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June 17, 1992

Mr. Joseph Yavondette
Project Officer
Bureau of Construction Services
Division of Hazardous Waste Remediation
New York State Department of
Environmental Conservation
50 Wolf Road, Room 430
Albany, New York 12233-7010

Re: Work Assignment #D002625-9, Subtask 2.3, Recommendations For Interim Remedial Actions Report for the Schatz Plant Site No. 3-14-074.

Dear Mr. Yavondette:

Enclosed you will find two copies of the Ecology and Environment Engineering, P.C. (E & E) Subtask 2.3 - Recommendations for Interim Remedial Actions Report for the Schatz Plant Site No. 3-14-074.

The report addresses the recommended remedial measures for:

- Implementing improvements to the existing facilities.
- Removal and disposal of identified wastes excavated and removed from the quenching pits.
- Removal and disposal of the PCB electrical capacitors in the Heat Treatment Building.
- Removal and disposal of the dirt cover on the floor and the materials in the two pits in the Electrical Panel Room and Building No. 3.
- Cleaning the contaminants from the pit surfaces and flooring.
- Securing access to the cleaned pits and flooring in both buildings.

The recommendations in the report are based on qualitative evaluation of the risks and regulatory requirements associated with leaving these materials in place. In all cases, the wastes warranted removal and the securing of the area where cleanup occurred as a part of the remedial response.

An order of magnitude construction cost estimate and preliminary schedule have been developed as part of the report. As discussed in Section 4 of the report, the construction costs exceed $100,000 thus preventing E & E from procuring a subcontractor to perform the services under our standby work authorization. Therefore, public procurement of a contractor would be required to implement the remedial activities recommended in this report. Once decisions are

made by NYSDEC on the recommendations for the materials remaining in the building, E & E is prepared to develop bid specifications, a more accurate cost estimate, and a project schedule.

As discussed previously, difficulties were encountered in producing this report in accordance with the originally approved work plan schedule because discrete analyses for PCBs and petroleum hydrocarbons at each location and a determination of the land disposal restrictions on a number of waste streams were required.

After your review of the document, I would like to discuss your comments to finalize the report recommendations. Once all your comments have been addressed, E & E is prepared to begin the design task for the project.

If you need additional information or have any questions during your initial review, please call me at 716/684-8060.

Sincerely,

Michael G. Steffan

Michael G. Steffan
Project Manager

MGS/dlw
Attachment

cc: CTF OB4041
H. Shapiro

OB4901 D3900

RECOMMENDATIONS FOR INTERIM REMEDIAL ACTIONS
SUBTASK 2.3

SCHATZ PLANT, SITE NUMBER 3-14-074
W.A. NUMBER: D002625-9

June 1992

Prepared for:

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
DIVISION OF CONSTRUCTION SERVICES
DIVISION OF HAZARDOUS WASTE REMEDIATION
50 Wolf Road
Albany, New York 12233-7010

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1. INTRODUCTION

1.1 PURPOSE AND SCOPE

This report presents the results of the interim remedial investigation conducted by Ecology and Environment Engineering, P.C. (E & E) at the Schatz Plant site (Site No. 3-14-074) located at 70 Fairview Avenue, Poughkeepsie, New York. The purpose of the investigation was to characterize waste materials in areas identified in the initial site investigation as potentially hazardous in order to determine whether removal actions are needed and appropriate disposal methods. Wastes were evaluated for Resource Conservation and Recovery Act (RCRA) characteristics, polychlorinated biphenyls (PCBs), petroleum hydrocarbons, and other inorganic materials.

1.2 OBJECTIVES

The goal of the remedial investigation was to develop preliminary analytical data concerning RCRA hazardous characteristics, PCBs, petroleum hydrocarbons, and other inorganic materials in soil, water, and liquid at the Schatz Plant site in order to determine whether wastes from various sources could be combined to facilitate disposal. To achieve this goal, E & E identified the following objectives for the remedial investigation:

- Provide sufficient data to adequately determine the concentration of PCBs, petroleum hydrocarbons, and other inorganic materials in soil and water samples in the vicinity of the Heat Treatment Building, Building No. 3, and the Electrical Panel Room, and to determine whether those materials exhibit any RCRA hazardous characteristics;

- Provide sufficient data to determine whether PCBs and petroleum hydrocarbons are present in liquid samples collected from the pits in the Heat Treatment Building and Building No. 3 and to determine whether those materials exhibit any RCRA hazardous characteristics; and

- Develop remedial action recommendations and cost estimates for the removal and disposal of wastes exhibiting hazardous characteristics or

containing significant concentrations of PCBs, petroleum hydrocarbons, and other inorganic materials at the Schatz Plant site in accordance with the goals of the site response activities stated in the work authorization (No. D002625-9).

1.3 REMOVAL ACTION REGULATORY ISSUES

Two types of regulatory issues were considered in the development an interim remedial program for the Schatz Plant site: regulatory requirements for the transportation and disposal of waste materials being removed from the site, and regulatory guidelines used in establishing cleanup goals for contaminated areas at the site.

Transportation and Disposal Requirements

State and Federal regulations require that a generator determine whether a waste is hazardous before it can be transported off site for disposal. Hazardous waste must be further characterized (profiled) to determine whether treatment is required to satisfy land disposal requirements (LDR) prior to disposal. Since information regarding the facility operations that generated the wastes destined for off-site disposal was not available, E & E was not able to determine that any of the wastes are listed hazardous wastes. Consequently, all hazardous waste determinations were made based on the presence or absence of hazardous characteristics. Characteristic determinations were based on information obtained through Hazard Categorization (HAZCAT), PCB, and Toxic Characteristic Leaching Procedure (TCLP) analysis. Because it covers a broader range of requirements, the TCLP was used instead of the EP Tox procedure. LDR were determined based on TCLP results.

There is no regulatory requirement to characterize wastes that are determined to be nonhazardous; however, as a practical matter, these wastes must be characterized before they will be accepted by a disposal facility. HAZCAT, PCB, and TCLP analytical results were also used for this characterization.

Regulatory Cleanup Guidelines

Draft Cleanup Policy and Guidelines issued by NYSDEC for public comment in October 1991 establish cleanup goals for "immediate/emergency response" actions. Because a complete RI/FS is being conducted at the Schatz Plant site, and the conditions that are addressed in this report warrant action in order to prevent or reduce the significant spread of contaminants and reduce public exposure, E & E has determined that the cleanup goal established for "immediate/emergency response" actions is applicable to this site. That goal is the restoration of prerelease conditions with a minimum requirement of the elimination of any significant threat of the spread of contaminants and the reduction of public exposure.

In addition, federal Toxic Substances Control Act (TSCA) regulations (40 CFR 761.125) establish cleanup requirements for new spills of PCBs at concentrations of 50 ppm or greater that provide for the cleanup of solid surfaces to 10 micrograms (μg) per 100 square centimeters (cm^2) by standard commercial wipe tests.

Both of these guidelines were considered in the development of cleanup recommendations for the site.

1.4 DOCUMENT ORGANIZATION

The remainder of this report describes the remedial investigation analytical results (Section 2), the interim remedial action recommendations (Section 3), an order-of-magnitude cost estimate and preliminary project schedule for the removal and disposal activities (Section 4), construction oversight activities (Section 5), and remaining concerns that should be addressed prior to proceeding with construction activities (Section 6).

2. SUMMARY OF ANALYTICAL RESULTS

The sampling effort performed by E & E was in accordance with the work plan approved by NYSDEC on September 27, 1991. The sample gathering and analysis was performed under Subtask 2.2. The field work involved obtaining liquid and soil samples of the various unknown materials in the Heat Treatment Building, Building No. 3, and the Electrical Panel Room.

Upon sampling the suspected waste streams and phased materials in each of the locations, five samples of each pit and area were taken and shipped to E & E's Analytical Services Center (ASC) in Buffalo, New York. One set of samples was used for initial HAZCAT analysis, the second and third sets were used for composite and discrete analysis, and the last two sets were to be used for future shipment to disposal vendors for waste profiling and pricing.

Pursuant to the approved work plan, because all samples were going to be used for waste stream identification for future disposal approval purposes, no preservation, holding time protocols, or quality assurance protocol procedures were required.

E & E chose sampling methods and equipment to minimize decontamination requirements and to prevent cross-contamination of discrete samples. Decontamination of sampling equipment was performed between discrete sampling locations. Where necessary, disposable equipment (scrapers, spoons, jars, etc.) was used to collect samples allowing minimal decontamination. All site disposable debris was left on site for later disposal.

Due to the weather constraints on site, all HAZCAT analysis was performed at E & E's ASC. All decisions on compositing and discrete analyses were made by an E & E staff chemist with assistance from the project manager and field team leader.

The analysis of the composited samples was performed as Round 1 of the waste stream identification process. As results were received for selected composites, a second round of analysis was then performed to obtain more information on individual waste streams.

2.1 THE SCHATZ PLANT

The Schatz Plant facility was formerly a manufacturing and machining plant for automotive ball bearings. It is assumed that either the facility could not be modernized to compete with the market, or the former owners decided to close. The facility is approximately 80 years old and is constructed of brick, structural steel, and concrete.

The analysis that follows concerns three locations in the facility: the Heat Treatment Building, Building No. 3, and the Electrical Panel Room. These areas were of concern due to primary investigation of closed locations of the site for hazard assessment and analytical information from former sampling efforts.

A concurrent remedial investigation/feasibility study (RI/FS) is being performed by another Standby Consultant on the property external to the site buildings.

2.2 HEAT TREATMENT BUILDING

The Heat Treatment Building is a composite brick and steel building that is currently inactive with no occupants or utility services. This particular building was a part of a previous automobile bearing manufacturing facility. The name of the building suggests that as the ball bearings were manufactured, heat treatment was used to harden or temper the materials or products.

The building contains a total of 16 pits, some of which are suspected to have been used for bearing hardening. Currently, the pits are filled in with fire brick debris, oil, and water from previous demolition.

No process information is available because of the age of the facility (approximately 80 years old) and time since closure, so hazardous waste streams are generally categorized in Section 3 based on the presence or absence of RCRA characteristics, PCBs, or assumed process information.

2.2.1 HAZCAT and Waste Characterization Results

Samples of unknown materials in each of the 16 quenching pits in the Heat Treatment Building were collected and analyzed to determine their general physical and chemical characteristics. Physical characteristics were used to identify and categorize common material types found in the pit, and chemical characteristics were used to identify RCRA characteristic hazardous waste that have special storage, packaging, and disposal requirements. Table 2-1 identifies the test categories and the test results for each sample. The sample locations are shown on Figure 2-1. HAZCAT lab reports are provided in Appendix A. Analytical Data Lab Reports are provided in Appendices C, D, E, and F.

Based on the results of the physical characteristics tests, two major categories, liquids and solids, and four material subcategories, soil/dirt, oily liquid, clear liquid, and brown liquid were identified (see Table 2-2). Based on the results of the HAZCAT chemical characteristics tests, the soil/dirt material found in Pit 15 was determined to be an oxidizer and materials in Pits 2 and 4 sustained flame. No other materials in the Heat Treatment Facility exhibited any HAZCAT characteristics tested for (see Table 2-3).

2.2.2 Clear and Brown Liquid Sample Results

First Round

The clear liquid samples collected from Pits P1, P3, P5, P6, P8, and P12 were combined to form Water Composite Sample No. 1 (see Figure 2-1). Analysis of this sample showed the presence of total cyanide at a concentration of 0.11 μg/L (see Table 2-4 and Figure 2-2). No other compounds were present above detection limits.

The brown liquid samples collected from Pits P7, P10, and P11 were combined to form Water Composite Sample No. 2 (see Figure 2-1). The analysis of this composite showed the presence of sulfide (1.3 mg/L) and organic chlorine (36 mg/L) at concentrations above the quantitation limits of 1.0 mg/L and 0.025 mg/L, respectively. Also noted was a concentration of barium (72 mg/L) (see Table 2-4 and Figure 2-2).

Second Round

Discrete liquid (clear and brown) samples were collected from Pits P1, P3, P5, P6, P7, P8, P10, P11, and P12 (see Figure 2-1) and analyzed for PCBs and total petroleum hydrocarbons. Analysis of these samples showed that Aroclor-1254 was present at low levels in water from Pits P1, P5, P6, P8, and P10. No PCBs were present above detection limits in pits P3, P7, P11, or P12; however, the quantitation limits were elevated in samples from Pits P3 (2.5 μg/L), P7 (400 μg/L), and P11 (1.1 μg/L) (see Table 2-5 and Figure 2-2). Total petroleum hydrocarbons were detected above quantitation limits (1.0 mg/L) in all of the discrete water samples except Pit P1 (see Table 2-5 and Figure 2-2).

2.2.3 Oily Liquid Sample Results

First Round

The two-phase oily liquids samples collected from Pits P2 and P4 were combined to form Liquid Composite Sample No. 3 (see Figure 2-1). Analysis of this sample showed the

presence of organic sulfur and cadmium at concentrations above the quantitation limits (0.025 mg/L and 0.20 mg/L, respectively) (see Table 2-6 and Figure 2-2). PCBs were not present above detection limits in this sample; however, the quantitation limit was elevated (10 mg/kg) due to matrix interference.

A discrete sample of brown liquid with oily particles collected from Pit P7 was analyzed for PCBs only. No PCBs were present above detection limits in this sample; however, the quantitation limit was elevated (15 mg/kg) due to matrix interference (see Table 2-6 and Figure 2-2).

Second Round

Discrete liquid samples were collected from Pits P2 and P4 and analyzed for PCBs and petroleum products (see Figure 2-1). PCBs were not detected above quantitation limits in either sample; however, the quantitation limit was elevated (5 mg/kg and 10 mg/kg, respectively) in both samples (see Table 2-7 and Figure 2-2). Both samples indicated the presence of an unidentified petroleum product. The petroleum product pattern seen in both samples best matched the lube/motor oil standard. No other petroleum products were identified.

2.2.4 Soil Sample Results

First Round

The soil samples collected from Pits P9, P13, P14, and P16 were combined to form Soil Composite Sample No. 4 (see Figure 2-1). Analysis of this sample showed the presence of chlorine, sulfur, and total sulfide above the quantitation limits of 0.050%, 0.025%, and 4.0 mg/kg, respectively (see Table 2-8 and Figure 2-2). In addition, this material was analyzed to determine its burning characteristics (BTU value and ash content, see Table 2-8).

A discrete soil sample was collected from Pit 15 and analyzed using the same parameters as the composite sample (see Figure 2-1). Analysis of this sample showed the presence of chlorine, organic sulfur, total cyanide, and cadmium above the quantitation limits of 0.050%, 0.025%, 1.0 mg/kg, and 0.20 mg/L, respectively (see Table 2-8 and Figure 2-2).

Second Round

The soil/dirt samples collected from Pits P9, P13, P14, and P16 (see Figure 2.1) were combined to form Soil Composite Sample No. 4, which was analyzed for PCB and total petroleum hydrocarbons. Analysis of this sample showed the presence of Aroclor-1254 at a

concentration of 330 mg/kg and the presence of total petroleum hydrocarbons at a concentration of 54,000 mg/kg (see Table 2-9 and Figure 2-4).

Because PCBs were present in the composite sample, discrete soil/dirt samples in Pits P9, P13, P14, and P16 (see Figure 2.2) were analyzed for PCBs. Aroclor-1254 was not detected above the quantitation limit in Pit P9; however, the quantitation limit was elevated (0.21 µg/L) (see Table 2-9 and Figure 2-4).

In addition, the discrete analysis of the soil/dirt samples from Pit P15 showed the presence of Aroclor-1254 at a concentration of 160 mg/kg and the presence of total petroleum hydrocarbons at a concentration of 69,000 mg/kg (see Table 2-9 and Figure 2-4).

2.3 BUILDING NO. 3

Building No. 3 is also a steel and concrete composite building. It is currently used for limited product storage, away from the anticipated pit cleanup area.

No information is available regarding Building No. 3's previous uses besides general storage. The information provided for the waste streams is based on physical characteristics and chemical analysis.

2.3.1 HAZCAT and Waste Characterization Results

Two oily dirt samples were collected in Building No. 3 and analyzed to determine general physical and chemical characteristics. Table 2-10 identifies the test categories and the test results for each sample. The sample locations are shown on Figure 2-3. HAZCAT lab reports are provided in Appendices A and B. Analytical Data Lab Reports are provided in Appendices C, D, E, and F.

Based on the results of the physical characteristics tests, the samples were categorized initially as soil/dirt. Based on the results of the HAZCAT chemical characteristics tests, neither sample exhibited hazardous characteristics (see Table 2-11).

2.3.2 Oily Liquid Sample Results

First Round

No liquid samples were analyzed during the first round of sampling.

Second Round

A single discrete sample of oily liquid was collected from Pit P1 (see Figure 2-3) and analyzed for PCBs and petroleum products. Analysis of this sample showed the presence of

Aroclor-1254 at a concentration of 390 mg/kg. This sample also showed the presence of an unidentified petroleum product. The petroleum product pattern seen in this sample best matched the lube/motor oil standard (see Table 2-12 and Figure 2-4).

2.3.3 Soil Sample Results

First Round

Analysis of the single discrete soil sample collected from Pit P1 (see Figure 2-3) showed the presence of chlorine, organic sulfur, total sulfide, and total cyanide above quantitation limits of 0.050%, 0.025%, 4.0 mg/kg, and 1.0 mg/kg, respectively (see Table 2-13). Analysis of the single discrete soil sample collected from Pit P2 also showed the presence of chlorine, organic sulfur, total sulfide, total cyanide, and cadmium above quantitation limits.

In addition, the material in both pits was analyzed to determine its burning characteristics (BTU and ash content, see Table 2-13).

Second Round

A soil sample was collected from Pit P2 and analyzed for PCBs and total petroleum hydrocarbons (see Figure 2-4). Analysis of this sample showed the presence of Aroclor-1254 at a concentration of 110 mg/kg and total petroleum hydrocarbons at a concentration of 80,000 mg/kg (see Table 2-14).

2.4 ELECTRICAL PANEL ROOM

The Electrical Panel Room, a part of Building No. 3, has been so designated because of the electrical switch gear located at the north end of the building. The room has a concrete floor and is directly adjacent to the pits in Building No. 3. The room is approximately 40 feet wide by 140 feet long and is mainly a brick structure with steel roof joints.

No process information is available regarding this room in Building No. 3. The information provided for the waste streams is based on physical characteristics and chemical analysis.

First Round

Discrete soil/dirt samples from the Electrical Panel Room (see Figure 2-3) were combined to form a composite sample (F1 and F2) and analyzed for PCBs and total petroleum hydrocarbons. Analysis of this sample showed the presence of Aroclor-1254 at a

concentration of 330 mg/kg and total petroleum hydrocarbons at a concentration of 60,000 mg/kg (see Table 2-14).

Second Round

Based on the concentration of PCBs in the composite sample, discrete samples from both collection locations were then analyzed for PCBs. Aroclor-1254 was detected above the quantitation limit of 3.1 mg/kg in sample F2 (See Table 2-14 and Figure 2-4). PCBs were not detected above quantitation limits in sample F1, however, the quantitation limit was elevated to 31 mg/kg.

Table 2-1

SUBTASK 2.2
HAZCAT RESULTS SUMMARY
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

HAZCAT Parameter	Sample Number				
	OB-HT-001-P1	OB-HT-001-P2 (Top)	OB-HT-001-P2 (Bottom)	OB-HT-001-P3	OB-HT-001-P4 Top Layer
1. Sample Description	Clear liquid, single phase, slight amount of sediment	Dark, oily top phase of two-phase sample	Clear to amber tint: bottom layer of two-phase sample	Clear to amber color; water appearance	Dark, oily top layer of two phase sample
2. Specific Gravity	1	<1	1	1	<1
3. Water Reactivity	NEG	NEG	NEG	NEG	NEG
4. Solubility in Water	Soluble	Insoluble	Soluble	Soluble	Insoluble
5. pH	~7	NA	~6	~6	NA
6. Presence of Cyanides	NEG	NA	NEG	NEG	NA
7. Presence of Sulfides	NEG	NA	NEG	NEG	NA
8. Presence of Oxidizers	NEG	NEG	NEG	NEG	NEG
9. Presence of Chloridated Hydrocarbons	NEG	NEG	NEG	NEG	NEG
10. Flammability	NEG	Sustained Flame	NEG	NEG	Sustained Flame

Key at end of table.

Table 2-1

SUBTASK 2.2
HAZCAT RESULTS SUMMARY
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

HAZCAT Parameter	Sample Number				
	OB-HT-001-P4 Bottom Layer	OB-HT-001-P5	OB-HT-001-P6	OB-HT-001-P7	OB-HT-001-P8
1. Sample Description	Amber colored water, bottom layer of two-phase sample	Clear liquid	Clear liquid with small floating oil particles	Clear liquid with floating oil particles	Clear liquid
2. Specific Gravity	1	1	1	1	1
3. Water Reactivity	NEG	NEG	NEG	NEG	NEG
4. Solubility in Water	Soluble	Soluble	Soluble	Soluble	Soluble
5. pH	~9	6 to 7	6 to 7	6	~6
6. Presence of Cyanides	NEG	NEG	NEG	NEG	NEG
7. Presence of Sulfides	NEG	NEG	NEG	NEG	NEG
8. Presence of Oxidizers	NEG	NEG	NEG	NEG	NEG
9. Presence of Chloridated Hydrocarbons	NEG	NEG	NEG	NEG	NEG
10. Flammability	NEG	NEG	NEG	NEG	NEG

Key at end of table.

Table 2-1

SUBTASK 2.2
HAZCAT RESULTS SUMMARY
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

HAZCAT Parameter	Sample Number				
	OB-HT-001-P9	OB-HT-001-P10	OB-HT-001-P11	OB-HT-001-P12	OB-HT-001-P13
1. Sample Description	Black sludge	Amber colored liquid with slight sediment	Clear liquid	Clear liquid with faint amber color	Dry black dirt with small debris
2. Specific Gravity	NA	1	1	1	NA
3. Water Reactivity	NEG	NEG	NEG	NEG	NEG
4. Solubility in Water	Insoluble	Soluble	Soluble	Soluble	Insoluble
5. pH	~6	6	6	6 to 7	6
6. Presence of Cyanides	NEG	NEG	NEG	NEG	NEG
7. Presence of Sulfides	NEG	NEG	NEG	NEG	NEG
8. Presence of Oxidizers	NEG	NEG	NEG	NEG	NEG
9. Presence of Chloridated Hydrocarbons	NEG	NEG	NEG	NEG	NEG
10. Flammability	NEG	NEG	NEG	NEG	NEG

Key at end of table.

Table 2-1

SUBTASK 2.2
HAZCAT RESULTS SUMMARY
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-74
POUGHKEEPSIE, NEW YORK

HAZCAT Parameter	Sample Number		
	OB-HT-001-P14	OB-HT-001-P15	OB-HT-001-P16
1. Sample Description	Brown/black dirt	Black loose dirt	Brown, grey and black dirt
2. Specific Gravity	NA	NA	NA
3. Water Reactivity	NEG	NEG	NA
4. Solubility in Water	Insoluble	Insoluble	Insoluble
5. pH	6	8-9	6
6. Presence of Cyanides	NEG	NEG	NEG
7. Presence of Sulfides	NEG	NEG	NEG
8. Presence of Oxidizers	NEG	POS	NEG
9. Presence of Chloridated Hydrocarbons	NEG	NEG	NEG
10. Flammability	NEG	NEG	NEG

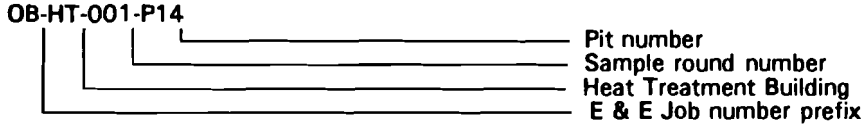
Key at end of table.

Table 2-1 (Cont.)

Key:

< = Less than.
~ = Approximate.
NA = Not analyzed.
NEG = Negative test results.
POS = Positive test results.

Sample number format:



Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-2

SUBTASK 2.2
SUMMARY OF PHYSICAL CHARACTERISTICS TESTS
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

Material Location	Material Category			
	Solids	Liquids		
	Soil/Dirt Solid	Oily Liquid	Clear Liquid	Brown Liquid
Pit 1			X	
Pit 2		X[a]	X[a]	
Pit 3			X	
Pit 4		X[a]		X[a]
Pit 5			X	
Pit 6			X	
Pit 7				X
Pit 8			X	
Pit 9	X			
Pit 10				X
Pit 11				X
Pit 12			X	
Pit 13	X			
Pit 14	X			
Pit 15	X			
Pit 16	X			

[a] Two phases identified in the sample.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-3

SUBTASK 2.2
SUMMARY OF CHEMICAL CHARACTERISTICS TESTS
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

Location/Material	Chemical Hazard Category				
	Acid	Cyanide	Flammable	Oxidizer	Reactive
Pit 1 - Clear liquid	No	No	No	No	No
Pit 2 - Oily liquid	No	No	Yes	No	No
Pit 2 - Clear liquid	No	No	No	No	No
Pit 3 - Clear liquid	No	No	No	No	No
Pit 4 - Oily liquid	No	No	Yes	No	No
Pit 4 - Brown liquid	No	No	No	No	No
Pit 5 - Clear liquid	No	No	No	No	No
Pit 6 - Clear liquid	No	No	No	No	No
Pit 7 - Brown liquid	No	No	No	No	No
Pit 8 - Clear liquid	No	No	No	No	No
Pit 9 - Soil/dirt	No	No	No	No	No
Pit 10 - Brown liquid	No	No	No	No	No
Pit 11 - Brown liquid	No	No	No	No	No
Pit 12 - Clear liquid	No	No	No	No	No
Pit 13 - Soil/dirt	No	No	No	No	No
Pit 14 - Soil/dirt	No	No	No	No	No
Pit 15 - Soil/dirt	No	No	No	Yes	No
Pit 16 - Soil/dirt	No	No	No	No	No

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-4

SUBTASK 2.2
FIRST ROUND WATER ANALYTICAL RESULTS - HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

	Water Analysis							
	Total Cyanide (ppm)	BTU (BTU/lb.)	Sulfide (ppm)	Total Solids (ppm)	% Organic Sulfur	Organic Chlorine (ppm)	Purgeables - TCLP (ppm)	TCLP - Extracts (ppm)
Water Composite Sample No. 1 (HT-P1,P3,P5,P6,P8,P12)	0.11	a	ND	810	ND	ND	ND	ND
Water Composite Sample No. 2 (HT-P7,P10,P11)	ND	a	1.3	430	ND	0.36	ND	72 Barium

Notes:

[a] Did not ignite.

Key:

ND = Not detected.
ppm = mg/L, mg/kg.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-5

SUBTASK 2.2
SECOND ROUND WATER ANALYTICAL RESULTS
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

Sample Number	Water Analysis	
	PCBs µg/L (Aroclor)	Total Petroleum Hydrocarbons mg/L
OB-HT-001-P1	1.0 (1254)	ND
OB-HT-001-P3	ND[a]	1.4
OB-HT-001-P5	0.80 (1254)	7.5
OB-HT-001-P6	80 (1254)	1,400
OB-HT-001-P7	ND[b]	600
OB-HT-001-P8	1.0 (1254)	6.0
OB-HT-001-P10	9.0 (1254)	1,900
OB-HT-001-P11	ND[c]	6.1
OB-HT-001-P12	ND	9.1

[a] Elevated quantitation limit of 2.5 µg/L.
[b] Elevated quantitation limit of 400 µg/L.
[c] Elevated quantitation limit of 1.1 µg/L.

Key:

(1254) = Aroclor-1254.
ND = Not detected above quantitation limit.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-6

SUBTASK 2.2
FIRST ROUND LIQUID ANALYTICAL RESULTS - HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

	Liquid Analysis							
	PCB-Liquid (ppm)	BTU (BTU/lb.)	% Organic Chlorine	% Organic Sulfur	Sulfide Releasable (ppm)	Cyanide Releasable (ppm)	Purgeables - TCLP (ppm)	TCLP - Extracts (ppm)
Liquid Composite Sample No. 3 (HT-P2,P4)	ND[a]	19,000	ND	0.28	ND	ND	ND	0.29 Cadmium[b]
OB-HT-001-P7 (oil)	ND[a]	NA	NA	NA	NA	NA	NA	NA

Notes:

[a] Detection limits elevated due to matrix interference. Composite No. 3: Detection limit = 10 mg/kg. OB-HT-001-P7: Detection limit = 15 mg/kg.

[b] Detection limits elevated due to matrix interference.

Key:

NA = Not applicable.
ND = Not detected.
ppm = mg/L, mg/kg.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-7

SUBTASK 2.2
SECOND ROUND LIQUID ANALYTICAL RESULTS -
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

	Liquid Analysis					
	PCBs	Petroleum Products				
Sample Number	mg/kg (Aroclor)	Gasoline	Motor/ Lube Oil	Kerosene	Fuel Oil	Diesel
OB-HT-001-P2	ND[a]	ND	P[c]	ND	ND	ND
OB-HT-001-P4	ND[b]	ND	P[c]	ND	ND	ND

[a] Elevated quantitation limit of 5.0 mg/kg.
[b] Elevated quantitation limit of 10 mg/kg.
[c] Unidentified petroleum hydrocarbon pattern in range of motor/lube oil standard.

Key:

ND = Not detected above quantitation limit.
P = Present.

Sample number format:
OB-HT-001-P2

- Pit number
- Sample round number
- Heat Treatment Building
- E & E Job number prefix

Source: Ecology and Environment Engineering, P.C. 1992

Table 2-8

TASK 2.2
FIRST ROUND SOIL ANALYTICAL RESULTS - HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

	Soil Analysis											
	PCB (ppm)	BTU (BTU/lb.)	Bulk Density (gm/cm^3)	% Organic Matter	% Ash	% Chlorine	% Organic Sulfur	Total Sulfide (ppm)	Total Cyanide (ppm)	% Total Solids	Purgeables - TCLP (ppm)	TCLP - Extracts (ppm)
Soil Composite Sample No. 4 (HT-P9,P13,P14,P16)	330[a]	11,000	1.00	15	81	0.14	0.24	37	ND	94	NA	ND
OB-HT-001-P15	160	5,500	0.93	32	68	0.23	0.27	ND	9.5	97	NA	0.25 Cadmium

[a] Composites broken down by individual pit samples for further analysis - see Table 2-2.

Key:

NA = Not applicable.
ND = Not detected.
ppm = mg/L, mg/kg.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-9

SUBTASK 2.2
SECOND ROUND SOIL ANALYTICAL RESULTS
HEAT TREATMENT BUILDING
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

Sample Number	Sample Type	Soil Analysis	
		PCB mg/kg (Aroclor)	Total Petroleum Hydrocarbons mg/kg
Comp. P9, P13, P14, P16	Composite	330 (1254)	54,000
OB-HT-001-P15	Discrete	160 (1254)	69,000
OB-HT-001-P9	Discrete	ND[a]	NA
OB-HT-001-P13	Discrete	41 (1254)	NA
OB-HT-001-P14	Discrete	6.7 (1254)	NA
OB-HT-001-P16	Discrete	P[b] (1254)	NA

[a] Elevated quantitation limit of 0.21 mg/kg.
[b] Elevated quantitation limit of 50 mg/kg.

Key:

(1254) = Aroclor-1254.
NA = Not analyzed.
ND = Not detected above quantitation limit.
P = Present below stated quantitation limit.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-10

SUBTASK 2.2
HAZCAT RESULTS SUMMARY
BUILDING NO. 3

HAZCAT Parameter	Sample Number	
	OB-BLDG#3-001-P1	OB-BLDG#3-001-P2
1. Sample Description	Black, oily dirt	Black, oily dirt
2. Specific Gravity	NA	NA
3. Water Reactivity	NEG	NEG
4. Solubility in Water	Insoluble	Insoluble
5. pH	6	6
6. Presence of Cyanides	NEG	NEG
7. Presence of Sulfides	NEG	NEG
8. Presence of Oxidizers	NEG	NEG
9. Presence of Chloridated Hydrocarbons	NEG	NEG
10. Flammability	NEG	NEG

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-11

SUBTASK 2.2
SUMMARY OF CHEMICAL CHARACTERISTICS TESTS -
BUILDING NO. 3
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

Location/Material	Chemical Hazard Category				
	Acid	Cyanide	Flammable	Oxidizer	Reactive
OB-BLDG #3-001					
Pit 1 - Soil/dirt	ND	ND	ND	ND	ND
OB-BLDG #3-001					
Pit 2 - Soil/dirt	ND	ND	ND	ND	ND

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-12

**SECOND ROUND LIQUID ANALYTICAL RESULTS -
BUILDING NO. 3
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK**

Liquid Analysis						
		Petroleum Products				
Sample Number	PCBs mg/kg (Aroclor)	Gasoline	Motor/ Lube Oil	Kerosene	Fuel Oil	Diesel
OB-BLDG3-001-P1	390 (1254)	ND	P	ND	ND	ND

Key:

ND = Not detected above quantitation limit.
P = Present below stated quantitation limit.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-13

SUBTASK 2.2
FIRST ROUND SOIL ANALYTICAL RESULTS - ELECTRICAL PANEL ROOM AND BUILDING NO. 3
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

	Soil Analysis											
	PCB (ppm)	BTU (BTU/lb.)	Bulk Density (gm/cm^3)	% Organic Matter	% Ash	% Chlorine	% Organic Sulfur	Total Sulfide (ppm)	Total Cyanide (ppm)	% Total Solids	Purgeables - TCLP (ppm)	TCLP - Extracts (ppm)
Soil Composite Sample No. 5 (EPR-F1,F2)	330[a]	7,600	0.88	34	58	0.60	0.55	820	ND	98	0.17 Tetrachloro-ethylene	1.4 Cadmium
OB-BLDG3-001-P1	390	5,300	1.9	21	51	0.086	0.21	81	2.5	99	NA	ND
OB-BLDG3-001-P2	40	9,300	0.88	54	42	0.26	0.86	33	2.0	87	NA	4.6 Cadmium

[a] Composites broken down by individual pit samples for further analysis - see Table 2-14.

Key:

NA = Not applicable.
ND = Not detected.
ppm = mg/L, mg/kg.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 2-14

SUBTASK 2.2
SECOND ROUND SOIL ANALYTICAL RESULTS -
ELECTRICAL PANEL ROOM AND BUILDING NO. 3
SCHATZ PLANT SITE NO. 3-14-074
POUGHKEEPSIE, NEW YORK

Soil Analysis			
Sample Number	**Sample Type**	**PCBs mg/kg (Aroclor)**	**Total Petroleum Hydrocarbons mg/kg**
Comp. EPR, F1, and F2	Composite	330 (1254)	60,000
OB-EPR-001-F1	Discrete	ND[a]	NA
OB-EPR-001-F2	Discrete	26 (1254)	NA
OB-BLDG3-001-P2	Discrete	110 (1254)	80,000

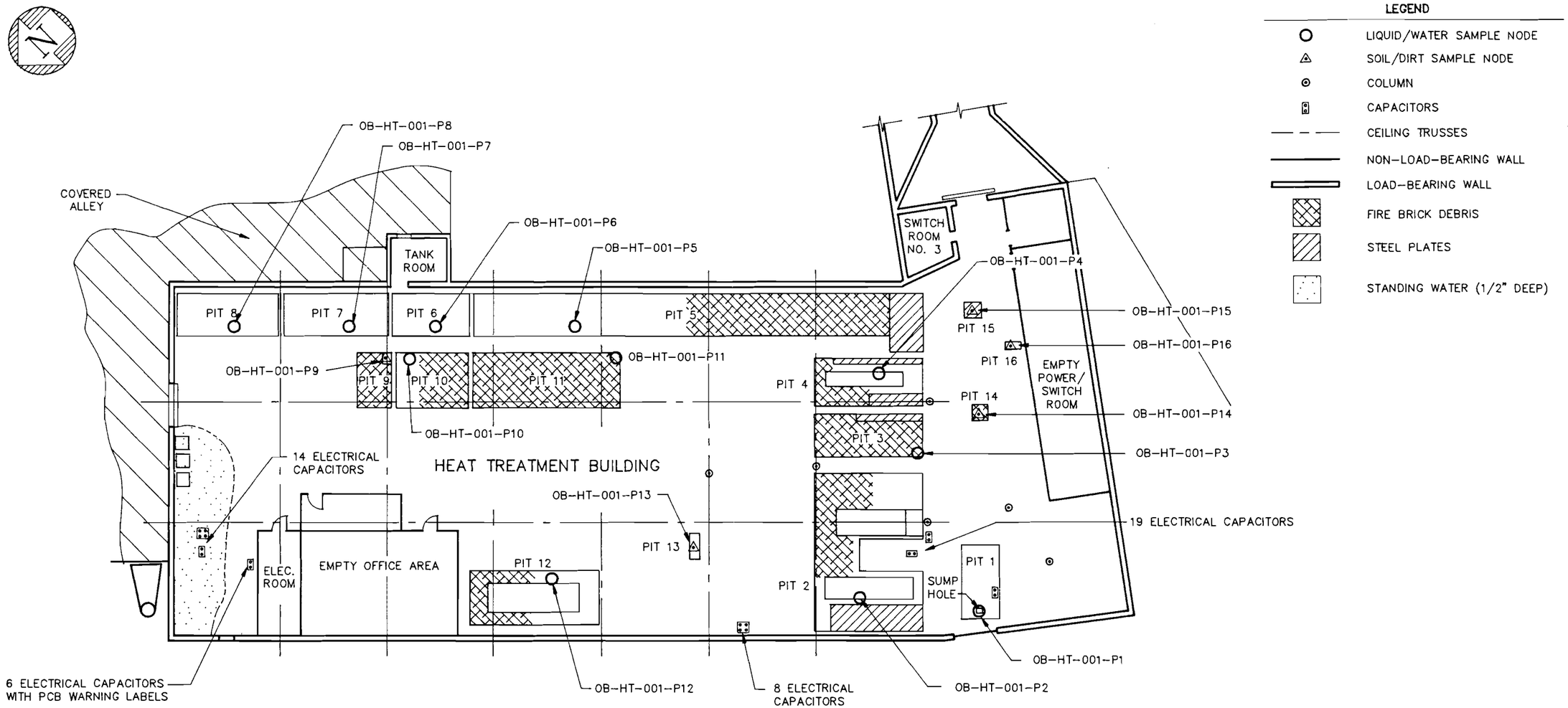
[a] Elevated quantitation limit of 31 mg/kg.

Key:

NA = Not analyzed for particular parameter.
ND = Not detected above quantitation limit.

Source: Ecology and Environment Engineering, P.C. 1992.

OB4SITE-FIG1



COMPOSITE SAMPLE DEFINITIONS		
NAME	SAMPLE LOCATIONS	DESCRIPTION
WATER COMPOSITE SAMPLE NO.1	OB-HT-001-P1,P3,P5,P6,P8,P12	CLEAR LIQUID
WATER COMPOSITE SAMPLE NO.2	OB-HT-001-P7,P10,P11	BROWN COLORED LIQUID
LIQUID COMPOSITE SAMPLE NO.3	OB-HT-001-P2,P4	OILY LIQUID
SOIL COMPOSITE SAMPLE NO.4	OB-HT-001-P9,P13,P14,P16	SOIL/DIRT

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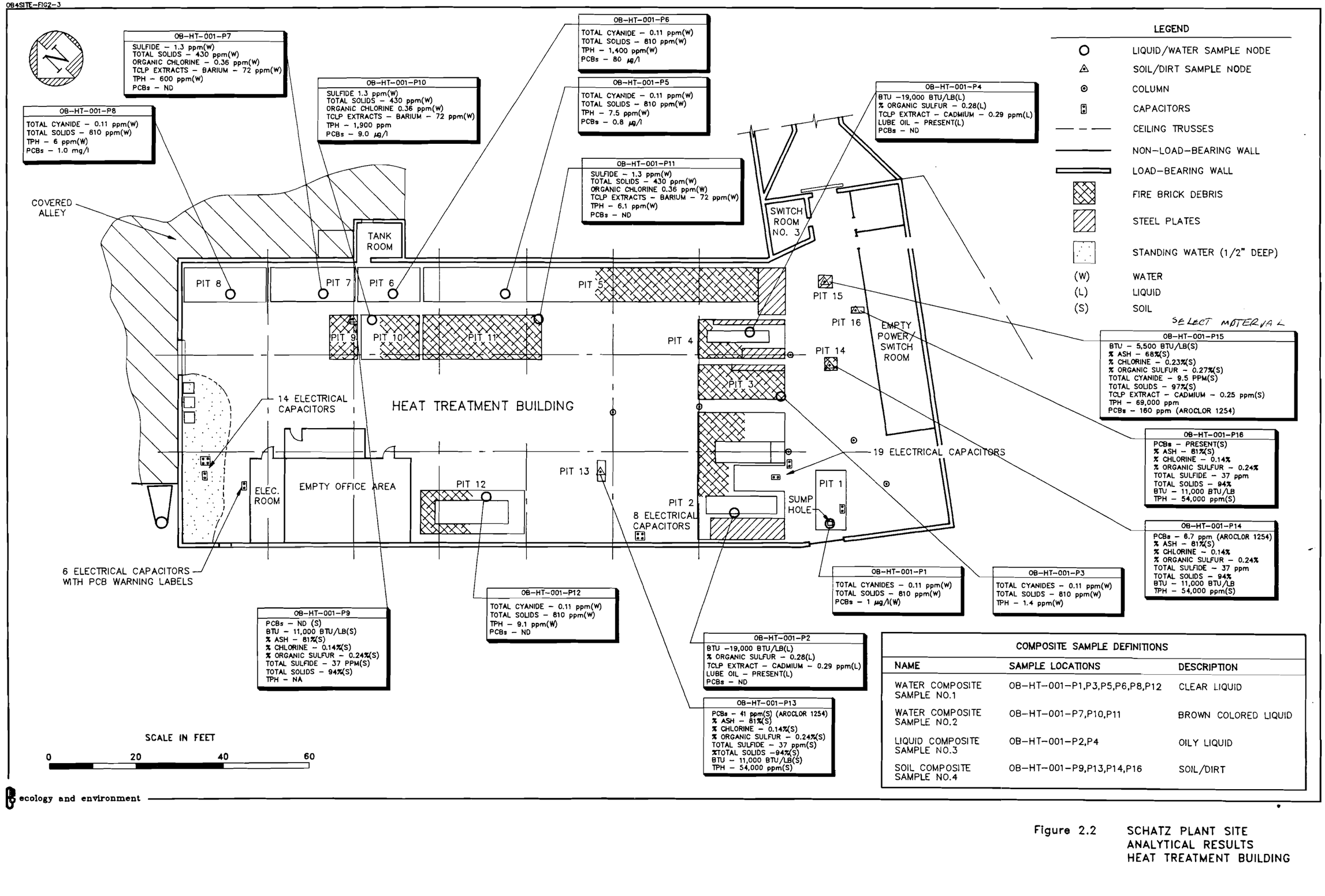
Figure 2.1 SCHATZ PLANT SITE
SUBTASK 2.2 SAMPLE LOCATIONS
HEAT TREATMENT BUILDING

OB4SITE-FIG2-3



COMPOSITE SAMPLE DEFINITIONS

NAME	SAMPLE LOCATIONS	DESCRIPTION
WATER COMPOSITE SAMPLE NO.1	OB-HT-001-P1,P3,P5,P6,P8,P12	CLEAR LIQUID
WATER COMPOSITE SAMPLE NO.2	OB-HT-001-P7,P10,P11	BROWN COLORED LIQUID
LIQUID COMPOSITE SAMPLE NO.3	OB-HT-001-P2,P4	OILY LIQUID
SOIL COMPOSITE SAMPLE NO.4	OB-HT-001-P9,P13,P14,P16	SOIL/DIRT

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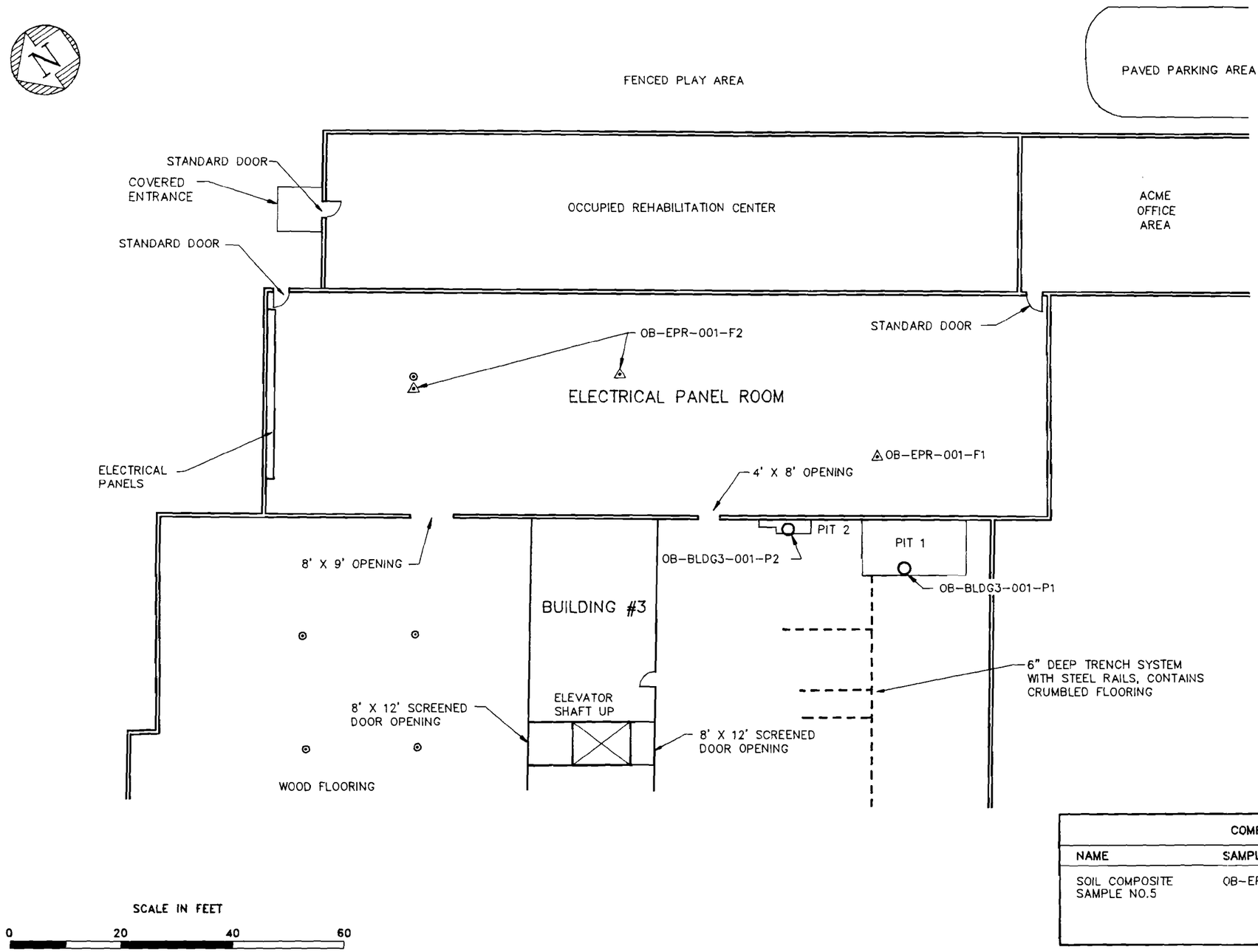
Figure 2.2 SCHATZ PLANT SITE
ANALYTICAL RESULTS
HEAT TREATMENT BUILDING

OB4SITE-FIG2



COMPOSITE SAMPLE DEFINITIONS		
NAME	SAMPLE LOCATIONS	DESCRIPTION
SOIL COMPOSITE SAMPLE NO.5	OB-EPR-001-F1,F2	SOIL/DIRT FOR F2 SAMPLE WAS COLLECTED IN TWO LOCATIONS TO PROVIDE AN ADEQUATE VOLUME.

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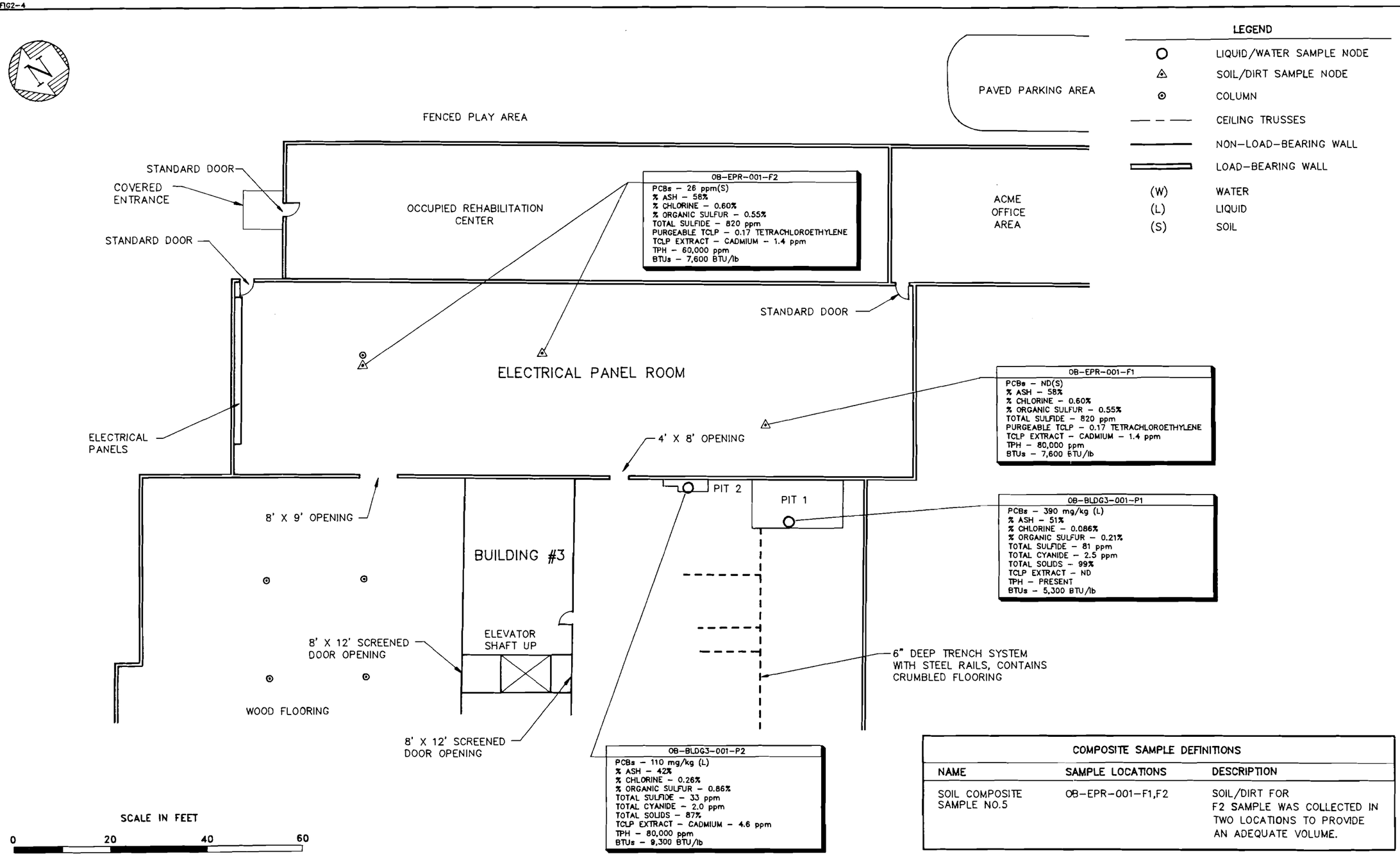
Figure 2.3 SCHATZ PLANT SITE
SUBTASK 2.2 SAMPLE LOCATIONS
BUILDING NO. 3 AND
ELECTRICAL PANEL ROOM

OB4SITE-FIG2-4



COMPOSITE SAMPLE DEFINITIONS

NAME	SAMPLE LOCATIONS	DESCRIPTION
SOIL COMPOSITE SAMPLE NO.5	OB-EPR-001-F1,F2	SOIL/DIRT FOR F2 SAMPLE WAS COLLECTED IN TWO LOCATIONS TO PROVIDE AN ADEQUATE VOLUME.

Figure 2.4 SCHATZ PLANT SITE ANALYTICAL RESULTS BUILDING NO. 3 AND ELECTRICAL PANEL ROOM

3. INTERIM REMEDIAL ACTION RECOMMENDATIONS

This section discusses E & E's remedial action recommendations, which have been developed based on analytical results, regulatory requirements, previous discussions with the NYSDEC Project Officer regarding the remedial action, and a qualitative assessment of the risks of the wastes remaining at the site.

Upon approval of these recommendations (after discussion with NYSDEC), E & E is prepared to develop contract documents incorporating these remedial recommendations for public procurement of a responsible and qualified remedial contractor. The development of these documents is expected to follow the outline presented in the work plan and the public procurement requirements of NYSDEC.

3.1 GENERAL CLEANUP CRITERIA

The New York State Environmental Conservation Law (ECL) requires that waste site remedial actions be protective of human health and the environment, and comply with applicable standards, criteria, and guidelines (SCG). The various locations within the Schatz Plant site from which material, debris, and liquids are recommended to be extracted should meet applicable cleanup standards as determined either by ambient water quality standards and guidance documents on maximum soil concentration for exposure pathways or limits recommended or preestablished by NYSDEC.

Draft cleanup policy and guidelines were issued to interested parties by NYSDEC in October 1991 for state-wide review. E & E has used these initial standards as representative of worst case levels at which cost effective and feasible cleanup goals could be met for the site.

Where NYSDEC guidelines for cleanup of site contaminants were not established, E & E used EPA-accepted proposed standards (TSCA-PCBs) and RCRA corrective action goals (55FR Pg. 30798 dated 7/27/90) to establish cleanup levels that were obtainable, cost effective, and would be defendable for the site remediation.

3.2 IDENTIFICATION OF WASTE STREAMS

Based upon the HAZCAT and analytical data presented in Section 2, hazardous waste characteristics were reviewed and interpreted with respect to the New York State Environmental Conservation Law (ECL) 6NYCRR Part 371 for the Heat Treatment Building, Electrical Panel Room, and Building No. 3. Pursuant to NYSDEC Part 371 regulations, waste containing PCBs in excess of 500 ppm is considered hazardous.

As previously mentioned in Section 1.3, NYSDEC still recognizes the analytical procedure of EP Toxicity as a method for discovering a hazardous waste characteristic for an unknown waste stream. The TCLP was substituted because it covers a broader range of contaminants. In addition, most disposal firms are using data from TCLP analysis for determining treatment requirements for wastes.

Detailed below are the waste streams identified for the three designated locations within the Schatz Plant site. They are also summarized in Table 3-2 at the end of this section.

3.2.1 Site Wastes

Waste Stream No. 1 - PCB-Containing Electrical Capacitors (Heat Treatment Building)

Forty-nine large (45 to 60 pounds) deactivated electrical capacitors were scattered throughout the Heat Treatment Building. Manufacturer names and serial numbers were documented by E & E initially during the site survey. The manufacturers (i.e., General Electric) were called to confirm that the capacitors contained PCBs. Based on the information provided by the manufacturers, E & E has determined that the capacitors contain PCBs in excess of 500 ppm, making them both RCRA and TSCA wastes. The large capacitors contain solid bituminous type materials, which, in their present condition, would not sustain flame or cause an ignition problem. All of the capacitors seemed to be in good shape (no leaking casings) and could be properly containerized for transportation and disposal.

Waste Stream No. 2 - PCB-Contaminated Floor Solids (Electrical Panel Room)

In the Electrical Panel Room, soil/dirt solids from floor scrapings revealed PCBs after composite analysis at levels of 300 ppm and discrete analysis at levels of 26 ppm (see Table 2-14). The suggested area of cleanup is 140 feet by 40 feet, the entire room. In addition to PCBs, petroleum hydrocarbons were found in the sample at a concentration level between 60,000 and 80,000 ppm (see Table 2-14). The area is further suspect due to prior analysis per information of NYSDEC by the New York State Department of Health (NYSDOH) that found PCB levels in excess of 2,000 ppm in one sample from the floor.

250

Cadmium was also found in the composite sample and analyzed for TCLP at a level of 1.4 ppm (see Table 2-13), which is above the TCLP maximum concentration of contaminants for wastes containing heavy metals. Tetrachloroethylene (TCE) was also found at a level of 0.17 mg/L. This waste stream is a hazardous waste for two reasons: it is above 50 ppm for PCBs and it fails the TCLP test for cadmium and TCE. Under TCLP testing, this concentration exceeds the limit for nonwastewater concentration, which is 0.05 mg/L. Because TCLP limits are also used to establish treatment levels for TCLP wastes, pretreatment would be required prior to land disposal.

Waste Stream No. 3 - PCB-Contaminated Liquid, Pits 1 and 2 (Building No. 3)

In Building No. 3, the residual liquids and solids in Pits 1 and 2 on the first round of sampling contained 390 mg/kg and 40 mg/kg of PCBs, respectively (see Table 2-13). Along with PCBs, petroleum hydrocarbons were found at 80,000 ppm in Pit 2 (see Table 2-14), total cyanides at 2.0 and 2.5 ppm in Pits 1 and 2, respectively, and TCLP extracts for cadmium at 4.6 ppm in Pit 2.

The concentrations of cadmium are above TCLP values, making the wastes hazardous. The remaining constituents are the PCB liquids/solids above 50 ppm, but below the limit of 500 ppm, and cyanide, which is under 100 ppm for LDR.

The waste stream for the liquids in Pits 1 and 2 is hazardous for two reasons: it fails the TCLP test for cadmium and it is above 50 ppm for PCBs. If the waste is going to be land disposed, it should be pretreated to the cadmium standard of 1.0 ppm.

Waste Stream No. 4 - Solid PCB Debris, Pits 13, 14, 15, and 16 (Heat Treatment Building)

The initial analysis of the composite sample from these four small pits showed that they contained 330 mg/kg of PCBs, 54,000 mg/kg of petroleum hydrocarbons, and no cyanide.

Discrete analysis for PCBs in Pits 13, 14, 15, and 16 indicated PCBs present but below the stated quantitation limit in Pit 16, and concentrations of 6.7 mg/kg, 41 mg/kg, and 160 mg/kg in Pits 14, 13, and 15, respectively.

Discrete analysis showed the level of cyanides for Pit 15 was 9.5 ppm with no cyanides found in Pits 13, 14, and 16.

Cadmium was found in the TCLP extract at 0.25 ppm (mg/kg), which is below the EP Toxicity maximum concentration for NYSDEC and the LDR for wastes containing heavy metals.

The wastes in Pits 13 and 15 are determined to be hazardous because they exceed 50 ppm for PCBs. Pit 15 also has high levels of petroleum hydrocarbons. The wastes in Pits 14 and 16 are not hazardous because they are under the 50 ppm level for PCBs. The solid

materials do not contain any petroleum hydrocarbons, so the solids would be a nonregulated solid waste.

Due to the smallness of these pits and because these pits are suspicious for other PCB liquids, it would be cost effective to dispose of all the materials in the same manner. Bottom samples were also difficult to obtain from Pits 14 and 16.

Waste Stream No. 5 - Fire Brick/Solid Debris, Pits 2, 3, 4, 5, 9, 10, 11, and 12 (Heat Treatment Building)

No analytical information was obtained from the fire brick debris in Pits 2, 3, 4, 5, 9, 10, 11, and 12 in the Heat Treatment Building. However, based on site observations and previous work with similar materials, it is of E & E's opinion that the materials are regulated but are not a hazardous waste.

It is recommended in the waste stream identification section of this report and in Section 3.3 that all this debris be removed to above the liquid level (if encountered) in the pits and then disposed of at an authorized facility as a regulated industrial/commercial solid waste.

The balance of the solids will be removed after all free liquids have been removed for their respective treatment requirements.

Waste Stream No. 6A - Liquids Remaining in the Debris-Laden Quenching Pits 2, 3, 4, 5, 10, 11, and 12 (Heat Treatment Building)

Pits 2, 3, 4, 5, 10, 11, and 12 all have residual liquids below the remaining demolition debris mentioned in Waste Stream No. 5. The liquids remaining contain residue amounts of petroleum hydrocarbons from 1.4 to 1,900 ppm (see Tables 2-5 and 2-7), PCBs (Pit 5 at 0.8 μg/L, and Pit 10 at 9.0 μg/L), cyanides (Pits 3, 5, and 12 at 0.11 ppm) TCLP extract as cadmium (Pits 2 and 4 at 0.29 ppm) and TCLP-extract as barium (Pits 10 and 11 at 72 ppm) (see Tables 2-4 and 2-6).

The review of the individual constituent concentration in waste extract for barium (D005) and cadmium (D003) revealed that they are below the maximum concentration of 100 mg/L and 1 mg/L, respectively. The waste is nonhazardous because it does not exhibit characteristics above the EP Toxicity maximum concentration limits and is not a TCLP characteristic waste and subject to LDR. However, the cyanide concentration (0.11 mg/L) of this waste stream suggests that the waste may be classified as a hazardous waste from a nonspecific source (F010) because it fits a possible process description as a quenching bath sludge from oil baths from metal heat treating operations where cyanides are used. To be conservative, E & E has identified this waste stream as hazardous as treatment of the cyanide will be required prior to land disposal.

Waste Stream No. 6B - Liquids Only Remaining Pits 1, 6, 7, and 8 (Heat Treatment Building)

In Pits 1, 6, 7, and 8, only liquids remain to be cleaned up. The constituents of these pits include very low levels of PCBs and cyanides (PCBs at 1 μg/L to 80 μg/L, and cyanides at 0.11 ppm) (see Tables 2-4 and 2-5).

Barium is also present in the liquids in Pit 7 at 72 ppm. The maximum concentration for a characteristic of EP Toxicity is below the limit (100 mg/L) and not subject to LDR.

However, the cyanide concentration (0.11 mg/L) of this waste stream suggests that the waste may be classified as a hazardous waste from a nonspecific source (F010) because it fits a possible process description as a quenching bath sludge from oil baths from metal heat treating operations where cyanides are used. To be conservative, E & E has identified this waste stream as hazardous, as treatment of the cyanide will be required prior to land disposal.

Waste Stream No. 7 - Decon Water and Rinsate Solvent Resulting from Cleaning Each Pit or Surface for Clearance (All Buildings)

Water and a selected solvent will be used on site to decontaminate floor and pit surfaces to obtain clearance levels. The resultant water will be filtered, pumped out, and drummed for disposal.

The constituents of the wastes will be various mixes of all contaminants but are anticipated to be at low levels. The resultant liquid waste's suspected maximum concentrations will not trip the limits but are assumed to still be a restricted solid/liquid waste and offered for hazardous waste treatment by the remedial action and the disposal firm under the mixing rules. The mixing rules do not allow dilution of wastes as a result of mixing. Other materials in the wastes generated as a result of decon or rinsing are to be treated as the original analytical finding.

Waste Stream No. 8 - Steel Quenching Casing Pits 2, 4, and 12 (Heat Treatment Building)

The steel casings or quenching tanks in Pits 2, 4, and 12 are recommended to be removed and power washed to decontaminate all oil, debris, and contaminants and then to dispose of the waste in Waste Stream No. 7 as a regulated hazardous waste depending on the mixing rule. The quenching tanks are nonporous and can be cleaned to become a nonhazardous waste. Clearance wipe tests would be performed to allow the casings to be disposed of as nonregulated solid wastes.

The casings could then be shipped to a commercial/industrial solid waste facility for disposal or offered to recyclers with certification of decontamination for reuse or recycling.

3.2.2 Site Generated Debris (SGD)

Waste Stream 9 - Site Expendable Materials and Disposable Clothing (Both Buildings)

As a result of the cleaning and washing operations, standard personal protection, expendable materials, and disposable clothing will be expected to be used on site.

Contractor Responsibility →

The resultant debris will be disposed of normally as nonhazardous regulated debris for land disposal. If concentrations of constituents rise in further analyses prior to disposal, the site expendables would be shipped as hazardous debris. The site generated debris with PCBs over 50 ppm will be shipped as a listed hazardous waste (B007). E & E has assumed that 50% of the SGD will be hazardous and the other 50% will be regulated nonhazardous.

Waste Stream 10 - Decon Water as a Result of Decontamination of Personnel and Equipment (Both Buildings)

Contractor Responsibility

Water will be used on site to decontaminate personnel and equipment during all phases of the operations. The resultant decon water will be drummed and analyzed for proper disposal. The major constituents will be water with about 1% to 5% solids. The concentrations of barium, cyanide, cadmium, PCBs, and petroleum hydrocarbons are expected to be very low.

This waste stream is expected to be nonhazardous but must be disposed of at an authorized facility.

3.3 FEASIBILITY REVIEW OF SURFACES CLEANING METHODS

For the areas in the Schatz Plant requiring remediation, the methods recommended for the removal of the site liquids, solids, debris, and surfaces may be unique to the site, but standard excavation, power washing, and high pressure vacuuming will most likely be used throughout the remediation. The conditions at the site will be unique, and special handling procedures and extra precautions will be necessary to protect the health and safety of the workers and the occupants of the adjoining buildings that are in close proximity to the active work area.

The recommended contaminant reduction techniques will be reviewed for each specific building and area.

The on-site decontamination techniques for surfaces and pits after debris removal considered for the remediation would fall into the following general categories:

- Vacuum extraction (with aqueous based solvents);
- High pressure flushing and washing; and

- Dustless scabbing, scarifying or planning.

While all decontamination techniques have variations in different situations, depending on the uses and requirements of the cleanup, these methods will be evaluated individually to obtain a cost effective approach to cleanup at the Schatz Plant.

The criteria for cleanup must also be established by NYSDEC. Currently EPA states that PCB cleanup is required on areas as provided in 40 CFR 761.125, subpart G (see Table 3-3).

3.3.1 Vacuum Extraction (with Aqueous Based Solvents)

This approach uses aqueous based solvent or foams that are sprayed on surfaces where PCB materials are known to have been spilled previously. After the required waiting period with the foam on the contaminated surface, PCBs are vacuum extracted. Agitation or scrubbing of the surface prior to extraction increases the extraction efficiency. The PCB-laden foam is then removed by vacuuming the product from the surface. Excess residue is rinsed with water, which is also vacuumed from the surface. Highly contaminated surfaces or porous surfaces such as concrete may require multiple application with intermediate rinses to obtain the required level of decontamination. From information gathered, it seems these applications may result in higher initial concentrations of contaminants as they are extracted before the concentrations fall to acceptable cleanup levels. It would be anticipated that temporary diking or containment of areas be performed to limit the amounts of foam and water to be used.

Wastes would be containerized, sampled, and analyzed prior to disposal to provide accurate information on concentrations to the disposal facility for the appropriate disposal (landfilling or incineration).

Advantages to using vacuum extraction materials would be that no airborne dusts would be generated. Adequate containment control could be installed to effectively handle areas as needed. The product is environmentally safe to use and does have a medium BTU heating value (700 to 800 BTU/lb), making incineration less expensive. The ease in removal would have lower manpower requirements.

The disadvantage of vacuum extraction is the possibility of leach back over time. Also, multiple applications of material may be needed to achieve cleanup levels.

The order of magnitude cost per square foot (sf) for vacuum extraction on a typical 6,000 sf area containing concentrations between 50 and 500 ppm for PCBs would be:

Removal (6,000 sf) 4.25/sf	$25,500
Transport of Wastes 0.38/sf	2,300
Disposal 1.60/sf	9,600
Total	37,400.00

3.3.2 High Pressure Flushing and Washing

This approach uses high pressure equipment with surfactant and solvents added to the water and then to scrub and wash down the area of contamination. This method usually requires diking or containing the area to collect all the rinsates and solids that result from the washing process.

The solvents and surfactant that are typically used are citrus-based turpenes which cause the release of the contaminated PCB materials from the surface. A wet vacuum pick-up is required with the vacuumed solids filtered and the water mixture reused.

The advantages of this process is a fast turnaround in confined cleanup areas such as subsurface pits; larger areas can also be cleaned effectively.

The disadvantages are that a large volume of liquid waste may be generated as a result of the use of water. Additional containment would be required on flat surfaces such as floors. The high potential of leach back is always a probability and it is even suggested that the use of pressure drives the PCBs back into the nonimpervious surface. On elevated contamination areas (above 3,000 ppm), difficulty is encountered in obtaining the 100 μg/100 cm^2 clearance level by the EPA for indoor nonimpervious surfaces.

The order of magnitude costs per square foot for high pressure washing using solvents on a typical 6,000 sf area containing concentrations of between 50 and 500 ppm would be:

Removal (6,000 sf) 3.75/sf	$22,500
Transportation 0.45/sf	2,700
Disposal 1.70/sf	10,200
Total	35,400

3.3.3 Dustless Scabbing, Scarifying, or Planing

This operation is the direct removal of contamination by mechanical removal of a specified depth of concrete off the floor surface. The considerations to be addressed before employing this method are the possibility of spreading contamination around through airborne

dust and determining what concrete depths should be removed to eliminate the majority of the contamination.

While improvements such as high pressure vacuum dust pickup and wetting or misting the area have been added to this method, containment controls should still be implemented to reduce the spread of area contaminants. This would include installing poly barriers on all external and internal openings, installing decontamination chambers, and providing ambient monitoring.

The advantages of scabbing, scarifying, and planing are in obtaining low clearance levels by exposing a clean surface. The area has a high possibility of being declassified if the clean surface is below the cleanup criteria pursuant to the cleanup wipe testing for PCB material.

The disadvantages of this method would be the need for added controls for contaminant dust spread, a heavier material for disposal, ambient air monitoring, unknown depth of reinforcing, and the need to decontaminate equipment.

The order of magnitude costs per cubic foot for scabbing, scarifying, and planing a depth to 0.5 inch on a typical 6,000 sf floor would be:

Removal - $6.04/cf	$7,700
Transportation - 6.25/cf	3,000
Disposal - 29.17/cf	14,000
Total	24,700

3.4 RECOMMENDATIONS FOR REMEDIATION, REMOVAL, TRANSPORTATION, AND DISPOSAL

The recommendations listed in this section have been developed based on the rationale of risk that remains at the Schatz Plant site.

Where cleanup goals are established such as those for PCBs, they have been utilized to measure performance of cleanup and as a means to monitor the cleanup.

In all cases within the locations of the scope of work, remediation and removal have been recommended by E & E.

Each waste stream is further developed below and in the matrix in Table 3-3.

3.4.1 Electrical Panel Room Floor (Waste Stream No. 2)

The recommendation for the removal of the hazardous wastes, PCBs, cadmium, petroleum hydrocarbons, and tetrachloroethylene at the electrical panel room is to perform concrete planing of the surface at incremental depths of 1/2 inch for a minimum of two passes or a total of 1-inch surface removal.

The reasons planing was selected are cost and the fact that the work could be performed quickly once containment and decontamination units are installed. For two passes on the entire area at 1/2 inch each, it should take two to four days. Pickup of the materials and cleaning will follow immediately behind as the process is performed. The entire schedule, except for waste pickup, should take two weeks for mobilization, prep, removal, cleaning, and demobilization.

The transport of the material will be in covered roll-off containers, which will be disposed of as a hazardous waste at a facility that accepts solid PCB debris.

With the assumptions that higher than 50 ppm levels of PCBs are expected and the area is to have restricted access, 40 CFR 761.125 requirements for PCB spill cleanup on low contact, indoor, nonimpervious solid surfaces are recommended. This allows that the area can be unrestricted if decontamination of the floor attains levels of 10 μg/100 cm^2 after wipe testing. If 10 to 100 μg/100 cm^2 is obtained, the floor must be encapsulated using epoxy-based paints applied in two directions.

The cleanup levels shall be measured by standard wipe tests and using the EPA Office of Toxic Substances report "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup" (EPA 560/5-86-017, May 1986).

3.4.2 Building No. 3 - Pits 1 and 2 (Waste Stream No. 3)

The recommendation for the removal of the hazardous wastes, PCBs, cyanide, petroleum hydrocarbons, and cadmium liquids from the two pits located in Building No. 3 is a vacuum extraction technique with an aqueous based solvent.

The reason for this selection is that the pits are well defined with walls and can be cleaned as individual units. The residual PCB liquids would first be extracted and drummed for future incineration. The surface would then be sprayed with the solvent and repeatedly vacuumed until acceptable clearance is achieved for the established cleanup criteria. All liquids would be offered for disposal as B002 PCB waste if testing found contamination levels to be above 50 ppm and below 500 ppm. Except for waste disposal, the cleanup should take approximately one week. Mobilization and demobilization would be made a part of the overall project schedule.

The area is expected to be a restricted access area in the future, and pursuant to the requirements for PCB spill cleanup on a low contact, indoor, nonimpervious surface, is recommended to be decontaminated to a level of under 10 μg/100 cm^2 to allow reuse and 10 to 100 μg/100 cm^2 with an encapsulant. The cleanup levels shall be verified by the same standard wipe test as discussed for waste stream No. 2.

3.4.3 Heat Treatment Building

The recommendations for the various waste streams at the Heat Treatment Building consist of first removing solid waste (regulated-nonhazardous). Many waste streams have been characterized in the building by similarities of contaminants in each pit. In many cases, waste streams have been combined to reduce the number of specific items that would be generated as a result of the site remediation.

The recommended removal actions for each of the waste streams in the Heat Treatment Building are discussed below and are summarized in the matrix in Table 3-3.

Large PCB Capacitors (Waste Stream No. 1)

It is recommended that these large capacitors throughout the facility be collected and put in proper shipping containers, either drums or other approved containers. The capacitors will be disposed of either in a landfill or by incineration under the NYSDEC-designated B005 Hazardous Waste Code.

Removal of Solids from Pits 13, 14, 15, and 16 (Waste Stream No. 4)

Due to the small size of these pits and the economy in removal, it is recommended the solid materials from each pit be excavated and then drummed or containerized and offered for disposal as PCB solid wastes above 50 ppm. The excavated pits will then be solvent washed and wiped down or have the residual materials vacuum extracted. After wipe clearance checks, blocking would be installed in any remaining conduit holes or pipes by pouring a weak mix of concrete and finishing to grade.

Fire Brick/Solid Debris from Pits 2, 3, 4, 5, 9, 10, 11, and 12 (Waste Stream No. 5)

All solids and fire brick in the above-mentioned pits would be excavated, loaded into roll-off containers, and disposed of as regulated nonhazardous wastes at an acceptable commercial/industrial solid waste disposal facility.

The remaining liquids and steel quenching chambers are a part of other waste streams associated with the project.

Liquids Remaining in Pits 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, and 12 (Waste Stream Nos. 6A and 6B)

After the demolition debris is removed from Pits 2, 3, 4, 5, 10, 11, and 12, the balance of the free liquids are recommended to be containerized with waste from Pits 1, 6, 7, and 8 for bulk transport as a regulated nonhazardous waste for waste water treatment.

The levels of petroleum hydrocarbons are low (1.4 to 1,900 ppm), meaning the heating values would not make it a candidate for incineration. All liquids would be removed as nonhazardous regulated materials. Each pit would then be washed down using an aqueous based solvent or detergent then vacuumed dry. The additional wash water generated would be combined with the initial liquids and disposed of in the same manner.

Since low level PCBs were in each pit, verification of cleanup guidelines would be by standard PCB wipe tests. Proposed guidance for cleanup of total cyanide has been available from EPA (55 FR30798 dated 7/27/90) and NYSDEC (October 1991 Cleanup Policy and Guidelines), and these were established for soil concentrations of 2,000 mg/kg. For ambient water quality standards, the limit for GA drinking water sources is 100 μg/L. The initial liquids are 110,000 μg/L. Since no liquids are to remain in the pits and no cleanup levels of cyanide are established for surfaces, only the cleanup guidelines for PCBs will apply.

Decon Water and Rinsate Solvents Resulting From Final Cleaning of Each Pit Surface for Clearance - All Buildings (Waste Stream No. 7)

The liquid wastes and solids generated as a result of cleaning all pits should not trip any of the limits for LDR and will be offered for hazardous waste treatment to the disposal firm under the mixing rules. It is recommended that the liquid waste be sampled and analyzed prior to disposal to have full knowledge of the constituents in the waste stream.

The waste stream is expected to be shipped as hazardous waste after confirmation analysis. The volume of waste will be such that a vacuum tank truck would be utilized for transport to an acceptable facility. The liquids, whether deemed hazardous or non-hazardous, should be treated using wastewater treatment technology.

A matrix of waste information is presented in Table 3-2.

Steel Quenching Casings (Pits 2, 4, and 12) - Heat Treatment Building (Waste Stream No. 8)

These steel quenching casings are recommended to be decontaminated using detergents and solvents used in cleaning the pits. No PCBs have been previously detected. After these casings are removed from the pits and cleaned, they will be visually inspected for debris. Once the approval is obtained, the casings will be shipped to a disposal facility or steel recycler as a nonhazardous solid material.

A matrix of waste information is presented in Table 3-2.

Figures 3-1 and 3-2 have been included to summarize the recommended remediation actions for all three locations at the Schatz Plant site.

3.4.4 Site Generated Debris (SGD)

Expendable Materials and Disposable Clothing - All Buildings (Waste Stream No. 9)

All disposable clothing and expendable materials used in the cleanup project will be disposed of as regulated nonhazardous or hazardous materials and would be drummed and landfilled. A matrix of waste information is presented in Table 3-2.

Decon Water Resulting from Decontamination of Personnel and Equipment - All Buildings (Waste Stream No. 10)

In all areas where decon of equipment and personnel is performed, the rinse water is expected to be treated as regulated nonhazardous waste. These liquid wastes would be drummed and recommended for wastewater treatment by the disposer.

A matrix of waste information is presented in Table 3-2.

3.5 SITE IMPROVEMENTS, ACCESS RESTRICTIONS, AND BUILDING SECURITY

To reiterate the goals for this project, E & E was to make recommendations for site improvements to handle the remediation of hazardous or toxic wastes at the Schatz Plant site. The site improvement recommendations included those items necessary to:

- Provide reasonable access to the facilities where wastes are to be removed.
- Provide access restrictions on those pits and surfaces to be secured for future inspections and studies; and
- Provide security improvements to the facility so that no unauthorized entry is gained by parties not involved with the project.

Improvements for access into the facility and access restrictions to the pits and surfaces, along with building security improvements are outlined on Figures 3-3 and 3-4.

The order of magnitude costs for the removal, transportation, and disposal along with the site improvements, access restrictions, and building security are discussed in Section 4.

Table 3-1

TCLP CONCENTRATION LEVELS - FOR LAND DISPOSAL RESTRICTION AND NYSDEC PART 371 SCHATZ PLANT SITE

Waste Contaminant	Land Disposal Restriction Limit	NYSDEC Identification of Hazardous Wastes	Schatz Maximum Concentration
Tetrachloroethylene	>0.7 mg/l[a]	[d]	0.17 ppm (mg/l)
Cadmium	1.0 mg/l[a]	1 mg/l	2.5 ppm
Barium	100 mg/l[b]	100 mg/l	72 ppm
Cyanide	>1,000 mg/l[c]	[e]	0.11 ppm

a 40 CFR 268.41(a)
b 40 CFR 268.43
c 40 CFR 261.24
d Constituents of an F001 nonspecific source waste.
e Constituents of an F010 nonspecific source waste.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 3-2

IDENTIFICATION OF WASTE STREAMS - GENERAL SITE
LAND DISPOSAL RESTRICTIONS AND DISPOSAL OPTIONS
SCHATZ PLANT

Waste Stream Number and Item	Locations[a]	Matrix/Phase	Constituents	Contaminant Levels (units as noted)	NYSDEC Maximum Concentration Exceedance or Land Disposal Restrictions (LDR)	Recommended Waste Hazard Code	Disposal Options[b]
No. 1 - Capacitors (Large)	HTB	Solids	PCBs	NA	No	B005	Incineration or landfilling
No. 2 - Solid Phase Floor	EPR	Solids	PCBs Petroleum Hydrocarbons Cadmium Tetrachloroethylene	26 ppm 60,000-80,000 ppm 1.4 ppm 0.17 mg/L	Yes (tetrachloroethylene)	B007	Landfilling or Incineration
No. 3 - Pits 1 and 2	B3	Liquids	PCBs Petroleum Hydrocarbons Total Cyanides Cadmium	110-390 ppm 80,000 ppm 2.0-2.5 ppm 4.6 ppm	Yes	B002 or D006	Incineration or Landfilling
No. 4 - Pit 13	HTB	Solids	PCBs Petroleum Hydrocarbons	41 ppm 54,000 ppm	Yes	B007	Landfilling or Incineration
No. 4 - Pit 14	HTB	Solids	PCBs Petroleum Hydrocarbons	6.7 ppm 54,000 ppm	No	B007	Landfilling or Incineration
No. 4 - Pit 15	HTB	Solids	PCBs Petroleum Hydrocarbons Total Cyanides Cadmium	160 ppm 69,000 ppm 9.5 ppm 0.25 ppm	Yes	B007	Incineration or Landfilling

Key at end of table.

Table 3-2

IDENTIFICATION OF WASTE STREAMS - GENERAL SITE
LAND DISPOSAL RESTRICTIONS AND DISPOSAL OPTIONS
SCHATZ PLANT

Waste Stream Number and Item	Locations[a]	Matrix/Phase	Constituents	Contaminant Levels (units as noted)	NYSDEC Maximum Concentration Exceedance or Land Disposal Restrictions (LDR)	Recommended Waste Hazard Code	Disposal Options[b]
No. 4 - Pit 16	HTB	Solids	PCBs Petroleum Hydrocarbons	330 ppm 54,000 ppm	Yes	B007	Incineration or Landfilling
No. 5 - Pits 2, 3, 4, 5, 9, 10, 11, and 12	HTB	Solids	Fire bricks Miscellaneous Solids	100%	No	None	Regulated solid waste landfill
No. 6A - Pits 10 and 11	HTB	Liquids	Barium PCBs Petroleum Hydrocarbons	72 ppm 9.0 µg/L 6.1-1,900 ppm	No	None	Regulated solid waste treatment
No. 6A - Pits 3, 5, and 12	HTB	Liquids	Cyanides Petroleum Hydrocarbons PCBs	0.11 ppm 1.4-9.1 ppm 0.8 µg/L	No	F010	Wastewater treatment or Incinerator
No. 6A - Pits 2, 4	HTB	Liquids	Cadmium PCBs Petroleum Hydrocarbons	0.29 ppm ND Present	No	None	Wastewater treatment or Incinerator
No. 6B - Pits 1, 6, and 8	HTB	Liquids	Total Cyanides PCBs Petroleum Hydrocarbons	0.11 ppm 1-80 µg/L 6-1,400 ppm	No	F010	Wastewater treatment or Incinerator

Key at end of table.

Table 3-2

IDENTIFICATION OF WASTE STREAMS - GENERAL SITE
LAND DISPOSAL RESTRICTIONS AND DISPOSAL OPTIONS
SCHATZ PLANT

Waste Stream Number and Item	Locations[a]	Matrix/Phase	Constituents	Contaminant Levels (units as noted)	NYSDEC Maximum Concentration Exceedance or Land Disposal Restrictions (LDR)	Recommended Waste Hazard Code	Disposal Options[b]
No. 6B - Pit 7	HTB	Liquids	Barium PCBs Petroleum Hydrocarbons	72 ppm ND 600 ppm	No	None	Wastewater treatment or Incinerator
No. 7 - Decon Liquids - Cleaning Pits and Floors	HTB B3 EPR	Liquids	Decon Barium Cyanide PCBs Petroleum Hydrocarbons Cadmium	 72 ppm 0.11 ppm 50 ppm 1,000 ppm 0.29 ppm	Depends on mixing rules	F010 or B002	Wastewater treatment
No. 8 - Quenching Basins	HTB	Solid	Steel casing quenching basin	Visual after cleaning	No	None	Solid waste facility or recycler
No. 9 - Expendable equipment and clothing	HTB B3 EPR	Solids	PCBs	0-50 ppm	No	None	Landfill

Key at end of table.

Table 3-2

IDENTIFICATION OF WASTE STREAMS - GENERAL SITE
LAND DISPOSAL RESTRICTIONS AND DISPOSAL OPTIONS
SCHATZ PLANT

Waste Stream Number and Item	Locations[a]	Matrix/Phase	Constituents	Contaminant Levels (units as noted)	NYSDEC Maximum Concentration Exceedance or Land Disposal Restrictions (LDR)	Recommended Waste Hazard Code	Disposal Options[b]
No. 10 - Decon Liquids Personnel Equipment	HTB B3 EPR	Liquids	Decon Water Barium Cyanide PCBs Petroleum Hydrocarbons Cadmium	Low Levels PCBs	Mixing Rule requirements	F010 or B005	Wastewater treatment

[a] Locations: EPR = Electrical Panel Room, B3 = Building 3, HTB = Heat Treatment Building.
[b] Final analysis needs to be performed.

Key:

NA = Not analyzed.
ND = Not detected.

Source: Ecology and Environment Engineering, P.C. 1992.

Table 3-3

MATRIX OF REMOVAL, TRANSPORT, AND DISPOSAL RECOMMENDATIONS SCHATZ PLANT SITE

Location	Waste Stream	Removal Recommendations	Transport	Disposal
Electrical Panel Room	Solids (Waste Stream No. 2)	• Install containment and decontamination controls. • Plane concrete surface up to 1 inch depending on visual surface contamination. • Place wastes in covered roll-off dumpster. • High-pressure vacuum residual materials. • Standard wipe tests for clearance.	30-cubic yard covered rolloff boxes	Disposal facilities able to accept NYS B007-PCB solid wastes other than liquids. Solids to be landfilled.
Building No. 3	Liquids (Waste Stream No. 3)	• Temporary control installed for decontamination and collection of liquids. • Vacuum or scrape residual oils out of pits and place in drums. • Apply layer(s) of aqueous solvents and then vacuum material. Reapply materials as standard wipe tests provide information on clearance. • Sample and analyze liquids for disposal.	PCB liquids and solvent placed in drums for transport	Liquids offered for incineration. Restricted PCB liquids over 50 ppm and under 500 ppm (B002) or cadmium wastes as D006.
Heat Treatment Building	Large PCB Capacitors (Waste Stream No. 1)	• Collect all large capacitors and place in drums or containerize.	Tractor trailer	Landfilling or incineration as a restricted TSCA waste
Heat Treatment Building	PCB-Contaminated Solids, Pits 13, 14, 15, and 16 (Waste Stream No. 4)	• Excavate all solid wastes from the small pits. • Containerize all wastes for shipment. • Detergent or solvent wash the pits. Perform standard wipe tests for clearance criteria. • Containerize all rinsate used.	Drums and containers by truck transport	Solids for landfilling. Liquids below 500 ppm for landfilling. Liquids above 500 ppm for incineration (B007 wastes).

Table 3-3

MATRIX OF REMOVAL, TRANSPORT, AND DISPOSAL RECOMMENDATIONS SCHATZ PLANT SITE

Location	Waste Stream	Removal Recommendations	Transport	Disposal
Heat Treatment Building	Fire brick and Solid Debris Pits 2, 3, 4, 5, 9, 10, 11, and 12 (Waste Stream No. 5)	• Excavate all solid materials in the pits. • Load in roll-off containers.	Covered roll-off containers	Disposal at an approved industrial/commercial solid waste facility. Regulated nonhazardous waste.
Heat Treatment Building	Liquids in pits 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 (Waste Stream No. 6)	• Pump or vacuum remaining liquids from pits. • Prepare for decon using aqueous solvents or detergents.	Drum or containerize, or, if large enough volume, use tank truck	Either by wastewater treatment or incineration (if high enough BTU heating values). Wastes are regulated and nonhazardous.
All Buildings	Decon water and rinsates solvents as a result of final cleaning each pit of surface for clearance (Waste Stream No. 7)	• After cleaning all surfaces and pits, collect and filter all rinsate into approved containers. • Sample liquids for accurate profile limits.	Drum, container, or tank transport	Decon liquids below or above restricted levels to be wastewater treated.
Heat Treatment Building	Pits 2, 4, and 12 steel quenching casings (Waste Stream No. 8)	• Remove waste from quenching pits. • Decon surfaces. • Perform decontamination clearance testing.	Tractor trailer and flat bed	Solid waste facility or scrap recycler
All Buildings	Site expendable materials and disposables (Waste Stream No. 9)	• Pack all site expendable materials and disposable clothing in approved containers or drums.	Drums or approved containers by tractor trailer	Materials to be landfilled. Wastes are regulated and nonhazardous wastes

Table 3-3

MATRIX OF REMOVAL, TRANSPORT, AND DISPOSAL RECOMMENDATIONS
SCHATZ PLANT SITE

Location	Waste Stream	Removal Recommendations	Transport	Disposal
All Buildings	Decon waters - decontamination of personnel and equipment (Waste Stream No. 10)	Decon waters to be collected and containerized, liquids to be sampled and analyzed for typical contaminants.	Drummed as liquids for tractor trailer transport	Liquids below or above restricted levels to be wastewater treated.

Source: Ecology and Environment Engineering, P.C. 1992.

OB4FIG3-1

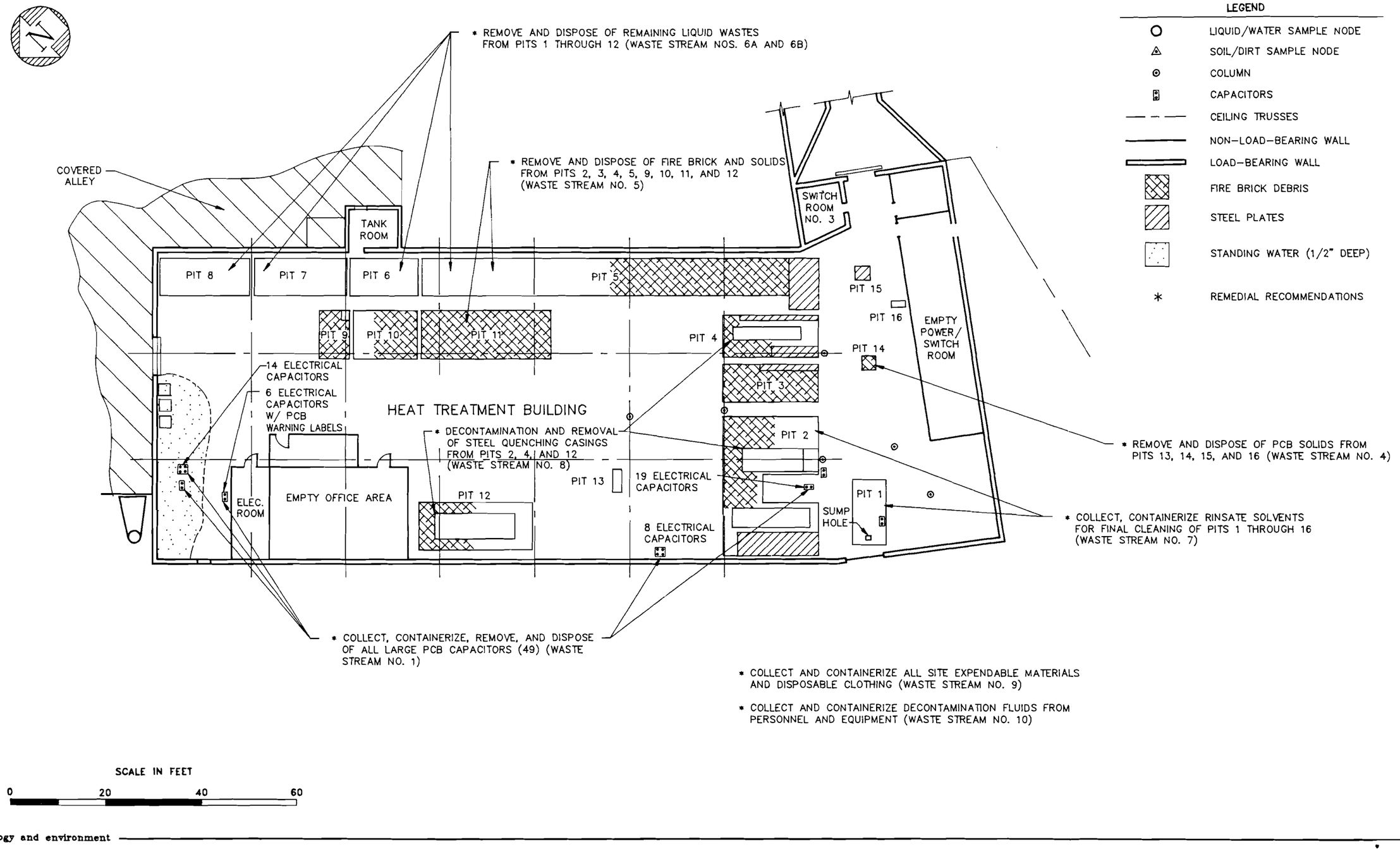


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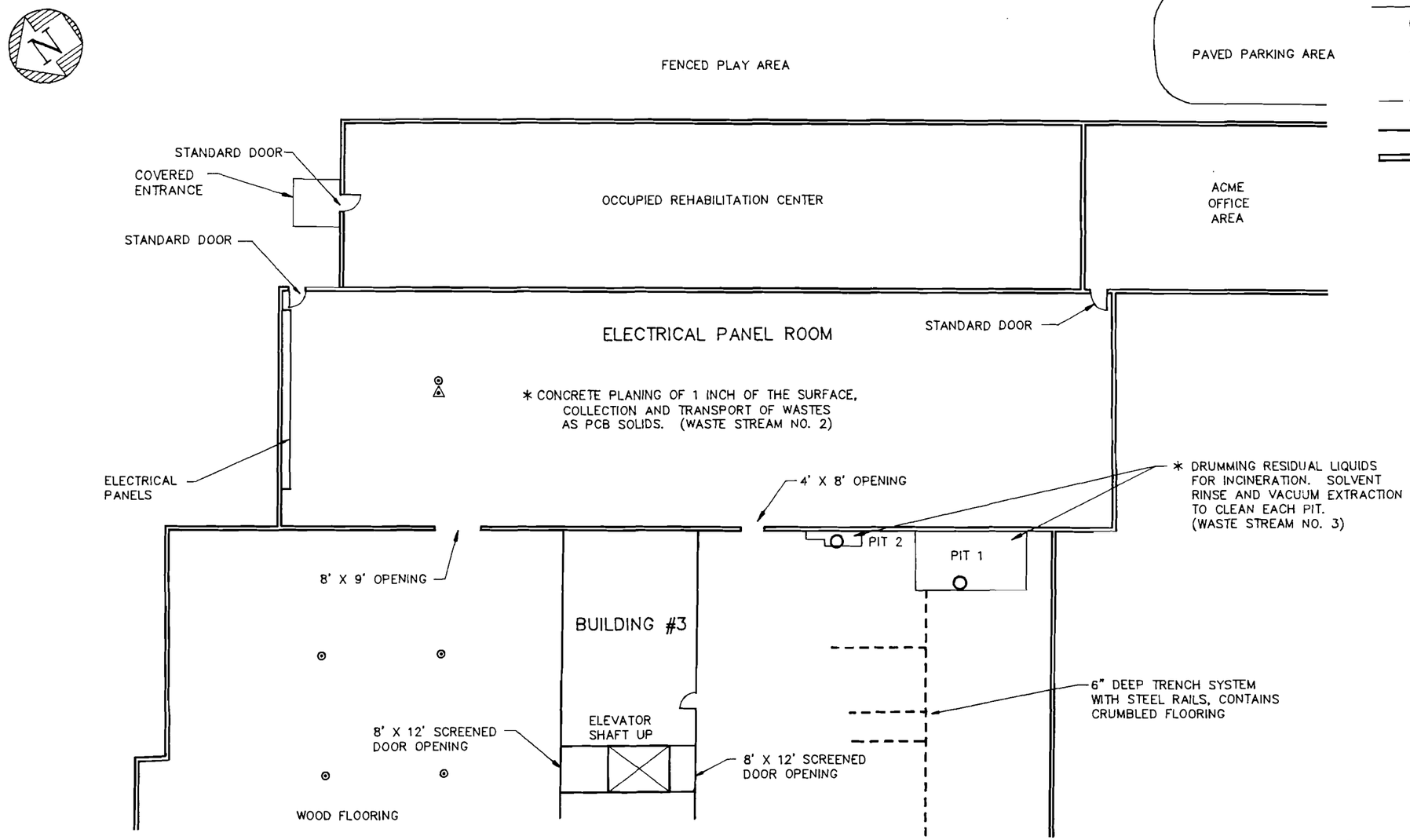
Figure 3.1 SCHATZ PLANT SITE
HEAT TREATMENT BUILDING
REMEDIAL RECOMMENDATIONS



COMPOSITE SAMPLE DEFINITIONS		
NAME	SAMPLE LOCATIONS	DESCRIPTION
SOIL COMPOSITE SAMPLE NO.5	OB-EPR-001-F1,F2	SOIL/DIRT FOR F2 SAMPLE WAS COLLECTED IN TWO LOCATIONS TO PROVIDE AN ADEQUATE VOLUME.

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Figure 3.2 SCHATZ PLANT SITE BUILDING NO. 3 AND ELECTRICAL PANEL ROOM REMEDIAL RECOMMENDATIONS

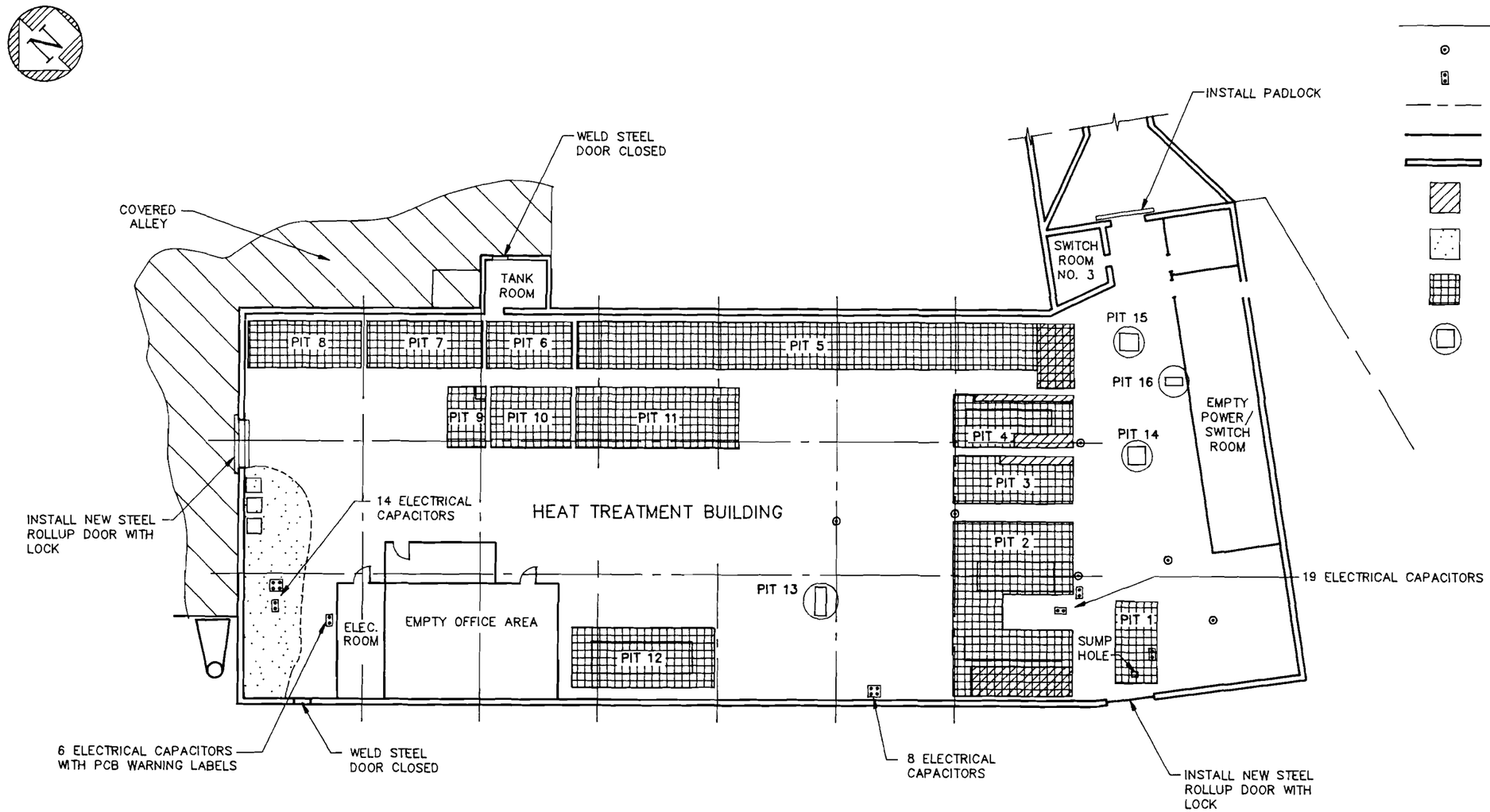

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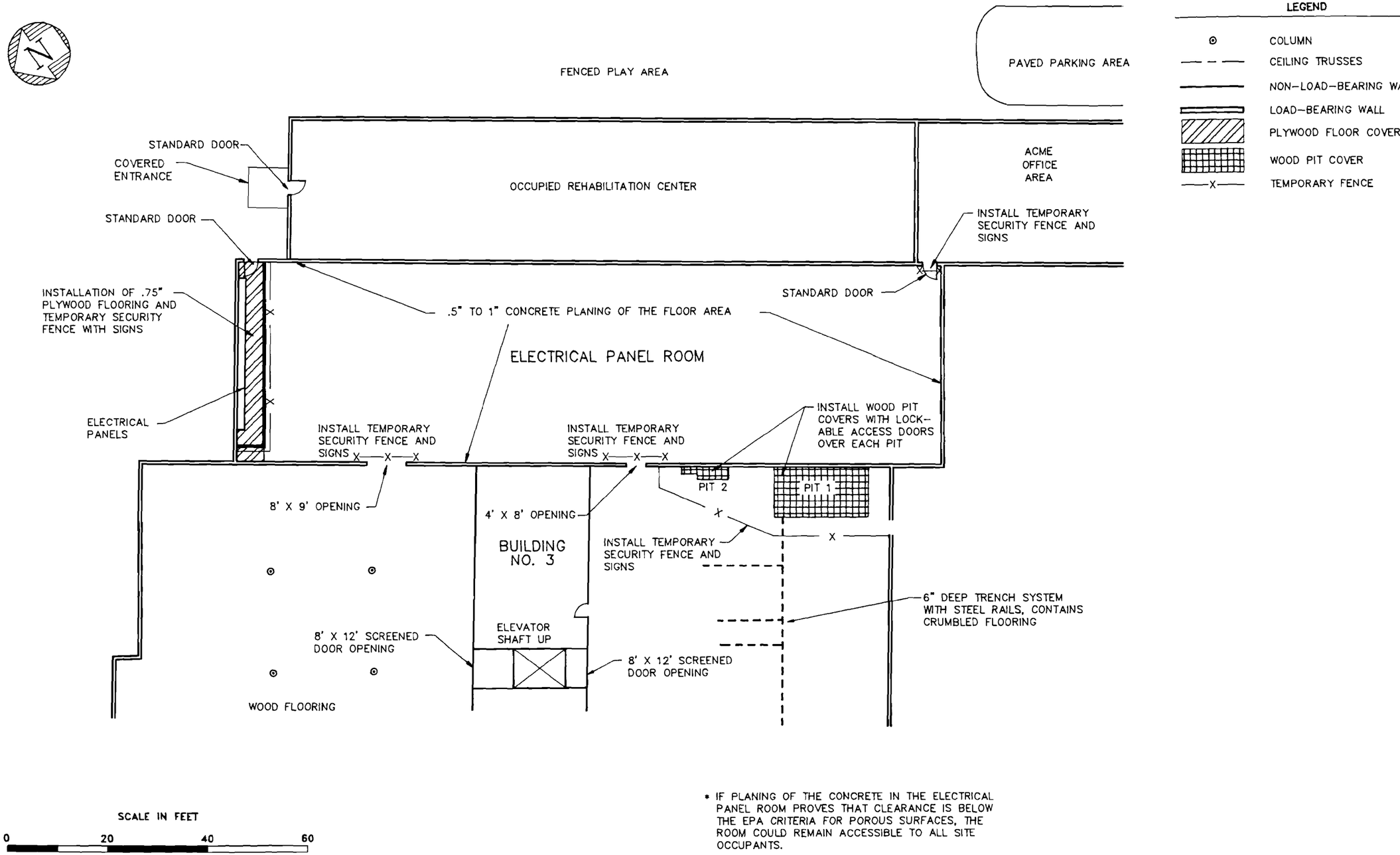
Figure 3.3 SCHATZ PLANT SITE ACCESS RESTRICTIONS AND SECURITY IMPROVEMENTS HEAT TREATMENT BUILDING

OB4SITE-FIG3-4



* IF PLANING OF THE CONCRETE IN THE ELECTRICAL PANEL ROOM PROVES THAT CLEARANCE IS BELOW THE EPA CRITERIA FOR POROUS SURFACES, THE ROOM COULD REMAIN ACCESSIBLE TO ALL SITE OCCUPANTS.

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Figure 3.4 SCHATZ PLANT SITE ACCESS RESTRICTIONS AND SECURITY IMPROVEMENTS BUILDING NO.3 AND ELECTRICAL PANEL ROOM

4. ORDER OF MAGNITUDE COST ESTIMATE AND PROJECT SCHEDULE

4.1 ORDER OF MAGNITUDE COST ESTIMATE

E & E has developed an order of magnitude cost estimate for the Schatz Plant site using assumptions for the hazardous and nonhazardous waste site remediation, transport, disposal, and temporary building improvements at both buildings, which encompass the three remediation areas. Table 4-1 contains the cost estimate for the initial remedial construction costs, transportation, disposal, and removal costs based on Means Building Data, vendor information, and costs related to previous work performed by E & E. Table 4-2 contains E & E's order of magnitude cost estimate for construction oversight and health and safety monitoring for the Schatz Plant remediation. Table 4-3 is a summary of all the construction work efforts that are suggested for the Schatz site.

4.1.1 Assumptions Related to Initial Remedial Order of Magnitude Construction Costs

General

- All areas will be addressed as one project with no breakout of individual areas;
- The project will be bid publicly; and
- Construction oversight will be required for the entire remediation period.

Electrical Panel Room/Building No. 3

- Due to the dark conditions encountered in the Electrical Panel Room and Building No. 3, construction lighting will be required during the cleanup.
- The floor planing work in the Electrical Panel Room will require setup of a temporary poly containment system on the walls, openings, and through wall penetrations to reduce particulate contamination. A

decontamination unit will be set up for personnel as well as equipment and load out decontamination.

- Ambient and personal air monitoring will be performed during active operation.

- Final wipe down and cleaning of all exposed surfaces will be performed. Standard wipe tests will be used for clearance.

- E & E recommends wipe tests for area clearance below 10 μg/100 cm^2. If above that level, encapsulating two-layer epoxy paint will be applied to the floor surface. If the level is below 10 μg/100 cm^2, the area can be accepted as clean and opened for general use instead of installing barriers.

- The clearance criteria for ambient air must not exceed the action guideline criteria (AGC). The AGC and action levels for the site contaminants are listed in Table 4-5. Due to the current low levels of contaminants, it is assumed that with proper precautions (wetting and surfacants) that no levels should be exceeded during remediation.

- Special precautions such as dust and watertight enclosure are needed around the switch gear in the work area.

- Personnel protection will be at modified Level C with Power Air Purifying Respirators (PAPR's) and dust cartridges.

- The Electrical Panel Room and Building No. 3 will need to have limited access during on-site efforts. This would mean sealing all external doors that access both facilities and designating a single point of entry/exit, assumed to be the west doorway opening.

- Daily 24-hour and weekend security will be set up in Building No. 3 and the Electrical Panel Room during remediation.

- Due to the low levels of PCBs in the Electrical Panel Room, floor planing will be performed on 1/2-inch lifts, with wipe testing to be performed on each lift. Two 1/2-inch planing lifts are assumed to be performed in order to provide clearance of the area.

- The selected solvent materials to be utilized for cleaning pits 1 and 2 in Building No. 3 will need to be applied a minimum of three times and vacuum extracted. Clearance initially will be by wipe testing. Performance wipe testing should be performed after three months to confirm clearance limits. Assumptions are that the clearance levels will be maintained due to the initial low levels of PCBs.

- Noise and vibration for floor planing may be a problem and the operation may need to be performed on the off-shift or weekend.

- Real time action levels would be set up with the use of a mini ram to observe contaminant levels to allow reduction in contractor operations if high levels are encountered.

- Flooring rebar is 2 inches or more below the original surface and will not be encountered. Coring to find the actual rebar depth will be conducted.

- Wooden covers with access hatches will be placed on Pits 1 and 2.

- Disposal of wastes will be within 300 miles of the site.

- Disposal costs include all state and local taxes and use fees.

- Due to the nature of a conceptual estimate, a 15% contingency has been added to the overall project cost estimate.

- Bonds and insurance are required for the project because it will be bid publicly. Bonds are assumed to cost 3% of the project and insurance at 5%.

- NYSDOL prevailing wage project.

- Decon, security, and lighting will be set up to cover both locations for remediation (Building No. 3 and Electrical Panel Room).

- General mobilization and demobilization costs include site trailers, sanitary service, phone and utilities, and mobilization and demobilization of all site equipment for the remediation of the three buildings.

Heat Treatment Building

- Site improvements will take place prior to beginning any remediation at the facility.

- For the solid debris in the pits, 2,000 lbs equals 1 cy.

- The liquids from the pits will be wastewater treated. All sample results indicate low hazard except petroleum hydrocarbons.

- Pits 3 and 11 are each 5 feet deep.

- Wooden covers with inspection hatches will be installed over all pits. The hatches will have clasps and locks.

- All access will be made through the southwest door for Heat Treatment Building remediation.

- Detergent or solvent wash will be required on all pits to be cleaned.

- All pits will be wipe tested to obtain clearance of 10 $\mu g/cm^2$ or less.

- The facility will be vacuumed clean after completion of pit cleaning and after pit cover installation.

4.1.2 Assumptions Related to Construction Oversight Services

- Four meetings for preconstruction and progress will be performed prior to mobilization, and one construction manager and one health and safety person will be provided to support.
- Once the project mobilizes, a two-person field staff will be on site full-time for construction and half-time for health and safety until project completion or 20 weeks.
- Sampling will be performed by staff on site, and analysis will be performed at an accredited lab. Sampling will be for airborne contaminants and wipes on surfaces for clearance.
- Travel to be on a two-week basis only.
- Per diem for Poughkeepsie applies at $94/day.
- Assume year 2 contract rate.

4.2 PROJECT SCHEDULE

The remediation project schedule was developed in conjunction with the order of magnitude cost estimate. The schedule does not take into account any seasonal weather logistical problems because the time of bidding and remediation is unknown. Associated with the project schedule is a graph overlaying the schedule of estimated expenditures per month until completion. The graph indicates an average of 20% cost expenditures per month until disposal occurs in month 5. The schedule is presented in Figure 4-1.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 1 OF 8

PROJECT TITLE: Schatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
A	**Electrical Panel Room**				
1	Special Conditions				
	Setup Containment	360	SF	5.00/sf	1,800.00
	Setup decon unit for personnel	1	LS	200.00	200.00
	Setup of decon unit for equipment	1	LS	500.00	500.00
	Special enclosures for electrical panel switch gear, protection security	1	LS	300.00	300.00
2	Exploration core drilling for depth of concrete and rebar.	1	LS	150.00	150.00
3	Installation of temporary intrinsic lights	1	LS	500.00	500.00
4	Decon support steam cleaning or water setup for decontamination	1	LS	300.00	300.00
5	1" planing of concrete surface at 1/2" lifts, area - 140 x 40	470	CF	16.00/cf	7,520.00
6	Loading of planing debris for disposal	34	Tons	50.00/ton	1,700.00
7	Decon of equipment	1	LS	1,000.00	1,000.00
8	Drumming of rinsate/decon waters	1	LS	300.00	300.00
9	Drumming of expendable clothing and site-derived wastes	1	LS	300.00	300.00
10	Transportation of planing wastes 3.50 mile x 300 miles	4	Truck	1,050.00/truck	4,200.00

Key at end of table.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 2 OF 8

PROJECT TITLE: Shatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
11	Transportation of decon waters	10	Drums	50.00/drum	500.00
12	Transportation of site-derived wastes	10	Drums	50.00/drum	500.00
13	Disposal of planing waste	34	Tons	300.00/ton	10,200.00
14	Disposal of decon water	10	Drums	180.00/drum	1,800.00
15	Disposal of site-derived wastes	10	Drums	180.00/drum	1,800.00
16	Remedial improvements				
	Electrical panel flooring 3/4" ply	160	SF	1.50/sf	240.00
	Security fencing and signs	60	LF	8.00/lf	480.00
	New hasps and locks	2	ea	120.00	240.00
	Electrical Panel Room Subtotal				35,530.00
B	Building No. 3 - Pits 1 and 2				
1	Removal of residual liquids in Pit No. 1, 19 x 10 foot	20	Gallons	15.00/gal	300.00
2	Removal of residual liquids in Pit No. 2	5	Gallons	15.00/gal	75.00
3	Vacuum extraction, Pit 1 (small area)	420	SF	6.25/sf	2,625.00
4	Vacuum extraction, Pit 2 (small area)	180	SF	6.25/sf	1,125.00
5	Transportation of drummed liquid wastes - PCB	10	Drums	150.00/drum	1,500.00
6	Transportation of site-derived wastes	5	Drums	50.00/drum	250.00

Key at end of table.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 3 OF 8

PROJECT TITLE: Shatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
7	Disposal drummed liquid wastes - PCB	10	Drums	300.00/drum	3,000.00
8	Disposal of site-derived wastes	5	Drums	200.00/drum	1,000.00
9	Remedial Improvements				
	Fencing and signs	50	LF	8.00/lf	400.00
	Pit covers and access covers	220	SF	8.50/sf	1,870.00
	Hasps and locks	2	EA	50.00	100.00
	Building No. 3 Subtotal				12,245.00
C	**Heat Treatment Building**				
1	Building Improvements				
	8 x 10 rollup doors and lock	80	SF	8.25/sf	660.00
	8 x 12 rollup doors and lock	96	SF	8.50/sf	812.00
	Install new lock - east door	1	EA	100.00	100.00
	Weld close existing doors	2	EA	175.00	350.00
	Portable scale	3	Months	700.00/mo	2,100.00
	Install temp traffic plate, Pit 1	91	SF	5.00/sf	455.00
	Setup decon - personnel	1	LS	300.00	300.00
	Setup decon - equipment	1	LS	500.00	500.00
	Security	1	LS	5,000/ls	5,000.00
2	Installation of temporary power and lighting	1	LS	1,800/ls	1,800.00
3	Loading and drumming PCB wastes Pits 13, 14, 15, and 16	12	Drums	100.00/Drum	1,200.00

Key at end of table.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 4 OF 8

PROJECT TITLE: Shatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
4	Washing and drumming rinsate on Pits 13, 14, 15, and 16 for Disposal	3	Drums	100.00/Drum	300.00
5	Fill Pits 13, 14, 15, and 16 with concrete slurry and vibrate	5	CY	150.00/cy	750.00
6	Collect and containerize PCB capacitors, 45-60 pounds each	49	EA	25.00/ea	1,225.00
7	Removal & loading of solids and fire brick debris from Pits 2, 3, 4, 5, 9, 10, 11, and 12				
	Pit No. 2	40	Tons		
	Pit No. 3	30	Tons		
	Pit No. 4	20	Tons		
	Pit No. 5	70	Tons		
	Pit No. 9	20	Tons		
	Pit No. 10	30	Tons		
	Pit No. 11	60	Tons		
	Pit No. 12	30	Tons		
	Debris Total	300	Tons	$170.00/ton	51,000.00
8	Transport of on-site solids and fire brick debris from Pits 2, 3, 4, 5, 9, 10, 11, and 12. Fifteen tons/rolloff	20	Trucks	$250.00/truck	5,000.00
9	Disposal of on-site solids and fire brick debris from Pits 2, 3, 4, 5, 9, 10, 11, and 12	300	Tons	185.00/ton	55,500.00

Key at end of table.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 5 OF 8

PROJECT TITLE: Shatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
10	Removal of liquids and sludge remaining in Pits No. 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, and 12				
	Pit No. 1	150	Gallons		
	Pit No. 2	1,200	Gallons		
	Pit No. 3	200	Gallons		
	Pit No. 4	4,000	Gallons		
	Pit No. 5	4,800	Gallons		
	Pit No. 6	800	Gallons		
	Pit No. 7	1,600	Gallons		
	Pit No. 8	3,200	Gallons		
	Pit No. 10	1,200	Gallons		
	Pit No. 11	400	Gallons		
	Pit No. 12	9,600	Gallons		
	Totals	27,150	Gallons	.60/gal	16,290.00
11	Cleaning and washing of all large pits within the Building 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12				
	Pit No. 1	273	CF		
	Pit No. 2	1,584	CF		
	Pit No. 3	800	CF		
	Pit No. 4	900	CF		
	Pit No. 5	2,980	CF		
	Pit No. 6	560	CF		

Key at end of table.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 6 OF 8

PROJECT TITLE: Shatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
	Pit No. 7	665	CF		
	Pit No. 8	532	CF		
	Pit No. 9	350	CF		
	Pit No. 10	650	CF		
	Pit No. 11	1,350	CF		
	Pit No. 12	2,400	CF		
	Total	13,044	CF	2.25/cf	29,349.00
12	Transportation rinsate liquid generated for pit cleaning	5,000	Gallons	.20/gal	1,000.00
13	Disposal of rinsate from pit cleaning	5,000	Gallons	.40/gal	2,000.00
14	Cleaning, removal and decontamination of steel casings 2, 4, and 12	3	EA	500.00/ea	1,500.00
15	Installation of plywood covers on all pits/hatch openings and locks				
	Pit No. 1	91	SF		
	Pit No. 2	528	SF		
	Pit No 3	160	SF		
	Pit No. 4	180	SF		
	Pit No. 5	596	SF		
	Pit No. 6	112	SF		
	Pit No. 7	133	SF		
	Pit No. 8	133	SF		
	Pit No. 9	70	SF		

Key at end of table.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 7 OF 8

PROJECT TITLE: Shatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
	Pit No. 10	130	SF		
	Pit No. 11	270	SF		
	Pit No. 12	240	SF		
	Total	2,643	SF	6.25/sf	16,520.00
16	Transportation and Disposal of site-derived wastes	15	Drums	230.00/drum	3,450.00
17	Transport and dispose of PCB capacitors	1	Container	4,500.00	4,500.00
18	Transport and dispose of solid/liquid wastes Pits 13, 14, 15, and 16	15	Drum	333.00/drum	5,000.00
19	Remove decon and temporary equipment	1	LS	4,000.00	4,000.00
	Subtotal				210,661.00
	Subtotal Items A, B, & C				258,436.00
	Mobilization/Demobilization 5%				12,922.00
	Bonds 3%				7,753.00
	Insurance 5%				12,922.00
	Subtotal				292,031.00

Key at end of table.

Table 4-1

INITIAL REMEDIAL ORDER OF MAGNITUDE CONSTRUCTION COSTS
SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 8 OF 8

PROJECT TITLE: Shatz Plant Site - Electrical Panel Room

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT & LAB.	ESTIMATED AMOUNT
	Contingency 15%				43,805.00
	Grand Total				335,836.00

Key:

LF = Linear foot.
LS = Lump sum.
SF = Square foot.

Source: Ecology and Environment Engineering, P.C. 1992.

Key at end of table.

Table 4-2

ORDER OF MAGNITUDE ESTIMATE FOR CONSTRUCTION OVERSIGHT AND HEALTH AND SAFETY MONITORING COSTS SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 1 OF 2

PROJECT TITLE: Schatz Plant Site

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	COST PER UNIT	ESTIMATED AMOUNT
1	Labor Preconstruction - Engineer V	80	Hours	60.00/hr	4,800.00
	H&S IV	80	Hours	50.00/hr	4,000.00
2	Labor work in progress - Engineer V	900	Hours	60.00/hr	54,000.00
	H&S IV	400	Hours	50.00/hr	20,000.00
3	Labor E & E support staff - Engineer VII	200	Hours	80.70/hr	16,140.00
	WP/Tech II	200	Hours	30.70/hr	6,150.00
4	Travel/Per Diem				
	Flight - Precon	8	Flight	400.00/flt	3,200.00
	Flight - Construction	15	Flight	400.00/flt	6,000.00
	Rental car - Precon	4	Days	50.00/day	200.00
	Rental car - Construction	5	Months	1,000.00/mo	5,000.00
	Per Diem - Precon	8	Days	94.00/day	752.00
	Per Diem - Construction	220	Days	94.00/day	20,680.00
5	Equipment Miniram	40	Days	38.00/day	1,520.00
	High vol sampler	40	Days	13.00/day	520.00
	OVA	10	Days	67.00/day	670.00
6	Analysis				
	Clearance on surfaces - PCBs	150	Samples	110.00/ea	16,500.00
	Ambient air - PCBs	50	Samples	100.00/ea	500.00
7	Level of Protection				
	Level "D"	200	Days	15.00/day	3,000.00
	Level "C"	20	Days	50.00/day	1,000.00
8	Disposal Analyses	10,000	LS	10,000.00	10,000.00
9	Shipping costs	3,000	LS	3,000.00	3,000.00
10	Construction costs	1,000	LS	1,000.00	1,000.00

Table 4-2

ORDER OF MAGNITUDE ESTIMATE FOR CONSTRUCTION OVERSIGHT AND HEALTH AND SAFETY MONITORING COSTS SCHATZ PLANT SITE

COST ESTIMATE WORK SHEET

DATE: 4-30-92 | SHEET 2 OF 2

PROJECT TITLE: Schatz Plant Site

LOCATION: Poughkeepsie, New York

OWNER: NYSDEC

ESTIMATED BY: MGS | CHECKED BY: | APPROVED BY:

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	COST PER UNIT	ESTIMATED AMOUNT
	Total Construction Oversight Costs				178,632.00

Source: Ecology and Environment Engineering, P.C. 1992.

Table 4-3

SUMMARY OF PROJECT COSTS
SCHATZ PLANT SITE

Item No.	Description	Estimated Amount
A	Electrical Panel Room	35,530.00
B	Building No. 3	12,245.00
C	Heat Treatment Building	210,661.00
	Subtotal	258,436.00
	Mobilization/Demobilization 5%	12,922.00
	Bonds 3%	7,753.00
	Insurance 5%	12,922.00
	Subtotal	292,031.00
	Contingency 15%	43,805.00
	Total Construction Costs	375,836.00
	Total Construction Oversight and H&S Costs	178,632.00
	Grand Total	514,468.00

Source: Ecology and Environment Engineering, P.C. 1992.

Table 4-4

AMBIENT CONTAMINANT GUIDELINES (ACG)/ACTION LEVELS SCHATZ PLANT SITE

	Waste Solids Concentrations	Air Cleanup Standards ($\mu g/m^3$)	Toxicity	Action Limits ($\mu g/m^3$)
Electrical Panel Room/Building No. 3				
PCBs	26 ppm - 390 ppm	4.5×10^{-4} [a, b]	High	0.02
Cadmium	1.4 ppm - 4.6	5.0×10^{-4} [c, b]	High	--
Tetrachloroethylene	0.17 ppm	7.5×10^{-2} [b, d]	Moderate	6,700
Particulates	Unknown	--	--	150
Total Hydrocarbons	60,000 ppm - 80,000 ppm	--	--	5 ppm
Cyanide	2.0 - 2.5 ppm	12.0 [c]	High	--
Heat Treatment Building				
PCBs	.8 $\mu g/L$ - 160 ppm	4.5×10^{-4} [a, e]	High	0.02
Cyanides	0.11 ppm - 9.5 ppm	12.0 [e]	High	--
Barium	72 ppm	--	Moderate	--
Total Hydrocarbons	54,000 - 69,000	--	--	5 ppm
Particulates	--	--	--	150
Cadmium	0.25 - 0.29 ppm	5.4×10^{-4} [c, b]	High	--

[a] ACG based on derivation by EPA.
[b] ACG based on ambient air concentration equal to cancer risk of 1 in 1 million after lifelong exposure.
[c] ACG derived from NYSDOH.
[d] ACG derived from NYSDEC.
[e] ACG derived from AGCIH - TLV-TWA (1990-1991).

Source: Ecology and Environment Engineering, P.C. 1992.

0B4SHATZ-PROJSCHED

CALENDAR PERIOD

NO.	DESCRIPTION	WEEKS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	% COMPLETE	COST($)	COST(%)
	NOTICE TO PROCEED				
	PRECONSTRUCTION AND SUBMITTAL REVIEW				
	MOBILIZATION – PROJECT		100%	50,340	15%
A	EPR AND BUILDING NO. 3 PREP			4,750	1.4
	EPR FLOOR PLANING		90	10,820	3.2
	EPR DISPOSAL OF WASTES			19,000	5.7
	EPR INSTALL IMPROVEMENTS		80	1,500	0.4
B	BLDG. NO. 3 PIT CLEANOUT LIQUIDS			4,875	1.5
	BLDG. NO. 3 PIT VACUUM EXTRACTION		70	5,000	1.5
	EPR/BLDG. NO. 3 INSTALL IMPROVEMENTS			2,370	0.7
C	HTB INSTALL ACCESS AND DECON CONTROLS		60	12,577	3.7
	HTB PICKUP AND CONTAINERIZE WASTES			2,725	0.8
	HTB REMOVAL OF PIT SOLID WASTES		50	51,000	15.2
	HTB REMOVAL OF PIT LIQUID WASTES			16,290	4.9
	HTB DECON PITS		40	29,349	8.7
	HTB TRANSPORT/DISPOSAL NON HAZ WASTES			67,950	20.3
	HTB TRANSPORT/DISPOSAL HAZ/TSCA WASTES		30	9,500	2.8
	HTB REMOVE DECON CONTROLS			4,000	1.2
	HTB INSTALL PIT COVERS AND HATCHES		20	16,520	4.9
	HTB SLURRY CONCRETE SMALL PITS			750	0.2
	HTB FINAL INSPECTION		10	1,000	0.3
	PROJECT DEMOBILIZATION			25,520	7.7
			0		
	TOTALS			335,836	100
	MONTHS	① ② ③ ④ ⑤ ⑥ ⑦			
	$ COMPLETE BY MONTH	0 | 65,824 | 58,100 | 46,345 | 116,871 | 48,696 | = 335,836			

Figure 4.1 SCHATZ PLANT SITE
ESTIMATED PROJECT SCHEDULE

5. CONSTRUCTION OVERSIGHT

E & E's original work plan did not include construction oversight of the remediation because it was unknown whether the project was going to be bid publicly or procured by E & E. Since the costs developed herein would exceed the mutual accepted level for procurement by E & E ($100,000), it is recommended that the project be bid publicly.

As a part of the construction oversight function, E & E would provide liaison support to NYSDEC by reviewing the performance of all aspects of the contractor's remediation work. These services would include liaison work between NYSDEC and the Contractor on all issues related to the project, quality assurance of construction, monitoring of health and safety conditions, and complete documentation of all construction activities. The general tasks provided to NYSDEC from E & E as a result of the State Standby Services Contract (SSSC) and as expected for the Schatz Plan remediation would be:

Task 1: Attend Pre-Construction Meeting

The pre-construction meeting will consist of a thorough review of the scope of work, health and safety plan, plans requested to be submitted with the bid, and project schedule. E & E would also initiate lines of communication and provide meeting minutes.

Task 2: Review of Contractor Submissions

E & E will obtain and review contractor submissions, monitor the progress of the contractor, review contractor's schedule, notify contractor of status, and propose actions to get back on schedule, if necessary.

Task 3: Project Inspection

E & E will provide experienced inspectors during all construction activities and notify NYSDEC of failure of the contractor to perform work specified in the contract. The engineer shall issue instructions, field orders, and interpretation and clarification of contract language to the contractor. The engineer will negotiate, develop, and submit change orders and

recommendations with specific developed information as needed by NYSDEC. The Engineer will document, evaluate, and recommend a course of action in cases of all disputes and claims by the contractor.

Task 4: Construction Records and Reports

The engineer will maintain complete and detailed records of all construction related activities during the project duration at the site project office.

Task 5: Quality Assurance

The engineer will provide regular inspection of the work, determine if the work complies with the requirements of the contract, and evaluate the amount of satisfactory work completed by the contractor. The engineer also will provide final inspection of the work to see if it is complete and meets the requirements of the construction contract.

Task 6: Final Remediation Report

A final report submittal describing variations from the contract documents and the overall extent and quantities of the work performed will be developed.

The construction oversight, which may be specific to the work performed at the Schatz site, could include:

- Perimeter ambient air monitoring prior to, during, and after completion of the remediation;
- Wipe or clearance sampling on the various affected areas of waste and mixed liquid removal;
- Monitoring of confined space entry in the pits on the project and other safety items;
- Public or community relations meetings as the project proceeds; and
- Scheduling of closure of access areas to area occupants.

While it is difficult to anticipate the schedule of the contractor, E & E has provided an order of magnitude estimate of oversight costs, which anticipates the schedule presented at the end of Section 4.

These cost estimates would be expected to be refined during the design phases of the project (Subtask 2.4) and finalized upon completion of the design. All work performed by E & E under the current work authorization will be completed upon review of bids and recommendation of award. Work performed after that point will be considered construction

oversight services and would be performed under a new work authorization or a budget modification to the existing work authorization. The construction oversight cost assumptions are listed in Table 4-2.

6. ISSUES OF CONCERN

While analytical results supports the recommendations that were developed in Section 3, there remain some issues of concern. These issues may impact the project cost and should be considered and discussed thoroughly. Their evaluation should also be critical on how the project will proceed.

6.1 ASBESTOS REMAINING IN THE HEAT TREATMENT FACILITY

During the initial survey of the facility, Subtask 2.1, asbestos-containing material (ACM) was suspected throughout the Heat Treatment Building after NYSDEC and E & E were told that a firm removed incidental ACM and cleared the building by air clearance testing. These clearance tests were submitted for the storeroom only; the building in total did not have any air clearance tests. During the survey, 11 bulk and 1 duplicate samples were taken of suspect ACM remaining in the pits and on the floor in the Heat Treatment Building. Ten of the 11 analyses indicated that ACM debris remained in the facility. While gross debris could still be mixed in the wastes of the pits during the excavation and the large amount of silica fire brick could give confusing readings to ambient monitoring results, additional removal considerations should be reviewed.

In general, this facility is a difficult setting in which to obtain any kind of air clearance. Other difficulties are that adjacent buildings have active operations continuing daily. While the Asbestos Hazardous Emergency Response Act (AHERA) does not apply because it is not a school setting, many of the methodologies contained therein have become industry standards. New York State Department of Labor (NYSDOL), Industrial Code Rule 56 the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) enforced by EPA and OSHA for work standards for asbestos would govern the Schatz Plant project if the asbestos debris removal is performed.

It is uncertain if a separate subcontract would be entered into for ACM removal, if complete removal could occur. Another uncertainty is whether ACM debris will be uncovered in the excavation of the pits.

A consideration for the project may be to bid for contractors that hold OSHA hazardous worker certificates and are certified for asbestos removal, thus fulfilling the obligations of all agencies during the remediation. Initial gross pickup and clearance could be performed, or, it would be possible to protect all workers during the project and perform a clearance at the end.

In addition, knowing asbestos may be in some of the debris, the material must be handled in a different manner and possibly kept wet to reduce visible emissions. A spray lockdown of materials and a final air clearance test could be part of the facility closure.

The current regulatory climate is that NYSDOL and OSHA are critically reviewing all projects and are enforcing all regulations under their direct jurisdiction.

6.1.1 Cost and Schedule

An initial order of magnitude cost for dual certifications for subcontractor billing is expected to be around $15,000 to $20,000 and impact the schedule by two to three weeks.

The assumptions provided for this estimate are that only ACM debris will be picked up initially and cleanup areas will be HEPA vacuumed. This effort would require only remote decontamination units, personal air monitoring, area air monitoring, and lockdown of remaining materials.

The schedule assumes less than one week for setup, one week for area removal, and less than a week for clearance.

E & E recommends that discussions be developed with NYSDOL and OSHA that the facility be allowed to proceed with gross pickup of remaining materials and provide an air clearance.

6.2 SUBSURFACE EXCAVATION

As previously surveyed, eight of 16 pits in the Heat Treatment Building contain demolition debris that was backfilled, reducing previous off-site disposal.

This backfill, we assume, was provided from inside the complex and was not from outside sources. While PCB capacitors and asbestos were defined in the original scope of work, there may also be other unknowns uncovered as excavation and removal of debris occur.

It is difficult to put cost quantification on these items because of the unknown factors. Any additional items to an existing waste stream (e.g., PCB capacitors) can be added or the unit price line items can be extended. If other items are uncovered, we assume that they would be packaged and placed in a secure area until a waste stream approval could be obtained for removal and disposal.

The impact of unknowns in the subsurface excavation are in time delays and increased transportation and disposal costs. Construction oversight would also be affected for procurement negotiation and additional oversight monitoring with these wastes.

At this point, the waste streams have been established for the project but new items may be found and increase the project costs.

6.3 PUBLICLY BID PROJECTS

In our past discussions with P. David Smith of NYSDEC, it was decided that if project costs are over the $100,000 limit for subcontracted E & E work, they should be procured publicly. In the case of the Schatz site, the extent of the reduction required by the site is over $100,000. This project, if publicly procured as recommended by E & E, would take an additional six to eight weeks to allow for bidding and selection of qualified and responsible bidders.

APPENDIX A

P-1

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P1 DATE: 12/11/91

1. SAMPLE DESCRIPTION Liquid. Clear "water-like" liquid. No phases present. Viscosity like water. Slight amount of black particulate at bottom of sample bottle.

2. SPECIFIC GRAVITY: =(1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble w/ water

5. PH: ~7 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS slight ppt.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P2 Top

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P2 (Top Layer) DATE: 12/11/91

1. SAMPLE DESCRIPTION 1-Lpty. Top Layer Viscous dark oily subst. Looks just like used motor oil. This top layer of two phased sample

2. SPECIFIC GRAVITY: = 1 / (<1) / >1 floats

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Floats on water

5. PH: N/A

6. PRESENCE OF CYANIDES: (NEG) / POS Slight ~~yellow~~ color NA

7. PRESENCE OF SULFIDES: (NEG) / POS NA

8. PRESENCE OF OXIDIZERS: (NEG) / POS NA

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: ~~Neg~~ Negative
    A. HNU _____
    B. BIC SUSTAINED a Flame

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P2 Bottom

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P2 (Bottom Layer) DATE: 12/11/91

1. SAMPLE DESCRIPTION: 1-Qpt Bottom Layer of two phased sample Clear liquid, slight amber tint - color. Appears to be a bottom aqueous layer.

2. SPECIFIC GRAVITY: (1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in water

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS Slight ppt.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg., produced yellow flame but would not sustain on it's own.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P3

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P3 DATE: 12/11/91

1. SAMPLE DESCRIPTION 8oz Glass Clear liquid - "water-like" appearance & viscosity. Slight / amber color tint.

2. SPECIFIC GRAVITY: (1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in water

5. PH: 6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P4 Top

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P4 (Top Layer) DATE: 12/11/98

1. SAMPLE DESCRIPTION 8oz-Glass Top layer of two phased sample Viscous dark oily samples. (Appears to look just like used motor oil.

2. SPECIFIC GRAVITY: = 1 / (<1) / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Floats on water

5. PH: N/A

6. PRESENCE OF CYANIDES: ~~NEG~~ / POS ~~ppt, color change~~ NA

7. PRESENCE OF SULFIDES: NEG / POS N/A

8. PRESENCE OF OXIDIZERS: NEG / POS N/A

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Sustainable Flame
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

#4 Bottom

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-14 (Bottom Layer) DATE: 12/11/91

1. SAMPLE DESCRIPTION 802. Gkar, Bottom Layer of two phased sample. Water like in viscosity & appearance except liquid has a dark amber brown color.

2. SPECIFIC GRAVITY: =(1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in water

5. PH: ~9 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS pt; color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Mg, But produced yellow flame - not sustainable.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P5

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001 - P5 DATE: 12/11/91

1. SAMPLE DESCRIPTION 8oz Glass Clear liquid which has no color. Appears to be more viscous than water.

2. SPECIFIC GRAVITY: (1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in water

5. PH: ~6-7 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt., color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Negative
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P6

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P6 DATE: 12/11/91

1. SAMPLE DESCRIPTION 1-l poly, Clear to slightly cloudy "water-like" liquid. Viscosity similar to water. Sample has minor amount of floating oily particles which sticks to top of bottle.

2. SPECIFIC GRAVITY: =(1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in Water

5. PH: ~6-7 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS pt., odor change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P7

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P7 DATE: 12/11/91

1. SAMPLE DESCRIPTION 1-l poly. Clear to slightly cloudy "water-like" liquid. same viscosity as water. Sample 1 has small amount of floating "motor oil" like substance on top. - not enough for sample

2. SPECIFIC GRAVITY: (1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in water with exception of minor amounts of "oil" which floats

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt. & color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg. - produced non-sustained yellow flame
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P8

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P8 DATE: 12/11/91

1. SAMPLE DESCRIPTION 1-Lqd. Clear "water-like" liquid Viscosity of water.

2. SPECIFIC GRAVITY: (1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in Water

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS Only = light ppt.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P9 DATE: 12/11/91

1. SAMPLE DESCRIPTION Black smooth sludge like material. May have oil ~~soft~~ or soaked it "moist" material (oil?) — paste like

2. SPECIFIC GRAVITY: = 1 / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Not soluble - solids at bottom, slightly cloudy water a leaf & pine needle (?) are apparent in the sample.

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt. & color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P10

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001- P10 DATE: 12/11/91

1. SAMPLE DESCRIPTION: 8 oz. Glass Cloudy slightly amber colored liquid. Same viscosity as (water) After transfer mixed thoroughly to test tube some precipitate (sediment) settled out.

2. SPECIFIC GRAVITY: (1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in Water

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg - slight yellow flame, not sustainable
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P11

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P11 DATE: 12/11/91

1. SAMPLE DESCRIPTION 1-Epoxy. Clear "water-like" liquid w/ similar viscosity to water.

2. SPECIFIC GRAVITY: =(1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in water

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS upt.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P12

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P12 DATE: 12/11/91

1. SAMPLE DESCRIPTION 8oz. Glass. Clear "water-like" liquid with similar viscosity as water. Very slight amber color tint.

2. SPECIFIC GRAVITY: (<1) / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Soluble in water.

5. PH: ~6-7 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P13

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): 03-HT-001 P13 DATE: 12/11/91

1. SAMPLE DESCRIPTION Dry black material, light, mixed loose material, slag-like, paper, brick ?

2. SPECIFIC GRAVITY: = 1 / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Solids remain at bottom of water. Suspended mat'l - cloudy

5. PH: ~6 (paper) grey/black color Complex floating pieces

6. PRESENCE OF CYANIDES: (NEG) / POS ppt. & color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: NG
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

HAZCAT P14

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): DB-HT-001-P14 DATE: 12/11/91

1. SAMPLE DESCRIPTION Brown/black soil-like material, Dry-loose.

2. SPECIFIC GRAVITY: = 1 / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Solids at bottom of water. Water slightly cloudy grey color.

5. PH: 6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt & color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

P15

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): 08-HT-001-P15 DATE: 12/11/91

1. SAMPLE DESCRIPTION Dry black gritty material, like a soil-slag mixture. Loose.

2. SPECIFIC GRAVITY: = 1 / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: solids at bottom, water slightly cloudy grey

5. PH: 8-9 (paper) green color

6. PRESENCE OF CYANIDES: (NEG) / POS ppt & color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: NEG (POS) ✓

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

HAZCAT P16

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-HT-001-P16. DATE: 12/11/91

1. SAMPLE DESCRIPTION Brown, Grey, Black Fine grained loose material - Topsoil like with mixed debris (glass) Dry.

2. SPECIFIC GRAVITY: = 1 / <1 / >1

3. WATER REACTIVITY: NEG / POS

4. SOLUBILITY: Black solid particulate mostly at bottom some suspended & floating. Water is clear.

5. PH: 6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt. & color change.

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC _____

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

APPENDIX B

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-BLDG3-001 P1 DATE: 12/11/91

1. SAMPLE DESCRIPTION Gritty solid sample soaked in (stained) black oil. Slightly oil film on top of sample

2. SPECIFIC GRAVITY: = 1 / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: Not soluble - floating oil, solids sink to bottom

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt. & color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Oil sustains a flame
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

HAZCAT

(PROJECT NAME):
(DOCUMENT CONTROL NUMBER):

(SAMPLE I.D. NUMBER): OB-BLDG3-001-P2 DATE: 12/11/91

1. SAMPLE DESCRIPTION Black → Brown solid, light weight material - very moist. (moisture ?) Scent almost like saturated paper - pulp. - paste

2. SPECIFIC GRAVITY: = 1 / <1 / >1

3. WATER REACTIVITY: (NEG) / POS

4. SOLUBILITY: solids at bottom - Water turns cloudy brown color - suspended material

5. PH: ~6 (paper)

6. PRESENCE OF CYANIDES: (NEG) / POS ppt & color change

7. PRESENCE OF SULFIDES: (NEG) / POS

8. PRESENCE OF OXIDIZERS: (NEG) / POS

9. PRESENCE OF CHLORINATED HYDROCARBONS:
   A. Copper Wire Test: (NEG) / POS
   B. Chlor-n-oil Test Kit: NEG / POS _____ PPM
   C. PCB Field Test Kit: NEG / POS _____ PPM

10. FLAMMABILITY: Neg.
    A. HNU _____
    B. BIC ✓

11. HAZARD CLASS ASSIGNED: _____
    (Ref. 49 CFR 172.101)

12. LABELING: _____

13. I.D. NUMBER: _____

APPENDIX C

ecology and environment, inc.

QUALITY ASSURANCE PROTOCOL REVIEW

Job No.: 9103.07 Date: 1/14/92

Report Title:

Client: Ashaty Site Task 21

Laboratory Data Review	Supervisor	Date
Metals	RAJ	1-15-92
Gen. Chem.		
GC		
GC/MS		
Micro, Asbestos		
Other		

	Signature	Date
Report Written by:	[signature]	1/14/92
1st Draft ~~Reviewed by~~: circulated	[signature]	1/14/92
2nd Draft Reviewed by: (If needed)		
Final Review by Author:		
ASC Manager:	[signature]	1.92
QA Officer:		
Corp. Project Manager: (Internal Job) Sign, return to ASC		
All QA Protocol Review Forms Signed and in File (to be signed by report writer)		
1 Copies of Report Sent to: Client via Staffan		1/16/92
1 Invoices Sent to Accounting		

Comments/Notes:

Copy Distribution: White - Report to Project File; Canary - Project Manager; Pink - Project File.

407064

M E M O R A N D U M

TO: Mike Steffan

FROM: Gary Hahn

DATE: January 15, 1992

SUBJECT: OB-4000 Schatz Site Task 21 Report

REF: 9103.037

CC: Lab File

Attached is the laboratory report of the analysis conducted on twelve samples received at the Analytical Services Center on December 19, 1991. Analysis was performed according to the procedures set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, U.S. EPA, 1986.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

GH:tms
enclosure

M E M O R A N D U M

TO: Mike Steffan

FROM: Gary Hahn G. Hahn/gk

DATE: January 31, 1992

SUBJECT: OB-4000 Schatz Site Task 21 Report

REF: 9103.037

CC: Lab File

Enclosed are revised pages for Schatz report 9103.037. The client sample id. has been amended on the purgeable-TCLP pages to read as follows:

LAB SAMPLE ID:	CLIENT SAMPLE ID:
EE-91-29727	COMP. P1, P3, P5, P6, P8, P12
EE-91-29734	COMPOSITE P7, P10, P11
EE-91-29739	COMPOSITE P2, P4

An amended tracking page is also included.

Please replace the original pages in your report with these revised pages.

If there are any questions, please contact me. Thank you.

GH:gk
enclosure

M E M O R A N D U M

TO: Mike Steffan

FROM: Gary Hahn G Hahn/GK

DATE: January 24, 1992

SUBJECT: OB-4000 Schatz Site Task 21 Report

REF: 9103.037

CC: Lab File

Enclosed are the results for the PCB reanalysis of sample EE-91-29738 [Client Id. OB-HT-001-P7 OIL] for Schatz Site Report 9103.037. The original detection limit was 1000 mg/kg for this sample. The detection limit for the reanalysis has been lowered to 15 mg/kg.

Please replace the original pages in your report with these revised pages.

If there are any questions, please contact me. Thank you.

Corrected pages were inserted in report.
JMM 3/10/92

GH:gk
enclosure

M E M O R A N D U M

TO: Mike Steffan

FROM: Gary Hahn G Hahn/jp

DATE: January 24, 1992

SUBJECT: OB-4000 Schatz Site Task 21 Report

REF: 9103.037

CC: Lab File

Enclosed are amended pages for job 9103.037.

-Corrected TRACKING for Herbicides - Date Extracted should be 01/02/92.

-Mercury QC.

If there are any questions, please contact me. Thank you.

GH:jp
enclosure

Corrected pages were inserted in report.
JMM 3/10/92

ecology and environment, inc.

368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Page 1 of 4

Project No.:	Project Name:	Project Manager:
084000	SCHATZ PLANT SITE	M. STEFFAN
Samplers: (Signatures)		**Field Team Leader:**
		K. SMITH

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	TCLP ANALYSIS - FULL	PH, % SOLIDS, % WATER	SPECIFIC GRAV., PH	REACTIVITY, IGNITABILITY	% SULPHUR, BTU, % HALOGENS	% ASH, T.O.C., PH	REMARKS
BLDG 3-001-P1	12/16/91	16:00	X	X		UNKNOWN	BLDG #3	1	X		X		X	X	ANALYSIS FOR WASTE CHARACTERIZATION
" 001-P2	12/16/91	16:00	X	X		"	BLDG #3	1	X		X		X	X	" " " "
EPR-001-F1	12/16/91	16:00	X	X		"	ELECTRICAL PANEL ROOM	1	X		X		X	X	" " " "
EPR-001-F2	12/16/91	16:00	X	X		"	ELECTRICAL PANEL ROOM	1	X		X		X	X	" " " "
HT 001-P1	12/16/91	16:00		X		"	HEAT TREAT BLDG	5	X	X		X	X		" " " "
" 001-P2	12/16/91	16:00		X		"	" " "	5	X	X		X	X		" " " "
" 001-P3	12/16/91	16:00		X		"	" " "	5	X	X		X	X		" " " "
" 001-P4	12/16/91	16:00		X		"	" " "	5	X	X		X	X		" " " "
" 001-P5	12/16/91	16:00		X		"	" " "	5	X	X		X	X		~~COMPOSITE SAMPLES~~ " " " "
" 001-P6	12/16/91	16:00		X		"	" " "	5	X	X		X	X		" " " "
" 001-P7	12/16/91	16:00		X		"	" " "	5	X	X		X	X		COPIES COMPOSITE SAMPLES 6-7-8
" 001-P8	12/16/91	16:00		X		"	" " "	5	X	X		X	X		" " " "

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: / Date:
Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

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*See CONCENTRATION RANGE on back of form.

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ecology and environment, inc.

368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.:	Project Name:	Project Manager:
084000	SCHATZ PLANT SITE	M. STEFFAN
Samplers: (Signatures)		Field Team Leader: K. SMITH

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	TCLP ANALYSIS FULL	DUP	% SOLIDS	SPECIFIC GRAV.	REACTIVITY, IGNITABILITY	% SULPHUR, BTU	% ASH, T.O.C.	% HALOGENS	REMARKS
OB-HT 001-P9	12/8/91	11:40		X		UNKNOWN	HEAT TREAT BLDG	1	X			X			X	X	ANALYSIS FOR WASTE CHARACTERIZATION
OB-H 001-P10	12/7/91	1140		X		"	"	5	X	X			X		X		
001-P11	12/7/91	1140		X				5	X	X			X		X		
001-P12	12/7/91			X				5	X	X			X		X		
001-P13				X				1	X		X				X	X	
001-P14				X				1	X		X				X	X	
001-P15				X				1	X		X				X	X	
001-P16				X				1	X		X				X	X	
																	COMPOSITE AS NECESSARY FROM HAZCAT INFORMATION

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:	
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number:	Date:
Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

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368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.:	Project Name:	Project Manager:
08.4000	Schatz	Mike Steffan

Samplers: (Signatures) L. Roed / Larry Roed

Field Team Leader:

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	REMARKS
	11.21.91						OB-HT-001-P1	1	Comp. First #1
	11.21.91						OB-HT-001-P3	1	
	11.21.91						OB-HT-001-P5	1	
	11.21.91						OB-HT-001-P6	1	
	11.21.91						OB-HT-001-P8	1	
	11.21.91						OB-HT-001-P12	1	
	12.19.91						OB-HT-001-Comp P1, P3, P5, P6 P7, P12	3	#1
	11.21.91						OB-HT-001-P#7	1	Comp. First #2
	11.21.91						OB-HT-001-P10	1	
	11.21.91						OB-HT-001-P11	1	
	12.19.91						OB-HT-001-Comp-P7, P10, P11	2	#2 — OIL
	12.19.91						OB-HT-001-P7-oil	1	
	11.21.91						OB-HT-001-P2	1	Comp. First #3
	11.21.91						OB-HT-001-P4	1	

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number:
Relinquished By: (Signature) Larry Roed	Date/Time:	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Date: 12.19.91

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

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368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.:	Project Name:	Project Manager:
03.4060	Schatz	Mike Steffan
Samplers: (Signatures)		Field Team Leader:
Larry Reed L. Reed		

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	REMARKS
	12.19.91						OB.HT.001.comp.P2,P4	1	#3
	12.19.91						OB.EPA.001.comp. F1, F2	1	#5
	12.19.91						OB.HT.001.comp.P3,P11,P14,P16	2	#4
	11.22.91						OB.BIDG3.001-P1	2	
	11.22.91						OB.BIDG3.001-P2	2	
	11.21.91						OB.HT.001-P15	2	

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:	
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)		
Relinquished By: (Signature) Larry Reed	Date/Time:	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	BL/Airbill Number:	Date: 12.19.91

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

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JOB NUMBER : 9103.037

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	
29727.01	COMP. P1,P3,P5,P6,P8,P12	WTCPRG1	11/21/91	01/02/92	01/06/92	
29733.01	COMP. P1,P3,P5,P6,P8,P12	WCNT 1	12/19/91		01/07/92	
		WORGCL1	12/19/91		01/08/92	
		WORGS 1	12/19/91		01/08/92	
		WSULFD1	12/19/91		12/26/91	
		WTS 1	12/19/91		12/26/91	
29733.02	COMP. P1,P3,P5,P6,P8,P12	WTCAP 1	12/19/91	01/02/92	01/06/92	
		WTCBN 1	12/19/91	01/02/92	01/06/92	
		WTCHG 1	12/19/91	01/02/92	01/03/92	
		WTCHRB1	12/19/91	01/02/92	01/06/92	
		WTCICP1	12/19/91	01/02/92	01/02/92	
		WTCPST1	12/19/91	01/02/92	01/08/92	
29734.01	COMPOSITE P7, P10, P11	WTCPRG1	11/21/91	01/02/92	01/06/92	
29737.01	COMPOSITE P7, P10, P11	WCNT 1	12/19/91		01/07/92	
		WORGCL1	12/19/91		01/08/92	
		WORGS 1	12/19/91		01/08/92	
		WSULFD1	12/19/91		12/26/91	
		WTS 1	12/19/91		12/26/91	
29737.02	COMPOSITE P7, P10, P11	WTCAP 1	12/19/91	01/02/92	01/06/92	
		WTCBN 1	12/19/91	01/02/92	01/06/92	
		WTCHG 1	12/19/91	01/02/92	01/03/92	
		WTCHRB1	12/19/91	01/02/92	01/06/92	
		WTCICP1	12/19/91	01/02/92	01/02/92	
		WTCPST1	12/19/91	01/02/92	01/10/92	
29738.01	OB-HT-001-P7 OIL	LPCB 1	11/21/91		01/20/92	RA
29739.01	COMPOSITE P2, P4	LTCPRG1	11/21/91	12/30/91	01/07/92	
29741.01	COMPOSITE P2, P4	LBTU 1	12/19/91		01/06/92	
		LCNREA1	12/19/91		01/02/92	
		LORGCL1	12/19/91		01/06/92	
		LORGS 1	12/19/91		01/06/92	
		LPCB 1	12/19/91		01/02/92	
		LSULRA1	12/19/91		01/02/92	
		LTCAP 1	12/19/91		01/06/92	
		LTCBN 1	12/19/91		01/06/92	
		LTCHG 1	12/19/91	01/02/92	01/03/92	
		LTCICP1	12/19/91	01/02/92	01/02/92	
		LTCPST1	12/19/91	01/13/92	01/10/92	
29742.01	COMPOSITE F1, F2	SASH 1	12/19/91		01/02/92	
		SBKDEN1	12/19/91		01/02/92	
		SBTU 1	12/19/91		01/08/92	
		SCNT 1	12/19/91		12/31/91	
		SORGCL1	12/19/91		01/08/92	
		SORGS 1	12/19/91		01/08/92	
		SORMAT1	12/19/91		01/02/92	
		SSULFD1	12/19/91		01/09/92	
		SSULRA1	12/19/91		01/10/92	
		STCAP 1	12/19/91	01/02/92	01/06/92	
		STCBN 1	12/19/91	01/02/92	01/06/92	

RA = REANALYSIS

JOB NUMBER : 9103.037

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
29742.01	COMPOSITE F1, F2	STCHG 1	12/19/91	01/02/92	01/03/92
		STCHRB1	12/19/91	01/02/92	01/06/92
		STCICP1	12/19/91	01/02/92	01/02/92
		STCPRG1	12/19/91	12/30/91	01/02/92
		STCPST1	12/19/91	01/02/92	01/08/92
		STS 1	12/19/91		01/06/92
29743.01	COMP. P9, P13, P14, P16	SASH 1	12/19/91		01/02/92
		SBKDEN1	12/19/91		01/02/92
		SBTU 1	12/19/91		01/08/92
		SCNT 1	12/19/91		12/31/91
		SORGCL1	12/19/91		01/08/92
		SORGS 1	12/19/91		01/08/92
		SORMAT1	12/19/91		01/02/92
		SSULFD1	12/19/91		01/09/92
		STCAP 1	12/19/91	01/02/92	01/06/92
		STCBN 1	12/19/91	01/02/92	01/06/92
		STCHG 1	12/19/91	01/02/92	01/03/92
		STCHRB1	12/19/91	01/02/92	01/06/92
		STCICP1	12/19/91	01/02/92	01/02/92
		STCPRG1	12/19/91	12/30/91	01/02/92
		STCPST1	12/19/91	01/02/92	01/08/92
		STS 1	12/19/91		01/06/92
29744.01	OB-HT-001-P15	SASH 1	11/21/91		01/02/92
		SBKDEN1	11/21/91		01/02/92
		SBTU 1	11/21/91		01/06/92
		SCNT 1	11/21/91		12/31/91
		SORGCL1	11/21/91		01/06/92
		SORGS 1	11/21/91		01/06/92
		SORMAT1	11/21/91		01/02/92
		SSULFD1	11/21/91		01/09/92
		STS 1	11/21/91		01/06/92
29744.02	OB-HT-001-P15	STCAP 1	11/21/91	01/02/92	01/06/92
		STCBN 1	11/21/91	01/02/92	01/06/92
		STCHG 1	11/21/91	01/02/92	01/03/92
		STCHRB1	11/21/91	01/02/92	01/06/92
		STCICP1	11/21/91	01/02/92	01/02/92
		STCPRG1	11/21/91	12/30/91	01/02/92
		STCPST1	11/21/91	01/02/92	01/08/92
29745.01	OB-BLDG3-001-P1	SASH 1	11/21/91		01/02/92
		SBKDEN1	11/21/91		01/02/92
		SBTU 1	11/21/91		01/06/92
		SCNT 1	11/21/91		12/31/91
		SORGCL1	11/21/91		01/06/92
		SORGS 1	11/21/91		01/06/92
		SORMAT1	11/21/91		01/02/92
		SSULFD1	11/21/91		01/09/92
		STS 1	11/21/91		01/06/92

JOB NUMBER : 9103.037

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
29745.02	OB-BLDG3-001-P1	STCAP 1	11/21/91	01/02/92	01/06/92
		STCBN 1	11/21/91	01/02/92	01/06/92
		STCHG 1	11/21/91	01/02/92	01/03/92
		STCHRB1	11/21/91	01/02/92	01/06/92
		STCICP1	11/21/91	01/02/92	01/02/92
		STCPRG1	11/21/91	12/30/91	01/02/92
		STCPST1	11/21/91	01/02/92	01/10/92
29746.01	OB-BLDG3-001-P2	SASH 1	11/21/91		01/02/92
		SBKDEN1	11/21/91		01/02/92
		SBTU 1	11/21/91		01/08/92
		SCNT 1	11/21/91		01/07/92
		SORGCL1	11/21/91		01/08/92
		SORGS 1	11/21/91		01/08/92
		SORMAT1	11/21/91		01/02/92
		SSULFD1	11/21/91		01/09/92
		STS 1	11/21/91		01/06/92
29746.02	OB-BLDG3-001-P2	STCAP 1	11/21/91	01/02/92	01/06/92
		STCBN 1	11/21/91	01/02/92	01/06/92
		STCHG 1	11/21/91	01/02/92	01/03/92
		STCHRB1	11/21/91	01/02/92	01/06/92
		STCICP1	11/21/91	01/02/92	01/02/92
		STCPRG1	11/21/91	12/30/91	01/02/92
		STCPST1	11/21/91	01/02/92	01/10/92

Ecology and Environment, Inc.
SAMPLE COMMENT REPORT

TEST NAME : BTU -WATER
LAB SAMPLE ID: 29733 TEST CODE:WBTU 1
CLIENT SAMPLE ID: COMP. P1,P3,P5,P6,P8,P12
COMMENT: Did not ignite.

TEST NAME : BTU -WATER
LAB SAMPLE ID: 29737 TEST CODE:WBTU 1
CLIENT SAMPLE ID: COMPOSITE P7, P10, P11
COMMENT: Did not ignite.

TEST NAME : BASE NEUTRAL-TCLP -LIQUID
LAB SAMPLE ID: 29741 TEST CODE:LTCBN 1
CLIENT SAMPLE ID: COMPOSITE P2, P4
COMMENT: Detection limits elevated due to matrix interference.

TEST NAME : PCB IN LIQUID -LIQUID
LAB SAMPLE ID: 29738 RA TEST CODE:LPCB 1
CLIENT SAMPLE ID: OB-HT-001-P7 OIL
COMMENT: Detection limits elevated due to sample matrix interference.

TEST NAME : PCB IN LIQUID -LIQUID
LAB SAMPLE ID: 29741 TEST CODE:LPCB 1
CLIENT SAMPLE ID: COMPOSITE P2, P4
COMMENT: Detection limits elevated due to sample matrix interference.

TEST CODE :STS 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SOLIDS-TOTAL UNITS : %
PARAMETER : Solids-Total

SAMPLE ID	RESULTS	Q
EE-91-29742		
COMPOSITE F1, F2	98	
EE-91-29743		
COMP. P9, P13, P14, P16	94	
EE-91-29744		
OB-HT-001-P15	97	
EE-91-29745		
OB-BLDG3-001-P1	99	
EE-91-29746		
OB-BLDG3-001-P2	87	

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WCNT 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : CYANIDE TOTAL UNITS : MG/L
PARAMETER : Cyanide Total

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29733 COMP. P1,P3,P5,P6,P8,P12	0.11		0.010
EE-91-29737 COMPOSITE P7, P10, P11	ND		0.010

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :LCNREA1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : CYANIDE-RELEASABLE UNITS : MG/L
PARAMETER : Cyanide

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29741 COMPOSITE P2, P4	ND		0.010

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SCNT 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : CYANIDE TOTAL UNITS : MG/KG
PARAMETER : Total Cyanide

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742			
COMPOSITE F1, F2	ND		1.0
EE-91-29743			
COMP. P9, P13, P14, P16	ND		1.0
EE-91-29744			
OB-HT-001-P15	9.5		1.0
EE-91-29745			
OB-BLDG3-001-P1	2.5		1.0
EE-91-29746			
OB-BLDG3-001-P2	2.0		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :WSULFD1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SULFIDE UNITS : MG/L
PARAMETER : Sulfide

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29733			
COMP. P1,P3,P5,P6,P8,P12	ND		1.0
EE-91-29737			
COMPOSITE P7, P10, P11	1.3		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :LSULRA1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SULFIDE RELEASABLE UNITS : MG/L
PARAMETER : Sulfide

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29741 COMPOSITE P2, P4	ND		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SSULRA1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SULFIDE RELEASABLE UNITS : MG/KG
PARAMETER : Sulfide

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742 COMPOSITE F1, F2	ND		4.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SSULFD1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SULFIDE TOTAL UNITS : MG/KG
PARAMETER : Sulfide

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742			
COMPOSITE F1, F2	820		4.0
EE-91-29743			
COMP. P9, P13, P14, P16	37		4.0
EE-91-29744			
OB-HT-001-P15	ND		8.0
EE-91-29745			
OB-BLDG3-001-P1	81		4.0
EE-91-29746			
OB-BLDG3-001-P2	33		4.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :WORGS 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ORGANIC SULFUR UNITS : %
PARAMETER : Organic Sulfur

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29733			
COMP. P1,P3,P5,P6,P8,P12	ND		0.025
EE-91-29737			
COMPOSITE P7, P10, P11	ND		0.025

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :LORGS 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ORGANIC SULFUR UNITS : %
PARAMETER : Sulfur

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29741 COMPOSITE P2, P4	0.28		0.025

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SORGS 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ORGANIC SULFUR % UNITS : %
PARAMETER : Organic Sulfur

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742			
COMPOSITE F1, F2	0.55		0.025
EE-91-29743			
COMP. P9, P13, P14, P16	0.24		0.025
EE-91-29744			
OB-HT-001-P15	0.27		0.025
EE-91-29745			
OB-BLDG3-001-P1	0.21		0.025
EE-91-29746			
OB-BLDG3-001-P2	0.86		0.025

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :WORGCL1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ORGANIC CHLORINE UNITS : MG/L
PARAMETER : Organic Chlorine

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29733			
COMP. P1,P3,P5,P6,P8,P12	ND		0.050
EE-91-29737			
COMPOSITE P7, P10, P11	0.36		0.025

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :LORGCL1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ORGANIC CHLORINE UNITS : %
PARAMETER : Chlorine

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29741 COMPOSITE P2, P4	ND		0.050

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SORGCL1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : CHLORINE % UNITS : %
PARAMETER : Chlorine %

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742			
COMPOSITE F1, F2	0.60		0.050
EE-91-29743			
COMP. P9, P13, P14, P16	0.14		0.050
EE-91-29744			
OB-HT-001-P15	0.23		0.050
EE-91-29745			
OB-BLDG3-001-P1	0.086		0.050
EE-91-29746			
OB-BLDG3-001-P2	0.26		0.050

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SASH 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ASH UNITS : %
PARAMETER : Ash

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742			
COMPOSITE F1, F2	58		1.0
EE-91-29743			
COMP. P9, P13, P14, P16	81		1.0
EE-91-29744			
OB-HT-001-P15	68		1.0
EE-91-29745			
OB-BLDG3-001-P1	51		1.0
EE-91-29746			
OB-BLDG3-001-P2	42		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SORMAT1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ORGANIC MATTER % UNITS : %
PARAMETER : Organic Matter

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742 COMPOSITE F1, F2	34		1.0
EE-91-29743 COMP. P9, P13, P14, P16	15		1.0
EE-91-29744 OB-HT-001-P15	32		1.0
EE-91-29745 OB-BLDG3-001-P1	21		1.0
EE-91-29746 OB-BLDG3-001-P2	54		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SBKDEN1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : BULK DENSITY UNITS : GM/CM3
PARAMETER : Bulk Density

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742 COMPOSITE F1, F2	0.88		0.10
EE-91-29743 COMP. P9, P13, P14, P16	1.00		0.10
EE-91-29744 OB-HT-001-P15	0.93		0.10
EE-91-29745 OB-BLDG3-001-P1	1.9		0.10
EE-91-29746 OB-BLDG3-001-P2	0.88		0.10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :LBTU 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : BTU UNITS : BTU/LB.
PARAMETER : BTU

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29741 COMPOSITE P2, P4	19000		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :SBTU 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : BTU UNITS : BTU/LB.
PARAMETER : BTU

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29742			
COMPOSITE F1, F2	7600		10
EE-91-29743			
COMP. P9, P13, P14, P16	11000		10
EE-91-29744			
OB-HT-001-P15	5500		10
EE-91-29745			
OB-BLDG3-001-P1	5300		10
EE-91-29746			
OB-BLDG3-001-P2	9300		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

TEST CODE :WTS 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SOLIDS TOTAL UNITS : MG/L
PARAMETER : Solids Total

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-91-29733			
COMP. P1,P3,P5,P6,P8,P12	810		10
EE-91-29737			
COMPOSITE P7, P10, P11	430		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT
NA = NOT APPLICABLE

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF SOLID SAMPLES

9103.037

(mg/kg)

Parameter	E & E Laboratory No. 91-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
Total Solids, %				
	Batch QC	83	82	1.5
	Batch QC	83	81	2.5
Total Cyanide	Batch QC	ND	ND	NC
Bulk Density, g/cm3	29743	1.0	1.0	3.2
Ash, %	29743	81	80	0.75
Organic Matter, %	29744	32	32	0
BTU, lb.	29746	9300	9800	6.0
Organic Sulfur, %	29746	0.86	0.68	24
Chlorine, %	29746	0.26	0.051	107
Total Sulfide	29744	ND	ND	NC
Releasable Sulfide	29742	ND	ND	NC

ND = NOT DETECTED

NC = NOT CALCULABLE

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, RPDs ARE CALCULATED DIRECTLY FROM THE RAW DATA.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOLID SAMPLES

9103.037

(mg/kg)

Parameter	E & E Laboratory No. 91-	Original Value	Amount Added	Amount Determined	Percent Recovery
Total Cyanide	Batch QC	0.22	0.10	1.4	120

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM THE RAW DATA.

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF LIQUID SAMPLES

9103.037

(mg/kg)

Parameter	E & E Laboratory No. 91-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
BTU, lb.	29741	19000	19000	2.0
Chlorine, %	29741	ND	ND	NC
Releasable Cyanide	29741	ND	ND	NC
Releasable Sulfide	29741	ND	ND	NC
Organic Sulfur, %	29741	0.28	0.27	0.7

ND = NOT DETECTED

NC = NOT CALCULABLE

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, RPDs ARE CALCULATED DIRECTLY FROM THE RAW DATA.

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF WATER SAMPLES

9103.037

(mg/L)

Parameter	E & E Laboratory No. 91-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
Total Solids	29733	810	840	3.6
Sulfide	29737	1.3	1.2	8.8

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, RPDs ARE CALCULATED DIRECTLY FROM THE RAW DATA.

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29733 MATRIX: WATER
SAMPLE ID CLIENT: COMP. P1,P3,P5,P6,P8,P12UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.0002	0.20
Arsenic	ND		1.0	5.0
Barium	ND		10	100
Cadmium	ND		0.20	1.0
Chromium	ND		1.0	5.0
Lead	ND		1.0	5.0
Selenium	ND		1.0	1.0
Silver	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29737 MATRIX: WATER
SAMPLE ID CLIENT: COMPOSITE P7, P10, P11 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.0002	0.20
Arsenic	ND		1.0	5.0
Barium	72		10	100
Cadmium	ND		0.20	1.0
Chromium	ND		1.0	5.0
Lead	ND		1.0	5.0
Selenium	ND		1.0	1.0
Silver	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29741 MATRIX: LIQUID
SAMPLE ID CLIENT: COMPOSITE P2, P4 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.020	0.20
Arsenic	ND		1.0	5.0
Barium	ND		10	100
Cadmium	0.29		0.20	1.0
Chromium	ND		1.0	5.0
Lead	ND		1.0	5.0
Selenium	ND		1.0	1.0
Silver	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29742 MATRIX: SOLID
SAMPLE ID CLIENT: COMPOSITE F1, F2 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.020	0.20
Arsenic	ND		1.0	5.0
Barium	ND		10	100
Cadmium	1.4		0.20	1.0
Chromium	ND		1.0	5.0
Lead	ND		1.0	5.0
Selenium	ND		1.0	1.0
Silver	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29743 MATRIX: SOLID
SAMPLE ID CLIENT: COMP. P9, P13, P14, P16 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.020	0.20
Arsenic	ND		1.0	5.0
Barium	ND		10	100
Cadmium	ND		0.20	1.0
Chromium	ND		1.0	5.0
Lead	ND		1.0	5.0
Selenium	ND		1.0	1.0
Silver	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29744 MATRIX: SOLID
SAMPLE ID CLIENT: OB-HT-001-P15 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.020	0.20
Arsenic	ND		1.0	5.0
Barium	ND		10	100
Cadmium	0.25		0.20	1.0
Chromium	ND		1.0	5.0
Lead	ND		1.0	5.0
Selenium	ND		1.0	1.0
Silver	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29745 MATRIX: SOLID
SAMPLE ID CLIENT: OB-BLDG3-001-P1 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.020	0.20
Arsenic	ND		1.0	5.0
Barium	ND		10	100
Cadmium	ND		0.20	1.0
Chromium	ND		1.00	5.0
Lead	ND		1.00	5.0
Selenium	ND		1.00	1.0
Silver	ND		1.00	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29746 MATRIX: SOLID
SAMPLE ID CLIENT: OB-BLDG3-001-P2 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.020	0.20
Arsenic	ND		1.0	5.0
Barium	ND		10	100
Cadmium	4.6		0.20	1.0
Chromium	ND		1.00	5.0
Lead	ND		1.00	5.0
Selenium	ND		1.00	1.0
Silver	ND		1.00	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :METHOD BLANK MATRIX: SOLID
UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Mercury	ND		0.0002	0.20
Arsenic	ND		0.50	5.0
Barium	ND		5.0	100
Cadmium	ND		0.10	1.0
Chromium	ND		0.50	5.0
Lead	ND		0.50	5.0
Selenium	ND		0.50	1.0
Silver	ND		0.50	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF WATER SAMPLES

9103.037

(mg/L)

Parameter	E & E Laboratory No. 91-29733	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
Mercury		ND	ND	NC

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

9103.037

(mg/L)

Parameter	E & E Laboratory No. 91-29733	Original Value	Amount Added	Amount Determined	Percent Recovery
Mercury		ND	1.0	0.98	98

ND = NOT DETECTED

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM THE RAW DATA.

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF LIQUID SAMPLES

9103.037

(mg/L)

Parameter	E & E Laboratory No. 91-29741	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
Mercury		ND	ND	NC

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR POST SPIKED LIQUID SAMPLES

9103.037

(ug/L)

Parameter	E & E Laboratory No. 91-29741	Original Value	Amount Added	Amount Determined	Percent Recovery
Mercury		ND	1.0	0.34	34

ND = NOT DETECTED

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM THE RAW DATA.

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29741 MATRIX: LIQUID
SAMPLE ID CLIENT: COMPOSITE P2, P4 UNITS : MG/KG

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL(MG/L)
Chlordane	ND		24	0.030
Endrin	ND		6.0	0.020
Heptachlor	ND		3.0	0.0080
gamma-BHC (Lindane)	ND		3.0	0.40
Methoxychlor	ND		48	10
Heptachlor epoxide	ND		3.0	0.0080
Toxaphene	ND		150	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29733 MATRIX: WATER
SAMPLE ID CLIENT: COMP. P1,P3,P5,P6,P8,P12UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.010	0.030
Endrin	ND		0.0025	0.020
Heptachlor	ND		0.0012	0.0080
gamma-BHC (Lindane)	ND		0.0012	0.40
Methoxychlor	ND		0.020	10
Heptachlor Epoxide	ND		0.0025	0.0080
Toxaphene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29737 MATRIX: WATER
SAMPLE ID CLIENT: COMPOSITE P7, P10, P11 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.050	0.030
Endrin	ND		0.012	0.020
Heptachlor	ND		0.0062	0.0080
gamma-BHC (Lindane)	ND		0.0062	0.40
Methoxychlor	ND		0.10	10
Heptachlor Epoxide	ND		0.012	0.0080
Toxaphene	ND		0.25	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29742 MATRIX: SOLID
SAMPLE ID CLIENT: COMPOSITE F1, F2 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.010	0.030
Endrin	ND		0.0025	0.020
Heptachlor	ND		0.0012	0.0080
gamma-BHC (Lindane)	ND		0.0012	0.40
Methoxychlor	ND		0.020	10
Heptachlor epoxide	ND		0.0025	0.0080
Toxaphene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29743 MATRIX: SOLID
SAMPLE ID CLIENT: COMP. P9, P13, P14, P16 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.010	0.030
Endrin	ND		0.0025	0.020
Heptachlor	ND		0.0012	0.0080
gamma-BHC (Lindane)	ND		0.0012	0.40
Methoxychlor	ND		0.020	10
Heptachlor epoxide	ND		0.0025	0.0080
Toxaphene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29744 MATRIX: SOLID
SAMPLE ID CLIENT: OB-HT-001-P15 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.010	0.030
Endrin	ND		0.0025	0.020
Heptachlor	ND		0.0012	0.0080
gamma-BHC (Lindane)	ND		0.0012	0.40
Methoxychlor	ND		0.020	10
Heptachlor epoxide	ND		0.0025	0.0080
Toxaphene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29745 MATRIX: SOLID
SAMPLE ID CLIENT: OB-BLDG3-001-P1 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.010	0.030
Endrin	ND		0.0025	0.020
Heptachlor	ND		0.0012	0.0080
gamma-BHC (Lindane)	ND		0.0012	0.40
Methoxychlor	ND		0.020	10
Heptachlor epoxide	ND		0.0025	0.0080
Toxaphene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29746 MATRIX: SOLID
SAMPLE ID CLIENT: OB-BLDG3-001-P2 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.010	0.030
Endrin	ND		0.0025	0.020
Heptachlor	ND		0.0012	0.0080
gamma-BHC (Lindane)	ND		0.0012	0.40
Methoxychlor	ND		0.020	10
Heptachlor epoxide	ND		0.0025	0.0080
Toxaphene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED TCLP SOIL SAMPLES

9103.037

(mg/L)

Parameter	E & E Laboratory No. 91-29745	Original Value	Amount Added	Amount Determined	Percent Recovery
2,4-D		ND	3.0	2.2	73
2,4,5-TP(Silvex)		ND	0.40	0.35	88

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY:
PERCENT RECOVERY OF WATER MATRIX SPIKE
(Sample # 29744)

9103.037

Compound	Original Result	Amount Added	Amount Determined	Percent Recovery
		(mg/L)		
Lindane	ND	0.010	0.0087	87
Heptachlor	ND	0.010	0.0090	90
Heptachlor Epoxide	ND	0.010	0.0080	80
Endrin	ND	0.025	0.025	100
Methoxychlor	ND	0.050	0.040	80

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT
RECOVERY OF SURROGATE SPIKES

9103.037

Compound	E & E Laboratory No. 91-	Percent Recovery
Dibutylchlorendate	29733	62
	29737	DL
	29742	80
	29743	84
	29744	76
	29744 MS	74
	29745	90
	29746	80
	Method Blank	76

DL = DILUTED OUT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :METHOD BLANK MATRIX: SOLID
UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0
Chlordane	ND		0.010	0.030
Endrin	ND		0.0025	0.020
Heptachlor	ND		0.0012	0.0080
gamma-BHC (Lindane)	ND		0.0012	0.40
Methoxychlor	ND		0.020	10
Heptachlor epoxide	ND		0.0025	0.0080
Toxaphene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :LPCB 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB IN LIQUID -LIQUID UNITS : MG/KG

LAB SAMPLE ID: EE-91-29738 RA
CLIENT SAMPLE ID: OB-HT-001-P7 OIL

PARAMETER	RESULTS	Q	DET.LIMIT
PCB-1242	ND	C	15
PCB-1254	ND	C	15
PCB-1221	ND	C	15
PCB-1232	ND	C	15
PCB-1248	ND	C	15
PCB-1260	ND	C	15
PCB-1016	ND	C	15

LAB SAMPLE ID: EE-91-29741
CLIENT SAMPLE ID: COMPOSITE P2, P4

PARAMETER	RESULTS	Q	DET.LIMIT
PCB-1242	ND	C	10
PCB-1254	ND	C	10
PCB-1221	ND	C	10
PCB-1232	ND	C	10
PCB-1248	ND	C	10
PCB-1260	ND	C	10
PCB-1016	ND	C	10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED OIL SAMPLES

9103.037

(mg/kg)

Parameter	E & E Laboratory No. 91-29741	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		ND	1000	1000	100

ND = NOT DETECTED

TEST CODE :WTCPRG1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : PURGABLES-TCLP UNITS : MG/L
SAMPLE ID LAB : EE-91-29727 MATRIX: WATER
SAMPLE ID CLIENT: COMP. P1,P3,P5,P6,P8,P12

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Benzene	ND		0.050	0.50
Carbon Tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl Ethyl Ketone	ND		0.10	200
Tetrachloroethylene	ND		0.050	0.70
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WTCPRG1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : PURGABLES-TCLP UNITS : MG/L
SAMPLE ID LAB : EE-91-29734 MATRIX: WATER
SAMPLE ID CLIENT: COMPOSITE P7, P10, P11

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Benzene	ND		0.050	0.50
Carbon Tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl Ethyl Ketone	ND		0.10	200
Tetrachloroethylene	ND		0.050	0.70
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29739 MATRIX: LIQUID
SAMPLE ID CLIENT: COMPOSITE P2, P4 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Benzene	ND		0.62	0.50
Carbon tetrachloride	ND		0.62	0.50
Chlorobenzene	ND		0.62	100
Chloroform	ND		0.62	6.0
1,2-Dichloroethane	ND		0.62	0.50
1,1-Dichloroethylene	ND		0.62	0.70
Methyl ethyl ketone	ND		1.2	200
Tetrachloroethylene	ND		0.62	0.70
Trichloroethylene	ND		0.62	0.50
Vinyl Chloride	ND		1.2	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29741 MATRIX: LIQUID
SAMPLE ID CLIENT: COMPOSITE P2, P4 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND	C	25	100
2,4,5-Trichlorophenol	ND	C	25	400
2,4,6-Trichlorophenol	ND	C	5.0	2.0
2-Methyl phenol	ND	C	5.0	200
3-Methyl phenol	ND	C	5.0	200
4-Methyl phenol	ND	C	5.0	200
2,4-Dinitrotoluene	ND	C	5.0	0.13
Hexachlorobenzene	ND	C	5.0	0.13
Hexachlorobutadiene	ND	C	5.0	0.50
Hexachloroethane	ND	C	5.0	3.0
Nitrobenzene	ND	C	5.0	2.0
1,4-Dichlorobenzene	ND	C	5.0	7.5
Pyridine	ND	C	50	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WTCBN 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : BASE NEUTRAL-TCLP UNITS : MG/L
SAMPLE ID LAB : EE-91-29733 MATRIX: WATER
SAMPLE ID CLIENT: COMP. P1,P3,P5,P6,P8,P12

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-Dinitrotoluene	ND		0.10	0.13
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
1,4-Dichlorobenzene	ND		0.10	7.5
Pyridine	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WTCAP 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ACID PHENOL-TCLP UNITS : MG/L
SAMPLE ID LAB : EE-91-29733 MATRIX: WATER
SAMPLE ID CLIENT: COMP. P1,P3,P5,P6,P8,P12

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	PRESENT	L	0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl Phenol	ND		0.10	200
3-Methyl Phenol	ND		0.10	200
4-Methyl Phenol	ND		0.10	200

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WTCBN 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : BASE NEUTRAL-TCLP UNITS : MG/L
SAMPLE ID LAB : EE-91-29737 MATRIX: WATER
SAMPLE ID CLIENT: COMPOSITE P7, P10, P11

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-Dinitrotoluene	ND		0.10	0.13
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
1,4-Dichlorobenzene	ND		0.10	7.5
Pyridine	ND		1.0	5.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :WTCAP 1 JOB NUMBER :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : ACID PHENOL-TCLP UNITS : MG/L
SAMPLE ID LAB : EE-91-29737 MATRIX: WATER
SAMPLE ID CLIENT: COMPOSITE P7, P10, P11

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	PRESENT	L	0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl Phenol	ND		0.10	200
3-Methyl Phenol	ND		0.10	200
4-Methyl Phenol	ND		0.10	200

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29742 MATRIX: SOLID
SAMPLE ID CLIENT: COMPOSITE F1, F2 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl phenol	ND		0.10	200
3-Methyl phenol	ND		0.10	200
4-Methyl phenol	ND		0.10	200
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,4-Dichlorobenzene	ND		0.10	7.5
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Pyridine	ND		1.0	5.0
Tetrachloroethylene	0.17		0.050	0.70
2,4-Dinitrotoluene	ND		0.10	0.13
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29743 MATRIX: SOLID
SAMPLE ID CLIENT: COMP. P9, P13, P14, P16 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl phenol	ND		0.10	200
3-Methyl phenol	ND		0.10	200
4-Methyl phenol	ND		0.10	200
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,4-Dichlorobenzene	ND		0.10	7.5
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Pyridine	ND		1.0	5.0
Tetrachloroethylene	ND		0.050	0.70
2,4-Dinitrotoluene	ND		0.10	0.13
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29744 MATRIX: SOLID
SAMPLE ID CLIENT: OB-HT-001-P15 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl phenol	ND		0.10	200
3-Methyl phenol	ND		0.10	200
4-Methyl phenol	ND		0.10	200
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,4-Dichlorobenzene	ND		0.10	7.5
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Pyridine	ND		1.0	5.0
Tetrachloroethylene	ND		0.050	0.70
2,4-Dinitrotoluene	ND		0.10	0.13
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29745 MATRIX: SOLID
SAMPLE ID CLIENT: OB-BLDG3-001-P1 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl phenol	ND		0.10	200
3-Methyl phenol	ND		0.10	200
4-Methyl phenol	ND		0.10	200
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,4-Dichlorobenzene	ND		0.10	7.5
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Pyridine	ND		1.0	5.0
Tetrachloroethylene	ND		0.050	0.70
2,4-Dinitrotoluene	ND		0.10	0.13
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :EE-91-29746 MATRIX: SOLID
SAMPLE ID CLIENT: OB-BLDG3-001-P2 UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl phenol	ND		0.10	200
3-Methyl phenol	ND		0.10	200
4-Methyl phenol	ND		0.10	200
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,4-Dichlorobenzene	ND		0.10	7.5
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Pyridine	ND		1.0	5.0
Tetrachloroethylene	ND		0.050	0.70
2,4-Dinitrotoluene	ND		0.10	0.13
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9103.037

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(mg/L)		
1,2-Dichloroethane-d4	29727	0.050	0.048	96
	29734	0.050	0.051	102
	29739	0.050	0.048	96
	29741	0.050	--	NA
	29742	0.050	0.050	100
	29743	0.050	0.054	104
	29744	0.050	0.051	102
	29745	0.050	0.053	106
	29746	0.050	0.052	104
	Method Blank 1	0.050	0.045	90
	Method Blank 2	0.050	0.051	102
	Method Blank 3	0.050	0.054	108
Toluene-d8	29727	0.050	0.048	96
	29734	0.050	0.052	104
	29739	0.050	0.053	106
	29741	0.050	--	NA
	29742	0.050	0.054	108
	29743	0.050	0.054	108
	29744	0.050	0.053	106
	29745	0.050	0.053	106
	29746	0.050	0.053	106
	Method Blank 1	0.050	0.048	96
	Method Blank 2	0.050	0.050	100
	Method Blank 3	0.050	0.055	110
Bromofluorobenzene	29727	0.050	0.045	90
	29734	0.050	0.048	96
	29739	0.050	0.045	90
	29741	0.050	--	NA
	29742	0.050	0.050	100
	29743	0.050	0.051	102
	29744	0.050	0.047	94
	29745	0.050	0.048	96
	29746	0.050	0.048	96
	Method Blank 1	0.050	0.043	86
	Method Blank 2	0.050	0.046	92
	Method Blank 3	0.050	0.049	98

These recoveries are acceptable to E & E, Inc. guidelines.
NA = NOT APPLICABLE

QUALITY CONTROL FOR ACCURACY: PERCENT
RECOVERY OF SURROGATE SPIKES

9103.037

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(mg/L)		
nitrobenzene-D5	29733	0.10	0.08	80
	29737	0.10	--	**
	29741	0.10	--	NA
	29742	0.10	0.08	80
	29743	0.10	0.08	80
	29744	0.10	0.08	80
	29745	0.10	0.09	90
	29746	0.10	0.06	60
	Method Blank 4	0.10	0.07	70
2-fluorobiphenyl	29733	0.10	0.06	60
	29737	0.10	0.06	60
	29741	0.10	--	NA
	29742	0.10	0.06	60
	29743	0.10	0.07	70
	29744	0.10	0.07	70
	29745	0.10	0.07	70
	29746	0.10	0.06	60
	Method Blank 4	0.10	0.06	60
terphenyl-D14	29733	0.10	0.08	80
	29737	0.10	0.07	70
	29741	0.10	--	NA
	29742	0.10	0.07	70
	29743	0.10	0.06	60
	29744	0.10	0.06	60
	29745	0.10	0.06	60
	29746	0.10	0.06	60
	Method Blank 4	0.10	0.07	70

These recoveries are acceptable to E & E, Inc. guidelines.

** Not found dut to matrix interference.

NA = NOT APPLICABLE

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY OF SURROGATE SPIKES

9103.037

Compound	E & E Laboratory No. 91-	Amount Added	Amount Determined	Percent Recovery
		(mg/L)		
phenol-D5	29733	0.20	0.07	35
	29737	0.20	0.04	20
	29741	0.20	--	NA
	29742	0.20	0.05	25
	29743	0.20	0.05	25
	29744	0.20	0.04	20
	29745	0.20	0.05	25
	29746	0.20	0.06	30
	Method Blank 4	0.20	0.06	30
2-fluorophenol	29733	0.20	0.08	40
	29737	0.20	--	**
	29741	0.20	--	NA
	29742	0.20	0.07	35
	29743	0.20	0.05	25
	29744	0.20	0.03	15
	29745	0.20	0.06	30
	29746	0.20	0.06	30
	Method Blank 4	0.20	0.07	35
2,4,6-tribromophenol	29733	0.20	0.16	80
	29737	0.20	0.12	60
	29741	0.20	--	NA
	29742	0.20	0.12	60
	29743	0.20	0.12	60
	29744	0.20	0.05	25
	29745	0.20	0.16	80
	29746	0.20	0.13	65
	Method Blank 4	0.20	0.13	65

These recoveries are acceptable to E & E, Inc. guidelines.

NA = NOT APPLICABLE

** Not found due to matrix interference.

QUALITY CONTROL FOR ACCURACY:
PERCENT RECOVERY OF TCLP SOIL MATRIX SPIKE
(Sample # 29734)

9103.037

(mg)

Compound	Original Result	Amount Added	Amount Determined	Percent Recovery
Benzene	ND	0.050	0.060	120
Carbon Tetrachloride	ND	0.050	0.040	80
Chlorobenzene	ND	0.050	0.040	80
Chloroform	ND	0.050	0.040	80
1,2-Dichloroethane	ND	0.050	0.040	80
1,1-Dichloroethylene	ND	0.050	--	**
Methyl Ethyl Ketone	ND	0.050	0.030	60
Tetrachloroethylene	ND	0.050	0.050	100
Vinyl Chloride	ND	0.050	0.090	180
Trichloroethylene	ND	0.050	0.040	80

ND = NOT DETECTED

** Compound missing due to matrix.

QUALITY CONTROL FOR ACCURACY:
PERCENT RECOVERY OF TCLP SOIL MATRIX SPIKE
(Sample # 29745)

9103.037

(mg)

Compound	Original Result	Amount Added	Amount Determined	Percent Recovery
2,4-Dinitrotoluene	ND	0.10	0.070	70
Hexachlorobutadiene	ND	0.10	0.030	30
Nitrobenzene	ND	0.10	0.050	50
2,4,5-Trichlorophenol	ND	0.20	0.090	45
Pentachlorophenol	ND	0.20	0.110	55
2-Methyl Phenol	ND	0.20	0.070	35

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY:
PERCENT RECOVERY OF TCLP SOIL MATRIX SPIKE
(Sample # 29746)

9103.037

(mg)

Compound	Original Result	Amount Added	Amount Determined	Percent Recovery
Benzene	ND	0.050	0.040	80
Carbon Tetrachloride	ND	0.050	0.040	80
Chlorobenzene	ND	0.050	0.040	80
Chloroform	ND	0.050	0.040	80
1,2-Dichloroethane	ND	0.050	0.030	60
1,1-Dichloroethylene	ND	0.050	0.040	80
Methyl Ethyl Ketone	ND	0.050	0.050	100
Tetrachloroethylene	ND	0.050	0.020	40
Vinyl Chloride	ND	0.050	0.030	60
Trichloroethylene	ND	0.050	0.030	60

ND = NOT DETECTED

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :METHOD BLANK 1 MATRIX: SOLID
UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Tetrachloroethylene	ND		0.050	0.70
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :METHOD BLANK 2 MATRIX: SOLID
UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Tetrachloroethylene	ND		0.050	0.70
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :METHOD BLANK 3 MATRIX: SOLID
UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl phenol	ND		0.10	200
3-Methyl phenol	ND		0.10	200
4-Methyl phenol	ND		0.10	200
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,4-Dichlorobenzene	ND		0.10	7.5
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethylene	ND		0.050	0.70
Methyl ethyl ketone	ND		0.10	200
Pyridine	ND		1.0	5.0
Tetrachloroethylene	ND		0.050	0.70
2,4-Dinitrotoluene	ND		0.10	0.13
Trichloroethylene	ND		0.050	0.50
Vinyl Chloride	ND		0.10	0.20

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

Results of Analysis of TCLP Extracts Job Number :9103.037

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
SAMPLE ID LAB :METHOD BLANK 4 MATRIX: SOLID
UNITS : MG/L

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.50	100
2,4,5-Trichlorophenol	ND		0.50	400
2,4,6-Trichlorophenol	ND		0.10	2.0
2-Methyl phenol	ND		0.10	200
3-Methyl phenol	ND		0.10	200
4-Methyl phenol	ND		0.10	200
Hexachlorobenzene	ND		0.10	0.13
Hexachlorobutadiene	ND		0.10	0.50
Hexachloroethane	ND		0.10	3.0
Nitrobenzene	ND		0.10	2.0
1,4-Dichlorobenzene	ND		0.10	7.5
Pyridine	ND		1.0	5.0
2,4-Dinitrotoluene	ND		0.10	0.13

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

APPENDIX D

ecology and environment, inc.

QUALITY ASSURANCE PROTOCOL REVIEW

Job No.: 9200.109 Date: 2/5/92

Report Title: Activity Site Task 21

Client:

Laboratory Data Review	Supervisor	Date
Metals		
Gen. Chem.	DJP	2-5-92
GC		2-5-92
GC/MS		
Micro, Asbestos		
Other		

	Signature	Date
Report Written by:	KR	2/5/92
1st Draft Reviewed by:	KR	2/5/92
calculated:	KR	2/5/92
2nd Draft Reviewed by: (If needed)		
Final Review by Author:		2/6/92
ASC Manager:		2-5-92
QA Officer:		
Corp. Project Manager: Mike Stoffax (Internal Job)		
All QA Protocol Review Forms Signed and in File (to be signed by report writer)		
1 Copies of Report Sent to: Olivia		2/6/92
1 Invoices Sent to Accounting Mike Stoffax		2/6/92

Comments/Notes: Send original & return to ASC

Copy Distribution: White - Report to Project File; Canary - Project Manager; Pink - Project File. 407064

MEMORANDUM

TO: Mike Steffan

FROM: Gary Hahn

DATE: February 6, 1992

SUBJECT: Schatz Site Task 21 Report

REF: 9200.109

CC: Lab File

Attached is the laboratory report of the analysis conducted on sixteen samples received at the Analytical Services Center on January 17, 1992. Analysis was performed according to the procedures set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, U.S. EPA, 1986.

A facsimile of PCB draft results was sent to you on 1/30/92 by Gayle Kroetsch.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

GH/kr
Enclosure

(17744) (1672 9200.109) (B32)

ecology and environment, inc.
196 SUGG ROAD, P.O. BOX D, BUFFALO, N.Y., 14226, TEL. 716-632-4491
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project No.:	Project Name:	Project Manager:
084000	SCHATZ PLANT SITE	M. STEFFAN
Samplers: (Signatures)		**Field Team Leader:**
		K. SMITH

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	PCB	TPH	REMARKS
HT-001-P9	1/17/92	1400				PCB-OIL - LOW	HT. BLDG PITS				MAKE ONE COMPOSITE SAMPLE
-P13	"	"	X						X	X	FROM THESE FOUR (4) SAMPLES
-P14	"	"				29743.0 e02 SAMPLE NO.					FOR ANALYSIS
-P16	"	"									
HT-001-P15	"	"		X				1	X	X	
B-BLDG-001-P1	"	"		X			BLDG-3 PITS	1	X	X	
" -001-P2	"	"		X				1	X	X	
EP2-001-F1	"	"							X	X	MAKE ONE COMPOSITE SAMPLE
-001-F2	"	"				29742.61 SAMPLE NO.			X	X	FROM THESE TWO (2) SAMPLES
											FOR ANALYSIS

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
	1/17/92					
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: / Date:
Relinquished By: (Signature)	Date/Time: 1-17-92 1545	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

234055

D-5

ecology and environment, inc.
196 SUGG ROAD, P.O. BOX D, BUFFALO, N.Y., 14225, TEL. 716-632-4491
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.:	Project Name:	Project Manager:
084000	SCHAFF PLANT SITE	M. STEFFAN
Samplers: (Signature)		Field Team Leader:
		K. SMITH

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CON-TAINERS	PCBs	TPH	REMARKS
SF-001-P1	1/17/92	14:00		X		PCBs - 01-05 - low		1	X	X	
SF-001-P2	"	"		X				1	X	X	
SF-001-P3	"	"		X				1	X	X	
SF-001-P4	"	"		X				1	X	X	
SF-001-P5	"	"		X				1	X	X	
SF-001-P6	"	"		X				1	X	X	
SF-001-P7	"	"		X				1	X	X	
SF-001-P8	"	"		X				1	X	X	
SF-001-P9											
SF-001-P10	"	"		X				1	X	X	
SF-001-P11	"	"		X				1	X	X	
SF-001-P12	"	"		X				1	X	X	

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
	1/17/92					
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: / Date:
Relinquished By: (Signature)	Date/Time: 1-17-92/1548	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

234055

*See CONCENTRATION RANGE on back of form.

D-6

JOB NUMBER : 9200.109

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
30863.01	COMP. P9, P13, P14, P16	SPCB 1	01/17/92	01/22/92	01/24/92
		SPETHY1	01/17/92		01/23/92
		STSCLP1	01/17/92		01/22/92
30864.01	OB-HT-001-P15	SPCB 1	01/17/92	01/22/92	01/24/92
		SPETHY1	01/17/92		01/23/92
		STSCLP1	01/17/92		01/22/92
30865.01	OB-BLDG3-001-P1	LPCB 1	01/17/92		01/20/92
		LPETPD1	01/17/92		01/22/92
30866.01	OB-BLDG3-001-P2	SPCB 1	01/17/92	01/22/92	01/24/92
		SPETHY1	01/17/92		01/23/92
		STSCLP1	01/17/92		01/22/92
30867.01	COMPOSIT F1, F2	SPCB 1	01/17/92	01/22/92	01/24/92
		SPETHY1	01/17/92		01/30/92
		STSCLP1	01/17/92		01/22/92
30868.01	OB-HT-001-P1	WPCB 1	01/17/92	01/21/92	01/22/92
		WPETHY1	01/17/92		01/23/92
30869.01	OB-HT-001-P2	LPCB 1	01/17/92		01/20/92
		LPETPD1	01/17/92		01/21/92
30870.01	OB-HT-001-P3	WPCB 1	01/17/92	01/21/92	01/23/92
		WPETHY1	01/17/92		01/23/92
30871.01	OB-HT-001-P4	LPCB 1	01/17/92		01/21/92
		LPETPD1	01/17/92		01/22/92
30872.01	OB-HT-001-P5	WPCB 1	01/17/92	01/21/92	01/22/92
		WPETHY1	01/17/92		01/28/92
30873.01	OB-HT-001-P6	WPCB 1	01/17/92	01/21/92	01/22/92
		WPETHY1	01/17/92		01/28/92
30874.01	OB-HT-001-P7	WPCB 1	01/17/92	01/21/92	01/22/92
		WPETHY1	01/17/92		01/28/92
30875.01	OB-HT-001-P8	WPCB 1	01/17/92	01/21/92	01/22/92
		WPETHY1	01/17/92		01/28/92
30876.01	OB-HT-001-P10	WPCB 1	01/17/92	01/21/92	01/22/92
		WPETHY1	01/17/92		01/28/92
30877.01	OB-HT-001-P11	WPCB 1	01/17/92	01/21/92	01/22/92
30878.01	OB-HT-001-P12	WPCB 1	01/17/92	01/21/92	01/22/92
		WPETHY1	01/17/92		01/28/92

Ecology and Environment, Inc.
SAMPLE COMMENT REPORT

TEST NAME : PCB -WATER
LAB SAMPLE ID: 30870 TEST CODE:WPCB 1
CLIENT SAMPLE ID: OB-HT-001-P3
COMMENT: Detection limit elevated due to matrix interference.

TEST NAME : PCB -WATER
LAB SAMPLE ID: 30874 TEST CODE:WPCB 1
CLIENT SAMPLE ID: OB-HT-001-P7
COMMENT: Detection limit elevated due to matrix interference.

TEST NAME : PCB -WATER
LAB SAMPLE ID: 30877 TEST CODE:WPCB 1
CLIENT SAMPLE ID: OB-HT-001-P11
COMMENT: Detection limit elevated due to matrix interference.

TEST CODE :STSCLP1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SOLIDS - TOTAL UNITS : %
PARAMETER : SOLIDS - TOTAL

SAMPLE ID	RESULTS	Q
EE-92-30863 COMP. P9, P13, P14, P16	92	
EE-92-30864 OB-HT-001-P15	96	
EE-92-30866 OB-BLDG3-001-P2	73	
EE-92-30867 COMPOSIT F1, F2	97	

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :WPETHY1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : TRPH UNITS : MG/L
PARAMETER : Petroleum Hydrocarbons

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-92-30868 OB-HT-001-P1	ND		1.0
EE-92-30870 OB-HT-001-P3	1.4		1.0
EE-92-30872 OB-HT-001-P5	7.5		1.0
EE-92-30873 OB-HT-001-P6	1400		1.0
EE-92-30874 OB-HT-001-P7	600		1.0
EE-92-30875 OB-HT-001-P8	6.0		1.0
EE-92-30876 OB-HT-001-P10	1900		1.0
EE-92-30877 OB-HT-001-P11	6.1		1.0
EE-92-30878 OB-HT-001-P12	9.1		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT
NA = NOT APPLICABLE

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

9200.109

(mg/L)

Parameter	E & E Laboratory No. 92-	Original Value	Amount Added	Amount Determined	Percent Recovery
T. Recoverable Petroleum Hydrocarbons					
	Spiked Blank	ND	1.6	1.8	113
	Batch QC	ND	1.6	1.8	113

ND = NOT DETECTED

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM THE RAW DATA.

TEST CODE :WPETHY1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : TRPH UNITS : MG/L
PARAMETER : Petroleum Hydrocarbons

SAMPLE ID	RESULTS	Q	QNT. LIMIT
METHOD BLANK	ND		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT
NA = NOT APPLICABLE

TEST CODE :SPETHY1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
RESULTS IN DRY WEIGHT
TEST NAME : TRPH UNITS : MG/KG
PARAMETER : Petroleum Hydrocarbons

SAMPLE ID	RESULTS	Q	QNT. LIMIT
EE-92-30863 COMP. P9, P13, P14, P16	54000		5.4
EE-92-30864 OB-HT-001-P15	69000		5.2
EE-92-30866 OB-BLDG3-001-P2	80000		6.8
EE-92-30867 COMPOSIT F1, F2	60000		5.2

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT
NA = NOT APPLICABLE

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF SOLID SAMPLES

9200.109

(mg/kg)

Parameter	E & E Laboratory No. 92-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
T. Recoverable Petroleum Hydrocarbons				
	Batch QC	43	ND	NC
	Batch QC	93	46	67

ND = NOT DETECTED

NC = NOT CALCULABLE

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, RPDs ARE CALCULATED DIRECTLY FROM THE RAW DATA.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOLID SAMPLES

9200.109

(mg/kg)

Parameter	E & E Laboratory No. 92-	Original Value	Amount Added	Amount Determined	Percent Recovery
T. Recoverable Petroleum Hydrocarbons					
	30866	59000	150	89000	**
	Batch QC	2200	140	2400	**
	Batch QC	22	160	200	124
	Batch QC	93	160	200	71
	Batch QC	32	160	190	99

ND = NOT DETECTED

** = RECOVERY NOT DETERMINED BECAUSE SAMPLE AMOUNT IS FOUR OR MORE TIMES GREATER THAN SPIKE AMOUNT.

NOTE: ALTHOUGH RESULTS ARE REPORTED AS ROUNDED VALUES, PERCENT RECOVERIES ARE CALCULATED DIRECTLY FROM THE RAW DATA.

TEST CODE :WPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB -WATER UNITS : UG/L

LAB SAMPLE ID: EE-92-30868
CLIENT SAMPLE ID: OB-HT-001-P1

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.50
PCB-1242	ND		0.50
PCB-1254	1.0		0.50
PCB-1221	ND		0.50
PCB-1232	ND		0.50
PCB-1248	ND		0.50
PCB-1260	ND		0.50

LAB SAMPLE ID: EE-92-30870
CLIENT SAMPLE ID: OB-HT-001-P3

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND	C	2.5
PCB-1242	ND	C	2.5
PCB-1254	ND	C	2.5
PCB-1221	ND	C	2.5
PCB-1232	ND	C	2.5
PCB-1248	ND	C	2.5
PCB-1260	ND	C	2.5

LAB SAMPLE ID: EE-92-30872
CLIENT SAMPLE ID: OB-HT-001-P5

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.50
PCB-1242	ND		0.50
PCB-1254	0.80		0.50
PCB-1221	ND		0.50
PCB-1232	ND		0.50
PCB-1248	ND		0.50
PCB-1260	ND		0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :WPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB -WATER UNITS : UG/L

LAB SAMPLE ID: EE-92-30873
CLIENT SAMPLE ID: OB-HT-001-P6

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		50
PCB-1242	ND		50
PCB-1254	80		50
PCB-1221	ND		50
PCB-1232	ND		50
PCB-1248	ND		50
PCB-1260	ND		50

LAB SAMPLE ID: EE-92-30874
CLIENT SAMPLE ID: OB-HT-001-P7

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND	C	400
PCB-1242	ND	C	400
PCB-1254	ND	C	400
PCB-1221	ND	C	400
PCB-1232	ND	C	400
PCB-1248	ND	C	400
PCB-1260	ND	C	400

LAB SAMPLE ID: EE-92-30875
CLIENT SAMPLE ID: OB-HT-001-P8

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		1.0
PCB-1242	ND		1.0
PCB-1254	1.0		1.0
PCB-1221	ND		1.0
PCB-1232	ND		1.0
PCB-1248	ND		1.0
PCB-1260	ND		1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :WPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB -WATER UNITS : UG/L

LAB SAMPLE ID: EE-92-30876
CLIENT SAMPLE ID: OB-HT-001-P10

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		5.0
PCB-1242	ND		5.0
PCB-1254	9.0		5.0
PCB-1221	ND		5.0
PCB-1232	ND		5.0
PCB-1248	ND		5.0
PCB-1260	ND		5.0

LAB SAMPLE ID: EE-92-30877
CLIENT SAMPLE ID: OB-HT-001-P11

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND	C	1.1
PCB-1242	ND	C	1.1
PCB-1254	ND	C	1.1
PCB-1221	ND	C	1.1
PCB-1232	ND	C	1.1
PCB-1248	ND	C	1.1
PCB-1260	ND	C	1.1

LAB SAMPLE ID: EE-92-30878
CLIENT SAMPLE ID: OB-HT-001-P12

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.50
PCB-1242	ND		0.50
PCB-1254	ND		0.50
PCB-1221	ND		0.50
PCB-1232	ND		0.50
PCB-1248	ND		0.50
PCB-1260	ND		0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

9200.109

(ug/L)

Parameter	E & E Laboratory No. 92-30873 MS	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		ND	50	50	100

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED WATER SAMPLES

9200.109

(ug/L)

Parameter	E & E Laboratory No. 92- Spiked Blank	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		ND	50	45	90

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
OF HEXABROMOBENZENE SURROGATE SPIKES

9200.109

(ug/L)

E & E Laboratory No. 92-	Amount Added	Amount Determined	Percent Recovery
30868	2.5	1.5	60
30870	2.5	--	INF
30872	2.5	2.2	88
30873	2.5	--	DL
30874	2.5	--	DL
30875	2.5	1.8	72
30876	2.5	--	INF
30877	2.6	2.6	100
30878	2.5	1.6	64

These recoveries are within E & E quality control limits (37-138%).

DL = SURROGATE DILUTED OUT

INF = SURROGATE CONTAINS MATRIX INTERFERENCE

TEST CODE :WPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB -WATER UNITS : UG/L

LAB SAMPLE ID: METHOD BLANK #1

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.50
PCB-1242	ND		0.50
PCB-1254	ND		0.50
PCB-1221	ND		0.50
PCB-1232	ND		0.50
PCB-1248	ND		0.50
PCB-1260	ND		0.50

LAB SAMPLE ID: METHOD BLANK #2

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.50
PCB-1242	ND		0.50
PCB-1254	ND		0.50
PCB-1221	ND		0.50
PCB-1232	ND		0.50
PCB-1248	ND		0.50
PCB-1260	ND		0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :LPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB IN LIQUID -LIQUID UNITS : MG/KG

LAB SAMPLE ID: EE-92-30865
CLIENT SAMPLE ID: OB-BLDG3-001-P1

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1242	ND		25
PCB-1254	390		25
PCB-1221	ND		25
PCB-1232	ND		25
PCB-1248	ND		25
PCB-1260	ND		25
PCB-1016	ND		25

LAB SAMPLE ID: EE-92-30869
CLIENT SAMPLE ID: OB-HT-001-P2

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1242	ND		5.0
PCB-1254	ND		5.0
PCB-1221	ND		5.0
PCB-1232	ND		5.0
PCB-1248	ND		5.0
PCB-1260	ND		5.0
PCB-1016	ND		5.0

LAB SAMPLE ID: EE-92-30871
CLIENT SAMPLE ID: OB-HT-001-P4

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1242	ND		10
PCB-1254	ND		10
PCB-1221	ND		10
PCB-1232	ND		10
PCB-1248	ND		10
PCB-1260	ND		10
PCB-1016	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED OIL SAMPLES

9200.109

(mg/kg)

Parameter	E & E Laboratory No. 92-30869 MS	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		ND	1800	2100	117

ND = NOT DETECTED

TEST CODE :SPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB-SOIL -SOLID UNITS : MG/KG
RESULTS IN DRY WEIGHT

LAB SAMPLE ID: EE-92-30863
CLIENT SAMPLE ID: COMP. P9, P13, P14, P16

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		54
PCB-1242	ND		54
PCB-1254	330		54
PCB-1221	ND		54
PCB-1232	ND		54
PCB-1248	ND		54
PCB-1260	ND		54

LAB SAMPLE ID: EE-92-30864
CLIENT SAMPLE ID: OB-HT-001-P15

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		62
PCB-1242	ND		62
PCB-1254	160		62
PCB-1221	ND		62
PCB-1232	ND		62
PCB-1248	ND		62
PCB-1260	ND		62

LAB SAMPLE ID: EE-92-30866
CLIENT SAMPLE ID: OB-BLDG3-001-P2

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		27
PCB-1242	ND		27
PCB-1254	110		27
PCB-1221	ND		27
PCB-1232	ND		27
PCB-1248	ND		27
PCB-1260	ND		27

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :SPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB-SOIL -SOLID UNITS : MG/KG
RESULTS IN DRY WEIGHT

LAB SAMPLE ID: EE-92-30867
CLIENT SAMPLE ID: COMPOSIT F1, F2

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		62
PCB-1242	ND		62
PCB-1254	330		62
PCB-1221	ND		62
PCB-1232	ND		62
PCB-1248	ND		62
PCB-1260	ND		62

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

QUALITY CONTROL FOR ACCURACY AND PRECISION:
PERCENT RECOVERY AND RELATIVE PERCENT DIFFERENCE (RPD)
OF SOIL MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD)
(Sample # 30863)

9200.109

(mg/kg)

Parameter	Original Result	Amount Added		Amount Determined		Percent Recovery		
		MS	MSD	MS	MSD	MS	MSD	RPD
PCB-1242	ND	1.7	1.7	--	--	--	--	**

ND = NOT DETECTED

** = SPIKE DILUTED OUT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOIL SAMPLES

9200.109

(mg/kg)

Parameter	E & E Laboratory No. 92- Spiked Blank	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		ND	1.7	1.9	112

ND = NOT DETECTED

TEST CODE :SPCB 1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB-SOIL -SOLID UNITS : MG/KG

LAB SAMPLE ID: METHOD BLANK

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.020
PCB-1242	ND		0.020
PCB-1254	ND		0.020
PCB-1221	ND		0.020
PCB-1232	ND		0.020
PCB-1248	ND		0.020
PCB-1260	ND		0.020

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :LPETPD1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PETROLEUM PRODUCTS-LIQUID UNITS : MG/KG

LAB SAMPLE ID: EE-92-30865
CLIENT SAMPLE ID: OB-BLDG3-001-P1

PARAMETER	RESULTS	Q	QNT.LIMIT
Gasoline	ND		NA
Lube Oil	PRESENT	*	NA
Kerosene	ND		10000
Fuel Oil	ND		10000
Diesel Fuel	ND		10000

LAB SAMPLE ID: EE-92-30869
CLIENT SAMPLE ID: OB-HT-001-P2

PARAMETER	RESULTS	Q	QNT.LIMIT
Gasoline	ND		NA
Lube Oil	PRESENT	*	NA
Kerosene	ND		50000
Fuel Oil	ND		50000
Diesel Fuel	ND		50000

LAB SAMPLE ID: EE-92-30871
CLIENT SAMPLE ID: OB-HT-001-P4

PARAMETER	RESULTS	Q	QNT.LIMIT
Gasoline	ND		NA
Lube Oil	PRESENT	*	NA
Kerosene	ND		10000
Fuel Oil	ND		10000
Diesel Fuel	ND		10000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT
NA = NOT APPLICABLE
* = UNIDENTIFIED PETROLEUM HYDROCARBON PATTERN IN THE RANGE OF MOTOR OIL STANDARD.

TEST CODE :LPETPD1 JOB NUMBER :9200.109

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PETROLEUM PRODUCTS-LIQUID UNITS : MG/KG

LAB SAMPLE ID: METHOD BLANK #1

PARAMETER	RESULTS	Q	QNT.LIMIT
Gasoline	ND		NA
Lube Oil	ND		NA
Kerosene	ND		10000
Fuel Oil	ND		10000
Diesel Fuel	ND		10000

LAB SAMPLE ID: METHOD BLANK #2

PARAMETER	RESULTS	Q	QNT.LIMIT
Gasoline	ND		NA
Lube Oil	ND		NA
Kerosene	ND		10000
Fuel Oil	ND		10000
Diesel Fuel	ND		10000

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT
NA = NOT APPLICABLE

APPENDIX E

MEMORANDUM

TO: M. Steffan

FROM: J. McMullan

DATE: March 12, 1992

SUBJECT: Data Review of Job Nos. 9103.037 and 9200.109, NYSDEC Schatz Site

cc: J. Wilcox, M. Meredith, K. Smith

A total of nine samples (five soils, two oils, and two waters) were collected by Ecology and Environment Engineering, P.C. (E & E) at the NYSDEC Schatz site on November 21 and December 19, 1991. A total of 16 samples (four soils, three oils, and nine waters) were collected by E & E at this site on January 17, 1992. The 12 sampling locations or composites from sampling locations from the previous round were sampled. The two sets of samples were analyzed for different parameters by E & E's Analytical Services Center (ASC) and the results were reported as Job Nos. 9103.037 and 9200.109.

Although the parameters varied, all samples were analyzed for PCBs and either total petroleum hydrocarbons (TPH) or petroleum products. Most of the samples were analyzed for TCLP (Total), while three were analyzed for TCLP (purgeables only) and one was analyzed for TCLP (Total, except herbicides). Other parameters analyzed for in one or more samples included BTU, cyanide (total or releasable), sulfide (total or releasable), organic chlorine, organic sulfur, organic matter, ash, and bulk density. Analyses were performed according to the procedures set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, EPA, September 1986.

All data have been reviewed for useability and quality assurance/quality control (QA/QC) concerns are noted below along with any data qualifications. The analytical results reported in Job Nos. 9103.037 and 9200.109 are summarized on Data Summary Forms given in Appendix B with the glossary of data qualifiers presented in Appendix A. Positive results are summarized in Tables 1 through 6, attached. All data are considered valid and useable with any exceptions noted below in QA/QC comments.

QA/QC COMMENTS

- The percent spike recovery for mercury in the TCLP analysis of oils was low at 34%. The TCLP mercury quantitation limit in oil sample Comp. P2,P4 is qualified "UJ" as estimated with a low bias.

- Some relative percent difference (RPD) values were high, notably 67% for TPH in waters and 107% for organic chlorine in soils. In both

instances, the results for the duplicate analyses were very low values, so the high RPDs are acceptable.

- Surrogate and matrix spike recoveries (except for mercury as noted above) were within QC limits.

- Method blank results indicated no laboratory contamination by the analytes of concern.

Attachments:

Table 1 - Soil Samples, Inorganic Results
Table 2 - Soil Samples, Organic Results
Table 3 - Water and Oil Samples, Inorganic Results
Table 4 - Water Samples, Organic Results
Table 5 - Oil Samples, Organic Results
Table 6 - TCLP Extract Results, All Samples.

dlw

Table 1

SOIL SAMPLES
INORGANIC RESULTS
(Results expressed in mg/kg, except as noted)

Parameter	Comp. F1, F2	Comp. P9, P13, P14, P16	HT-001-P15	Building 3-001-P1	Building 3-001-P2
Cyanide, total	<1.0	<1.0	9.5	2.5	2.0
Sulfide, total	820	37	<8.0	81	33
Sulfide, releasable	<4.0	NA	NA	NA	NA
% Organic sulfur	0.55	0.24	0.27	0.21	0.86
% Organic chlorine	0.60	0.14	0.23	0.086	0.26
% Ash	58	81	68	51	42
% Organic Matter	34	15	32	21	54
Bulk Density (g/cm^3)	0.88	1.00	0.93	1.90	0.88
BTU/lb.	7,600	11,000	5,500	5,300	9,300
% Solids (1/17/92)	97	92	96	NA	73
% Solids (11/21/91, 12/19/91)	98	94	97	99	87

Key:

NA = Not analyzed.

Table 2

SOIL SAMPLES
ORGANIC RESULTS
(results expressed in mg/kg)

Parameter	Sample			
	Composite F1, F2	Composite P9, P13, P14, P16	HT-001-P15	Building 3 - 001-P2
TPH	60,000	54,000	69,000	80,000
PCB - 1254	330	330	160	110

Table 3

WATER AND OIL SAMPLES
INORGANIC RESULTS
(results expressed in mg/L, except as noted)

Parameter	Sample		
	Composite P1, P3, P5, P6, P8, P12	Composite P7, P10, P11	Composite P2, P4
Cyanide, total	0.11	<0.10	NA
Cyanide, releasable	NA	NA	<0.01
Sulfide, total	<1.0	1.3	NA
Sulfide, releasable	NA	NA	<1.0
% Organic sulfur	<0.025	<0.025	0.28
% Organic chlorine	<0.050	0.36	<0.050
BTU/lb	NA	NA	19,000
Total solids	810	430	NA

Key:

NA = Not analyzed.

Table 4

WATER SAMPLES
ORGANIC RESULTS
(results expressed in µg/L)

Parameter	Sample								
	HT-001-P1	HT-001-P3	HT-001-P5	HT-001-P6	HT-001-P7	HT-001-P8	HT-001-P10	HT-001-P11	HT-001-P12
TPH	<1.0	1.4	7.5	1,400	600	6.0	1,900	6.1	9.1
PCB - 1254	1.0	<0.50	0.80	80	<0.50	1.0	9.0	<0.50	<0.50

Table 5

OIL SAMPLES
ORGANIC RESULTS
(results expressed in mg/kg)

Parameter	Sample		
	Bldg. 3-001-P1	HT-001-P2	HT-001-P4
Lube/motor oil	P	P	P
PCB - 1254	390	<5.0	<5.0

Key:

P = Present, but unidentified pattern.

Table 6

TCLP EXTRACT RESULTS
ALL SAMPLES
(results expressed in μg/L extract)

Parameter	Sample							
	Composite P1, P3, P5, P6, P8, P12	Composite P7, P10, P11	Composite P2, P4	Composite F1, F2	Composite P9, P13, P14, P16	HT-001-P15	Bldg.3-001-P1	Bldg.3-001-P2
Organics								
Tetrachloroethene	<0.05	<0.05	<0.62	0.17	<0.05	<0.05	<0.05	<0.05
Pentachlorophenol	<0.50	P	<25	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-Trichlorophenol	P	<0.50	<25	<0.50	<0.50	<0.50	<0.50	<0.50
Metals								
Barium	<10	72	<10	<10	<10	<10	<10	<10
Cadmium	<0.20	<0.20	0.29	1.4	<0.20	0.25	<0.20	4.6

Key:

P = Present below quantitation limit.

APPENDIX A

GLOSSARY OF DATA QUALIFIERS

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION
(Confidence concerning presence or absence of compounds):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed Identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(Can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

[ ]= Inorganic analyte present. As values approach IDL, quantitation may not be accurate.

OTHER CODES

Q = No analytical result.

kvk/Y03060
[SEC]172

APPENDIX B

DATA SUMMARY FORMS

DATA SUMMARY FORM: O R G A N I C S

Site Name: Schatz

Case #: 9500.109 Sampling Date(s): 1/17/92

~~SOIL SAMPLES~~ ~~(ug/Kg)~~ Oil Samples (mg/kg)

To calculate sample quantitation limit:
(QL * Dilution Factor) / ((100 - % moisture)/100)

QL	COMPOUND	Sample No. / ~~Dilution Factor~~ / ~~% Moisture~~ / Location	Bldg 3-001-P1	HT-001-P2	HT-001-P4						
NA	Gasoline		ND	ND	ND						
NA	Lube Oil		P	P	P						
10,000	Kerosene		ND	ND	ND						
10,000	Fuel Oil		ND	ND	ND						
10,000	Diesel Fuel		ND	ND	ND						

E-14

QL = Quantitation Limit

P = Present; Unidentified pattern
NA = Not applicable
ND = Not detected

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: ~~PESTICIDES AND~~ PCB'S

Site Name: Schatz

Case #: 9200.109 Sampling Date(s): 1/17/92

~~SOIL SAMPLES (ug/Kg)~~ Oil Samples (mg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100)

E-15

CRQL	COMPOUND	Sample No. / ~~Dilution Factor~~ / Location / Dilution Factor	Bldg. 3-001-P1	HT-001-P2	HT-001-P4						
		Dilution Factor	5.0	1.0	2.0						
8	alpha-BHC		NA	NA	NA						
8	beta-BHC										
8	delta-BHC										
8	gamma-BHC (Lindane)										
8	Heptachlor										
8	Aldrin										
8	Heptachlor Epoxide										
8	Endosulfan I										
16	Dieldrin										
16	4,4'-DDE										
16	Endrin										
16	Endosulfan II										
16	4,4'-DDD										
16	Endosulfan Sulfate										
16	4,4'-DDT										
80	Methoxychlor										
16	Endrin Ketone										
80	alpha-Chlordane										
80	gamma-Chlordane										
160	Toxaphene		↓	↓	↓						
80	5.0 Aroclor-1016		ND	ND	ND						
80	5.0 Aroclor-1221		ND	ND	ND						
80	5.0 Aroclor-1232		ND	ND	ND						
80	5.0 Aroclor-1242		ND	ND	ND						
80	5.0 Aroclor-1248		ND	ND	ND						
160	5.0 Aroclor-1254		390	ND	ND						
160	5.0 Aroclor-1260		ND	ND	ND						

CRQL = Contract Required Quantitation Limit
NA = Not applicable
ND = Not detected

SEE NARRATIVE FOR CODE DEFINITIONS
revised 07/90

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Schatz

Case #: 9103037 Sampling Date(s): 11/21 + 12/19/91

0:1 ~~ug/L~~ WATER SAMPLES (mg/L, unless otherwise stated)

+Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

E-16	Sample No. / ~~Dilution Factor~~ / Location / Matrix	Comp. P1, P3, P5, P6, P8, P12	Comp. P7, P10, P11	Comp. P2, P4							
		Water	Water	0:1							
DL	ANALYTE										
0.01	Cyanide, total	0.11	ND	NA							
0.01	Cyanide, releasable	NA	NA	ND							
1.0	Sulfide, total	ND	1.3	NA							
1.0	Sulfide, releasable	NA	NA	ND							
0.025	% organic sulfur	ND	ND	0.28							
0.025	% chlorine	ND*	0.36	ND*							
10	BTU / lb.	NA	NA	19,000							
10	Total Solids	810	430	NA							

DL = Detection Limit

* Sample QL was 2 + its QL listed.

NA = Not analyzed. ND = Not detected.

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: ~~PESTICIDES AND~~ PCB'S

ite Name: Schatz

WATER SAMPLES
(µg/L)

ase #: 9200109 Sampling Date(s): 1/17/92

To calculate sample quantitation limit:
(CRQL * Dilution Factor)

CRQL	COMPOUND	Sample No.	HT-001-P1	HT-001-P3	HT-001-P5	HT-001-P6	HT-001-P7	HT-001-P8	HT-001-P10	HT-001-P11	HT-001-P12
		Dilution Factor	1.0	5.0	1.0	100	800	2.0	10	2.2	1.0
		Location									
0.05	alpha-BHC		NA	NA	NA	NA	NA	NA	NA	NA	NA
0.05	beta-BHC										
0.05	delta-BHC										
0.05	*gamma-BHC (Lindane)										
0.05	*Heptachlor										
0.05	Aldrin										
0.05	Heptachlor Epoxide										
0.05	Endosulfan I										
0.10	Dieldrin										
0.10	4,4'-DDE										
0.10	*Endrin										
0.10	Endosulfan II										
0.10	4,4'-DDD										
0.10	Endosulfan Sulfate										
0.10	4,4'-DDT										
0.50	*Methoxychlor										
0.10	Endrin Ketone										
0.50	*alpha-Chlordane										
0.50	*gamma-Chlordane										
1.0	*Toxaphene		↓	↓	↓	↓	↓	↓	↓	↓	↓
0.50	*Aroclor-1016		ND	ND	ND	ND	ND	ND	ND	ND	ND
0.50	*Aroclor-1221		ND	ND	ND	ND	ND	ND	ND	ND	ND
0.50	*Aroclor-1232		ND	ND	ND	ND	ND	ND	ND	ND	ND
0.50	*Aroclor-1242		ND	ND	ND	ND	ND	ND	ND	ND	ND
0.50	*Aroclor-1248		ND	ND	ND	ND	ND	ND	ND	ND	ND
~~1.0~~ 0.50	*Aroclor-1254		1.0	ND	0.80	80	ND	1.0	9.0	ND	ND
~~1.0~~ 0.50	*Aroclor-1260		ND	ND	ND	ND	ND	ND	ND	ND	ND

E-17

CRQL = ~~Contract Required~~ Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

ND= Not detected NA= Not analyzed

revised 07/90

DATA SUMMARY FORM: O R G A N I C S

te Name: Schatz

se #: 9200.109 Sampling Date(s): 1/17/92

WATER SAMPLES
~~(ug/L)~~ (mg/L)

To calculate sample quantitation limit:
(QL * Dilution Factor)

QL	COMPOUND	Sample No. / Dilution Factor / Location	HT-001-P1	HT-001-P3	HT-001-P5	HT-001-P6	HT-001-P7	HT-001-P8	HT-001-P10	HT-001-P11	HT-001-P12
1.0	Total Petroleum Hydrocarbons		ND	1.4	7.5	1400	600	6.0	1900	6.1	9.1

E-18

= Quantitation Limit ND = Not detected

SEE NARRATIVE FOR E DEFINITION

revised 07/90

DATA SUMMARY FORM: ~~PESTICIDES AND~~ PCB'S

te Name: Schatz

se #: 9200.109 Sampling Date(s): 1/17/92

SOIL SAMPLES
~~(ug/Kg)~~ (mg/kg)

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100)

	Sample No. / Dilution Factor / Location	Comp P9, P13, P14, P16	HT-001-P15	Bldg. 3-009-P2	Comp. F1, F2					
	Dilution Factor	2.0	3.0	1.0	3.0					
BQL	COMPOUND									
8	alpha-BHC	NA	NA	NA	NA					
8	beta-BHC									
8	delta-BHC									
8	gamma-BHC (Lindane)									
8	Heptachlor									
8	Aldrin									
8	Heptachlor Epoxide									
8	Endosulfan I									
16	Dieldrin									
16	4,4'-DDE									
16	Endrin									
16	Endosulfan II									
16	4,4'-DDD									
16	Endosulfan Sulfate									
16	4,4'-DDT									
80	Methoxychlor									
16	Endrin Ketone									
80	alpha-Chlordane									
80	gamma-Chlordane									
160	Toxaphene	↓	↓	↓	↓					
80	Aroclor-1016	ND	ND	ND	ND					
80	Aroclor-1221	ND	ND	ND	ND					
80	Aroclor-1232	ND	ND	ND	ND					
80	Aroclor-1242	ND	ND	ND	ND					
80	Aroclor-1248	ND	ND	ND	ND					
160	Aroclor-1254	330	160	110	330					
160	Aroclor-1260	ND	ND	ND	ND					

CRQL = Contract Required Quantitation Limit
NA = Not applicable
ND = Not detected

SEE NARRATIVE FOR CODE DEFINITIONS
revised 07/90

DATA SUMMARY FORM: O R G A N I C S

ite Name: Schatz

ase #: 9200.109 Sampling Date(s): 1/17/92

SOIL SAMPLES

~~(ug/Kg)~~ (mg/kg)

To calculate sample quantitation limit:
(QL * Dilution Factor) / ((100 - % moisture)/100)

E-20

QL	COMPOUND	Sample No. / ~~Dilution Factor~~ / ~~% Moisture~~ / Location								
		Comp P9, P13, P14, P16	HT-001-P15	Bldg. 3-001-P2	Comp F1, F2					
5.0	Total Petroleum Hydrocarbons	54,000	69,000	80,000	60,000					
1.0	% Solids	92	96	73	97					

QL = Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 07/90

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Schatz

Case #: 9103.037 Sampling Date(s): 11/21+12/9/91

SOIL SAMPLES (mg/Kg), unless otherwise stated.

+Due to dilution, sample quantitation limit is affected. See dilution table for specifics.

DL	ANALYTE	Sample No. / ~~Dilution factor~~ / % Solids / Location	Comp. F1, F2 98	Comp P9, P13, P14, P16 94	HT-001-P15 97	Bldg 3-081-P1 99	Bldg 3-081-P2 87					
1.0	Cyanide, total		ND	ND	9.5	2.5	2.0					
4.0	Sulfide, total		820	37	ND*	81	33					
4.0	Sulfide, reactive		ND	NA	NA	NA	NA					
0.025	% organic sulfur		0.55	0.24	0.27	0.21	0.86					
0.050	% chlorine		0.60	0.14	0.23	0.086	0.26					
1.0	% ash		58	81	68	51	42					
1.0	% organic matter		34	15	32	21	54					
0.10	Bulk density, gm/cm³		0.88	1.00	0.93	1.90	0.88					
10	BTU/lb.		7,600	11,000	5,500	5300	9,300					

DL = Detection Limit

* Sample was diluted 2-fold; thus, DL was 8 mg/kg.

NA = Not analyzed ND = Not detected

SEE NARRATIVE FOR CODE DEFINITION

revised 07/9(

E-21

recycled paper

recycled paper

DATA SUMMARY FORM: ~~PESTICIDES~~ AND PCB'S

~~SOIL SAMPLES~~ (ug/Kg) Oil Samples (mg/Kg)

Name: Schatz

#: 9103.037 Sampling Date(s): 11/21 and 12/19/91

To calculate sample quantitation limit:
(CRQL * Dilution Factor) / ((100 - % moisture)/100)

QL	COMPOUND	Sample No. / ~~Dilution Factor~~ / Location								
		HT-001-P7*	Comp P2,P4							
8	alpha-BHC	NA	NA							
8	beta-BHC									
8	delta-BHC									
8	gamma-BHC (Lindane)									
8	Heptachlor									
8	Aldrin									
8	Heptachlor Epoxide									
8	Endosulfan I									
16	Dieldrin									
16	4,4'-DDE									
16	Endrin									
16	Endosulfan II									
16	4,4'-DDD									
16	Endosulfan Sulfate									
16	4,4'-DDT									
80	Methoxychlor									
16	Endrin Ketone									
80	alpha-Chlordane									
80	gamma-Chlordane									
160	Toxaphene	↓	↓							
80/10	Aroclor-1016	ND	ND							
80/10	Aroclor-1221	ND	ND							
80/10	Aroclor-1232	ND	ND							
80/10	Aroclor-1242	ND	ND							
80/10	Aroclor-1248	ND	ND							
160/10	Aroclor-1254	ND	ND							
160/10	Aroclor-1260	ND	ND							

E-22

CRQL = Contract Required Quantitation Limit

NA = Not analyzed
ND = Not detected

* Sample QL was 1.5 times that listed.

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 07/90

DATA SUMMARY FORM: O R G A N I C S

e Name: Schatz

~~WATER SAMPLES~~ ~~(ug/L)~~ TCLP Extracts - Purgeables (mg/L)

e # 9103037 Sampling Date(s): 11/21 + 12/19/91

To calculate sample quantitation limit:
(QL * Dilution Factor)

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QL	COMPOUND	Sample No. / ~~Dilution Factor~~ / Location																	
		Comp. P1, P3, P5, P6, P8, P12		Comp. P7, P10, P11		Comp F1, F2		Comp P9, P13, P14, P16		HT-001-P15		Bldg. 3-B01-P1		Bldg. 3-B01-P2					
		Matrix:		Water		Water		Soil		Soil		Soil		Soil					
.050	Benzene	ND	R	ND		ND		ND		ND	R	ND	R	ND	R				
.050	Carbon Tetrachloride	ND		ND		ND		ND		ND		ND		ND					
.050	Chlorobenzene	ND		ND		ND		ND		ND		ND		ND					
.050	Chloroform	ND		ND		ND		ND		ND		ND		ND					
.050	1,2-Dichloroethane	ND		ND		ND		ND		ND		ND		ND					
.050	1,1-Dichloroethene	ND		ND		ND		ND		ND		ND		ND					
.10	Methyl Ethyl Ketone	ND		ND		ND		ND		ND		ND		ND					
.050	Tetrachloroethene	ND		ND		0.17		ND		ND		ND		ND					
.050	Trichloroethene	ND		ND		ND		ND		ND		ND		ND					
.10	Vinyl Chloride	ND	↓	ND	↓	ND	↓	ND	↓	ND	↓	ND	↓	ND	↓				

= Quantitation Limit

ND = Not detected.

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: ORGANICS

Site Name: Schatz

~~WATER SAMPLES~~ ~~(ug/L)~~ TCLP Extracts (mg/L) BNA Extractables

Case #: 9103.037 Sampling Date(s): 11/21 + 12/19/91

To calculate sample quantitation limit:
(QL * Dilution Factor)

E-24

QL	COMPOUND	Sample No. / ~~Dilution Factor~~ / Location																					
		Comp P1,P3, P5,P6,P8,P12		Comp. P7, P10,P11		Comp F1,F2		Comp. P9, P13,P14, P16		HT-001- P15		Bldg. 3- 001-P1		Bldg. 3- 001-P2									
		Matrix		Water		Water		Soil		Soil		Soil		Soil		Soil							
0.50	Pentachlorophenol	ND		P		ND		ND		ND	R	ND	R	ND	R								
0.50	2,4,5-Trichlorophenol	P		ND		ND		ND		ND		ND		ND									
0.10	2,4,6-Trichlorophenol	ND		ND		ND		ND		ND		ND		ND									
0.10	2-Methylphenol	ND		ND		ND		ND		ND		ND		ND									
0.10	3-Methylphenol	ND		ND		ND		ND		ND		ND		ND									
0.10	4-Methylphenol	ND		ND		ND		ND		ND	↓	ND	↓	ND	↓								
0.10	2,4-Dinitrotoluene	ND		ND		ND		ND		ND	R	ND	R	ND	R								
0.10	Hexachlorobenzene	ND		ND		ND		ND		ND		ND		ND									
0.10	Hexachlorobutadiene	ND		ND		ND		ND		ND		ND		ND									
0.10	Hexachloroethane	ND		ND		ND		ND		ND		ND		ND									
0.10	Nitrobenzene	ND		ND		ND		ND		ND		ND		ND									
0.10	1,4-Dichlorobenzene	ND		ND		ND		ND		ND		ND		ND									
1.0	Pyridine	ND		ND		ND		ND		ND	↓	ND	↓	ND	↓								

QL = Quantitation Limit

ND = Not detected
P = Present below quantitation limit.

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: O R G A N I C S

ite Name: Schatz

ase #: 9103.037 Sampling Date(s): 11/21 + 12/19/91

~~WATER SAMPLES~~ ~~(ug/L)~~ TCLP Extracts - Herbicides and Pesticides (mg/L)

To calculate sample quantitation limit:
(QL * Dilution Factor)

QL	Compound	Sample No.	Comp. P1, P3, P5, P6, P8, P12	Comp. P7, P10, P11	Comp F1, F2	Comp. P9, P13, P14, P16	HT-001-P15		Bldg. 3-001-P1		Bldg. 3-001-P2			
		Matrix	Water	Water	Soil	Soil	Soil		Soil		Soil			
0.25	2,4-D		ND	ND	ND	ND	ND	R	ND	R	ND	R		
0.025	2,4,5-TP (Silvex)		ND	ND	ND	ND	ND	↓	ND	↓	ND	↓		
0.010	Chlordane		ND	ND*	ND	ND	ND	R	ND	R	ND	R		
0.0025	Endrin		ND	ND*	ND	ND	ND		ND		ND			
0.0012	Heptachlor		ND	ND*	ND	ND	ND		ND		ND			
0.0012	gamma-BHC (Lindane)		ND	ND*	ND	ND	ND		ND		ND			
0.050	Methoxychlor		ND	ND*	ND	ND	ND		ND		ND			
0.0025	Heptachlor Epoxide		ND	ND*	ND	ND	ND		ND		ND			
0.050	Toxaphene		ND	ND*	ND	ND	ND	↓	ND	↓	ND	↓		

E-25

= Quantitation Limit

* Sample QL for pesticides is 5 times listed QL, due to dilution of sample.

ND = Not detected NA = Not analyzed

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: O R G A N I C S

Site Name: Schatz

Case #: 9103.037 Sampling Date(s): 11/21 + 12/19/91

~~SOIL SAMPLES~~ ~~(ug/Kg)~~ TCLP Extracts - Purgeables (mg/L)

To calculate sample quantitation limit:
(QL * Dilution Factor) / ((100 - % moisture)/100)

E-26

QL	COMPOUND	Sample No. Comp. P2,P4										
		~~Dilution Factor~~										
		~~% Moisture~~										
		Location										
		Matrix	Oil									
0.62	Benzene	NO	R									
0.62	Carbon tetrachloride	NO										
0.62	Chlorobenzene	NO										
0.62	Chloroform	NO										
0.62	1,2-Dichloroethene	NO										
0.62	1,1-Dichloroethene	NO										
1.2	Methyl Ethyl Ketone	NO										
0.62	Tetrachloroethene	NO										
0.62	Trichloroethene	NO										
1.2	Vinyl Chloride	NO	↓									

QL = Quantitation Limit

NO - Not detected.

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: O R G A N I C S

ite Name: Schatz

ase #: 9103.037 Sampling Date(s): 11/21 + 12/19/91

~~SOIL SAMPLES~~ ~~(ug/Kg)~~ TCLP Extracts - BNA Extractables (mg/L)

To calculate sample quantitation limit:
(QL * Dilution Factor) / ((100 - % moisture)/100)

E-27

QL	COMPOUND	Sample No. Comp P2, P4								
		Dilution Factor								
		~~% Moisture~~								
		Location								
		Matrix 0.1								
25	Pentachlorophenol	ND								
25	2,4,5-Trichlorophenol	ND								
5.0	2,4,6-Trichlorophenol	ND								
5.0	2-Methylphenol	ND								
5.0	3-Methylphenol	ND								
5.0	4-Methylphenol	ND								
5.0	2,4-Dinitrotoluene	ND								
5.0	Hexachlorobenzene	ND								
5.0	Hexachlorobutadiene	ND								
5.0	Hexachloroethane	ND								
5.0	Nitrobenzene	ND								
5.0	1,4-Dichlorobenzene	ND								
50	Pyridine	ND								

QL = Quantitation Limit

ND = Not detected.

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: O R G A N I C S

Site Name: Schatz

Case #: 9103.037 Sampling Date(s): 11/21/91
+12/19/91

~~SOIL SAMPLES~~ ~~(ug/Kg)~~ TCLP Extracts - Pesticides (mg/kg)

To calculate sample quantitation limit:
(QL * Dilution Factor) / ((100 - % moisture)/100)

E-28

QL	COMPOUND	Sample No.	Comp P2,P4							
		~~Dilution Factor~~								
		~~% Moisture~~								
		Location								
		Matrix	Oil							
24	Chlordane		ND							
10.0	Endrin		ND							
3.0	Heptachlor		ND							
3.0	gamma-BHC (Lindane)		ND							
48	Methoxychlor		ND							
3.0	Heptachlor epoxide		ND							
150	Toxaphene		ND							

QL = Quantitation Limit

ND = Not detected

SEE NARRATIVE FOR CODE DEFINITIONS

revised 07/90

DATA SUMMARY FORM: I N O R G A N I C S

Site Name: Schatz

Case #: 9103.037 Sampling Date(s): 11/21 + 12/19/91

~~WATER SAMPLES~~ ~~(ug/L)~~ TCLP Extracts - Metals (mg/L)

+Due to dilution, sample quantitation limit is affected.
See dilution table for specifics.

DL	ANALYTE	Sample No. / ~~Dilution Factor~~ / Location	Comp P1,P3, P5,P6,P8,P12	Comp P7, P10,P11	Comp P2,P4	Comp F1,F2	Comp P9,P13 P14,P16	HT-001-P15	Bldg.3-009-P1	Bldg.3-081-P2		
		Matrix	Water	Water	Oil	Soil	Soil	Soil	Soil	Soil		
0.0002	Mercury		ND	ND	ND	ND	ND	ND	ND	ND		
1.0	Arsenic		ND	ND	ND	ND	ND	ND	ND	ND		
10	Barium		ND	72	ND	ND	ND	ND	ND	ND		
0.20	Cadmium		ND	ND	0.29	1.4	ND	0.25	ND	4.6		
1.0	Chromium		ND	ND	ND	ND	ND	ND	ND	ND		
1.0	Lead		ND	ND	ND	ND	ND	ND	ND	ND		
1.0	Selenium		ND	ND	ND	ND	ND	ND	ND	ND		
1.0	Silver		ND	ND	ND	ND	ND	ND	ND	ND		

DL = Detection Limit ND = Not detected.

SEE NARRATIVE FOR CODE DEFINITIONS
revised 07/90

APPENDIX F

ecology and environment, inc.

QUALITY ASSURANCE PROTOCOL REVIEW

Job No.: 9200.4Ele Date: 3/18/92

Report Title:

Client: SCHATZ SITE TASK 21

Laboratory Data Review	Supervisor	Date
Metals		
Gen. Chem.		
(GC)	[illegible]	3-18-92
GC/MS		
Micro, Asbestos		
Other		

	Signature	Date
Report Written by:	[illegible] /JP	3/18/92
1st Draft Reviewed by:	JP	3/18/92
CIRCULATED:	JP	3/18/92
2nd Draft Reviewed by: (If needed)		
Final Review by Author:	[illegible]	3/19/92
ASC Manager:	[illegible]	3-19-92
QA Officer:		
Corp. Project Manager: M. STEFFAN (Internal Job)		
REVIEW SIGN RETURN All QA Protocol Review Forms Signed and in File (to be signed by report writer)		
1 Copies of Report Sent to: CLIENT VIA M. STEFFAN	JK	3/19/92
1 Invoices Sent to Accounting	JK	3/19/92

Comments/Notes:

Copy Distribution: White - Report to Project File; Canary - Project Manager; Pink - Project File. 407064

MEMORANDUM

TO: Mike Steffan

FROM: Gary Hahn G Hahn/jp

DATE: March 19, 1992

SUBJECT: OB-4000 Schatz Site Task 21 Report

RE: 9200.466

CLIENT: 1672

CC: Lab File

Attached is the laboratory report of the analysis conducted on six samples received at the Analytical Services Center on March 04, 1992. Analysis was performed according to the procedures set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, U.S. EPA, 1986.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

GH/jp
Enclosure

ecology and environment, inc.
368 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14086, TEL. 716/684-8060
International Specialists in the Environment

9200.466

CHAIN-OF-CUSTODY RECORD

Project No.:	Project Name:	Project Manager:
OB4000	SCHATZ PLANT SITE	M. STEFFAN
Samplers: (Signatures)		**Field Team Leader:**
		K. SMITH

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION — EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	PCB-SOILS	REMARKS
P9	3/4	1030		X		PCB's - Low	OB-HT-001-P9	1	X	
P13	3/4	1030		X			OB-HT-001-P13	1	X	
P14	3/4	1030		X			OB-HT-001-P14	1	X	
P16	3/4	1030		X			OB-HT-001-P16	1	X	
F1	3/4	1030		X			OB-HT-001-F1	1	X	* ~~Sample~~ Labled as OB-EPR-001-F1
F2	3/4	1030		X			OB-HT-001-F2	1	X	" " OB-EPR-001-F2

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
[signature]	3/4/92 1030					
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: / Date:
Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature) [signature]	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

234055

F-5

Ecology and Environment, Inc.
SAMPLE COMMENT REPORT

TEST NAME : PCB-SOIL -SOLID
LAB SAMPLE ID: 34310 TEST CODE:SPCB 1
CLIENT SAMPLE ID: OB-HT-001-P9
COMMENT: Quantitation limits elevated due to sample matrix interference.

TEST NAME : PCB-SOIL -SOLID
LAB SAMPLE ID: 34313 TEST CODE:SPCB 1
CLIENT SAMPLE ID: OB-HT-001-P16
COMMENT: Quantitation limits elevated due to sample matrix interference.

TEST NAME : PCB-SOIL -SOLID
LAB SAMPLE ID: 34314 TEST CODE:SPCB 1
CLIENT SAMPLE ID: OB-EPR-001-F1
COMMENT: Quantitation limits elevated due to sample matrix interference.

JOB NUMBER : 9200.466

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

LAB SAMPLE ID	CLIENT SAMPLE ID	TEST CODE	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
34310.01	OB-HT-001-P9	SPCB 1	03/04/92	03/13/92	03/17/92
		STSCLP1	03/04/92		03/13/92
34311.01	OB-HT-001-P13	SPCB 1	03/04/92	03/13/92	03/16/92
		STSCLP1	03/04/92		03/13/92
34312.01	OB-HT-001-P14	SPCB 1	03/04/92	03/13/92	03/17/92
		STSCLP1	03/04/92		03/13/92
34313.01	OB-HT-001-P16	SPCB 1	03/04/92	03/13/92	03/17/92
		STSCLP1	03/04/92		03/13/92
34314.01	OB-EPR-001-F1	SPCB 1	03/04/92	03/13/92	03/16/92
		STSCLP1	03/04/92		03/13/92
34315.01	OB-EPR-001-F2	SPCB 1	03/04/92	03/13/92	03/16/92
		STSCLP1	03/04/92		03/13/92

TEST CODE :STSCLP1 JOB NUMBER :9200.466

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : OB-4000 SCHATZ SITE TASK 21
TEST NAME : SOLIDS - TOTAL UNITS : %
PARAMETER : SOLIDS - TOTAL

SAMPLE ID	RESULTS	Q
EE-92-34310		
OB-HT-001-P9	96	
EE-92-34311		
OB-HT-001-P13	93	
EE-92-34312		
OB-HT-001-P14	93	
EE-92-34313		
OB-HT-001-P16	98	
EE-92-34314		
OB-EPR-001-F1	98	
EE-92-34315		
OB-EPR-001-F2	97	

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :SPCB 1 JOB NUMBER :9200.466

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB-SOIL -SOLID UNITS : MG/KG
RESULTS IN DRY WEIGHT

LAB SAMPLE ID: EE-92-34310
CLIENT SAMPLE ID: OB-HT-001-P9

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND	C	0.21
PCB-1242	ND	C	0.21
PCB-1254	ND	C	0.21
PCB-1221	ND	C	0.21
PCB-1232	ND	C	0.21
PCB-1248	ND	C	0.21
PCB-1260	ND	C	0.21

LAB SAMPLE ID: EE-92-34311
CLIENT SAMPLE ID: OB-HT-001-P13

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		4.3
PCB-1242	ND		4.3
PCB-1254	41		4.3
PCB-1221	ND		4.3
PCB-1232	ND		4.3
PCB-1248	ND		4.3
PCB-1260	ND		4.3

LAB SAMPLE ID: EE-92-34312
CLIENT SAMPLE ID: OB-HT-001-P14

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		5.4
PCB-1242	ND		5.4
PCB-1254	6.7		5.4
PCB-1221	ND		5.4
PCB-1232	ND		5.4
PCB-1248	ND		5.4
PCB-1260	ND		5.4

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

TEST CODE :SPCB 1 JOB NUMBER :9200.466

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB-SOIL -SOLID UNITS : MG/KG
RESULTS IN DRY WEIGHT

LAB SAMPLE ID: EE-92-34313
CLIENT SAMPLE ID: OB-HT-001-P16

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND	C	50
PCB-1242	ND	C	50
PCB-1254	PRESENT	LC	50
PCB-1221	ND	C	50
PCB-1232	ND	C	50
PCB-1248	ND	C	50
PCB-1260	ND	C	50

LAB SAMPLE ID: EE-92-34314
CLIENT SAMPLE ID: OB-EPR-001-F1

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND	C	31
PCB-1242	ND	C	31
PCB-1254	ND	C	31
PCB-1221	ND	C	31
PCB-1232	ND	C	31
PCB-1248	ND	C	31
PCB-1260	ND	C	31

LAB SAMPLE ID: EE-92-34315
CLIENT SAMPLE ID: OB-EPR-001-F2

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		3.1
PCB-1242	ND		3.1
PCB-1254	26		3.1
PCB-1221	ND		3.1
PCB-1232	ND		3.1
PCB-1248	ND		3.1
PCB-1260	ND		3.1

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOIL SAMPLES

9200.466

(mg/kg as received)

Parameter	E & E Laboratory No. 92-34310	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		ND	1.7	1.3	76

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOIL SAMPLES

9200.466

(mg/kg as received)

Parameter	E & E Laboratory No. 92- Spiked Blank	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		ND	1.7	1.6	94

ND = NOT DETECTED

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
OF HEXABROMOBENZENE SURROGATE SPIKES

9200.466

(mg/kg as received)

E & E Laboratory No. 92-	Amount Added	Amount Determined	Percent Recovery
34310	0.83	0.60	72
34311	0.83	--	DL
34312	0.83	--	DL
34313	0.83	--	DL
34314	0.83	--	DL
34315	0.83	--	DL

These recoveries are within E & E quality control limits (37-138%).

DL = Surrogate diluted out of sample.

TEST CODE :SPCB 1 JOB NUMBER :9200.466

Ecology and Environment, Inc.
Analytical Services Center

CLIENT :OB-4000 SCHATZ SITE TASK 21
TEST NAME:PCB-SOIL -SOLID UNITS : MG/KG
RESULTS IN DRY WEIGHT

LAB SAMPLE ID: METHOD BLANK 1

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.020
PCB-1242	ND		0.020
PCB-1254	ND		0.020
PCB-1221	ND		0.020
PCB-1232	ND		0.020
PCB-1248	ND		0.020
PCB-1260	ND		0.020

LAB SAMPLE ID: METHOD BLANK 2

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.020
PCB-1242	ND		0.020
PCB-1254	ND		0.020
PCB-1221	ND		0.020
PCB-1232	ND		0.020
PCB-1248	ND		0.020
PCB-1260	ND		0.020

LAB SAMPLE ID: METHOD BLANK 3

PARAMETER	RESULTS	Q	QNT.LIMIT
PCB-1016	ND		0.020
PCB-1242	ND		0.020
PCB-1254	ND		0.020
PCB-1221	ND		0.020
PCB-1232	ND		0.020
PCB-1248	ND		0.020
PCB-1260	ND		0.020

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED QNT. LIMIT