl chloride	75-01-4	mg/kg	27	ND	ND
Xylene (mixed)	1330-20-7	mg/kg	1000	ND	ND

Notes:

- J Estimated value.
  - (1) Subsurface criteria was developed using the maximum of the NYSDEC Table 375-6.8(b): Restricted Use Soil Cleanup Objectives (Reference <http://www.dec.ny.gov/regs/15507.html>) and the Landfill Reference Sampling Results collected on September 18 and 19, 2008 .
  - (2) The concentrations of chromium identified are for Total Chromium.
  - (3) "3. The verification samples were analyzed for TCL VOCs, TCL SVOCs, Pesticides, TAL Metals, and PCBs in accordance with the SOP. Since 2,4,5-TP Acid (Silvex) is a herbicide and therefore not a part of the above analysis, it was not analyzed, yet it has a Site-Specific Cleanup Criteria. As discussed and agreed upon in a phone call with USEPA on October 22, 2008, samples do not need to be reanalyzed for Silvex."
  - (4) Compound was detected in the samples collected from the Landfill Reference Sampling Event but was not included in the NYSDEC 375 criteria.
  - (5) The concentrations of m-Cresol and p-Cresol identified are for m and p-Cresol together.
- Exceeds criteria.



TABLE 4.3

SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
 PAS IRWIN DUMP SUPERFUND SITE  
 OSWEGO, NEW YORK

<i>Sample Location</i>	<i>Subsurface Criteria</i>			<i>Sidewall - North</i>	<i>Sidewall - Northwest</i>	<i>Sidewall - East</i>
<i>Sample Depth</i>	<i>(maximum of</i>			<i>(7 ft bgs)</i>	<i>(7 ft bgs)</i>	<i>(8-10' ft bgs)</i>
<i>Sample ID</i>	<i>industrial/reference)(1)</i>			<i>BH-630609-100608-BPS-022</i>	<i>BH-630609-100608-BPS-023</i>	<i>BH-630609-100708-BPS-030</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 7, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>				
<b>Metals</b>						
Arsenic	7440-38-2	mg/kg	16	2.6	3.3	4.2
Barium	7440-39-3	mg/kg	10000	39	46.7	315
Beryllium	7440-41-7	mg/kg	2700	<0.57	<0.6	<0.65
Cadmium	7440-43-9	mg/kg	60	<0.57	<0.6	<0.65
Chromium, hexavalent (2)	18540-29-9	mg/kg	800	6.8	10.6	13.4
Chromium, trivalent (2)	16065-83-1	mg/kg	6800	6.8	10.6	13.4
Copper	7440-50-8	mg/kg	10000	15.4	14.5	18.8
Cyanide (Total)		mg/kg	10000	<0.23	0.33 J	<0.30
Lead	7439-92-1	mg/kg	3900	2.3	19.4	22.7
Manganese	7439-96-5	mg/kg	10000	280	153	406
Mercury (Total)		mg/kg	5.7	<0.034	0.081	0.055
Nickel	7440-02-0	mg/kg	10000	8	9.4	11.1
Selenium	7782-49-2	mg/kg	6800	<2.3	<2.4	<2.6
Silver	7440-22-4	mg/kg	6800	<1.1	<1.2	<1.3
Zinc	7440-66-6	mg/kg	10000	18.2	48.3	62.6
<b>Pesticides/PCBs</b>						
2,4,5-TP Acid (Silvex) (3)	93-72-1	mg/kg	1000	(3)	(3)	(3)
4,4'-DDD	72-54-8	mg/kg	180	ND	0.0033	ND
4,4'-DDE	72-55-9	mg/kg	120	ND	0.006	ND
4,4'-DDT	50-29-3	mg/kg	94	ND	0.003	ND
Aldrin	309-00-2	mg/kg	1.4	ND	ND	ND
alpha-BHC	319-84-6	mg/kg	6.8	ND	ND	ND
beta-BHC	319-85-7	mg/kg	14	ND	ND	ND
Chlordane (alpha)	5103-71-9	mg/kg	47	ND	ND	ND
Chlordane (gamma) (4)	5103-74-2	mg/kg	0.0231	ND	ND	ND
delta-BHC	319-86-8	mg/kg	1000	ND	ND	ND
Dibenzofuran	132-64-9	mg/kg	1000	ND	ND	ND
Dieldrin	60-57-1	mg/kg	2.8	ND	ND	ND
Endosulfan I	959-98-8	mg/kg	920	ND	ND	ND
Endosulfan II	33213-65-9	mg/kg	920	ND	ND	ND
Endosulfan sulfate	1031-07-8	mg/kg	920	ND	ND	ND
Endrin	72-20-8	mg/kg	410	ND	ND	ND
Heptachlor	76-44-8	mg/kg	29	ND	ND	ND
Heptachlor epoxide (4)	1024-57-3	mg/kg	0.0018	ND	ND	ND
Lindane	58-89-9	mg/kg	23	ND	ND	ND
Polychlorinated biphenyls	1336-36-3	mg/kg	25	ND	ND	ND

TABLE 4.3

**SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Subsurface Criteria</i>	<i>Sidewall - North</i>	<i>Sidewall - Northwest</i>	<i>Sidewall - East</i>
<i>Sample Depth</i>			<i>(maximum of</i>	<i>(7 ft bgs)</i>	<i>(7 ft bgs)</i>	<i>(8-10' ft bgs)</i>
<i>Sample ID</i>			<i>industrial/reference)(1)</i>	<i>BH-630609-100608-BPS-022</i>	<i>BH-630609-100608-BPS-023</i>	<i>BH-630609-100708-BPS-030</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 7, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>				
<b><i>Semi-Volatiles</i></b>						
2,6-Dinitrotoluene (4)	606-20-2	mg/kg	0.714	ND	ND	ND
Acenaphthene	83-32-9	mg/kg	1000	ND	ND	ND
Acenaphthylene	208-96-8	mg/kg	1000	ND	ND	ND
Anthracene	120-12-7	mg/kg	1000	ND	ND	ND
Benz(a)anthracene	56-55-3	mg/kg	11	ND	ND	0.0273 J
Benzo(a)pyrene	50-32-8	mg/kg	1.1	ND	ND	0.0192 J
Benzo(b)fluoranthene	205-99-2	mg/kg	11	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	mg/kg	1000	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	mg/kg	110	ND	ND	ND
bis(2-Ethylhexyl)phthalate (4)	117-81-7	mg/kg	4.76	ND	ND	ND
Chrysene	218-01-9	mg/kg	110	ND	ND	0.0319 J
Dibenz(a,h)anthracene	53-70-3	mg/kg	1.1	ND	ND	ND
Fluoranthene	206-44-0	mg/kg	1000	ND	ND	0.045
Fluorene	86-73-7	mg/kg	1000	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	11	ND	ND	ND
m-Cresol (5)	108-39-4	mg/kg	1000	ND	ND	ND
Naphthalene	91-20-3	mg/kg	1000	ND	ND	ND
N-Nitroso-di-n-propylamine (4)	621-64-7	mg/kg	0.336	ND	ND	ND
o-Cresol	95-48-7	mg/kg	1000	ND	ND	ND
p-Cresol (5)	106-44-5	mg/kg	1000	ND	ND	ND
Pentachlorophenol	87-86-5	mg/kg	55	ND	ND	ND
Phenanthrene	85-01-8	mg/kg	1000	ND	ND	0.0344 J
Phenol	108-95-2	mg/kg	1000	ND	ND	ND
Pyrene	129-00-0	mg/kg	1000	ND	ND	0.0548
<b><i>Volatiles</i></b>						
1,1,1-Trichloroethane	71-55-6	mg/kg	1000	ND	ND	ND
1,1-Dichloroethane	75-34-3	mg/kg	480	ND	ND	ND
1,1-Dichloroethene	75-35-4	mg/kg	1000	ND	ND	ND
1,2,4-Trimethylbenzene	95-63-6	mg/kg	380	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	mg/kg	1000	ND	ND	ND
1,2-Dichloroethane	107-06-2	mg/kg	60	ND	ND	ND
1,3,5- Trimethylbenzene	108-67-8	mg/kg	380	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	mg/kg	560	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	mg/kg	250	ND	ND	ND
1,4-Dioxane	123-91-1	mg/kg	250	ND	ND	ND
Acetone	67-64-1	mg/kg	1000	0.0084 J	ND	ND
Benzene	71-43-2	mg/kg	89	ND	ND	ND
Butylbenzene	104-51-8	mg/kg	1000	ND	ND	ND

TABLE 4.3

SUMMARY OF SUBSURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
 PAS IRWIN DUMP SUPERFUND SITE  
 OSWEGO, NEW YORK

Sample Location	Subsurface Criteria	Sidewall - North	Sidewall - Northwest	Sidewall - East		
Sample Depth	(maximum of	(7 ft bgs)	(7 ft bgs)	(8-10' ft bgs)		
Sample ID	industrial/reference)(1)	BH-630609-100608-BPS-022	BH-630609-100608-BPS-023	BH-630609-100708-BPS-030		
Sample Date		October 6, 2008	October 6, 2008	October 7, 2008		
Parameters	CAS Number	Units				
<i>Volatiles Continued</i>						
Carbon tetrachloride	56-23-5	mg/kg	44	ND	ND	ND
Chlorobenzene	108-90-7	mg/kg	1000	ND	ND	ND
Chloroform	67-66-3	mg/kg	700	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	mg/kg	1000	ND	ND	ND
Ethylbenzene	100-41-4	mg/kg	780	ND	ND	ND
Hexachlorobenzene	118-74-1	mg/kg	12	ND	ND	ND
Methyl Acetate (4)	79-20-9	mg/kg	0.0165	0.0044 J	ND	ND
Methyl ethyl ketone	78-93-3	mg/kg	1000	ND	ND	ND
Methyl tert-butyl ether	1634-04-4	mg/kg	1000	ND	ND	ND
Methylene chloride	75-09-2	mg/kg	1000	ND	ND	ND
n-Propylbenzene	103-65-1	mg/kg	1000	ND	ND	ND
sec-Butylbenzene	135-98-8	mg/kg	1000	ND	ND	ND
tert-Butylbenzene	98-06-6	mg/kg	1000	ND	ND	ND
Tetrachloroethene	127-18-4	mg/kg	300	ND	ND	ND
Toluene	108-88-3	mg/kg	1000	0.0038	ND	ND
trans-1,2-Dichloroethene	156-60-5	mg/kg	1000	ND	ND	ND
Trichloroethene	79-01-6	mg/kg	400	ND	ND	ND
Vinyl chloride	75-01-4	mg/kg	27	ND	ND	ND
Xylene (mixed)	1330-20-7	mg/kg	1000	ND	ND	ND

Notes:

- J Estimated value.
  - (1) Subsurface criteria was developed using the maximum of the NYSDEC Table 375-6.8(b): Restricted Use Soil Cleanup Objectives (Reference <http://www.dec.ny.gov/regs/15507.html>) and the Landfill Reference Sampling Results collected on September 18 and 19, 2008 .
  - (2) The concentrations of chromium identified are for Total Chromium.
  - (3) "3. The verification samples were analyzed for TCL VOCs, TCL SVOCs, Pesticides, TAL Metals, and PCBs in accordance with the SOP. Since 2,4,5-TP Acid (Silvex) is a herbicide and therefore not a part of the above analysis, it was not analyzed, yet it has a Site-Specific Cleanup Criteria. As discussed and agreed upon in a phone call with USEPA on October 22, 2008, samples do not need to be reanalyzed for Silvex."
  - (4) Compound was detected in the samples collected from the Landfill Reference Sampling Event but was not included in the NYSDEC 375 criteria.
  - (5) The concentrations of m-Cresol and p-Cresol identified are for m and p-Cresol together.
- Exceeds criteria.

TABLE 4.4

SUMMARY OF SURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>Surface Criteria</i>	<i>Sidewall - North</i>	<i>Sidewall - West</i>	<i>Sidewall - Southwest</i>
<i>Sample Depth</i>			<i>(maximum of</i>	<i>(0-1')</i>	<i>(0-1')</i>	<i>(0-1')</i>
<i>Sample ID</i>			<i>residential/reference) (1)</i>	<i>BH-630609-100608-BPS-024</i>	<i>BH-630609-100608-BPS-025</i>	<i>BH-630609-100608-BPS-027</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>				
<b>Metals</b>						
Arsenic	7440-38-2	mg/kg	16	5.1	3	2.9
Barium	7440-39-3	mg/kg	350	77.6	73.9	65.4
Beryllium	7440-41-7	mg/kg	14	<0.60	<0.6	<0.59
Cadmium	7440-43-9	mg/kg	2.5	<0.60	<0.6	<0.59
Chromium, hexavalent (2)	18540-29-9	mg/kg	22	14.3	10.8	11.2
Chromium, trivalent (2)	16065-83-1	mg/kg	36	14.3	10.8	11.2
Copper	7440-50-8	mg/kg	270	35.7	159	22.3
Cyanide (Total)		mg/kg	27	<0.27	<0.26	<0.26
Lead	7439-92-1	mg/kg	400	79.4	18.9	23.2
Manganese	7439-96-5	mg/kg	2000	408	365	346
Mercury (Total)		mg/kg	0.81	0.15	0.052	0.089
Nickel	7440-02-0	mg/kg	140	12.9	12	11.8
Selenium	7782-49-2	mg/kg	36	<2.4	<2.4	<2.4
Silver	7440-22-4	mg/kg	36	<1.2	<1.2	<1.2
Zinc	7440-66-6	mg/kg	2200	95.1	42.5	46.2
<b>Pesticides/PCBs</b>						
2,4,5-TP Acid (Silvex) (3)	93-72-1	mg/kg	58	(3)	(3)	(3)
4,4'-DDD	72-54-8	mg/kg	2.6	0.257	ND	ND
4,4'-DDE	72-55-9	mg/kg	1.8	ND	ND	ND
4,4'-DDT	50-29-3	mg/kg	1.7	0.0312	ND	ND
Aldrin	309-00-2	mg/kg	0.019	ND	ND	ND
alpha-BHC	319-84-6	mg/kg	0.097	ND	ND	ND
beta-BHC	319-85-7	mg/kg	0.072	0.0052	ND	ND
Chlordane (alpha)	5103-71-9	mg/kg	0.91	ND	ND	ND
Chlordane (gamma) (4)	5103-74-2	mg/kg	0.0231	ND	ND	ND
delta-BHC	319-86-8	mg/kg	100	ND	ND	ND
Dibenzofuran	132-64-9	mg/kg	14	0.0523 J	ND	ND
Dieldrin	60-57-1	mg/kg	0.039	ND	ND	ND
Endosulfan I	959-98-8	mg/kg	4.8	ND	ND	ND
Endosulfan II	33213-65-9	mg/kg	4.8	ND	ND	ND
Endosulfan sulfate	1031-07-8	mg/kg	4.8	ND	ND	ND
Endrin	72-20-8	mg/kg	2.2	ND	ND	ND
Heptachlor	76-44-8	mg/kg	0.42	ND	ND	ND
Heptachlor epoxide (4)	1024-57-3	mg/kg	0.0018	ND	ND	ND
Lindane	58-89-9	mg/kg	0.28	ND	ND	ND
Polychlorinated biphenyls	1336-36-3	mg/kg	1	ND	ND	ND

TABLE 4.4

SUMMARY OF SURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>Surface Criteria</i>	<i>Sidewall - North</i>	<i>Sidewall - West</i>	<i>Sidewall - Southwest</i>
<i>Sample Depth</i>			<i>(maximum of</i>	<i>(0-1')</i>	<i>(0-1')</i>	<i>(0-1')</i>
<i>Sample ID</i>			<i>residential/reference) (1)</i>	<i>BH-630609-100608-BPS-024</i>	<i>BH-630609-100608-BPS-025</i>	<i>BH-630609-100608-BPS-027</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>				
<b>Semi-Volatiles</b>						
2,6-Dinitrotoluene (4)	606-20-2	mg/kg	0.714	ND	ND	ND
Acenaphthene	83-32-9	mg/kg	100	0.0462	ND	ND
Acenaphthylene	208-96-8	mg/kg	100	0.113	ND	ND
Anthracene	120-12-7	mg/kg	100	0.161	ND	ND
Benzo(a)anthracene	56-55-3	mg/kg	1	0.568	ND	0.0397
Benzo(a)pyrene	50-32-8	mg/kg	1	0.637	ND	0.039
Benzo(b)fluoranthene	205-99-2	mg/kg	1	0.48	ND	0.0354 J
Benzo(g,h,i)perylene	191-24-2	mg/kg	100	0.388	ND	0.0273 J
Benzo(k)fluoranthene	207-08-9	mg/kg	1	0.555	ND	0.0195 J
bis(2-Ethylhexyl)phthalate (4)	117-81-7	mg/kg	4.76	0.0469 J	0.0467 J	ND
Chrysene	218-01-9	mg/kg	1	0.677	ND	0.0407
Dibenz(a,h)anthracene	53-70-3	mg/kg	0.33	0.113	ND	ND
Fluoranthene	206-44-0	mg/kg	100	0.823	ND	0.0719
Fluorene	86-73-7	mg/kg	100	0.0632	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.5	0.361	ND	0.0248 J
m-Cresol (5)	108-39-4	mg/kg	100	ND	ND	ND
Naphthalene	91-20-3	mg/kg	100	0.0599	ND	ND
N-Nitroso-di-n-propylamine (4)	621-64-7	mg/kg	0.336	ND	ND	ND
o-Cresol	95-48-7	mg/kg	100	ND	0.0997	ND
p-Cresol (5)	106-44-5	mg/kg	34	ND	ND	ND
Pentachlorophenol	87-86-5	mg/kg	2.4	ND	ND	ND
Phenanthrene	85-01-8	mg/kg	100	0.52	ND	0.0404
Phenol	108-95-2	mg/kg	100	ND	ND	ND
Pyrene	129-00-0	mg/kg	100	0.896	ND	0.0606
<b>Volatiles</b>						
1,1,1-Trichloroethane	71-55-6	mg/kg	100	ND	ND	ND
1,1-Dichloroethane	75-34-3	mg/kg	19	ND	ND	ND
1,1-Dichloroethene	75-35-4	mg/kg	100	ND	ND	ND
1,2,4-Trimethylbenzene	95-63-6	mg/kg	47	ND	0.00074 J	0.00051 J
1,2-Dichlorobenzene	95-50-1	mg/kg	100	ND	ND	ND
1,2-Dichloroethane	107-06-2	mg/kg	2.3	ND	ND	ND
1,3,5- Trimethylbenzene	108-67-8	mg/kg	47	ND	0.0005 J	0.00041 J
1,3-Dichlorobenzene	541-73-1	mg/kg	17	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	mg/kg	9.8	ND	ND	ND
1,4-Dioxane	123-91-1	mg/kg	9.8	ND	ND	ND
Acetone	67-64-1	mg/kg	100	ND	ND	ND
Benzene	71-43-2	mg/kg	2.9	ND	ND	ND
Butylbenzene	104-51-8	mg/kg	100	ND	ND	ND

TABLE 4.4

**SUMMARY OF SURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Surface Criteria</i>	<i>Sidewall - North</i>	<i>Sidewall - West</i>	<i>Sidewall - Southwest</i>
<i>Sample Depth</i>			<i>(maximum of</i>	<i>(0-1')</i>	<i>(0-1')</i>	<i>(0-1')</i>
<i>Sample ID</i>			<i>residential/reference) (1)</i>	<i>BH-630609-100608-BPS-024</i>	<i>BH-630609-100608-BPS-025</i>	<i>BH-630609-100608-BPS-027</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 6, 2008</i>	<i>October 6, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>				
<b>Volatiles Continued</b>						
Carbon tetrachloride	56-23-5	mg/kg	1.4	ND	ND	ND
Chlorobenzene	108-90-7	mg/kg	100	ND	ND	ND
Chloroform	67-66-3	mg/kg	10	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	mg/kg	59	ND	ND	ND
Ethylbenzene	100-41-4	mg/kg	30	ND	0.00071 J	0.00051 J
Hexachlorobenzene	118-74-1	mg/kg	0.33	ND	ND	ND
Methyl Acetate (4)	79-20-9	mg/kg	0.0165	0.0769	ND	ND
Methyl ethyl ketone	78-93-3	mg/kg	100	ND	ND	ND
Methyl tert-butyl ether	1634-04-4	mg/kg	62	ND	ND	ND
Methylene chloride	75-09-2	mg/kg	51	ND	ND	ND
n-Propylbenzene	103-65-1	mg/kg	100	ND	ND	ND
sec-Butylbenzene	135-98-8	mg/kg	100	ND	ND	ND
tert-Butylbenzene	98-06-6	mg/kg	100	ND	ND	ND
Tetrachloroethene	127-18-4	mg/kg	5.5	ND	ND	ND
Toluene	108-88-3	mg/kg	100	0.0011	0.0012	0.0022
trans-1,2-Dichloroethene	156-60-5	mg/kg	100	ND	ND	ND
Trichloroethene	79-01-6	mg/kg	10	ND	0.00037 J	ND
Vinyl chloride	75-01-4	mg/kg	0.21	ND	ND	ND
Xylene (mixed)	1330-20-7	mg/kg	100	ND	0.0035	0.0024

Notes:

J Estimated value.

- (1) Subsurface criteria was developed using the maximum of the NYSDEC Table 375-6.8(b): Restricted Use Soil Cleanup Objectives (Reference <http://www.dec.ny.gov/regs/15507.html>) and the Landfill Reference Sampling Results collected on September 18 and 19, 2008.
- (2) The concentrations of chromium identified are for Total Chromium.
- (3) "3. The verification samples were analyzed for TCL VOCs, TCL SVOCs, Pesticides, TAL Metals, and PCBs in accordance with the SOP. Since 2,4,5-TP Acid (Silvex) is a herbicide and therefore not a part of the above analysis, it was not analyzed, yet it has a Site-Specific Cleanup Criteria. As discussed and agreed upon in a phone call with USEPA on October 22, 2008, samples do not need to be reanalyzed for Silvex."
- (4) Compound was detected in the samples collected from the Landfill Reference Sampling Event but was not included in the NYSDEC 375 criteria.
- (5) The concentrations of m-Cresol and p-Cresol identified are for m and p-Cresol together.

	Exceeds criteria.
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TABLE 4.4

SUMMARY OF SURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>Surface Criteria</i>	<i>Sidewall - Southwest</i>	<i>Sidewall - East</i>
<i>Sample Depth</i>			<i>(maximum of</i>	<i>(0-1')</i>	<i>(0-2')</i>
<i>Sample ID</i>			<i>residential/reference) (1)</i>	<i>BH-630609-100608-BPS-028 - DUP</i>	<i>BH-630609-100708-BPS-029</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 7, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>			
<b>Metals</b>					
Arsenic	7440-38-2	mg/kg	16	2.8	4.1
Barium	7440-39-3	mg/kg	350	67.8	157
Beryllium	7440-41-7	mg/kg	14	<0.55	<0.58
Cadmium	7440-43-9	mg/kg	2.5	<0.55	<0.58
Chromium, hexavalent (2)	18540-29-9	mg/kg	22	11.9	17.8
Chromium, trivalent (2)	16065-83-1	mg/kg	36	11.9	17.8
Copper	7440-50-8	mg/kg	270	21	24.4
Cyanide (Total)		mg/kg	27	<0.25	<0.29
Lead	7439-92-1	mg/kg	400	22.7	42.4
Manganese	7439-96-5	mg/kg	2000	337	338
Mercury (Total)		mg/kg	0.81	0.087	0.11
Nickel	7440-02-0	mg/kg	140	11.5	11.5
Selenium	7782-49-2	mg/kg	36	<2.2	<2.3
Silver	7440-22-4	mg/kg	36	<1.1	<1.2
Zinc	7440-66-6	mg/kg	2200	44.2	78.4
<b>Pesticides/PCBs</b>					
2,4,5-TP Acid (Silvex) (3)	93-72-1	mg/kg	58	(3)	(3)
4,4'-DDD	72-54-8	mg/kg	2.6	ND	ND
4,4'-DDE	72-55-9	mg/kg	1.8	ND	0.0016
4,4'-DDT	50-29-3	mg/kg	1.7	ND	0.0048
Aldrin	309-00-2	mg/kg	0.019	ND	ND
alpha-BHC	319-84-6	mg/kg	0.097	ND	ND
beta-BHC	319-85-7	mg/kg	0.072	ND	ND
Chlordane (alpha)	5103-71-9	mg/kg	0.91	ND	ND
Chlordane (gamma) (4)	5103-74-2	mg/kg	0.0231	ND	ND
delta-BHC	319-86-8	mg/kg	100	ND	ND
Dibenzofuran	132-64-9	mg/kg	14	ND	0.0515 J
Dieldrin	60-57-1	mg/kg	0.039	ND	ND
Endosulfan I	959-98-8	mg/kg	4.8	ND	ND
Endosulfan II	33213-65-9	mg/kg	4.8	ND	ND
Endosulfan sulfate	1031-07-8	mg/kg	4.8	ND	ND
Endrin	72-20-8	mg/kg	2.2	ND	ND
Heptachlor	76-44-8	mg/kg	0.42	ND	ND
Heptachlor epoxide (4)	1024-57-3	mg/kg	0.0018	ND	0.002
Lindane	58-89-9	mg/kg	0.28	ND	ND
Polychlorinated biphenyls	1336-36-3	mg/kg	1	ND	ND

TABLE 4.4

SUMMARY OF SURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

<i>Sample Location</i>			<i>Surface Criteria</i>	<i>Sidewall - Southwest</i>	<i>Sidewall - East</i>
<i>Sample Depth</i>			<i>(maximum of</i>	<i>(0-1')</i>	<i>(0-2')</i>
<i>Sample ID</i>			<i>residential/reference) (1)</i>	<i>BH-630609-100608-BPS-028 - DUP</i>	<i>BH-630609-100708-BPS-029</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 7, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>			
<b>Semi-Volatiles</b>					
2,6-Dinitrotoluene (4)	606-20-2	mg/kg	0.714	ND	ND
Acenaphthene	83-32-9	mg/kg	100	ND	0.0845
Acenaphthylene	208-96-8	mg/kg	100	ND	0.0432
Anthracene	120-12-7	mg/kg	100	ND	0.255
Benz(a)anthracene	56-55-3	mg/kg	1	0.0359 J	1.12
Benzo(a)pyrene	50-32-8	mg/kg	1	0.0363 J	0.821
Benzo(b)fluoranthene	205-99-2	mg/kg	1	0.0341 J	0.725
Benzo(g,h,i)perylene	191-24-2	mg/kg	100	0.0279 J	0.377
Benzo(k)fluoranthene	207-08-9	mg/kg	1	ND	0.765
bis(2-Ethylhexyl)phthalate (4)	117-81-7	mg/kg	4.76	ND	1.35
Chrysene	218-01-9	mg/kg	1	0.0387	1.13
Dibenz(a,h)anthracene	53-70-3	mg/kg	0.33	ND	0.164
Fluoranthene	206-44-0	mg/kg	100	0.0648	1.57
Fluorene	86-73-7	mg/kg	100	ND	0.0887
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.5	0.0266 J	0.396
m-Cresol (5)	108-39-4	mg/kg	100	ND	ND
Naphthalene	91-20-3	mg/kg	100	ND	0.0406
N-Nitroso-di-n-propylamine (4)	621-64-7	mg/kg	0.336	ND	ND
o-Cresol	95-48-7	mg/kg	100	ND	ND
p-Cresol (5)	106-44-5	mg/kg	34	ND	ND
Pentachlorophenol	87-86-5	mg/kg	2.4	ND	ND
Phenanthrene	85-01-8	mg/kg	100	0.032 J	0.849
Phenol	108-95-2	mg/kg	100	ND	0.0784 J
Pyrene	129-00-0	mg/kg	100	0.0567	1.41
<b>Volatiles</b>					
1,1,1-Trichloroethane	71-55-6	mg/kg	100	ND	ND
1,1-Dichloroethane	75-34-3	mg/kg	19	ND	ND
1,1-Dichloroethene	75-35-4	mg/kg	100	ND	ND
1,2,4-Trimethylbenzene	95-63-6	mg/kg	47	0.00051 J	ND
1,2-Dichlorobenzene	95-50-1	mg/kg	100	ND	ND
1,2-Dichloroethane	107-06-2	mg/kg	2.3	ND	ND
1,3,5- Trimethylbenzene	108-67-8	mg/kg	47	0.00046 J	ND
1,3-Dichlorobenzene	541-73-1	mg/kg	17	ND	ND
1,4-Dichlorobenzene	106-46-7	mg/kg	9.8	ND	ND
1,4-Dioxane	123-91-1	mg/kg	9.8	ND	ND
Acetone	67-64-1	mg/kg	100	ND	ND
Benzene	71-43-2	mg/kg	2.9	ND	ND
Butylbenzene	104-51-8	mg/kg	100	ND	ND



TABLE 4.4

SUMMARY OF SURFACE SAMPLE RESULTS FOR EXCAVATION VERIFICATION SAMPLES  
 PAS IRWIN DUMP SUPERFUND SITE  
 OSWEGO, NEW YORK

<i>Sample Location</i>			<i>Surface Criteria</i>	<i>Sidewall - Southwest</i>	<i>Sidewall - East</i>
<i>Sample Depth</i>			<i>(maximum of</i>	<i>(0-1')</i>	<i>(0-2')</i>
<i>Sample ID</i>			<i>residential/reference) (1)</i>	<i>BH-630609-100608-BPS-028 - DUP</i>	<i>BH-630609-100708-BPS-029</i>
<i>Sample Date</i>				<i>October 6, 2008</i>	<i>October 7, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>			
<b>Volatiles Continued</b>					
Carbon tetrachloride	56-23-5	mg/kg	1.4	ND	ND
Chlorobenzene	108-90-7	mg/kg	100	ND	ND
Chloroform	67-66-3	mg/kg	10	ND	ND
cis-1,2-Dichloroethene	156-59-2	mg/kg	59	ND	ND
Ethylbenzene	100-41-4	mg/kg	30	0.00058 J	ND
Hexachlorobenzene	118-74-1	mg/kg	0.33	ND	ND
Methyl Acetate (4)	79-20-9	mg/kg	0.0165	ND	ND
Methyl ethyl ketone	78-93-3	mg/kg	100	ND	ND
Methyl tert-butyl ether	1634-04-4	mg/kg	62	ND	ND
Methylene chloride	75-09-2	mg/kg	51	ND	ND
n-Propylbenzene	103-65-1	mg/kg	100	ND	ND
sec-Butylbenzene	135-98-8	mg/kg	100	ND	ND
tert-Butylbenzene	98-06-6	mg/kg	100	ND	ND
Tetrachloroethene	127-18-4	mg/kg	5.5	ND	ND
Toluene	108-88-3	mg/kg	100	0.0018	ND
trans-1,2-Dichloroethene	156-60-5	mg/kg	100	ND	ND
Trichloroethene	79-01-6	mg/kg	10	0.00034 J	ND
Vinyl chloride	75-01-4	mg/kg	0.21	ND	ND
Xylene (mixed)	1330-20-7	mg/kg	100	0.0027	ND

Notes:

- J Estimated value.
  - (1) Subsurface criteria was developed using the maximum of the NYSDEC Table 375-6.8(b): Restricted Use Soil Cleanup Objectives (Reference <http://www.dec.ny.gov/regs/15507.html>) and the Landfill Reference Sampling Results collected on September 18 and 19, 2008.
  - (2) The concentrations of chromium identified are for Total Chromium.
  - (3) "3. The verification samples were analyzed for TCL VOCs, TCL SVOCs, Pesticides, TAL Metals, and PCBs in accordance with the SOP. Since 2,4,5-TP Acid (Silvex) is a herbicide and therefore not a part of the above analysis, it was not analyzed, yet it has a Site-Specific Cleanup Criteria. As discussed and agreed upon in a phone call with USEPA on October 22, 2008, samples do not need to be reanalyzed for Silvex."
  - (4) Compound was detected in the samples collected from the Landfill Reference Sampling Event but was not included in the NYSDEC 375 criteria.
  - (5) The concentrations of m-Cresol and p-Cresol identified are for m and p-Cresol together.
- Exceeds criteria.

TABLE 4.5

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - SOIL STOCKPILES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>		<i>Potentially Unimpacted Stockpile "West" WS-630609-100608-BPS-001 Composite 1 ft. below pile surface</i>	<i>Potentially Unimpacted Stockpile "West" WS-630609-100608-BPS-002 Composite 3 ft. below pile surface</i>	<i>Potentially Unimpacted Stockpile "East" WS-630609-100608-BPS-003 Composite 1 ft. below pile surface</i>	<i>Potentially Unimpacted Stockpile "East" WS-630609-100608-BPS-004 Composite 3 ft. below pile surface</i>
<b>VOCs TCLP</b>					
Benzene	mg/L	ND	ND	ND	ND
2-Butanone (MEK)	mg/L	ND	ND	ND	ND
Carbon tetrachloride	mg/L	ND	ND	ND	ND
Chlorobenzene	mg/L	ND	ND	ND	ND
Chloroform	mg/L	ND	ND	ND	ND
1,4-Dichlorobenzene	mg/L	ND	ND	ND	ND
1,2-Dichloroethane	mg/L	ND	ND	ND	ND
1,1-Dichloroethene	mg/L	ND	ND	ND	ND
Tetrachloroethene	mg/L	ND	ND	ND	ND
Trichloroethene	mg/L	ND	ND	ND	ND
Vinyl chloride	mg/L	ND	ND	ND	ND
<b>Metals TCLP</b>					
Arsenic	mg/L	ND	ND	ND	ND
Barium	mg/L	1.9	1.4	1.8	1.7
Cadmium	mg/L	ND	ND	ND	ND
Chromium	mg/L	ND	ND	ND	ND
Lead	mg/L	ND	ND	ND	ND
Mercury	mg/L	ND	ND	ND	ND
Selenium	mg/L	ND	ND	ND	ND
Silver	mg/L	ND	ND	ND	ND
<b>PCBs</b>					
Aroclor 1016	mg/kg	ND	ND	ND	ND
Aroclor 1221	mg/kg	ND	ND	ND	ND
Aroclor 1232	mg/kg	ND	ND	ND	ND
Aroclor 1242	mg/kg	ND	ND	ND	ND
Aroclor 1248	mg/kg	ND	ND	ND	ND
Aroclor 1254	mg/kg	ND	ND	0.0524	0.0565
Aroclor 1260	mg/kg	ND	ND	ND	ND
<b>General Chemistry</b>					
Corrosivity as pH	s.u.	7.45	7.61	7.76	7.79
Cyanide Reactivity	mg/kg	ND	ND	ND	ND
Ignitability (Flashpoint)	Deg. F	>200	>200	>200	>200
Solids, Percent	%	87	85.1	83.7	85.5
Sulfide Reactivity	mg/kg	ND	ND	ND	120

TABLE 4.5

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - SOIL STOCKPILES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>		<i>Potentially Impacted Pile "South"</i>	<i>Potentially Impacted Pile "South"</i>	<i>Potentially Impacted Pile "North"</i>	<i>Potentially Impacted Pile "North"</i>
<i>Sample ID:</i>		<i>WS-630609-100608-BPS-006</i>	<i>WS-630609-100608-BPS-007</i>	<i>WS-630609-100608-BPS-008</i>	<i>WS-630609-100608-BPS-009</i>
<i>Sample type:</i>		<i>Composite</i>	<i>Composite</i>	<i>Composite</i>	<i>Composite</i>
<i>Depth:</i>		<i>1 ft. below pile surface</i>	<i>3 ft. below pile surface</i>	<i>1 ft. below pile surface</i>	<i>3 ft. below pile surface</i>
<i>VOCs TCLP</i>					
Benzene	mg/L	ND	ND	ND	ND
2-Butanone (MEK)	mg/L	ND	ND	ND	ND
Carbon tetrachloride	mg/L	ND	ND	ND	ND
Chlorobenzene	mg/L	ND	ND	ND	ND
Chloroform	mg/L	ND	0.0108	ND	ND
1,4-Dichlorobenzene	mg/L	ND	ND	ND	ND
1,2-Dichloroethane	mg/L	ND	ND	ND	ND
1,1-Dichloroethene	mg/L	ND	ND	ND	ND
Tetrachloroethene	mg/L	ND	ND	ND	ND
Trichloroethene	mg/L	ND	ND	ND	ND
Vinyl chloride	mg/L	ND	ND	ND	ND
<i>Metals TCLP</i>					
Arsenic	mg/L	ND	ND	ND	ND
Barium	mg/L	2.0	2.0	2.0	2.2
Cadmium	mg/L	ND	ND	ND	ND
Chromium	mg/L	ND	ND	ND	ND
Lead	mg/L	ND	ND	ND	ND
Mercury	mg/L	ND	ND	ND	ND
Selenium	mg/L	ND	ND	ND	ND
Silver	mg/L	ND	ND	ND	ND
<i>PCBs</i>					
Aroclor 1016	mg/kg	ND	ND	ND	ND
Aroclor 1221	mg/kg	ND	ND	ND	ND
Aroclor 1232	mg/kg	ND	ND	ND	ND
Aroclor 1242	mg/kg	ND	ND	0.0948	ND
Aroclor 1248	mg/kg	0.0576	ND	ND	0.0837
Aroclor 1254	mg/kg	ND	0.0787	0.065	0.0541
Aroclor 1260	mg/kg	ND	ND	ND	ND
<i>General Chemistry</i>					
Corrosivity as pH	s.u.	7.51	7.37	7.40	7.17
Cyanide Reactivity	mg/kg	ND	ND	ND	ND
Ignitability (Flashpoint)	Deg. F	>200	>200	>200	>200
Solids, Percent	%	80.8	81.4	86.7	89.7
Sulfide Reactivity	mg/kg	ND	ND	ND	ND

TABLE 4.6

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - WASTEWATER  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Tank 1</i>	<i>Tank 1</i>
<i>Sample Depth</i>				
<i>Sample ID</i>			WW-630609-100708-BPS-032	WW-630609-100908-LN-033
<i>Sample Date</i>			October 7, 2008	October 9, 2008
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>		
<b><i>Metals</i></b>				
Aluminum		µg/L	278	na
Antimony		µg/L	ND	na
Arsenic	7440-38-2	µg/L	56.6	na
Barium	7440-39-3	µg/L	ND	na
Beryllium	7440-41-7	µg/L	ND	na
Boron		µg/L	319	na
Cadmium	7440-43-9	µg/L	ND	na
Calcium		µg/L	271000	na
Chromium, hexavalent (2)	18540-29-9	µg/L	ND	ND
Chromium, trivalent (2)	16065-83-1	µg/L	ND	ND
Cobalt		µg/L	ND	na
Copper	7440-50-8	µg/L	ND	na
Iron		µg/L	444	na
Lead	7439-92-1	µg/L	ND	na
Magnesium		µg/L	144000	na
Manganese	7439-96-5	µg/L	59.9	na
Mercury (Total)		µg/L	ND	na
Molybdenum		µg/L	ND	na
Nickel	7440-02-0	µg/L	ND	na
Potassium		µg/L	19200	na
Selenium	7782-49-2	µg/L	ND	na
Silver	7440-22-4	µg/L	ND	na
Sodium		µg/L	26000	na
Thallium		µg/L	ND	na
Vanadium		µg/L	ND	na
Zinc	7440-66-6	µg/L	ND	na
<b><i>Pesticides/PCBs</i></b>				
Aldrin	309-00-2	µg/L	ND	na
alpha-BHC	319-84-6	µg/L	ND	na
beta-BHC	319-85-7	µg/L	ND	na
delta-BHC	319-86-8	µg/L	ND	na
gamma-BHC (Lindane)	58-89-9	µg/L	ND	na
Chlordane (alpha)	5103-71-9	µg/L	ND	na
Chlordane (gamma) (4)	5103-74-2	µg/L	ND	na
Dieldrin	60-57-1	µg/L	ND	na
4,4'-DDD	72-54-8	µg/L	ND	na
4,4'-DDE	72-55-9	µg/L	ND	na
4,4'-DDT	50-29-3	µg/L	ND	na

TABLE 4.6

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - WASTEWATER  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Tank 1</i>	<i>Tank 1</i>
<i>Sample Depth</i>				
<i>Sample ID</i>			<i>WW-630609-100708-BPS-032</i>	<i>WW-630609-100908-LN-033</i>
<i>Sample Date</i>			<i>October 7, 2008</i>	<i>October 9, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>		
Endrin	72-20-8	µg/L	ND	na
Endosulfan sulfate	1031-07-8	µg/L	ND	na
Endrin aldehyde	7421-93-4	µg/L	ND	na
Endrin ketone	53494-70-5	µg/L	ND	na
Endosulfan I	959-98-8	µg/L	ND	na
Endosulfan II	33213-65-9	µg/L	ND	na
Heptachlor	76-44-8	µg/L	ND	na
Heptachlor epoxide (4)	1024-57-3	µg/L	ND	na
Methoxychlor	72-43-5	µg/L	ND	na
Toxaphene	8001-35-2	µg/L	ND	na
Aroclor 1016	12674-11-2	µg/L	ND	na
Aroclor 1221	11104-28-2	µg/L	ND	na
Aroclor 1232	11141-16-5	µg/L	ND	na
Aroclor 1242	53469-21-9	µg/L	ND	na
Aroclor 1248	12672-29-6	µg/L	ND	na
Aroclor 1254	11097-69-1	µg/L	ND	na
Aroclor 1260	11096-82-5	µg/L	ND	na
<i>Semi-Volatiles</i>				
2-Chlorophenol	95-57-8	µg/L	ND	na
4-Chloro-3-methyl phenol	59-50-7	µg/L	ND	na
2,4-Dichlorophenol	120-83-2	µg/L	ND	na
2,4-Dimethylphenol	105-67-9	µg/L	ND	na
2,4-Dinitrophenol	51-28-5	µg/L	ND	na
4,6-Dinitro-o-cresol	534-52-1	µg/L	ND	na
2-Methylphenol	95-48-7	µg/L	ND	na
3&4-Methylphenol		µg/L	ND	na
2-Nitrophenol	88-75-5	µg/L	ND	na
4-Nitrophenol	100-02-7	µg/L	ND	na
Pentachlorophenol	87-86-5	µg/L	ND	na
Phenol	108-95-2	µg/L	ND	na
2,4,5-Trichlorophenol	95-95-4	µg/L	ND	na
2,4,6-Trichlorophenol	88-06-2	µg/L	ND	na
Acenaphthene	83-32-9	µg/L	ND	na
Acenaphthylene	208-96-8	µg/L	ND	na
Acetophenone	98-86-2	µg/L	ND	na
Anthracene	120-12-7	µg/L	ND	na
Atrazine	1912-24-9	µg/L	ND	na
Benzaldehyde	100-52-7	µg/L	ND	na
Benzo(a)anthracene	56-55-3	µg/L	ND	na
Benzo(a)pyrene	50-32-8	µg/L	ND	na

TABLE 4.6

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - WASTEWATER  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Tank 1</i>	<i>Tank 1</i>
<i>Sample Depth</i>				
<i>Sample ID</i>			<i>WW-630609-100708-BPS-032</i>	<i>WW-630609-100908-LN-033</i>
<i>Sample Date</i>			<i>October 7, 2008</i>	<i>October 9, 2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>		
Benzo(b)fluoranthene	205-99-2	µg/L	ND	na
Benzo(g,h,i)perylene	191-24-2	µg/L	ND	na
Benzo(k)fluoranthene	207-08-9	µg/L	ND	na
4-Bromophenyl phenyl ether	101-55-3	µg/L	ND	na
Butyl benzyl phthalate	85-68-7	µg/L	ND	na
1,1'-Biphenyl	92-52-4	µg/L	ND	na
2-Chloronaphthalene	91-58-7	µg/L	ND	na
4-Chloroaniline	106-47-8	µg/L	ND	na
Carbazole	86-74-8	µg/L	ND	na
Caprolactam	105-60-2	µg/L	ND	na
Chrysene	218-01-9	µg/L	ND	na
bis(2-Chloroethoxy)methane	111-91-1	µg/L	ND	na
bis(2-Chloroethyl)ether	111-44-4	µg/L	ND	na
bis(2-Chloroisopropyl)ether	108-60-1	µg/L	ND	na
4-Chlorophenyl phenyl ether	7005-72-3	µg/L	ND	na
2,4-Dinitrotoluene	121-14-2	µg/L	ND	na
2,6-Dinitrotoluene	606-20-2	µg/L	ND	na
3,3'-Dichlorobenzidine	91-94-1	µg/L	ND	na
Dibenzo(a,h)anthracene	53-70-3	µg/L	ND	na
Dibenzofuran	132-64-9	µg/L	ND	na
Di-n-butyl phthalate	84-74-2	µg/L	ND	na
Di-n-octyl phthalate	117-84-0	µg/L	ND	na
Diethyl phthalate	84-66-2	µg/L	ND	na
Dimethyl phthalate	131-11-3	µg/L	ND	na
bis(2-Ethylhexyl)phthalate	117-81-7	µg/L	ND	na
Fluoranthene	206-44-0	µg/L	ND	na
Fluorene	86-73-7	µg/L	ND	na
Hexachlorobenzene	118-74-1	µg/L	ND	na
Hexachlorobutadiene	87-68-3	µg/L	ND	na
Hexachlorocyclopentadiene	77-47-4	µg/L	ND	na
Hexachloroethane	67-72-1	µg/L	ND	na
Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	ND	na
Isophorone	78-59-1	µg/L	ND	na
2-Methylnaphthalene	91-57-6	µg/L	ND	na
2-Nitroaniline	88-74-4	µg/L	ND	na
3-Nitroaniline	99-09-2	µg/L	ND	na
4-Nitroaniline	100-01-6	µg/L	ND	na
Naphthalene	91-20-3	µg/L	ND	na
Nitrobenzene	98-95-3	µg/L	ND	na
N-Nitroso-di-n-propylamine	621-64-7	µg/L	ND	na
N-Nitrosodiphenylamine	86-30-6	µg/L	ND	na

TABLE 4.6

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - WASTEWATER  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Tank 1</i>	<i>Tank 1</i>
<i>Sample Depth</i>				
<i>Sample ID</i>			WW-630609-100708-BPS-032	WW-630609-100908-LN-033
<i>Sample Date</i>			October 7, 2008	October 9, 2008
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>		
Phenanthrene	85-01-8	µg/L	ND	na
Pyrene	129-00-0	µg/L	ND	na
Pyridine	110-86-1	µg/L	ND	na
<i>Volatiles</i>				
Acetone	67-64-1	µg/L	1760	na
Benzene	71-43-2	µg/L	1.1	na
Bromodichloromethane	75-27-4	µg/L	ND	na
Bromoform	75-25-2	µg/L	ND	na
Bromomethane	74-83-9	µg/L	ND	na
2-Butanone (MEK)	78-93-3	µg/L	130	na
Carbon disulfide	75-15-0	µg/L	ND	na
Carbon tetrachloride	56-23-5	µg/L	ND	na
Chlorobenzene	108-90-7	µg/L	ND	na
Chloroethane	75-00-3	µg/L	ND	na
Chloroform	67-66-3	µg/L	ND	na
Chloromethane	74-87-3	µg/L	ND	na
Cyclohexane	110-82-7	µg/L	ND	na
1,2-Dibromo-3-chloropropane	96-12-8	µg/L	ND	na
Dibromochloromethane	124-48-1	µg/L	ND	na
1,2-Dibromoethane	106-93-4	µg/L	ND	na
1,2-Dichlorobenzene	95-50-1	µg/L	ND	na
1,3-Dichlorobenzene	541-73-1	µg/L	ND	na
1,4-Dichlorobenzene	106-46-7	µg/L	0.53	na
Dichlorodifluoromethane	75-71-8	µg/L	ND	na
1,1-Dichloroethane	75-34-3	µg/L	ND	na
1,2-Dichloroethane	107-06-2	µg/L	130	na
1,1-Dichloroethene	75-35-4	µg/L	ND	na
cis-1,2-Dichloroethene	156-59-2	µg/L	ND	na
trans-1,2-Dichloroethene	156-60-5	µg/L	ND	na
1,2-Dichloropropane	78-87-5	µg/L	ND	na
cis-1,3-Dichloropropene	10061-01-5	µg/L	ND	na
trans-1,3-Dichloropropene	10061-02-6	µg/L	ND	na
Ethylbenzene	100-41-4	µg/L	0.53	na
Freon 113	76-13-1	µg/L	ND	na
2-Hexanone	591-78-6	µg/L	ND	na
Isopropylbenzene	98-82-8	µg/L	ND	na
Methyl Acetate	79-20-9	µg/L	ND	na
Methylcyclohexane	108-87-2	µg/L	ND	na
Methyl Tert Butyl Ether	1634-04-4	µg/L	ND	na
4-Methyl-2-pentanone(MIBK)	108-10-1	µg/L	6	na

TABLE 4.6

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - WASTEWATER  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Tank 1</i>	<i>Tank 1</i>
<i>Sample Depth</i>				
<i>Sample ID</i>			WW-630609-100708-BPS-032	WW-630609-100908-LN-033
<i>Sample Date</i>			October 7, 2008	October 9, 2008
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>		
Methylene chloride	75-09-2	µg/L	ND	na
Styrene	100-42-5	µg/L	ND	na
1,1,2,2-Tetrachloroethane	79-34-5	µg/L	ND	na
Tetrachloroethene	127-18-4	µg/L	ND	na
Toluene	108-88-3	µg/L	191	na
1,2,4-Trichlorobenzene	120-82-1	µg/L	ND	na
1,1,1-Trichloroethane	71-55-6	µg/L	ND	na
1,1,2-Trichloroethane	79-00-5	µg/L	ND	na
Trichloroethene	79-01-6	µg/L	ND	na
Trichlorofluoromethane	75-69-4	µg/L	ND	na
Vinyl chloride	75-01-4	µg/L	ND	na
m,p-Xylene		µg/L	1.7	na
o-Xylene	95-47-6	µg/L	1.4	na
Xylene (total)	1330-20-7	µg/L	3.1	na
<i>General Chemistry</i>				
BOD, 5 Day		mg/L	15.7	na
Chemical Oxygen Demand		mg/L	55	na
Corrosivity as pH		su	7.52	na
Cyanide		mg/L	ND	na
Cyanide Reactivity		mg/L	ND	na
Ignitability (Flashpoint)		Deg. F	ND	na
Nitrogen, Ammonia		mg/L	0.26	na
Nitrogen, Total Kjeldahl		mg/L	1.1	na
Phosphorus, Total		mg/L	ND	na
Solids, Total Suspended		mg/L	16	na
Sulfide		mg/L	ND	na
Sulfide Reactivity		mg/L	ND	na
pH		su	7.16	na

## Notes:

- J - Estimated value.
- ND - Not detected.
- na - Not analyzed.



TABLE 4.7

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - CONCRETE  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>	<i>Concrete from Excavation</i>
<i>Sample ID:</i>	<i>CC-630609-100708-BPS-031</i>
<i>Sample type:</i>	<i>Discrete</i>

**VOCs TCLP**

Benzene	mg/L	ND
2-Butanone (MEK)	mg/L	ND
Carbon tetrachloride	mg/L	ND
Chlorobenzene	mg/L	ND
Chloroform	mg/L	ND
1,4-Dichlorobenzene	mg/L	ND
1,2-Dichloroethane	mg/L	ND
1,1-Dichloroethene	mg/L	ND
Tetrachloroethene	mg/L	ND
Trichloroethene	mg/L	ND
Vinyl chloride	mg/L	ND

**METALS TCLP**

Arsenic	mg/L	ND
Barium	mg/L	ND
Cadmium	mg/L	ND
Chromium	mg/L	ND
Lead	mg/L	ND
Mercury	mg/L	ND
Selenium	mg/L	ND
Silver	mg/L	ND

**PCBs**

Aroclor 1016	mg/kg	ND
Aroclor 1221	mg/kg	ND
Aroclor 1232	mg/kg	ND
Aroclor 1242	mg/kg	ND
Aroclor 1248	mg/kg	ND
Aroclor 1254	mg/kg	ND
Aroclor 1260	mg/kg	ND

**GENERAL CHEMISTRY**

Corrosivity as pH	s.u.	11.96
Cyanide Reactivity	mg/kg	ND
Ignitability (Flashpoint)	Deg. F	>200
Solids, Percent	%	93.9
Sulfide Reactivity	mg/kg	ND

TABLE 4.8

DRUM LOG AND SUMMARY OF DRUM COMPATIBILITY TEST  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

Date Sampled October 13 - 21, 2008																			
Drum Grouping	Drum Count	Composite Sample Number	Sample ID Number/Photo	Physical Description	Phase	PID	pH	Water X	Oxidizer	Fluoride	Petroleum Solvent	L, Br, Ch	Ignitability	Drum Size (gallons)	Drum Contents	Drum Description (1)	Characterization Results	Disposal Method	Disposal Facility
1	1	630609-01	OS-001	White Hard Solid	Solid	1	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	2	630609-01	OS-010	White Hard Solid	Solid	2.6	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	3	630609-01	OS-012	White Hard Solid	Solid	3.7	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	4	630609-01	OS-017	White Hard Solid	Solid	0.5	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	5	630609-01	OS-027	White Hard Solid	Solid	7.8	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	6	630609-01	OS-029	White Hard Solid	Solid	4.8	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	7	630609-01	OS-047	White Hard Solid	Solid	9.5	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	8	630609-01	OS-104	White Hard Solid	Solid	8.7	7	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
1	9	630609-01	OS-105	White Hard Solid	Solid	6.2	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
1	10	630609-01	OS-120	White Hard Solid	Solid	5.8	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
2	11	630609-02	OS-003	Pink Solid	Solid	7.5	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
2	12	630609-02	OS-011	Light Pink Solid	Solid	0.5	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
2	13	630609-02	OS-014	Pink Solid	Solid	0.5	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
2	14	630609-02	OS-015	Pink Solid	Solid	2.4	5	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
2	15	630609-02	OS-021	Light Pink Solid	Solid	4.3	5	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
2	16	630609-02	OS-033	Pink Solid	Solid	2.9	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
2	17	630609-02	OS-051	White Hard Solid	Solid	8.3	6	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
2	18	630609-02	OS-065	White Hard Solid	Solid	7.4	6	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
2	19	630609-02	OS-081	White Hard Solid	Solid	3.5	7	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
2	20	630609-02	OS-085	White Hard Solid	Solid	0.3	6	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
3	21	630609-03	OS-025	White Hard Solid	Solid	18.7	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
3	22	630609-03	OS-031	White Hard Solid	Solid	12.8	5	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
3	23	630609-03	OS-035	White Hard Solid	Solid	12	5	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
3	24	630609-03	OS-039	White Hard Solid	Solid	22.8	5	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
3	25	630609-03	OS-043	White Hard Solid	Solid	11.5	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
3	26	630609-03	OS-049	White Hard Solid	Solid	11	6	No	No	No	No	No	Neg	55	1/4		Non-Hazardous	Bulk	EQ
3	27	630609-03	OS-056	White Hard Solid	Solid	21.7	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
3	28	630609-03	OS-066	White Hard Solid	Solid	14.8	7	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
3	29	630609-03	OS-070	White Hard Solid	Solid	13.7	6	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
3	30	630609-03	OS-113	White Hard Solid	Solid	13.8	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
4	31	630609-04	OS-006	Adhesive Gel Clear	Solid	80.7	6	No	No	No	No	No	Neg	55	1/4		Non-Hazardous	Bulk	EQ
4	32	630609-04	OS-036	White Hard Solid	Solid	78	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
4	33	630609-04	OS-050	Dark Brown Chunks	Solid	79.5	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
4	34	630609-04	OS-061	Light Purple Solid	Solid	20.6	5	No	No	No	No	No	Neg	30	30 1/2		Non-Hazardous	Bulk	EQ
4	35	630609-04	OS-069	White Hard Solid	Solid	26.8	7	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
4	36	630609-04	OS-075	White Hard Solid	Solid	40	7	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
4	37	630609-04	OS-108	Pink Hard Solid	Solid	38.6	7	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
4	38	630609-04	OS-129	Pink Hard Solid	Solid	35.2	7	No	No	No	No	No	Neg	30	3/4		Non-Hazardous	Bulk	EQ
4	39	630609-04	OS-133	White Hard Solid	Solid	97.2	7	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
5	40	630609-05	OS-004	Brown Hard Scale	Solid	4.8	6	No	No	No	No	No	Neg	5	1/4		Non-Hazardous	Bulk	EQ
5	41	630609-05	OS-009	Black hard Scale	Solid	3.5	5	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
5	42	630609-05	OS-013	Gray Hard Scale	Solid	2.3	5	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
5	43	630609-05	OS-019	Clear Off White Crystal	Solid	0.4	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
5	44	630609-05	OS-020	Black hard Scale	Solid	0.2	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
5	45	630609-05	OS-024	Clear Off White Crystal	Solid	3.6	6	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
5	46	630609-05	OS-026	Gray Flakey Crystal	Solid	1	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
5	47	630609-05	OS-046	Light Pink Chunks	Solid	8.8	6	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
5	48	630609-05	OS-089	White Hard Solid	Solid	8.7	6	No	No	No	No	No	Neg	5	Full		Non-Hazardous	Bulk	EQ
5	49	630609-05	OS-096	White Hard Solid	Solid	3.8	6	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
6	50	630609-06	OS-028	Light Brown Soil	Solid	3.7	5	No	No	No	No	No	Neg	55	1/4		Non-Hazardous	Bulk	EQ
6	51	630609-06	OS-034	Brown Soil	Solid	1.3	5	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
6	52	630609-06	OS-042	Brown Soil	Solid	7.8	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
6	53	630609-06	OS-055	Soil Concrete	Solid	2.7	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
6	54	630609-06	OS-092	Light Pink Solid	Solid	7.9	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
6	55	630609-06	OS-098	Black Sponge Material	Solid	5.6	6	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
6	56	630609-06	OS-111	Amber Crystals / Soil	Solid	5.1	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
6	57	630609-06	OS-125	Soil Brown	Solid	2.8	5	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
6	58	630609-06	OS-128	Soil Brown	Solid	2.7	6	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
6	59	630609-06	OS-132	Soil Brown	Solid	8.7	7	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
7	60	630609-07	O-05	White Hard Solid	Solid	0.3	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
7	61	630609-07	O-06	White Hard Solid	Solid	0.2	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
7	62	630609-07	O-11	White Hard Solid	Solid	0.6	6	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
7	63	630609-07	O-12	White Hard Solid	Solid	27.8	6	No	No	No	No	No	Neg	55	1/4		Non-Hazardous	Bulk	EQ
7	64	630609-07	O-46	White Adhesive Gel	Semi-Solid	1	6	No	No	No	No	No	Neg	5	Full		Non-Hazardous	Bulk	EQ
7	65	630609-07	O-50	Gray Flakey Material	Solid	0.6	6	No	No	No	No	No	Neg	55	Full		Non-Hazardous	Bulk	EQ
7	66	630609-07	OS-063	Hard White Solid	Solid	13.8	5	No	No	No	No	No	Neg	55	1/4		Non-Hazardous	Bulk	EQ

TABLE 4.8

 DRUM LOG AND SUMMARY OF DRUM COMPATIBILITY TEST  
 PAS IRWIN DUMP SUPERFUND SITE  
 OSWEGO, NEW YORK

Date Sampled October 13 - 21, 2008			Samplers Name: Bryan Stillwell/CRA		Phase	PID	pH	Water X	Oxidizer	Fluoride	Petroleum Solvent	L, Br, Ch	Ignitability	Drum Size (gallons)	Drum Contents	Drum Description (1)	Characterization Results	Disposal Method	Disposal Facility
Drum Grouping	Drum Count	Composite Sample Number	Sample ID Number/Photo	Physical Description															
7	67	630609-07	OS-073	White Hard Solid	Solid	11.7	6	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
7	68	630609-07	OS-080	White Hard Solid	Solid	10.8	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
7	69	630609-07	OS-084	White / Amber Hard Solid	Solid	1.2	6	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
8	70	630609-08	O-13	White Hard Solid	Solid	0.3	6	No	No	No	No	No	Neg	55	1/4	Napko Stain Base	Non-Hazardous	Bulk	EQ
8	71	630609-08	O-15	White Hard Solid	Solid	0.8	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
8	72	630609-08	O-16	White Hard Solid	Solid	0.6	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
8	73	630609-08	O-18	White Hard Solid	Solid	0.6	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
8	74	630609-08	O-19	White Hard Solid	Solid	0.8	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
8	75	630609-08	O-32	White Hard Solid	Solid	1.7	7	No	No	No	No	No	Neg	55	Full	GE Label	Non-Hazardous	Overpack	WM
8	76	630609-08	O-34	White Hard Solid	Solid	1.3	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
8	77	630609-08	O-35	White Hard Solid	Solid	1.5	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
8	78	630609-08	O-36	White Hard Solid	Solid	0.7	6	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
9	79	630609-09	EPA-4	Red / Brown Hard Scale	Solid	1187.6	6	No	No	No	No	No	Neg	30	1/2		Haz for Ignitability	Overpack	WM
9	80	630609-09	O-33	Red Paste	Semi-Solid	2975.8	5	No	No	No	No	No	Neg	55	3/4		Haz for Ignitability	Overpack	WM
9	81	630609-09	O-38	Red Clay Material (Soft)	Solid	1237.8	6	No	No	No	No	No	Neg	55	1/4		Haz for Ignitability	Overpack	WM
9	82	630609-09	OS-005	Red / Brown Hard Scale	Solid	8.6	7	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
9	83	630609-09	OS-038	Red Gooney Material	Semi-Solid	1286.9	6	No	No	No	No	No	Neg	30	1/4		Haz for Ignitability	Overpack	WM
9	84	630609-09	OS-106	Red Clay Material (Soft)	Soft-Solid	1706.7	7	No	No	No	No	No	Neg	30	1/4		Haz for Ignitability	Overpack	WM
10	85	630609-10	O-08	Brown Liquid	Liquid	0	3	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Overpack	WM
10	86	630609-10	O-09	Brown Liquid / Solids	Liquid / Solid	7.9	6	No	No	No	No	No	Neg	7(2G)Pails	7(2G)Pails		Non-Hazardous	Overpack	WM
10	87	630609-10	O-10	Tan Liquid	Liquid	0.2	7	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Overpack	WM
10	88	630609-10	O-37	Light Brown Solid/ Liquid	Liquid / Solid	24.7	6	No	No	No	No	No	Neg	30	30 3/4		Non-Hazardous	Overpack	WM
11	89	630609-11	OS-107	Red Liquid Sludge	Liquid	1250.6	8	No	No	No	No	No	Neg	55	1/2		Haz for Ignitability	Overpack	WM
12	90	630609-12	OS-115	Amber Crystals / Soil	Solid	276.8	6	No	No	No	No	No	Neg	30	1/4		Haz for Ignitability	Overpack	WM
12	91	630609-12	OS-119	Amber Rock Hard	Solid	276	5	No	No	No	No	No	Neg	30	1/4		Haz for Ignitability	Overpack	WM
12	92	630609-12	OS-121	Amber Rock Hard	Solid	1027.7	6	No	No	No	No	No	Neg	55	1/4		Haz for Ignitability	Overpack	WM
12	93	630609-12	OS-124	Amber Rock Hard	Solid	1553.9	6	No	No	No	No	No	Neg	55	1/2		Haz for Ignitability	Overpack	WM
13	94	630609-13	O-21	Light Brown Adhesive	Semi-Solid	419.8	7	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Overpack	WM
13	95	630609-13	O-23	Light Brown Adhesive	Semi-Solid	87.6	7	No	No	No	No	No	Neg	30	3/4		Non-Hazardous	Bulk	EQ
13	96	630609-13	O-43	Brown Adhesive	Semi-Solid	750.8	6	No	No	No	No	No	Neg	55	Full		Non-Hazardous	Bulk	EQ
13	97	630609-13	O-44	Black Hard Solid	Solid	798.6	6	No	No	No	No	No	Neg	55	Full		Non-Hazardous	Bulk	EQ
13	98	630609-13	OS-022	Black Liquid Adhesive	Semi-Solid	441.8	5	No	No	No	No	No	Neg	30	1/4		Non-Hazardous	Bulk	EQ
13	99	630609-13	OS-094	Black / Cream Solid	Solid	469	7	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
13	100	630609-13	OS-116	Black Adhesive Material	Solids	1505.2	6	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
13	101	630609-13	OS-126	Gray Black Sludge	Solid	266.6	7	No	No	No	No	No	Neg	55	1/4		Non-Hazardous	Bulk	EQ
13	102	630609-13	OS-130	Black Adhesive Material	Solid	371.8	7	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
13	182	630609-13	O-21 recovered	Light Brown Adhesive	Semi-Solid	419.8	7	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Overpack	WM
14	103	630609-14	EPA-7	Brown Hard Solid	Solid	32.6	6	No	No	No	No	No	Neg	30	1/2		Haz for Ignitability	Overpack	WM
14	104	630609-14	O-02	Brown Soil	Solid	1.2	7	No	No	No	No	No	Neg	55	1/4		Haz for Ignitability	Overpack	WM
14	105	630609-14	O-52	Brown Soil	Solid	25.4	6	No	No	No	No	No	Neg	55	Full		Haz for Ignitability	Overpack	WM
14	106	630609-14	OS-040	Brown Soil	Solid	19.9	6	No	No	No	No	No	Neg	55	Full		Haz for Ignitability	Overpack	WM
14	107	630609-14	OS-045	Brown Soil	Solid	23	7	No	No	No	No	No	Neg	30	1/4		Haz for Ignitability	Overpack	WM
14	108	630609-14	OS-086	Brown Soil	Solid	13.6	7	No	No	No	No	No	Neg	30	1/4		Haz for Ignitability	Overpack	WM
14	109	630609-14	OS-135	Soil Brown	Solid	25.5	6	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
15	110	630609-15	O-41	Brown Soil	Solid	821.4	6	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
15	111	630609-15	O-42	Brown Soil	Solid	2378.7	6	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
15	112	630609-15	O-51	Brown Soil	Solid	377.8	6	No	No	No	No	No	Neg	55	Full		Non-Hazardous	Bulk	EQ
15	113	630609-15	OS-002	Brown Soil	Solid	220	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
15	114	630609-15	OS-007	Light Brown Powder	Solid	1425	5	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
15	115	630609-15	OS-030	Light Brown Soil	Solid	85	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
15	116	630609-15	OS-041	Brown Hard Chunks	Solid	486	6	No	No	No	No	No	Neg	30	1/2		Non-Hazardous	Bulk	EQ
15	117	630609-15	OS-060	Brown Soil	Solid	1210	5	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
15	118	630609-15	OS-102	Light Brown Solid	Solid	497.6	6	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
15	119	630609-15	OS-131	Soil Dark Brown	Solid	1175.8	7	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
16	120	630609-16	O-03	Light Green Solid	Solid	1	6	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
16	121	630609-16	O-04	Light Tan Material	Solid	2	7	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
16	122	630609-16	O-14	Pink Hard Solid	Solid	0.9	6	No	No	No	No	No	Neg	30	1/2		Haz for Ignitability	Overpack	WM
16	123	630609-16	O-17	Pink Hard Solid	Solid	0.4	6	No	No	No	No	No	Neg	30	1/2		Haz for Ignitability	Overpack	WM
16	124	630609-16	OS-032	Pink Solid	Solid	12.8	6	No	No	No	No	No	Neg	30	1/2		Haz for Ignitability	Overpack	WM
16	125	630609-16	OS-077	Light Pink Solid	Solid	11.9	6	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
16	126	630609-16	OS-093	Light Amber Solid	Solid	6.9	7	No	No	No	No	No	Neg	55	1/2		Haz for Ignitability	Overpack	WM
16	127	630609-16	OS-097	Light Pink Solid	Solid	29.1	7	No	No	No	No	No	Neg	55	Full		Haz for Ignitability	Overpack	WM
16	128	630609-16	OS-109	Light Purple Solid	Solid	7.2	7	No	No	No	No	No	Neg	55	Full		Haz for Ignitability	Overpack	WM

TABLE 4.8

DRUM LOG AND SUMMARY OF DRUM COMPATIBILITY TEST  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK

Date Sampled October 13 - 21, 2008																				
Drum Grouping	Drum Count	Composite Sample Number	Sample ID Number/Photo	Physical Description	Samplers Name: Bryan Stillwell/CRA	Phase	PID	pH	Water X	Oxidizer	Fluoride	Petroleum Solvent	L, Br, Ch	Ignitability	Drum Size (gallons)	Drum Contents	Drum Description (1)	Characterization Results	Disposal Method	Disposal Facility
16	129	630609-16	OS-112	Light Purple Solid	Solid	18.6	6	No	No	No	No	No	No	Neg	55	1/4		Haz for Ignitability	Overpack	WM
16	130	630609-16	OS-114	Pink Hard Solid	Solid	22.6	6	No	No	No	No	No	No	Neg	30	3/4		Haz for Ignitability	Overpack	WM
16	131	630609-16	OS-118	Light Green Solid	Solid	6.1	5	No	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
17	132	630609-17	O-07	Purple Hard Solid	Solid	1.7	6	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
17	133	630609-17	O-39	White Adhesive	Solid	29.5	7	No	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
17	134	630609-17	OS-016	Rags / Trash	Solid	0.5	5	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
17	135	630609-17	OS-018	Purple Flakes	Solid	0	5	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
17	136	630609-17	OS-048	Tan Powder Chips	Solid	21.8	5	No	No	No	No	No	No	Neg	55	Full		Non-Hazardous	Bulk	EQ
17	137	630609-17	OS-059	Purple Crystals	Solid	11.5	5	No	No	No	No	No	No	Neg	55	1/3		Non-Hazardous	Bulk	EQ
17	138	630609-17	OS-064	Tan Hard Solid	Solid	7.3	6	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
17	139	630609-17	OS-067	Rags	Solid	9.4	6	No	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
17	140	630609-17	OS-076	Orange White Sponge	Solid	2.64	6	No	No	No	No	No	No	Neg	30	3/4		Non-Hazardous	Bulk	EQ
17	141	630609-17	OS-127	Tan Powder	Solid	14.8	7	No	No	No	No	No	No	Neg	55	Full		Non-Hazardous	Bulk	EQ
18	142	630609-18	OS-053	White Spongy Material	Solid	329	5	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
18	143	630609-18	OS-054	White Spongy Material	Solid	120	6	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
18	144	630609-18	OS-057	White Cream Color Solid	Solid	341	6	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
18	145	630609-18	OS-082	White Spongy Material	Solid	278	6	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
18	146	630609-18	OS-095	White Spongy Material	Solid	92.1	7	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
18	147	630609-18	OS-099	White Spongy Material	Solid	286.7	6	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
18	148	630609-18	OS-101	Yellow Amber Solid	Solid	89.7	7	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
18	149	630609-18	OS-134	White Hard Solid	Solid	232.7	7	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
19	150	630609-19	EPA-2	Purple Hard Crystals	Solid	697.6	7	No	No	No	No	No	No	Neg	30	3/4		Non-Hazardous	Overpack	WM
19	151	630609-19	OS-058	Tan Powder Chips	Solid	1645	5	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
19	152	630609-19	OS-062	White Cream Color Solid	Solid	1648.7	6	No	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
19	153	630609-19	OS-068	Light Purple Solids	Solid	1933	7	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
19	154	630609-19	OS-071	Green Sponge Solid	Solid	2350.8	7	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
19	155	630609-19	OS-079	Rags / Aluminum Foil	Solid	607	6	No	No	No	No	No	No	Neg	55	3/4		Non-Hazardous	Bulk	EQ
19	156	630609-19	OS-083	Light Tan Solid	Solid	833	6	No	No	No	No	No	No	Neg	30	3/4		Non-Hazardous	Bulk	EQ
19	157	630609-19	OS-088	White Green Solid	Solid	1475	6	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
19	158	630609-19	OS-090	Purple Hard Solid	Solid	2175	6	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
19	159	630609-19	OS-117	Light Purple Solid	Solid	1045.8	7	No	No	No	No	No	No	Neg	30	Full		Non-Hazardous	Bulk	EQ
19	160	630609-19	OS-123	Gray Sponge Material	Solid	1131.2	6	No	No	No	No	No	No	Neg	55	1/2		Non-Hazardous	Bulk	EQ
20	161	630609-20	O-01	Purple Hard Solid	Solid	56.4	6	No	No	No	No	No	No	Neg	55	1/4	GE Label	Haz for Ignitability	Overpack	WM
20	162	630609-20	OS-072	Light Purple Solid	Solid	49.6	6	No	No	No	No	No	No	Neg	30	1/2		Haz for Ignitability	Overpack	WM
20	163	630609-20	OS-074	Light Purple Solid	Solid	35.8	6	No	No	No	No	No	No	Neg	30	3/4		Haz for Ignitability	Overpack	WM
20	164	630609-20	OS-087	Purple Crystal / Soil	Solid	96.9	6	No	No	No	No	No	No	Neg	55	1/2		Haz for Ignitability	Overpack	WM
20	165	630609-20	OS-091	Yellow Powder	Solid	29.7	7	No	No	No	No	No	No	Neg	55	1/4		Haz for Ignitability	Overpack	WM
20	166	630609-20	OS-100	Off White hard Solid	Solid	84.9	6	No	No	No	No	No	No	Neg	30	3/4		Haz for Ignitability	Overpack	WM
20	167	630609-20	OS-110	Purple White Hard Solid	Solid	13.8	6	No	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
20	168	630609-20	OS-122	Rags	Solid	27.6	6	No	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
21	169	630609-21	EPA-6 O-49	Brown Adhesive	Solid	3550.1	6	No	No	No	No	No	No	POS	5	1/2		Non-Hazardous	Overpack	WM
21	170	630609-21	O-40	Clear Thick Liquid	Liquid	8.1	6	No	No	No	No	No	No	POS	5	Full		Non-Hazardous	Overpack	WM
21	171	630609-21	O-45	Black Adhesive Material	Semi-Solid	1105.8	6	No	No	No	No	No	No	POS	5	Full		Non-Hazardous	Overpack	WM
22	172	630609-22	OS-008	Light Tan Powder	Solid	421	5	No	No	No	No	No	No	Neg	55	1/2		Haz for Ignitability	Overpack	WM
22	173	630609-22	OS-023	Light Cream Solid	Solid	138.7	5	No	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
22	174	630609-22	OS-037	Purple Solid	Solid	121.8	6	No	No	No	No	No	No	Neg	30	1/2		Haz for Ignitability	Overpack	WM
22	175	630609-22	OS-044	Purple Crystals	Solid	298.7	6	No	No	No	No	No	No	Neg	30	Full		Haz for Ignitability	Overpack	WM
22	176	630609-22	OS-078	Light Pink Solid	Solid	152	5	No	No	No	No	No	No	Neg	30	1/4		Haz for Ignitability	Overpack	WM
22	177	630609-22	OS-103	Green Light Brown	Solid	146.9	5	No	No	No	No	No	No	Neg	55	1/2		Haz for Ignitability	Overpack	WM
23	178	630609-23	EPA-3	Dark Brown Liquid	Liquid	493.6	7	No	No	No	No	No	No	POS	30	1/4		Non-Hazardous	Overpack	WM
23	179	630609-23	EPA-5 O-48	Light Brown Adhesive	Semi-Solid	307.5	5	No	No	No	No	No	No	POS	30	1/4		Non-Hazardous	Overpack	WM
23	180	630609-23	OS-052	Brown Liquid	Liquid	8.6	6	No	No	No	No	No	No	POS	55	Full		Non-Hazardous	Overpack	WM
24	181	630609-24	O-47	Yellow Spongy Material	Solid	315.8	7	No	No	No	No	No	No	POS	5	Full		Haz for Ignitability	Overpack	WM

## Note:

(1) Blank cell indicates drum rusted and/or deteriorated and no visible markings.

TABLE 4.9

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - DRUMS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample ID:</i>			<i>630609-01</i>	<i>630609-02</i>	<i>630609-03</i>	<i>630609-04</i>	<i>630609-05</i>	<i>630609-06</i>	<i>630609-07</i>	<i>630609-08</i>
<i>Sample type:</i>			<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>
<i>Sample Date</i>			<i>20-Oct-08</i>	<i>20-Oct-08</i>	<i>20-Oct-08</i>	<i>20-Oct-08</i>	<i>20-Oct-08</i>	<i>20-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>
	<i>Hazardous Waste</i>									
	<i>Unit</i>	<i>Criteria</i>								
<b>VOCs TCLP</b>										
Benzene	mg/L	0.5	0.0019 J	ND	ND	0.0163	ND	ND	0.0035 J	ND
2-Butanone (MEK)	mg/L	200	ND	ND	0.103	1.73	ND	ND	ND	ND
Carbon tetrachloride	mg/L	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	mg/L	100	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	mg/L	6	ND	ND	ND	0.0335	ND	0.021	0.0043 J	ND
1,4-Dichlorobenzene	mg/L	7.5	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	mg/L	0.5	ND	ND	ND	0.0086	ND	ND	ND	ND
1,1-Dichloroethene	mg/L	0.7	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	mg/L	0.7	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	mg/L	0.5	ND	ND	ND	0.0181	ND	ND	ND	ND
Vinyl chloride	mg/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND
<b>METALS TCLP</b>										
Arsenic	mg/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Barium	mg/L	100	3.6	3.3	5.5	1.9	2.0	3.3	3.8	6.7
Cadmium	mg/L	1	ND	ND	0.0054	0.05	ND	ND	0.02	ND
Chromium	mg/L	5	ND	ND	0.022	ND	ND	ND	ND	0.014
Lead	mg/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	mg/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/L	1	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/L	5	ND	ND	ND	ND	ND	ND	ND	ND
<b>PCBs</b>										
Aroclor 1016	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg		ND	0.49	ND	ND	ND	0.446	0.189	ND
Aroclor 1254	mg/kg		ND	0.207	ND	ND	ND	0.26	ND	ND
Aroclor 1260	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (1)	mg/kg	50	ND	0.697	ND	ND	ND	0.706	0.189	ND
<b>GENERAL CHEMISTRY</b>										
Corrosivity as pH	s.u.	<2 or >12.5	6.47	6.82	4.69	4.42	7.06	7.59	7.34	4.62
Cyanide Reactivity	mg/kg	250	ND	ND	ND	ND	ND	ND	ND	ND
Ignitability (Flashpoint)	Deg. F	<140	>200	>200	>200	>200	>200	>200	>200	>200
Solids, Percent	%		94.7	63	94	69.3	96	87.3	95.5	72.8
Sulfide Reactivity	mg/kg	250	ND	ND	ND	ND	ND	ND	ND	ND

**Notes:**

(1) Criteria for Total PCBs is based on TSCA numbers.

TABLE 4.9

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - DRUMS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample ID:</i>			<i>630609-09</i>	<i>630609-10</i>	<i>630609-11</i>	<i>630609-12</i>	<i>630609-13</i>	<i>630609-14</i>	<i>630609-15</i>	<i>630609-16</i>	<i>630609-17</i>
<i>Sample type:</i>			<i>Composite - solid</i>	<i>Composite - liquid</i>	<i>Liquid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>
<i>Sample Date</i>			<i>21-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>	<i>21-Oct-08</i>
	<i>Hazardous Waste</i>										
	<i>Unit</i>	<i>Criteria</i>									
<b>VOCs TCLP</b>											
Benzene	mg/L	0.5	0.111	0.0323	0.0102	0.012	ND	0.186	0.0373	0.0205	ND
2-Butanone (MEK)	mg/L	200	5.59	0.0757 J	0.256	2.83	ND	0.573	0.0434 J	0.0228 J	ND
Carbon tetrachloride	mg/L	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	mg/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	mg/L	6	ND	ND	ND	ND	0.012	ND	ND	ND	ND
1,4-Dichlorobenzene	mg/L	7.5	ND	ND	ND	0.111	ND	ND	ND	ND	ND
1,2-Dichloroethane	mg/L	0.5	ND	ND	ND	ND	ND	ND	0.0196	0.0116	ND
1,1-Dichloroethene	mg/L	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	mg/L	0.7	ND	ND	ND	ND	ND	0.0748	0.0049 J	0.005	ND
Trichloroethene	mg/L	0.5	ND	ND	ND	0.0027 J	ND	0.0373	0.0089	0.0069	ND
Vinyl chloride	mg/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>METALS TCLP</b>											
Arsenic	mg/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	mg/L	100	0.4	2.0	ND	0.43	1.8	2.2	1.9	2.8	7.2
Cadmium	mg/L	1	ND	0.004	ND	ND	ND	ND	ND	ND	ND
Chromium	mg/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	mg/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	mg/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	mg/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>PCBs</b>											
Aroclor 1016	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	mg/kg		ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg		ND	ND	ND	11.2	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg		ND	0.733	ND	ND	0.629	ND	0.196	ND	0.718
Aroclor 1254	mg/kg		ND	ND	ND	1.65	0.389	ND	0.0943	ND	0.78
Aroclor 1260	mg/kg		ND	ND	ND	1.04	ND	ND	ND	ND	0.231
Total PCBs (1)	mg/kg	50	ND	0.733	ND	13.89	1.018	ND	0.2903	ND	1.729
<b>GENERAL CHEMISTRY</b>											
Corrosivity as pH	s.u.	<2 or >12.5	4.83	6.93	3.25	5.56	5.86	6.81	7.57	7.27	6.88
Cyanide Reactivity	mg/kg	250	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ignitability (Flashpoint)	Deg. F	<140	85	>200	83.5	111	>200	72.7	171	85	>200
Solids, Percent	%		73.3	23.8	72	56.3	97.8	72.6	83.5	80.1	97.4
Sulfide Reactivity	mg/kg	250	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Notes:**

(1) Criteria for Total PCBs is based on TSCA numbers.

TABLE 4.9

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS - DRUMS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample ID:</i>			630609-18	630609-19	630609-20	630609-21	630609-22	630609-23	630609-24
<i>Sample type:</i>			<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - liquid</i>	<i>Composite - solid</i>
<i>Sample Date</i>			21-Oct-08	21-Oct-08	21-Oct-08	21-Oct-08	21-Oct-08	21-Oct-08	21-Oct-08
	<i>Hazardous Waste</i>								
	<i>Unit</i>	<i>Criteria</i>							
<b>VOCs TCLP</b>									
Benzene	mg/L	0.5	ND	0.0026 J	0.127	ND	0.362	0.0087	0.0855
2-Butanone (MEK)	mg/L	200	ND	ND	0.13	0.0282 J	0.0867 J	0.413	26
Carbon tetrachloride	mg/L	0.5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	mg/L	100	ND	ND	ND	0.0646	ND	ND	ND
Chloroform	mg/L	6	ND	ND	0.0225	ND	ND	0.0204	0.0035 J
1,4-Dichlorobenzene	mg/L	7.5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	mg/L	0.5	ND	ND	0.0467	ND	0.0824	ND	ND
1,1-Dichloroethene	mg/L	0.7	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	mg/L	0.7	ND	ND	0.0149	ND	ND	ND	ND
Trichloroethene	mg/L	0.5	ND	ND	0.229	ND	ND	ND	ND
Vinyl chloride	mg/L	0.2	ND	ND	ND	ND	ND	ND	ND
<b>METALS TCLP</b>									
Arsenic	mg/L	5	ND	ND	ND	ND	ND	ND	ND
Barium	mg/L	100	0.61	1.1	2.5	2.6	0.23	3.8	ND
Cadmium	mg/L	1	ND	0.014	0.2	0.0057	ND	0.011	ND
Chromium	mg/L	5	ND	ND	ND	ND	ND	0.022	ND
Lead	mg/L	5	ND	ND	ND	ND	ND	ND	ND
Mercury	mg/L	0.2	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/L	1	ND	ND	ND	ND	ND	ND	ND
Silver	mg/L	5	ND	ND	ND	ND	ND	ND	ND
<b>PCBs</b>									
Aroclor 1016	mg/kg		ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	mg/kg		ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	mg/kg		ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg		ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg		ND	ND	3.64	1.19	ND	ND	0.799
Aroclor 1254	mg/kg		ND	ND	1.57	0.569	ND	ND	ND
Aroclor 1260	mg/kg		ND	ND	0.48	ND	ND	ND	ND
Total PCBs (1)	mg/kg	50	ND	ND	5.69	1.759	ND	ND	0.799
<b>GENERAL CHEMISTRY</b>									
Corrosivity as pH	s.u.	<2 or >12.5	6.64	5.05	6.82	7.38	6.18	7	4.72
Cyanide Reactivity	mg/kg	250	ND	ND	ND	ND	ND	ND	ND
Ignitability (Flashpoint)	Deg. F	<140	>200	>200	79.5	>200	110	>200	85.6
Solids, Percent	%		92.1	71.6	75.1	85.8	83.9	71.7	80.8
Sulfide Reactivity	mg/kg	250	ND	ND	ND	ND	ND	ND	ND

Notes:

(1) Criteria for Total PCBs is based on TSCA numbers.

TABLE 4.10

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS -  
DISCRETE PCB SAMPLE ANALYSIS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location</i>			<i>Group 12 - Drum OS-115</i>	<i>Group 12 - Drum OS-119</i>	<i>Group 12 - Drum OS-121</i>	<i>Group 12 - Drum OS-124</i>
<i>Sample ID</i>			<i>630609-91308-001</i>	<i>630609-91308-002</i>	<i>630609-91308-003</i>	<i>630609-91308-004</i>
<i>Sample Date</i>			<i>13-Nov-08</i>	<i>13-Nov-08</i>	<i>13-Nov-08</i>	<i>13-Nov-08</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>				
<b>PCBs</b>						
Aroclor 1016	12674-11-2	µg/kg	ND	ND	ND	ND
Aroclor 1221	11104-28-2	µg/kg	ND	ND	ND	ND
Aroclor 1232	11141-16-5	µg/kg	ND	ND	ND	ND
Aroclor 1242	53469-21-9	µg/kg	ND	ND	990	231
Aroclor 1248	12672-29-6	µg/kg	ND	ND	ND	ND
Aroclor 1254	11097-69-1	µg/kg	ND	ND	359	ND
Aroclor 1260	11096-82-5	µg/kg	ND	ND	116	390

Note:

ND      non-detect



TABLE 4.11

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS -  
IGNITABILITY RE-ANALYSIS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample ID:</i>			630609-14	630609-14	630609-16	630609-16	630609-20
<i>Sample type:</i>			Composite - solid	Composite - solid	Composite - solid	Composite - solid	Composite - solid
<i>Sample Date</i>			21-Oct-08	7-Nov-08	21-Oct-08	7-Nov-08	21-Oct-08
	<i>Unit</i>	<i>Hazardous Waste Criteria</i>					
<b><u>GENERAL CHEMISTRY</u></b>							
Ignitability (Flashpoint)	Deg. F	<140	72.7	<200 <sup>(1)</sup>	85	115	79.5

## Notes:

- (1) No flash. Sample burned at 165°F.  
(2) No flash. Sample burned at 115°F.

TABLE 4.11

**SUMMARY OF WASTE CHARACTERIZATION SAMPLE RESULTS -  
IGNITABILITY RE-ANALYSIS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample ID:</i>			630609-20	630609-21	630609-21	630609-23	630609-23
<i>Sample type:</i>			<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - solid</i>	<i>Composite - liquid</i>	<i>Composite - liquid</i>
<i>Sample Date</i>			<i>7-Nov-08</i>	<i>21-Oct-08</i>	<i>7-Nov-08</i>	<i>21-Oct-08</i>	<i>7-Nov-08</i>
	<i>Unit</i>	<i>Hazardous Waste Criteria</i>					
<b><u>GENERAL CHEMISTRY</u></b>							
Ignitability (Flashpoint)	Deg. F	<140	>200 <sup>(2)</sup>	>200	>200	>200	>200

## Notes:

- (1) No flash. Sample burned at 165°F.  
(2) No flash. Sample burned at 115°F.

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>CW-2</i>	<i>CW-2-Dup</i>	<i>CW-3</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112008-JP-003</i>	<i>GW-630609-112008-JP-004</i>	<i>GW-630609-112008-JP-001</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/20/2008</i>	<i>11/20/2008</i>	<i>11/20/2008</i>
<i>Parameters</i>	<i>CAS</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
	<i>Number</i>					
<b>VOCs</b>						
Acetone	67-64-1	µg/L		ND	ND	ND
Benzene	71-43-2	µg/L	1.0	ND	ND	ND
Bromodichloromethane	75-27-4	µg/L		ND	ND	ND
Bromoform	75-25-2	µg/L		ND	ND	ND
Bromomethane	74-83-9	µg/L		ND	ND	ND
2-Butanone (MEK)	78-93-3	µg/L		ND	ND	ND
Carbon disulfide	75-15-0	µg/L	60	ND	ND	ND
Carbon tetrachloride	56-23-5	µg/L		ND	ND	ND
Chlorobenzene	108-90-7	µg/L	5.0	ND	ND	ND
Chloroethane	75-00-3	µg/L		ND	ND	ND
Chloroform	67-66-3	µg/L		ND	ND	ND
Chloromethane	74-87-3	µg/L		ND	ND	ND
Cyclohexane	110-82-7	µg/L		ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	µg/L		ND	ND	ND
Dibromochloromethane	124-48-1	µg/L		ND	ND	ND
1,2-Dibromoethane	106-93-4	µg/L		ND	ND	ND
1,2-Dichlorobenzene	95-50-1	µg/L	3.0	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	µg/L		ND	ND	ND
1,4-Dichlorobenzene	106-46-7	µg/L		ND	ND	ND
Dichlorodifluoromethane	75-71-8	µg/L		ND	ND	ND
1,1-Dichloroethane	75-34-3	µg/L		ND	ND	ND
1,2-Dichloroethane	107-06-2	µg/L		ND	ND	ND
1,1-Dichloroethene	75-35-4	µg/L		ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	µg/L	5.0	0.42 J	0.39 J	ND
trans-1,2-Dichloroethene	156-60-5	µg/L		ND	ND	ND
1,2-Dichloropropane	78-87-5	µg/L		ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	µg/L		ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	µg/L		ND	ND	ND
Ethylbenzene	100-41-4	µg/L		ND	ND	ND
Freon 113	76-13-1	µg/L		ND	ND	ND
2-Hexanone	591-78-6	µg/L		ND	ND	ND
Isopropylbenzene	98-82-8	µg/L		ND	ND	ND
Methyl Acetate	79-20-9	µg/L		ND	ND	ND
Methylcyclohexane	108-87-2	µg/L		ND	ND	ND
Methyl Tert Butyl Ether	1634-04-4	µg/L	10	0.88 J	0.84 J	ND
4-Methyl-2-pentanone(MIBK)	108-10-1	µg/L		ND	ND	ND
Methylene chloride	75-09-2	µg/L		ND	ND	ND
Styrene	100-42-5	µg/L		ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	µg/L		ND	ND	ND
Tetrachloroethene	127-18-4	µg/L		ND	ND	ND
Toluene	108-88-3	µg/L		ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	µg/L		ND	ND	ND
1,1,1-Trichloroethane	71-55-6	µg/L		ND	ND	ND
1,1,2-Trichloroethane	79-00-5	µg/L		ND	ND	ND
Trichloroethene	79-01-6	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>CW-2</i>	<i>CW-2-Dup</i>	<i>CW-3</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112008-JP-003</i>	<i>GW-630609-112008-JP-004</i>	<i>GW-630609-112008-JP-001</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/20/2008</i>	<i>11/20/2008</i>	<i>11/20/2008</i>
<i>Parameters</i>	<i>CAS</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
	<i>Number</i>					
Trichlorofluoromethane	75-69-4	µg/L		ND	ND	ND
Vinyl chloride	75-01-4	µg/L		ND	ND	ND
m,p-Xylene		µg/L		ND	ND	ND
o-Xylene	95-47-6	µg/L		ND	ND	ND
Xylene (total)	1330-20-7	µg/L		ND	ND	ND
<b>SVOCs</b>						
2-Chlorophenol	95-57-8	µg/L		ND	ND	ND
4-Chloro-3-methyl phenol	59-50-7	µg/L		ND	ND	ND
2,4-Dichlorophenol	120-83-2	µg/L		ND	ND	ND
2,4-Dimethylphenol	105-67-9	µg/L		ND	ND	ND
2,4-Dinitrophenol	51-28-5	µg/L		ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	µg/L		ND	ND	ND
2-Methylphenol	95-48-7	µg/L		ND	ND	ND
3&4-Methylphenol		µg/L		ND	ND	ND
2-Nitrophenol	88-75-5	µg/L		ND	ND	ND
4-Nitrophenol	100-02-7	µg/L		ND	ND	ND
Pentachlorophenol	87-86-5	µg/L		ND	ND	ND
Phenol	108-95-2	µg/L		ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	µg/L		ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	µg/L		ND	ND	ND
Acenaphthene	83-32-9	µg/L		ND	ND	ND
Acenaphthylene	208-96-8	µg/L		ND	ND	ND
Acetophenone	98-86-2	µg/L		ND	ND	ND
Anthracene	120-12-7	µg/L		ND	ND	ND
Atrazine	1912-24-9	µg/L		ND	ND	ND
Benzaldehyde	100-52-7	µg/L		ND	ND	ND
Benzo(a)anthracene	56-55-3	µg/L		ND	ND	ND
Benzo(a)pyrene	50-32-8	µg/L		ND	ND	ND
Benzo(b)fluoranthene	205-99-2	µg/L		ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	µg/L		ND	ND	ND
Benzo(k)fluoranthene	207-08-9	µg/L		ND	ND	ND
4-Bromophenyl phenyl ether	101-55-3	µg/L		ND	ND	ND
Butyl benzyl phthalate	85-68-7	µg/L		ND	ND	ND
1,1'-Biphenyl	92-52-4	µg/L		ND	ND	ND
2-Chloronaphthalene	91-58-7	µg/L		ND	ND	ND
4-Chloroaniline	106-47-8	µg/L		ND	ND	ND
Carbazole	86-74-8	µg/L		ND	ND	ND
Caprolactam	105-60-2	µg/L		ND	ND	ND
Chrysene	218-01-9	µg/L		ND	ND	ND
bis(2-Chloroethoxy)methane	111-91-1	µg/L		ND	ND	ND
bis(2-Chloroethyl)ether	111-44-4	µg/L		ND	ND	ND
bis(2-Chloroisopropyl)ether	108-60-1	µg/L		ND	ND	ND
4-Chlorophenyl phenyl ether	7005-72-3	µg/L		ND	ND	ND
2,4-Dinitrotoluene	121-14-2	µg/L		ND	ND	ND
2,6-Dinitrotoluene	606-20-2	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>CW-2</i>	<i>CW-2-Dup</i>	<i>CW-3</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112008-JP-003</i>	<i>GW-630609-112008-JP-004</i>	<i>GW-630609-112008-JP-001</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/20/2008</i>	<i>11/20/2008</i>	<i>11/20/2008</i>
<i>Parameters</i>	<i>CAS</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
	<i>Number</i>					
3,3'-Dichlorobenzidine	91-94-1	µg/L		ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	µg/L		ND	ND	ND
Dibenzofuran	132-64-9	µg/L		ND	ND	ND
Di-n-butyl phthalate	84-74-2	µg/L		ND	ND	ND
Di-n-octyl phthalate	117-84-0	µg/L		ND	ND	ND
Diethyl phthalate	84-66-2	µg/L		ND	ND	ND
Dimethyl phthalate	131-11-3	µg/L		ND	ND	ND
bis(2-Ethylhexyl)phthalate	117-81-7	µg/L		ND	ND	ND
Fluoranthene	206-44-0	µg/L		ND	ND	ND
Fluorene	86-73-7	µg/L		ND	ND	ND
Hexachlorobenzene	118-74-1	µg/L		ND	ND	ND
Hexachlorobutadiene	87-68-3	µg/L		ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	µg/L		ND	ND	ND
Hexachloroethane	67-72-1	µg/L		ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	µg/L		ND	ND	ND
Isophorone	78-59-1	µg/L		ND	ND	ND
2-Methylnaphthalene	91-57-6	µg/L		ND	ND	ND
2-Nitroaniline	88-74-4	µg/L		ND	ND	ND
3-Nitroaniline	99-09-2	µg/L		ND	ND	ND
4-Nitroaniline	100-01-6	µg/L		ND	ND	ND
Naphthalene	91-20-3	µg/L	10	ND	ND	ND
Nitrobenzene	98-95-3	µg/L		ND	ND	ND
N-Nitroso-di-n-propylamine	621-64-7	µg/L		ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	µg/L		ND	ND	ND
Phenanthrene	85-01-8	µg/L		ND	ND	ND
Pyrene	129-00-0	µg/L		ND	ND	ND
<b>PCBs</b>						
Aroclor 1016	12674-11-2	µg/L		ND	ND	ND
Aroclor 1221	11104-28-2	µg/L		ND	ND	ND
Aroclor 1232	11141-16-5	µg/L		ND	ND	ND
Aroclor 1242	53469-21-9	µg/L		ND	ND	ND
Aroclor 1248	12672-29-6	µg/L		ND	ND	ND
Aroclor 1254	11097-69-1	µg/L		ND	ND	ND
Aroclor 1260	11096-82-5	µg/L		ND	ND	ND
<b>Pesticides</b>						
Aldrin	309-00-2	µg/L		ND	ND	ND
alpha-BHC	319-84-6	µg/L		ND	ND	ND
beta-BHC	319-85-7	µg/L		ND	ND	ND
delta-BHC	319-86-8	µg/L		ND	ND	ND
gamma-BHC (Lindane)	58-89-9	µg/L		ND	ND	ND
alpha-Chlordane	5103-71-9	µg/L		ND	ND	ND
gamma-Chlordane	5103-74-2	µg/L		ND	ND	ND
Dieldrin	60-57-1	µg/L		ND	ND	ND
4,4'-DDD	72-54-8	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location: Sample ID: Date</i>			<i>NYSDEC - New York State Ambient Water Quality Standards and Guidance Values (1)</i>	<i>CW-2 GW-630609-112008-JP-003 11/20/2008</i>	<i>CW-2-Dup GW-630609-112008-JP-004 11/20/2008</i>	<i>CW-3 GW-630609-112008-JP-001 11/20/2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>				
4,4'-DDE	72-55-9	µg/L		ND	ND	ND
4,4'-DDT	50-29-3	µg/L		ND	ND	ND
Endrin	72-20-8	µg/L		ND	ND	ND
Endosulfan sulfate	1031-07-8	µg/L		ND	ND	ND
Endrin aldehyde	7421-93-4	µg/L		ND	ND	ND
Endrin ketone	53494-70-5	µg/L		ND	ND	ND
Endosulfan-I	959-98-8	µg/L		ND	ND	ND
Endosulfan-II	33213-65-9	µg/L		ND	ND	ND
Heptachlor	76-44-8	µg/L		ND	ND	ND
Heptachlor epoxide	1024-57-3	µg/L		ND	ND	ND
Methoxychlor	72-43-5	µg/L		ND	ND	ND
Toxaphene	8001-35-2	µg/L		ND	ND	ND
<i>Metals</i>						
Aluminum		µg/L	100	<200	<200	<200
Antimony		µg/L		<6.0	<6.0	<6.0
Arsenic	25	µg/L		<3.0	<3.0	<3.0
Barium	1,000	µg/L		482	472	<200
Beryllium		µg/L		<1.0	<1.0	<1.0
Cadmium		µg/L		<3.0	<3.0	<3.0
Calcium	-	µg/L		167000	165000	75600
Chromium		µg/L		<10	<10	<10
Cobalt		µg/L		<50	<50	<50
Copper		µg/L		<10	<10	<10
Iron	300	µg/L		10700	10700	<100
Lead		µg/L		<3.0	<3.0	<3.0
Magnesium	35,000	µg/L		22000	21600	24800
Manganese	300	µg/L		1740	1710	<15
Mercury		µg/L		<0.20	<0.20	<0.20
Nickel		µg/L		<10	<10	<10
Potassium		µg/L		<10000	<10000	<10000
Selenium		µg/L		<10	<10	<10
Silver		µg/L		<10	<10	<10
Sodium	20,000	µg/L		18500	18200	<10000
Thallium		µg/L		<2.0	<10	<10
Vanadium		µg/L		<50	<50	<50
Zinc		µg/L		<20	<20	<20

## Notes:

- (1) Criteria identified is the most stringent, independent of use or class as found in the following reference: <http://www.dec.ny.gov/regulations/2652.html>.
- (2) Boxed represents concentration above criteria. Screening criteria used were NYSDEC New York State Ambient Water Quality Standards and Guidance Values.

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>CW-4</i>	<i>MW-1</i>	<i>MW-2</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112108-JP-007</i>	<i>GW-630609-112008-JP-002</i>	<i>GW-630609-112108-JP-005</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/21/2008</i>	<i>11/20/2008</i>	<i>11/21/2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
<b>VOCs</b>						
Acetone	67-64-1	µg/L		ND	ND	ND
Benzene	71-43-2	µg/L	1.0	ND	ND	ND
Bromodichloromethane	75-27-4	µg/L		ND	ND	ND
Bromoform	75-25-2	µg/L		ND	ND	ND
Bromomethane	74-83-9	µg/L		ND	ND	ND
2-Butanone (MEK)	78-93-3	µg/L		ND	ND	ND
Carbon disulfide	75-15-0	µg/L	60	ND	ND	ND
Carbon tetrachloride	56-23-5	µg/L		ND	ND	ND
Chlorobenzene	108-90-7	µg/L	5.0	ND	ND	ND
Chloroethane	75-00-3	µg/L		ND	ND	ND
Chloroform	67-66-3	µg/L		ND	ND	ND
Chloromethane	74-87-3	µg/L		ND	ND	ND
Cyclohexane	110-82-7	µg/L		ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	µg/L		ND	ND	ND
Dibromochloromethane	124-48-1	µg/L		ND	ND	ND
1,2-Dibromoethane	106-93-4	µg/L		ND	ND	ND
1,2-Dichlorobenzene	95-50-1	µg/L	3.0	ND	ND	ND
1,3-Dichlorobenzene	541-73-1	µg/L		ND	ND	ND
1,4-Dichlorobenzene	106-46-7	µg/L		ND	ND	ND
Dichlorodifluoromethane	75-71-8	µg/L		ND	ND	ND
1,1-Dichloroethane	75-34-3	µg/L		ND	ND	ND
1,2-Dichloroethane	107-06-2	µg/L		ND	ND	ND
1,1-Dichloroethene	75-35-4	µg/L		ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	µg/L	5.0	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	µg/L		ND	ND	ND
1,2-Dichloropropane	78-87-5	µg/L		ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	µg/L		ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	µg/L		ND	ND	ND
Ethylbenzene	100-41-4	µg/L		ND	ND	ND
Freon 113	76-13-1	µg/L		ND	ND	ND
2-Hexanone	591-78-6	µg/L		ND	ND	ND
Isopropylbenzene	98-82-8	µg/L		ND	ND	ND
Methyl Acetate	79-20-9	µg/L		ND	ND	ND
Methylcyclohexane	108-87-2	µg/L		ND	ND	ND
Methyl Tert Butyl Ether	1634-04-4	µg/L	10	2.3	ND	ND
4-Methyl-2-pentanone(MIBK)	108-10-1	µg/L		ND	ND	ND
Methylene chloride	75-09-2	µg/L		ND	ND	ND
Styrene	100-42-5	µg/L		ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	µg/L		ND	ND	ND
Tetrachloroethene	127-18-4	µg/L		ND	ND	ND
Toluene	108-88-3	µg/L		ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	µg/L		ND	ND	ND
1,1,1-Trichloroethane	71-55-6	µg/L		ND	ND	ND
1,1,2-Trichloroethane	79-00-5	µg/L		ND	ND	ND
Trichloroethene	79-01-6	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>CW-4</i>	<i>MW-1</i>	<i>MW-2</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112108-JP-007</i>	<i>GW-630609-112008-JP-002</i>	<i>GW-630609-112108-JP-005</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/21/2008</i>	<i>11/20/2008</i>	<i>11/21/2008</i>
<i>Parameters</i>	<i>CAS</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
	<i>Number</i>					
Trichlorofluoromethane	75-69-4	µg/L		ND	ND	ND
Vinyl chloride	75-01-4	µg/L		ND	ND	ND
m,p-Xylene		µg/L		ND	ND	ND
o-Xylene	95-47-6	µg/L		ND	ND	ND
Xylene (total)	1330-20-7	µg/L		ND	ND	ND
<b>SVOCs</b>						
2-Chlorophenol	95-57-8	µg/L		ND	ND	ND
4-Chloro-3-methyl phenol	59-50-7	µg/L		ND	ND	ND
2,4-Dichlorophenol	120-83-2	µg/L		ND	ND	ND
2,4-Dimethylphenol	105-67-9	µg/L		ND	ND	ND
2,4-Dinitrophenol	51-28-5	µg/L		ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	µg/L		ND	ND	ND
2-Methylphenol	95-48-7	µg/L		ND	ND	ND
3&4-Methylphenol		µg/L		ND	ND	ND
2-Nitrophenol	88-75-5	µg/L		ND	ND	ND
4-Nitrophenol	100-02-7	µg/L		ND	ND	ND
Pentachlorophenol	87-86-5	µg/L		ND	ND	ND
Phenol	108-95-2	µg/L		ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	µg/L		ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	µg/L		ND	ND	ND
Acenaphthene	83-32-9	µg/L		ND	ND	ND
Acenaphthylene	208-96-8	µg/L		ND	ND	ND
Acetophenone	98-86-2	µg/L		ND	ND	ND
Anthracene	120-12-7	µg/L		ND	ND	ND
Atrazine	1912-24-9	µg/L		ND	ND	ND
Benzaldehyde	100-52-7	µg/L		ND	ND	ND
Benzo(a)anthracene	56-55-3	µg/L		ND	ND	ND
Benzo(a)pyrene	50-32-8	µg/L		ND	ND	ND
Benzo(b)fluoranthene	205-99-2	µg/L		ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	µg/L		ND	ND	ND
Benzo(k)fluoranthene	207-08-9	µg/L		ND	ND	ND
4-Bromophenyl phenyl ether	101-55-3	µg/L		ND	ND	ND
Butyl benzyl phthalate	85-68-7	µg/L		ND	ND	ND
1,1'-Biphenyl	92-52-4	µg/L		ND	ND	ND
2-Chloronaphthalene	91-58-7	µg/L		ND	ND	ND
4-Chloroaniline	106-47-8	µg/L		ND	ND	ND
Carbazole	86-74-8	µg/L		ND	ND	ND
Caprolactam	105-60-2	µg/L	-	47.6	ND	ND
Chrysene	218-01-9	µg/L		ND	ND	ND
bis(2-Chloroethoxy)methane	111-91-1	µg/L		ND	ND	ND
bis(2-Chloroethyl)ether	111-44-4	µg/L		ND	ND	ND
bis(2-Chloroisopropyl)ether	108-60-1	µg/L		ND	ND	ND
4-Chlorophenyl phenyl ether	7005-72-3	µg/L		ND	ND	ND
2,4-Dinitrotoluene	121-14-2	µg/L		ND	ND	ND
2,6-Dinitrotoluene	606-20-2	µg/L		ND	ND	ND



TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>CW-4</i>	<i>MW-1</i>	<i>MW-2</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112108-JP-007</i>	<i>GW-630609-112008-JP-002</i>	<i>GW-630609-112108-JP-005</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/21/2008</i>	<i>11/20/2008</i>	<i>11/21/2008</i>
	<i>CAS</i>		<i>and Guidance Values (1)</i>			
<i>Parameters</i>	<i>Number</i>	<i>Units</i>				
3,3'-Dichlorobenzidine	91-94-1	µg/L		ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	µg/L		ND	ND	ND
Dibenzofuran	132-64-9	µg/L		ND	ND	ND
Di-n-butyl phthalate	84-74-2	µg/L		ND	ND	ND
Di-n-octyl phthalate	117-84-0	µg/L		ND	ND	ND
Diethyl phthalate	84-66-2	µg/L		ND	ND	ND
Dimethyl phthalate	131-11-3	µg/L		ND	ND	ND
bis(2-Ethylhexyl)phthalate	117-81-7	µg/L		ND	ND	ND
Fluoranthene	206-44-0	µg/L		ND	ND	ND
Fluorene	86-73-7	µg/L		ND	ND	ND
Hexachlorobenzene	118-74-1	µg/L		ND	ND	ND
Hexachlorobutadiene	87-68-3	µg/L		ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	µg/L		ND	ND	ND
Hexachloroethane	67-72-1	µg/L		ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	µg/L		ND	ND	ND
Isophorone	78-59-1	µg/L		ND	ND	ND
2-Methylnaphthalene	91-57-6	µg/L		ND	ND	ND
2-Nitroaniline	88-74-4	µg/L		ND	ND	ND
3-Nitroaniline	99-09-2	µg/L		ND	ND	ND
4-Nitroaniline	100-01-6	µg/L		ND	ND	ND
Naphthalene	91-20-3	µg/L	10	ND	ND	ND
Nitrobenzene	98-95-3	µg/L		ND	ND	ND
N-Nitroso-di-n-propylamine	621-64-7	µg/L		ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	µg/L		ND	ND	ND
Phenanthrene	85-01-8	µg/L		ND	ND	ND
Pyrene	129-00-0	µg/L		ND	ND	ND
<b>PCBs</b>						
Aroclor 1016	12674-11-2	µg/L		ND	ND	ND
Aroclor 1221	11104-28-2	µg/L		ND	ND	ND
Aroclor 1232	11141-16-5	µg/L		ND	ND	ND
Aroclor 1242	53469-21-9	µg/L		ND	ND	ND
Aroclor 1248	12672-29-6	µg/L		ND	ND	ND
Aroclor 1254	11097-69-1	µg/L		ND	ND	ND
Aroclor 1260	11096-82-5	µg/L		ND	ND	ND
<b>Pesticides</b>						
Aldrin	309-00-2	µg/L		ND	ND	ND
alpha-BHC	319-84-6	µg/L		ND	ND	ND
beta-BHC	319-85-7	µg/L		ND	ND	ND
delta-BHC	319-86-8	µg/L		ND	ND	ND
gamma-BHC (Lindane)	58-89-9	µg/L		ND	ND	ND
alpha-Chlordane	5103-71-9	µg/L		ND	ND	ND
gamma-Chlordane	5103-74-2	µg/L		ND	ND	ND
Dieldrin	60-57-1	µg/L		ND	ND	ND
4,4'-DDD	72-54-8	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location: Sample ID: Date</i>	<i>NYSDEC - New York State Ambient Water Quality Standards and Guidance Values (1)</i>		<i>CW-4 GW-630609-112108-JP-007 11/21/2008</i>	<i>MW-1 GW-630609-112008-JP-002 11/20/2008</i>	<i>MW-2 GW-630609-112108-JP-005 11/21/2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>			
4,4'-DDE	72-55-9	µg/L	ND	ND	ND
4,4'-DDT	50-29-3	µg/L	ND	ND	ND
Endrin	72-20-8	µg/L	ND	ND	ND
Endosulfan sulfate	1031-07-8	µg/L	ND	ND	ND
Endrin aldehyde	7421-93-4	µg/L	ND	ND	ND
Endrin ketone	53494-70-5	µg/L	ND	ND	ND
Endosulfan-I	959-98-8	µg/L	ND	ND	ND
Endosulfan-II	33213-65-9	µg/L	ND	ND	ND
Heptachlor	76-44-8	µg/L	ND	ND	ND
Heptachlor epoxide	1024-57-3	µg/L	ND	ND	ND
Methoxychlor	72-43-5	µg/L	ND	ND	ND
Toxaphene	8001-35-2	µg/L	ND	ND	ND
<b>Metals</b>					
Aluminum		µg/L	100	<200	<200
Antimony		µg/L		<6.0	<6.0
Arsenic		µg/L	25	<3.0	<3.0
Barium		µg/L	1,000	<200	211
Beryllium		µg/L		<1.0	<1.0
Cadmium		µg/L		<3.0	<3.0
Calcium		µg/L	-	29700	136000
Chromium		µg/L		<10	<10
Cobalt		µg/L		<50	<50
Copper		µg/L		<10	<10
Iron		µg/L	300	290	<100
Lead		µg/L		<3.0	<3.0
Magnesium		µg/L	35,000	11400	20800
Manganese		µg/L	300	75.4	353
Mercury		µg/L		<0.20	<0.20
Nickel		µg/L		<10	<10
Potassium		µg/L		<10000	<10000
Selenium		µg/L		<10	<10
Silver		µg/L		<10	<10
Sodium		µg/L	20,000	41200	<10000
Thallium		µg/L		<10	<10
Vanadium		µg/L		<50	<50
Zinc		µg/L		<20	<20

## Notes:

- (1) Criteria identified is the most stringent, independent of use or class as found in the following reference: <http://www.dec.ny.gov/regulations/2652.html>.
- (2) Boxed represents concentration above criteria. Screening criteria used were NYSDEC New York State Ambient Water Quality Standards and Guidance Values.

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>MW-3</i>	<i>MW-4</i>	<i>MW-5</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112108-JP-006</i>	<i>GW-630609-112508-JP-008</i>	<i>GW-630609-112508-JP-009</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/21/2008</i>	<i>11/25/2008</i>	<i>11/25/2008</i>
<i>Parameters</i>	<i>CAS</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
	<i>Number</i>					
<b>VOCs</b>						
Acetone	67-64-1	µg/L		ND	ND	ND
Benzene	71-43-2	µg/L	1.0	ND	1.5	0.96 J
Bromodichloromethane	75-27-4	µg/L		ND	ND	ND
Bromoform	75-25-2	µg/L		ND	ND	ND
Bromomethane	74-83-9	µg/L		ND	ND	ND
2-Butanone (MEK)	78-93-3	µg/L		ND	ND	ND
Carbon disulfide	75-15-0	µg/L	60	ND	ND	0.75 J
Carbon tetrachloride	56-23-5	µg/L		ND	ND	ND
Chlorobenzene	108-90-7	µg/L	5.0	ND	1.9	ND
Chloroethane	75-00-3	µg/L		ND	ND	ND
Chloroform	67-66-3	µg/L		ND	ND	ND
Chloromethane	74-87-3	µg/L		ND	ND	ND
Cyclohexane	110-82-7	µg/L		ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	µg/L		ND	ND	ND
Dibromochloromethane	124-48-1	µg/L		ND	ND	ND
1,2-Dibromoethane	106-93-4	µg/L		ND	ND	ND
1,2-Dichlorobenzene	95-50-1	µg/L	3.0	ND	2.6	ND
1,3-Dichlorobenzene	541-73-1	µg/L		ND	ND	ND
1,4-Dichlorobenzene	106-46-7	µg/L		ND	ND	ND
Dichlorodifluoromethane	75-71-8	µg/L		ND	ND	ND
1,1-Dichloroethane	75-34-3	µg/L		ND	ND	ND
1,2-Dichloroethane	107-06-2	µg/L		ND	ND	ND
1,1-Dichloroethene	75-35-4	µg/L		ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	µg/L	5.0	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	µg/L		ND	ND	ND
1,2-Dichloropropane	78-87-5	µg/L		ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	µg/L		ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	µg/L		ND	ND	ND
Ethylbenzene	100-41-4	µg/L		ND	ND	ND
Freon 113	76-13-1	µg/L		ND	ND	ND
2-Hexanone	591-78-6	µg/L		ND	ND	ND
Isopropylbenzene	98-82-8	µg/L		ND	ND	ND
Methyl Acetate	79-20-9	µg/L		ND	ND	ND
Methylcyclohexane	108-87-2	µg/L		ND	ND	ND
Methyl Tert Butyl Ether	1634-04-4	µg/L	10	ND	0.51 J	ND
4-Methyl-2-pentanone(MIBK)	108-10-1	µg/L		ND	ND	ND
Methylene chloride	75-09-2	µg/L		ND	ND	ND
Styrene	100-42-5	µg/L		ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	µg/L		ND	ND	ND
Tetrachloroethene	127-18-4	µg/L		ND	ND	ND
Toluene	108-88-3	µg/L		ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	µg/L		ND	ND	ND
1,1,1-Trichloroethane	71-55-6	µg/L		ND	ND	ND
1,1,2-Trichloroethane	79-00-5	µg/L		ND	ND	ND
Trichloroethene	79-01-6	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>MW-3</i>	<i>MW-4</i>	<i>MW-5</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112108-JP-006</i>	<i>GW-630609-112508-JP-008</i>	<i>GW-630609-112508-JP-009</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/21/2008</i>	<i>11/25/2008</i>	<i>11/25/2008</i>
<i>Parameters</i>	<i>CAS</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
	<i>Number</i>					
Trichlorofluoromethane	75-69-4	µg/L		ND	ND	ND
Vinyl chloride	75-01-4	µg/L		ND	ND	ND
m,p-Xylene		µg/L		ND	ND	ND
o-Xylene	95-47-6	µg/L		ND	ND	ND
Xylene (total)	1330-20-7	µg/L		ND	ND	ND
<b>SVOCs</b>						
2-Chlorophenol	95-57-8	µg/L		ND	ND	ND
4-Chloro-3-methyl phenol	59-50-7	µg/L		ND	ND	ND
2,4-Dichlorophenol	120-83-2	µg/L		ND	ND	ND
2,4-Dimethylphenol	105-67-9	µg/L		ND	ND	ND
2,4-Dinitrophenol	51-28-5	µg/L		ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	µg/L		ND	ND	ND
2-Methylphenol	95-48-7	µg/L		ND	ND	ND
3&4-Methylphenol		µg/L		ND	ND	ND
2-Nitrophenol	88-75-5	µg/L		ND	ND	ND
4-Nitrophenol	100-02-7	µg/L		ND	ND	ND
Pentachlorophenol	87-86-5	µg/L		ND	ND	ND
Phenol	108-95-2	µg/L		ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	µg/L		ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	µg/L		ND	ND	ND
Acenaphthene	83-32-9	µg/L		ND	ND	ND
Acenaphthylene	208-96-8	µg/L		ND	ND	ND
Acetophenone	98-86-2	µg/L		ND	ND	ND
Anthracene	120-12-7	µg/L		ND	ND	ND
Atrazine	1912-24-9	µg/L		ND	ND	ND
Benzaldehyde	100-52-7	µg/L		ND	ND	ND
Benzo(a)anthracene	56-55-3	µg/L		ND	ND	ND
Benzo(a)pyrene	50-32-8	µg/L		ND	ND	ND
Benzo(b)fluoranthene	205-99-2	µg/L		ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	µg/L		ND	ND	ND
Benzo(k)fluoranthene	207-08-9	µg/L		ND	ND	ND
4-Bromophenyl phenyl ether	101-55-3	µg/L		ND	ND	ND
Butyl benzyl phthalate	85-68-7	µg/L		ND	ND	ND
1,1'-Biphenyl	92-52-4	µg/L		ND	ND	ND
2-Chloronaphthalene	91-58-7	µg/L		ND	ND	ND
4-Chloroaniline	106-47-8	µg/L		ND	ND	ND
Carbazole	86-74-8	µg/L		ND	ND	ND
Caprolactam	105-60-2	µg/L		ND	ND	ND
Chrysene	218-01-9	µg/L		ND	ND	ND
bis(2-Chloroethoxy)methane	111-91-1	µg/L		ND	ND	ND
bis(2-Chloroethyl)ether	111-44-4	µg/L		ND	ND	ND
bis(2-Chloroisopropyl)ether	108-60-1	µg/L		ND	ND	ND
4-Chlorophenyl phenyl ether	7005-72-3	µg/L		ND	ND	ND
2,4-Dinitrotoluene	121-14-2	µg/L		ND	ND	ND
2,6-Dinitrotoluene	606-20-2	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location:</i>			<i>NYSDEC - New York</i>	<i>MW-3</i>	<i>MW-4</i>	<i>MW-5</i>
<i>Sample ID:</i>			<i>State Ambient Water</i>	<i>GW-630609-112108-JP-006</i>	<i>GW-630609-112508-JP-008</i>	<i>GW-630609-112508-JP-009</i>
<i>Date</i>			<i>Quality Standards</i>	<i>11/21/2008</i>	<i>11/25/2008</i>	<i>11/25/2008</i>
<i>Parameters</i>	<i>CAS Number</i>	<i>Units</i>	<i>and Guidance Values (1)</i>			
3,3'-Dichlorobenzidine	91-94-1	µg/L		ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	µg/L		ND	ND	ND
Dibenzofuran	132-64-9	µg/L		ND	ND	ND
Di-n-butyl phthalate	84-74-2	µg/L		ND	ND	ND
Di-n-octyl phthalate	117-84-0	µg/L		ND	ND	ND
Diethyl phthalate	84-66-2	µg/L		ND	ND	ND
Dimethyl phthalate	131-11-3	µg/L		ND	ND	ND
bis(2-Ethylhexyl)phthalate	117-81-7	µg/L		ND	ND	ND
Fluoranthene	206-44-0	µg/L		ND	ND	ND
Fluorene	86-73-7	µg/L		ND	ND	ND
Hexachlorobenzene	118-74-1	µg/L		ND	ND	ND
Hexachlorobutadiene	87-68-3	µg/L		ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	µg/L		ND	ND	ND
Hexachloroethane	67-72-1	µg/L		ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	µg/L		ND	ND	ND
Isophorone	78-59-1	µg/L		ND	ND	ND
2-Methylnaphthalene	91-57-6	µg/L		ND	ND	ND
2-Nitroaniline	88-74-4	µg/L		ND	ND	ND
3-Nitroaniline	99-09-2	µg/L		ND	ND	ND
4-Nitroaniline	100-01-6	µg/L		ND	ND	ND
Naphthalene	91-20-3	µg/L	10	0.68 J	ND	ND
Nitrobenzene	98-95-3	µg/L		ND	ND	ND
N-Nitroso-di-n-propylamine	621-64-7	µg/L		ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	µg/L		ND	ND	ND
Phenanthrene	85-01-8	µg/L		ND	ND	ND
Pyrene	129-00-0	µg/L		ND	ND	ND
<b>PCBs</b>						
Aroclor 1016	12674-11-2	µg/L		ND	ND	ND
Aroclor 1221	11104-28-2	µg/L		ND	ND	ND
Aroclor 1232	11141-16-5	µg/L		ND	ND	ND
Aroclor 1242	53469-21-9	µg/L		ND	ND	ND
Aroclor 1248	12672-29-6	µg/L		ND	ND	ND
Aroclor 1254	11097-69-1	µg/L		ND	ND	ND
Aroclor 1260	11096-82-5	µg/L		ND	ND	ND
<b>Pesticides</b>						
Aldrin	309-00-2	µg/L		ND	ND	ND
alpha-BHC	319-84-6	µg/L		ND	ND	ND
beta-BHC	319-85-7	µg/L		ND	ND	ND
delta-BHC	319-86-8	µg/L		ND	ND	ND
gamma-BHC (Lindane)	58-89-9	µg/L		ND	ND	ND
alpha-Chlordane	5103-71-9	µg/L		ND	ND	ND
gamma-Chlordane	5103-74-2	µg/L		ND	ND	ND
Dieldrin	60-57-1	µg/L		ND	ND	ND
4,4'-DDD	72-54-8	µg/L		ND	ND	ND

TABLE 5.1

**SUMMARY OF GROUNDWATER SAMPLE RESULTS  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Sample Location: Sample ID: Date</i>	<i>CAS Number</i>	<i>Units</i>	<i>NYSDEC - New York State Ambient Water Quality Standards and Guidance Values (1)</i>	<i>MW-3 GW-630609-112108-JP-006 11/21/2008</i>	<i>MW-4 GW-630609-112508-JP-008 11/25/2008</i>	<i>MW-5 GW-630609-112508-JP-009 11/25/2008</i>
<b>Parameters</b>						
4,4'-DDE	72-55-9	µg/L		ND	ND	ND
4,4'-DDT	50-29-3	µg/L		ND	ND	ND
Endrin	72-20-8	µg/L		ND	ND	ND
Endosulfan sulfate	1031-07-8	µg/L		ND	ND	ND
Endrin aldehyde	7421-93-4	µg/L		ND	ND	ND
Endrin ketone	53494-70-5	µg/L		ND	ND	ND
Endosulfan-I	959-98-8	µg/L		ND	ND	ND
Endosulfan-II	33213-65-9	µg/L		ND	ND	ND
Heptachlor	76-44-8	µg/L		ND	ND	ND
Heptachlor epoxide	1024-57-3	µg/L		ND	ND	ND
Methoxychlor	72-43-5	µg/L		ND	ND	ND
Toxaphene	8001-35-2	µg/L		ND	ND	ND
<b>Metals</b>						
Aluminum		µg/L	100	429	<200	1020
Antimony		µg/L		<6.0	<6.0	<6.0
Arsenic		µg/L	25	19.2	<3.0	<3.0
Barium		µg/L	1,000	288	<200	214
Beryllium		µg/L		<1.0	<1.0	<1.0
Cadmium		µg/L		<3.0	<3.0	<3.0
Calcium		µg/L	-	101000	126000	139000
Chromium		µg/L		<10	<10	<10
Cobalt		µg/L		<50	<50	<50
Copper		µg/L		<10	<10	<10
Iron		µg/L	300	7080	335	4420
Lead		µg/L		<3.0	<3.0	<3.0
Magnesium		µg/L	35,000	19300	37000	29400
Manganese		µg/L	300	4020	996	3390
Mercury		µg/L		<0.20	<0.20	<0.20
Nickel		µg/L		<10	<10	<10
Potassium		µg/L		<10000	<10000	<10000
Selenium		µg/L		<10	<10	<10
Silver		µg/L		<10	<10	<10
Sodium		µg/L	20,000	68900	<10000	<10000
Thallium		µg/L		<2.0	<10	<10
Vanadium		µg/L		<50	<50	<50
Zinc		µg/L		<20	<20	<20

## Notes:

- (1) Criteria identified is the most stringent, independent of use or class as found in the following reference: <http://www.dec.ny.gov/regulations/2652.html>.
- (2) Boxed represents concentration above criteria. Screening criteria used were NYSDEC New York State Ambient Water Quality Standards and Guidance Values.

TABLE 6.1

**SUMMARY OF WASTE STREAMS AND DISPOSAL FACILITIES  
PAS IRWIN DUMP SUPERFUND SITE  
OSWEGO, NEW YORK**

<i>Waste Stream</i>	<i>Disposal Type</i>	<i>Disposal Coordinator</i>	<i>Profile No.</i>	<i>Disposal Facility</i>	<i>Transporter</i>	<i>Transporter Method</i>	<i>USEPA Approval</i>
Drum carcasses	Landfill	Waste Management	103701NY	High Acres Landfill-(Subtitle D) 425 Perinton Parkway Fairport, NY 14450 Tel: 800-476-6571	Silverole Trucking, Inc 85 Silverole Drive Rochester, NY 14623	roll-off	10/23/2008
Soil Stockpiles	Landfill	Waste Management	103719NY	High Acres Landfill-(Subtitle D) 425 Perinton Parkway Fairport, NY 14450 Tel: 800-476-6571	Silverole Trucking, Inc 85 Silverole Drive Rochester, NY 14623	dump truck	10/23/2008
Concrete	Landfill	Waste Management	10368NY	High Acres Landfill-(Subtitle D) 425 Perinton Parkway Fairport, NY 14450 Tel: 800-476-6571	Tonawanda Tank Transport P.O. Box H Buffalo, NY 14217	roll-off	10/29/2008
Non-hazardous drums	Landfill	EQ	K084022MDI	EPA ID#: MI0000131230 Republic Landfill-(Subtitle D) Carleton Farms, Inc PO Box 634 28800 Clark Road New Boston, MI 48164-9610	Hazmat Environmental Group Colleen Orth 60 Commerce Drive Buffalo, NY 14218	roll-off	11/17/2008
Hazardous drums (ignitable solids) <sup>(1)</sup>	Incineration	Waste Management	NY298403	Ross Incineration Services 36790 Giles Road Grafton, OH 44044	Franks Vacuum Truck Service, Inc 4500 Royal Avenue, Niagara Falls, NY 14303	box van	11/20/2008
Hazardous drums (ignitable liquid) <sup>(1)</sup>	Incineration	Waste Management	NY298402	Ross Incineration Services 36790 Giles Road Grafton, OH 44045	Franks Vacuum Truck Service, Inc 4500 Royal Avenue, Niagara Falls, NY 14303	box van	11/20/2008
Non-Hazardous liquid drums <sup>(1)</sup>	Incineration	Waste Management	103753NY	Ross Incineration Services 36790 Giles Road Grafton, OH 44046	Franks Vacuum Truck Service, Inc 4500 Royal Avenue, Niagara Falls, NY 14303	box van	11/20/2008
Wastewater	Treatment in POTW	William T. Field Memorial Pollution Control Plant	Permit OUP-08-009(T)	William T. Field Memorial Pollution Control Plant, 700 William T. Field Drive, Watertown, NY 13601	Riccelli Enterprise, Inc. P.O. Box 6418 Syracuse, NY 13217	tanker truck	11/10/2008

Note:

(1) Transported to Waste Management in Model City, NY who accepted title and shipped to Ross Incineration Services in Grafton, OH.