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PRE-DESIGN INVESTIGATION
TASK SW-1
EXTENT OF HAZARDOUS SUBSTANCES IN WETLANDS AND SURFACE WATER SEDIMENTS
INTERIM REPORT

INDUSTRI-PLEX SITE
WOBURN, MASSACHUSETTS

Prepared for:

Industri-Plex Site Remedial Trust
800 North Linbergh Boulevard
St. Louis, Missouri 63167

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August 1990 Project No.: 893-6255

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Golder Associates Inc.
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August 31, 1990 Project No. 893-6255

United States Environmental Protection Agency
Region I
J.F.K. Federal Building, HRS-CAN-3
Boston, MA 02203-2211

Attn: Marilyn M. Wade, P.E.
Remedial Project Manager

RE: INDUSTRI-PLEX SITE, PRE-DESIGN INVESTIGATION TASK SW-1 EXTENT OF HAZARDOUS SUBSTANCES IN WETLANDS AND SURFACE WATER SEDIMENTS; INTERIM REPORT

Dear Ms. Wade:

On behalf of the Industri-Plex Site Remedial Trust, we are submitting the attached Interim Report for Pre-Design Investigation (PDI) Task SW-1, Extent of Hazardous Substances in Wetlands and Surface Water Sediments. This report is being submitted in accordance with the PDI Work Plan Task SW-1 reporting requirements (Section 3.4.3.6, p. 95). It includes the results of the Target Compound List/Target Analyte List (TCL/TAL) analyses, SW-846 analyses (arsenic, lead, and chromium), methylmercury analyses, and microscopy for identification of hide residue. The above data have been used to select proposed locations for Surface Water Treatability Testing under PDI Task SW-2. The SW-2 sampling locations, and a revised schedule for implementation of Task SW-2, are proposed in this Interim Report for review and approval by USEPA and MDEP.

If you have any questions, please contact us.

Very truly yours,

GOLDER ASSOCIATES INC.

Kenneth R. Moser
Associate

cc: J. Naparstek, MDEP
A. Ostrofsky, NUS
D.L. Baumgartner, ISRT
W.L. Smull, ISRT

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1.0 INTRODUCTION

This report is submitted in fulfillment of the Interim Report deliverable for Pre-Design Investigation (PDI) Task SW-1, Extent of Hazardous Substances in Wetlands and Surface Water Sediments, as specified in Section 3.4.3.6 of the PDI Work Plan (page 95). The purpose of this Interim Report is to present the results of the Task SW-1 data and to propose locations for Surface Water Treatability Testing to be conducted under PDI Task SW-2. This report includes the results from Task SW-1 for Target Compound List/Target Analyte List (TCL/TAL) analyses; SW-846 analyses for arsenic, lead, and chromium; methylmercury analyses; and microscopy for identification of hide residue.

Section 2 identifies the data presented in this report and a brief discussion of sample collection procedures. Section 3 identifies the rationale used to evaluate the usability of the data. Data usability/validation backup are provided in Appendices A, B, and C.

2.0 DATA COLLECTION AND RESULTS

The locations of the 107 samples collected in streams and wetlands under PDI Task SW-1 are shown in Figure 1. The locations of previous samples obtained during the RI/FS, as well as samples to be collected under the GSIP, are also shown on Figure 1.

Twenty-three of the PDI Task SW-1 sample locations are located in stream channels. At each of these sample locations, 3 boreholes were drilled across the stream channel to collect sediment samples over the width of the stream. Within each borehole, sediment samples were collected by (1) advancing a 3-foot long split spoon sampler using a portable tripod rig or (2) by using a stainless steel hand auger and a 4-inch diameter steel casing. Discrete samples were collected from each borehole between the ground surface and a depth of 36 inches, except where sample recovery was affected by the presence of bedrock or gravel and cobbles in the streams.

Eighty-four of the PDI Task SW-1 sample locations are located in or adjacent to ponds or wetland areas. At each of these sample locations, only one borehole was used to collect the sediment samples. These samples were collected by using a stainless steel hand auger and a 4-inch diameter steel casing. Discrete samples were collected from each borehole between the ground surface and a depth of 36 inches. A boat was used to collect the sediment samples within the ponds. Sampling equipment was decontaminated in accordance with procedures given in Attachment 1 of the Field Sampling Plan.

These sediment samples were collected between April 4 and June 13, 1990, and were analyzed by Enseco-East (Somerset, NJ).

The analytical results for arsenic, lead, chromium, and hide residue analysis are summarized in Table 1 and Figure 2, and the results of Target Compounds List/Target Analyte List (TCL/TAL) analyses by Contract Lab Program Routine Analytical Services (CLP-RAS) are presented in Tables 2 and 3. Results for 2 CLP volatile organic compound trip blanks, 25 SW-846 equipment rinsate blanks, 2 CLP-RAS equipment rinsate blanks, 25 SW-846 field duplicates, and 2 CLP-RAS field duplicates are also included in Tables 1 through 3. Assessment of associated matrix spike/matrix spike duplicate (MS/MSD), duplicate control samples (DCS), and laboratory duplicate samples are summarized in Appendices A, B, and C.

Samples were also collected for methylmercury analysis from five locations (2, 9, 10, 22, and 29 as shown on Figure 1). Location 2 is in an area of standing water at the northwest corner of the site. Locations 9 and 10 are in the Chromium Lagoons. Location 22 is in the main branch of the Aberjona River, and Location 29 is in the pond adjacent to the arsenic pit in the northern portion of the site. Each of these streams/ponds are adjacent to soils where mercury was detected during the RI/FS. The samples were analyzed by Clean Harbors Analytical Services, Inc. of Bedford, Massachusetts according to a method provided by NUS Corporation, the USEPA Region I oversight contractor.

3.0 DATA ASSESSMENT

The discussion below presents the rationale for assigning data assessment codes to each analytical result given in Tables 1 through 3. The presentation is grouped according to the SW-846, CLP-RAS, methylmercury, and hide residue microscopy analyses.

3.1 SW-846 Analyses

An assessment of overall SW-846 data quality is given in Appendix A. SW-846 data assessment codes for individual analyses are given with the data in Table 1. These include acceptable quantitative data (A), estimated (semiquantitative) data (J), acceptable and not detected (U-quantitative, UJ-semiquantitative), and unusable (R). The SW-846 assessment codes provide a guide as to the quality of the data with respect to PARCC parameters (precision, accuracy, representativeness, comparability, completeness) and other Data Quality Objectives outlined in the PDI Work Plan and Quality Assurance Project Plan (QAPjP).

Enseco-East assigns a separate project number to each set of SW-846 samples delivered from the Industri-Plex Site on a given day. The laboratory data reports present results by project number. Therefore, data quality was assessed in groups by Enseco-East project number in accordance with the guidelines provided in Section 12 of the QAPjP and documented on the forms shown in Appendix B.

SW-846 data are assessed as acceptable quantitative data (A) if all associated QC samples are within the specified control limits. They are also assessed as acceptable quantitative data if only a small fraction of the associated QC samples are not in control.

SW-846 data are estimated, or semiquantitative (J) if any one of the following occur:

1. The holding time specified in the QAPjP has been exceeded,

2. Precision of lab duplicate is outside control limits,

3. Precision of field duplicates are outside control limits, or

4. MS/MSD percent recoveries or relative percent difference (RPD) are outside control limits.

Whether or not the qualifier (J) is assigned to other samples collected along with the above QC samples depends upon the frequency of the out-of-control condition. For example, if over 70 percent of the lab and field duplicates are in control, then only the specific samples which are not in control would be assessed as semiquantitative (J). However, if less than 60 percent of the duplicate samples were in control, it is likely that precision for all associated samples is similar and they should be assessed as semiquantitative (J).

Samples are considered not detected and quantitative (U) if the precision and MS/MSD recoveries are in control. They are considered not detected and semiquantitative (UJ) if either precision or spike recoveries are poor.

None of the data were found to be unusable. The criteria chosen for data to be assessed as unusable (R) are:

1. Large concentrations of the analyte are detected in method or equipment rinsate blanks, or

2. The analyte is not detected but the matrix spike/matrix spike duplicate (MS/MSD) recovery is very low.

The overall assessment of the SW-846 data is documented in Appendix A. Ninety one percent of the lab duplicates and 73 percent of the field duplicates were within the control limits for precision. Upon close review of the field duplicates, over half of the field duplicates near or above action levels were not within control limits. This indicates that the distribution of arsenic, lead, and chromium in stream sediments is very inhomogeneous when they occur at high concentrations. Therefore, the data as a whole are considered to be precise, but the sediments are very inhomogeneous.

All DCS samples were within control limits, and 83 percent of the MS/MSD samples were within control limits. Therefore, the data set as a whole is considered to be sufficiently accurate to support design. The data are also considered to be representative, comparable, and complete (see Appendix B).

Field procedures/documentation were complete, acceptable and sufficient to support design. Field documentation will be included in the Task SW-1 Interim Final Report. Overall, the data are considered to be useable and consistent with the objectives of the task. However, because of the inhomogeneous distribution of metals in the sediments, there is a larger degree of uncertainty associated with the precision of the field sampling than was expected, especially when arsenic, lead, and chromium occur at high concentrations.

3.2 CLP-RAS

CLP-RAS data were validated according to Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses (November 1988) and Region I Laboratory Data Validation Functional Guidelines for

Evaluating Inorganics Analyses (February 1989). The data validation narrative summary is given in Appendix C. Data qualifiers are provided along with the analytical data in Tables 2 and 3.

3.3 Methylmercury

Clean Harbors Analytical Services, Inc. of Bedford, Massachusetts analyzed the methylmercury samples in accordance with the analytical method provided by NUS Corporation. No useable data were obtained because high matrix interference resulted in poor chromatographic resolution.

3.4 Hide Residue Microscopy

Visual identification of hair fibers was used as an indicator of hide residue. Samples were examined under a binocular microscope for the presence of hair fibers. Most samples were examined under both wet and oven-dried conditions. The oven-dried samples were found to be the most reliable and reproducible method of analysis. A minimum of five percent of the samples were examined independently by two microscopists. All samples identified as containing hides by the first microscopist were examined by a second microscopist. If the results differed, a third microscopist examined the sample to provide additional data on which to produce a final result. The presence of hides was also noted on the borehole log in the field and taken into consideration during the microscopy. The results of hide residue microscopy are presented in Table 1 along with the SW-846 results.

4.0 RECOMMENDATIONS FOR TASK SW-2

Based upon the data collected during Task SW-1, potential sample locations are proposed for Task SW-2. Task SW-2 will evaluate the necessary treatment technologies for site surface water during dredging of sediments which contain metals above Consent Decree action levels. Sediments containing hide residues are to be capped in place.

The PDI Work Plan (p. 99) indicated that 10 locations would be tested under Task SW-2. Two locations would be analyzed for TCL/TAL and eight locations would be tested for arsenic, lead, and chromium. All ten locations would be tested for total suspended solids. However, less than ten Task SW-1 locations contain metals above Consent Decree Action Levels without hide residues (Figure 2), such that ten locations are not available for sampling.

Based upon the SW-846 and hide residue microscopy results, as well as the physical setting/characteristics of each of the nine locations available, sufficient data to support design of surface water treatment systems should be collected by sampling ~~only 5~~ of the available locations. These locations are believed to be physically and chemically representative of the reaches of each stream and/or pond to be dredged. TCL/TAL samples will be collected at location 8 in the Chromium Lagoons because polycylic aromatic hydrocarbons were detected. Although hides were also detected in the Chromium Lagoons, treatability testing at this location will provide useful data if it is determined that excavation of the Chromium Lagoons is appropriate. Locations 2, 17, 29, and 54, will be sampled for arsenic, lead, and chromium. Location 17 is in the drainage ditch adjacent to the Chromium Lagoons and is considered representative of both the ditch along New Boston Street and the ditch adjacent to the Chromium

Boston Street and the ditch adjacent to the Chromium Lagoons. Location 2 is in an area of standing water in the northwest part of the site adjacent to New Boston Street. Locations 29 and 54 are in two distinct ponds adjacent to the arsenic pit and northeast of Commerce Way, respectively. All five locations will be sampled for total suspended solids. All of the above analyses include discrete samples of disturbed surface water and sediment pore water.

The revised schedule for Task SW-2 includes Fieldwork #1 during the second week of September such that laboratory testing can be completed and a Task SW-2 Interim Report can be issued in late October. The above schedule is contingent upon approval of the Task SW-2 sample locations by USEPA and MDEP.

TABLE 1

Summary of Task SW-1 Arsenic, Lead
Chromium, and Hide Residue Analyses

TABLE 1

SUMMARY OF TASK SW-1 ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES

NOTE: Sample ID is designated as described for the example given below.

IP/SW1/001/006/1/2/1

The first two characters (IP) stand for the Industri-Plex Site;

The third through fifth characters (SW1) stand for the Pre-Design task number;

The sixth through eighth characters (001) stand for the sample location number within that task (EB=equipment rinsate blank);

The ninth through eleventh characters (006) stand for the depth of the bottom of the sample interval in inches below ground surface, where applicable;

The twelfth character (1) stands for the matrix type (1=solid, 2=liquid, 3=gas);

The thirteenth character (2) stands for the sampling round number (D=field duplicate sample); and

The fourteenth character (1) stands for the analysis type (1=arsenic, lead and chromium; 2=TCL VOCs, 3=TCL semivolatile organic compounds, 4=TCL pesticides/PCBs; and 5=TAL metals. A DL at the end indicates a laboratory-diluted sample.

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:AQUEOUS

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/L)			Lead (mg/L)			Chromium (mg/L)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/EB22/000/2/1/1	000	900420	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/SW1/EB23/000/2/2/1	000	900425	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/SW1/EB31/000/2/2/1	000	900515	0.013	A	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB32/000/2/2/1	000	900515	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB33/000/2/2/1	000	900517	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB34/000/2/1/1	000	900518	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB35/000/2/1/1	000	900518	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB36/000/2/2/1	000	900521	ND	U	0.010	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB37/000/2/2/1	000	900523	ND	U	0.010	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB38/000/2/2/1	000	900524	ND	U	0.010	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB39/000/2/2/1	000	900524	ND	U	0.010	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB40/000/2/2/1	000	900524	ND	U	0.010	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB41/000/2/1/1	000	900531	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB41/000/2/1/1	000	900601	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB42/000/2/1/1	000	900601	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB45/000/2/1/1	000	900605	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB47/000/2/1/1	000	900607	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB49/000/2/1/1	000	900607	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB50/000/2/1/1	000	900608	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB51/000/2/1/1	000	900608	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB52/000/2/1/1	000	900611	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA

NOTES: * - Duplicate Sample
RL - Reporting Limit
NA - Not Applicable

AC - Assessment Codes.....
A - Quantitative Data
J - Estimated (Semiquantitative) Data
UJ - Not Detected/Semiquantitative Data
R - Unusable Data
U - Not Detected/Quantitative

Hide Residue Detected.....
Y - Detected
N - Not Detected
NS - Not Sampled
NA - Not Applicable
BS - Background Sample
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:AQUEOUS

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/L)			Lead (mg/L)			Chromium (mg/L)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/EB53/000/2/1/1	000	900611	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB54/000/2/1/1	000	900612	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB55/000/2/1/1	000	900612	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/SW1/EB56/000/2/1/1	000	900613	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA

NOTES: * - Duplicate Sample
RL - Reporting Limit
NA - Not Applicable

AC - Assessment Codes.....
A - Quantitative Data
J - Estimated (Semiquantitative) Data
UJ - Not Detected/Semiquantitative Data
R - Unusable Data
U - Not Detected/Quantitative

Hide Residue Detected.....
Y - Detected
N - Not Detected
NS - Not Sampled
NA - Not Applicable
BS - Background Sample
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/001/006/1/2/1	006	900516	16.53	A	3.33	16.27	A	6.67	234.67	A	1.33	25.	0.10	N
IP/SW1/001/012/1/2/1	012	900516	12.03	A	1.35	36.89	A	6.76	452.70	A	1.35	26.	0.10	NE
IP/SW1/001/018/1/2/1	018	900516	5.41	A	0.68	46.35	A	6.76	889.19	A	1.35	26.	0.10	N
IP/SW1/001/027/1/2/1	027	900516	2.27	A	0.67	23.60	A	6.67	108.27	A	1.33	25.	0.10	NE
IP/SW1/001/036/1/2/1	036	900516	0.92	A	0.60	ND	U	5.95	3.33	A	1.19	16.	0.10	N
IP/SW1/002/006/1/2/1	006	900515	3.38	A	0.70	30.14	A	7.04	10732.39	A	1.41	29.	0.10	N
IP/SW1/002/012/1/2/1	012	900515	1.92	A	0.64	ND	U	6.41	25.13	A	1.28	22.	0.10	NE
IP/SW1/002/018/1/2/1	018	900515	2.13	A	0.53	6.08	A	5.33	11.62	A	1.07	6.2	0.10	N
IP/SW1/002/027/1/2/1	027	900515	0.75	A	0.60	ND	U	6.02	7.47	A	1.20	17.	0.10	NE
IP/SW1/002/030/1/2/1	030	900515	ND	U	0.61	31.46	A	6.10	9402.44	A	1.22	18.	0.10	N
IP/SW1/002/SUR/1/2/1	SUR	900515	61.11	A	2.78	38.89	A	27.78	31.67	A	5.56	82.	0.10	NE
IP/SW1/03L/006/1/2/1	006	900515	135.92	A	35.21	253.52	A	7.04	361.97	A	1.41	29.	.	N
IP/SW1/03L/012/1/2/1	012	900515	130.00	A	31.25	7.13	A	6.25	44.38	A	1.25	20.	.	NE
IP/SW1/03L/018/1/2/1	018	900515	14.76	A	3.05	6.34	A	6.10	25.12	A	1.22	18.	.	N
IP/SW1/03L/027/1/2/1	027	900515	6.46	A	0.61	ND	U	6.10	9.76	A	1.22	18.	0.10	NE
IP/SW1/03L/029/1/2/1	029	900515	13.38	A	1.25	ND	U	6.25	9.13	A	1.25	20.	0.10	N
IP/SW1/03L/SUR/1/2/1	SUR	900515	1000.00	A	166.67	342.00	A	33.33	6306.67	A	6.67	85.	0.10	NE
IP/SW1/03M/006/1/2/1	006	900515	43.77	A	7.25	77.39	A	7.25	568.12	A	1.45	31.	0.10	N
IP/SW1/03M/012/1/2/1	012	900515	22.50	A	3.13	24.75	A	6.25	89.75	A	1.25	20.	0.10	NE
IP/SW1/03M/018/1/2/1	018	900515	21.08	A	1.20	ND	U	6.02	15.06	A	1.20	17.	0.10	N
IP/SW1/03M/027/1/2/1	027	900515	12.75	A	6.25	7.63	A	6.25	31.38	A	1.25	20.	.	N
IP/SW1/03M/SUR/1/2/1	SUR	900515	64.35	A	10.87	87.83	A	10.87	1578.26	A	2.17	54.	.	NE
IP/SW1/03R/006/1/2/1	006	900515	191.67	A	34.72	168.06	A	6.94	779.17	A	1.39	28.	0.10	N
IP/SW1/03R/012/1/2/1	012	900515	178.05	A	30.49	289.02	J	6.10	609.76	A	1.22	18.	0.10	NE
IP/SW1/03R/012/1/D/1*	012	900515	168.67	A	30.12	47.47	J	6.02	554.22	A	1.20	17.	0.10	NE
IP/SW1/03R/018/1/2/1	018	900515	124.25	A	12.50	15.00	A	6.25	436.25	A	1.25	20.	0.10	N
IP/SW1/03R/027/1/2/1	027	900515	13.73	A	1.20	8.55	A	6.02	150.60	A	1.20	17.	0.10	N
IP/SW1/03R/SUR/1/2/1	SUR	900515	58.26	A	5.43	236.96	A	10.87	743.48	A	2.17	54.	0.10	NE
IP/SW1/04L/006/1/2/1	006	900515	208.62	A	86.21	889.66	A	17.24	2313.79	A	3.45	71.	0.10	N
IP/SW1/04L/012/1/2/1	012	900515	202.76	A	34.48	641.38	A	17.24	803.45	A	3.45	71.	0.10	NS
IP/SW1/04L/015/1/2/1	015	900515	61.14	A	5.68	92.73	A	5.68	33.41	A	1.14	12.	0.10	NS
IP/SW1/04M/006/1/2/1	006	900515	311.11	A	138.89	1616.67	A	27.78	1627.78	A	5.56	82.	0.10	Y
IP/SW1/04M/012/1/2/1	012	900515	355.88	A	147.06	800.00	A	29.41	747.06	A	5.88	83.	0.10	NE
IP/SW1/04M/018/1/2/1	018	900515	132.79	A	40.98	188.52	A	8.20	66.56	A	1.64	39.	0.10	N

NOTES: * - Duplicate Sample
RL - Reporting Limit
NA - Not Applicable

AC - Assessment Codes.....
A - Quantitative Data
J - Estimated (Semiquantitative) Data
UJ - Not Detected/Semiquantitative Data
R - Unusable Data
U - Not Detected/Quantitative

Hide Residue Detected.....
Y - Detected
N - Not Detected
NS - Not Sampled
NA - Not Applicable
BS - Background Sample
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/04M/026/1/2/1	026	900515	66.86	A	29.07	71.28	A	5.81	22.09	A	1.16	14.	0.10	N
IP/SW1/04R/006/1/2/1	006	900515	218.00	A	20.00	1140.00	A	20.00	1024.00	A	4.00	75.	0.10	N
IP/SW1/04R/012/1/2/1	012	900515	315.63	A	31.25	984.38	A	31.25	1725.00	A	6.25	68.	0.10	NE
IP/SW1/04R/018/1/2/1	018	900515	130.86	A	6.17	276.54	A	12.35	75.06	A	2.47	19.	0.10	Y
IP/SW1/04R/027/1/2/1	027	900515	136.78	A	5.75	50.34	A	5.75	29.43	A	1.15	13.	0.10	NE
IP/SW1/04R/030/1/2/1	030	900515	107.19	A	11.24	37.98	A	5.62	27.08	A	1.12	11.	0.10	N
IP/SW1/05L/006/1/2/1	006	900515	317.11	A	65.79	135.53	A	6.58	93.03	A	1.32	24.	0.10	N
IP/SW1/05L/012/1/2/1	012	900515	76.52	A	11.24	35.28	A	5.62	30.34	A	1.12	11.	0.10	NE
IP/SW1/05L/018/1/2/1	018	900515	64.27	A	27.23	20.37	A	5.45	21.46	A	1.09	8.2	0.10	N
IP/SW1/05L/021/1/2/1	021	900515	50.94	A	27.69	13.51	A	5.54	18.49	A	1.11	9.7	0.10	N
IP/SW1/05M/006/1/2/1	006	900515	230.77	A	76.92	278.46	A	7.69	264.62	A	1.54	35.	0.10	N
IP/SW1/05M/006/1/D/1*	006	900515	211.27	A	70.42	346.48	A	14.08	235.21	A	2.82	29.	0.10	N
IP/SW1/05M/012/1/2/1	012	900515	26.08	A	5.55	18.31	A	5.55	23.86	A	1.11	9.9	0.10	NE
IP/SW1/05M/018/1/2/1	018	900515	28.60	A	5.38	9.35	A	5.38	15.05	A	1.08	7.0	0.10	N
IP/SW1/05M/021/1/2/1	021	900515	35.60	A	5.49	7.80	A	5.49	15.38	A	1.10	9.0	0.10	N
IP/SW1/05R/006/1/2/1	006	900515	228.00	A	33.33	325.33	A	6.67	75.07	A	1.33	25.	0.10	N
IP/SW1/05R/012/1/2/1	012	900515	84.09	A	28.41	102.61	A	5.68	18.41	A	1.14	12.	0.10	NE
IP/SW1/05R/018/1/2/1	018	900515	154.53	A	27.59	10.04	A	5.52	35.10	J	1.10	9.4	0.10	N
IP/SW1/05R/023/1/2/1	023	900515	44.00	A	5.56	9.67	A	5.56	17.67	A	1.11	10.	0.10	N
IP/SW1/06L/006/1/2/1	006	900514	224.32	A	67.57	452.70	A	6.76	179.73	A	1.35	26.	0.10	NS
IP/SW1/06L/012/1/2/1	012	900514	103.16	A	31.65	140.51	A	6.33	53.54	A	1.27	21.	0.10	NE
IP/SW1/06L/018/1/2/1	018	900514	69.41	A	29.41	147.06	A	5.88	21.53	A	1.18	15.	0.10	N
IP/SW1/06M/006/1/2/1	006	900514	312.12	A	151.52	357.58	A	7.58	265.15	A	1.52	34.	0.10	NS
IP/SW1/06M/012/1/2/1	012	900514	132.14	A	59.52	251.19	A	5.95	42.50	A	1.19	16.	0.10	NS
IP/SW1/06M/018/1/2/1	018	900514	33.61	A	6.02	66.63	A	6.02	15.54	A	1.20	17.	0.10	NS
IP/SW1/06M/023/1/2/1	023	900514	13.21	A	3.09	ND	U	6.17	6.42	A	1.23	19.	0.10	N
IP/SW1/06R/006/1/2/1	006	900514	160.76	A	63.29	477.22	A	6.33	129.11	A	1.27	21.	0.10	N
IP/SW1/06R/012/1/2/1	012	900514	19.02	A	3.05	13.05	A	6.10	14.02	A	1.22	18.	0.10	NE
IP/SW1/06R/018/1/2/1	018	900514	18.10	A	2.98	ND	U	5.95	8.45	A	1.19	16.	0.10	N
IP/SW1/06R/027/1/2/1	027	900514	14.15	A	3.05	ND	U	6.10	8.17	A	1.22	18.	0.10	NE
IP/SW1/06R/030/1/2/1	030	900514	13.66	A	3.05	ND	U	6.10	6.83	A	1.22	18.	0.10	N
IP/SW1/07L/006/1/2/1	006	900516	187.27	A	22.73	275.00	A	22.73	554.55	A	4.55	78.	0.10	N

NOTES: * - Duplicate Sample
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A - Quantitative Data
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UJ - Not Detected/Semiquantitative Data
R - Unusable Data
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Hide Residue Detected.....
Y - Detected
N - Not Detected
NS - Not Sampled
NA - Not Applicable
BS - Background Sample
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/07L/012/1/2/1	012	900516	72.45	A	9.43	100.94	A	9.43	635.85	A	1.89	47.	0.10	NE
IP/SW1/07L/018/1/2/1	018	900516	20.43	A	3.57	28.14	A	7.14	104.57	A	1.43	30.	0.10	N
IP/SW1/07L/027/1/2/1	027	900516	4.51	A	0.61	ND	U	6.10	20.49	A	1.22	18.	0.10	NE
IP/SW1/07L/036/1/2/1	036	900516	3.49	A	0.60	ND	U	6.02	10.72	A	1.20	17.	0.10	N
IP/SW1/07M/006/1/2/1	006	900516	229.00	A	25.00	298.00	A	25.00	505.00	A	5.00	80.	0.10	N
IP/SW1/07M/012/1/2/1	012	900516	68.33	A	9.26	120.93	A	9.26	209.26	A	1.85	46.	0.10	NE
IP/SW1/07M/018/1/2/1	018	900516	118.41	A	22.73	229.55	A	11.36	411.36	A	2.27	56.	0.10	Y
IP/SW1/07M/027/1/2/1	027	900516	11.22	A	1.35	21.76	A	6.76	40.68	A	1.35	26.	0.10	NE
IP/SW1/07M/036/1/2/1	036	900516	10.00	A	1.25	10.50	A	6.25	14.63	A	1.25	20.	0.10	N
IP/SW1/07R/006/1/2/1	006	900516	216.80	A	40.00	302.40	A	20.00	744.00	A	4.00	75.	0.10	N
IP/SW1/07R/012/1/2/1	012	900516	39.39	A	7.58	40.76	A	7.58	79.70	A	1.52	34.	0.10	NE
IP/SW1/07R/018/1/2/1	018	900516	21.62	A	3.38	15.00	A	6.76	23.38	A	1.35	26.	0.10	N
IP/SW1/07R/027/1/2/1	027	900516	11.77	A	1.27	ND	U	6.33	6.33	A	1.27	21.	0.10	NE
IP/SW1/07R/030/1/2/1	030	900516	5.49	A	0.61	ND	U	6.10	4.51	A	1.22	18.	0.10	N
IP/SW1/008/006/1/1/1	006	900605	2638.89	A	138.89	8086.44	A	27.78	258333.33	A	5.56	82.	0.10	Y
IP/SW1/008/012/1/1/1	012	900605	1062.50	A	41.67	4288.21	A	20.83	144618.04	A	4.17	76.	0.10	NE
IP/SW1/008/018/1/1/1	018	900605	249.14	A	19.61	1264.90	A	48.63	21568.63	A	9.80	49.	0.10	Y
IP/SW1/008/027/1/1/1	027	900605	14013.85	A	735.29	4610.74	A	14.71	7327.00	A	2.94	66.	0.10	NE
IP/SW1/008/036/1/1/1	036	900605	8571.43	J	357.14	1862.25	J	17.86	1683.68	A	3.57	72.	0.10	N
IP/SW1/008/036/1/D/1*	036	900605	28254.84	J	1315.79	4764.53	J	26.32	4016.63	A	5.26	81.	0.10	N
IP/SW1/009/006/1/1/1	006	900604	2508.65	A	29.41	8754.35	A	59.41	359861.59	A	11.76	83.	0.10	Y
IP/SW1/009/012/1/1/1	012	900604	1831.14	A	34.48	31866.83	A	17.24	112722.97	A	3.45	71.	0.10	NE
IP/SW1/009/018/1/1/1	018	900604	1001.18	A	38.46	8733.72	A	7.69	7242.60	A	1.54	35.	0.10	Y
IP/SW1/009/027/1/1/1	027	900604	3507.67	A	362.32	11615.20	A	36.23	745.64	A	7.25	31.	0.10	NE
IP/SW1/009/036/1/1/1	036	900604	6306.13	A	357.14	17000.00	A	7.14	1157.14	A	1.43	30.	0.10	Y
IP/SW1/010/006/1/1/1	006	900605	916.94	A	14.71	2396.21	A	70.59	49048.44	A	14.12	66.	0.10	Y
IP/SW1/010/012/1/1/1	012	900605	6058.68	A	446.43	14859.70	A	17.50	2369.27	A	3.57	44.	0.10	NE
IP/SW1/010/018/1/1/1	018	900605	1117.72	A	86.21	545.79	A	17.24	343.66	A	3.41	71.	0.10	N
IP/SW1/010/027/1/1/1	027	900605	2308.74	A	212.77	2684.47	A	10.21	3576.28	A	2.09	53.	0.10	NE
IP/SW1/010/036/1/1/1	036	900605	676.40	A	47.17	644.36	A	9.43	259.89	A	1.89	47.	0.10	N
IP/SW1/011/006/1/1/1	006	900604	1062.50	A	62.50	1850.00	A	62.50	36750.00	A	12.50	60.	0.10	N
IP/SW1/011/012/1/1/1	012	900604	1302.80	A	60.98	1653.78	A	61.46	42534.20	A	12.20	59.	0.10	NE
IP/SW1/011/018/1/1/1	018	900604	2608.48	A	113.64	2933.89	A	57.27	33574.39	A	11.36	56.	0.10	Y
IP/SW1/011/027/1/1/1	027	900604	8239.02	A	531.91	18650.98	A	10.64	5522.85	A	2.13	53.	0.10	NE

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Hide Residue Detected.....
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TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/011/036/1/1/1	036	900604	11980.61	A	657.89	18074.79	A	13.16	7756.24	A	2.61	62.	0.10	N
IP/SW1/12L/006/1/2/1	006	900518	1.73	A	0.56	18.77	A	5.56	70.99	A	1.11	10.	0.10	N
IP/SW1/12M/006/1/2/1	006	900518	20.18	A	0.60	58.35	A	6.02	220.64	A	1.20	17.	0.10	N
IP/SW1/12R/006/1/2/1	006	900518	7.66	A	2.78	25.92	A	5.56	91.23	A	1.11	10.	0.10	N
IP/SW1/13L/006/1/2/1	006	900518	3090.29	A	104.17	1654.50	A	20.83	822.92	A	4.17	76.	0.10	N
IP/SW1/13M/006/1/2/1	006	900518	2337.27	A	96.15	687.88	A	19.23	384.62	A	3.85	74.	0.10	N
IP/SW1/13M/CMP/1/2/1	CMP	900518	66.59	A	5.75	121.82	A	5.75	284.06	A	1.15	13.	0.10	NE
IP/SW1/13R/006/1/2/1	006	900518	3362.21	A	71.43	2637.79	A	35.71	1316.36	A	7.14	86.	0.10	N
IP/SW1/14L/006/1/2/1	006	900518	57.29	A	5.21	189.23	A	10.42	162.75	A	2.08	52.	0.10	N
IP/SW1/14L/012/1/2/1	012	900518	3.85	A	0.63	ND	U	6.33	8.66	A	1.27	21.	0.10	NE
IP/SW1/14L/018/1/2/1	018	900518	4.16	A	0.61	ND	U	6.10	10.26	A	1.22	18.	0.10	N
IP/SW1/14M/006/1/2/1	006	900518	159.19	A	16.13	393.35	A	16.13	231.00	A	3.23	69.	0.10	N
IP/SW1/14M/012/1/2/1	012	900518	4.85	A	0.63	ND	U	6.25	9.06	A	1.25	20.	0.10	NE
IP/SW1/14M/018/1/2/1	018	900518	4.84	A	0.66	ND	U	6.58	11.25	A	1.32	24.	0.10	N
IP/SW1/14R/006/1/2/1	006	900518	666.67	A	23.81	1215.43	A	23.81	614.52	A	4.76	79.	0.10	N
IP/SW1/14R/012/1/2/1	012	900518	8.53	A	0.62	ND	U	6.17	12.20	A	1.23	19.	0.10	NE
IP/SW1/14R/018/1/2/1	018	900518	7.35	A	0.63	ND	U	6.25	8.60	A	1.25	20.	0.10	N
IP/SW1/14R/026/1/2/1	026	900518	5.02	A	0.62	ND	U	6.17	9.44	A	1.23	19.	0.10	NS
IP/SW1/15L/006/1/2/1	006	900517	46.88	A	3.91	249.03	A	7.81	314.94	A	1.56	36.	0.10	N
IP/SW1/15L/012/1/2/1	012	900517	24.19	A	3.16	ND	U	6.33	8.01	A	1.27	21.	0.10	NE
IP/SW1/15L/018/1/2/1	018	900517	73.34	A	8.93	28.38	A	8.93	31.25	A	1.79	44.	0.10	N
IP/SW1/15L/027/1/2/1	027	900517	14.00	A	1.30	ND	U	6.49	10.62	A	1.30	23.	0.10	NE
IP/SW1/15L/030/1/2/1	030	900517	10.83	A	0.62	14.17	A	6.17	14.02	A	1.23	19.	0.10	N
IP/SW1/15M/006/1/2/1	006	900517	86.38	A	8.33	350.00	A	8.33	1041.67	A	1.67	40.	0.10	N
IP/SW1/15M/012/1/2/1	012	900517	180.80	A	11.36	514.98	A	11.36	1342.98	A	2.27	56.	0.10	NE
IP/SW1/15M/018/1/2/1	018	900517	77.88	A	13.70	307.75	A	6.85	696.19	A	1.37	27.	0.10	N
IP/SW1/15M/027/1/2/1	027	900517	26.11	A	3.16	126.27	A	6.33	241.95	A	1.27	21.	0.10	NE
IP/SW1/15M/027/1/D/1*	027	900517	31.23	A	3.79	58.55	A	7.58	81.95	A	1.52	34.	0.10	NE
IP/SW1/15M/036/1/2/1	036	900517	7.72	A	0.69	31.64	A	6.94	48.61	A	1.39	28.	0.10	N

NOTES: * - Duplicate Sample
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Hide Residue Detected.....
Y - Detected
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TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/15R/006/1/2/1	006	900517	54.00	A	5.00	139.20	A	10.00	784.00	A	2.00	50.	0.10	NS
IP/SW1/15R/012/1/2/1	012	900517	65.71	A	7.14	230.61	A	7.14	759.19	A	1.43	30.	0.10	NE
IP/SW1/15R/018/1/2/1	018	900517	188.00	A	4.55	165.27	A	22.73	243.82	A	4.55	78.	0.10	Y
IP/SW1/15R/027/1/2/1	027	900517	2.46	A	0.64	12.65	A	6.41	16.60	A	1.28	22.	0.10	NE
IP/SW1/15R/036/1/2/1	036	900517	1.92	A	0.63	ND	U	6.33	9.14	A	1.27	21.	0.10	N
IP/SW1/16L/006/1/2/1	006	900517	9473.68	A	263.16	5928.00	A	26.32	263.16	A	5.26	81.	0.10	N
IP/SW1/16L/012/1/2/1	012	900517	3697.92	A	104.17	ND	U	20.83	17.38	A	4.17	76.	0.10	NS
IP/SW1/16L/018/1/2/1	018	900517	5777.80	A	166.67	ND	U	33.33	120.00	A	6.67	85.	0.10	NS
IP/SW1/16L/027/1/2/1	027	900517	7200.00	A	400.00	8240.00	A	20.00	440.00	A	4.00	75.	0.10	NE
IP/SW1/16L/036/1/2/1	036	900517	7409.97	A	263.16	21329.63	A	26.32	578.95	A	5.26	62.	0.10	N
IP/SW1/16M/006/1/2/1	006	900517	18407.59	A	1351.35	18626.73	A	27.03	4704.16	A	5.41	63.	0.10	Y
IP/SW1/16M/012/1/2/1	012	900517	6326.54	A	285.71	2775.51	A	14.29	56.31	A	2.86	65.	0.10	NE
IP/SW1/16M/012/1/D/1*	012	900517	9187.50	A	625.00	7687.50	A	12.50	135.63	A	2.50	60.	0.10	NE
IP/SW1/16M/018/1/2/1	018	900517	2802.76	A	58.82	882.35	A	29.41	141.88	A	5.88	83.	0.10	N
IP/SW1/16M/027/1/2/1	027	900517	1217.67	A	47.62	113.38	A	23.81	95.24	A	4.76	79.	0.10	NE
IP/SW1/16M/036/1/2/1	036	900517	2495.26	A	108.70	12136.09	A	21.74	472.61	A	4.35	77.	0.10	N
IP/SW1/16R/006/1/2/1	006	900517	2858.37	A	423.73	10140.76	A	8.47	629.14	A	1.69	41.	0.10	N
IP/SW1/16R/012/1/2/1	012	900517	3114.18	A	58.82	4532.88	A	29.41	186.82	A	5.88	83.	0.10	NE
IP/SW1/16R/018/1/2/1	018	900517	3238.31	A	62.50	1867.19	A	31.25	179.69	A	6.25	84.	0.10	N
IP/SW1/16R/027/1/2/1	027	900517	2848.69	A	409.84	12684.75	A	8.20	360.11	A	1.64	39.	0.10	NE
IP/SW1/16R/036/1/2/1	036	900517	4734.77	A	188.68	12175.15	A	9.43	708.43	A	1.89	47.	0.10	N
IP/SW1/17L/006/1/1/1	006	900404	117.10	A	16.13	1008.06	A	8.06	4258.06	A	1.61	38.	0.10	N
IP/SW1/17L/006/1/2/1	006	900514	157.81	A	78.13	113.75	A	7.81	282.81	A	1.56	36.	0.10	N
IP/SW1/17L/012/1/2/1	012	900514	27.95	A	5.68	6.70	A	5.68	17.16	A	1.14	12.	0.10	NE
IP/SW1/17L/018/1/2/1	018	900514	23.11	A	5.56	ND	U	5.56	11.67	A	1.11	10.	0.10	N
IP/SW1/17L/025/1/2/1	025	900514	48.28	A	11.49	ND	U	5.75	22.53	A	1.15	13.	0.10	N
IP/SW1/17M/006/1/1/1	006	900404	953.66	A	121.95	1475.61	A	12.20	3170.73	A	2.44	59.	0.10	NS
IP/SW1/17M/006/1/2/1	006	900514	208.33	A	3.47	402.78	A	6.94	1569.44	A	1.39	28.	0.10	NS
IP/SW1/17M/012/1/1/1	012	900404	14.61	A	2.81	10.00	A	5.62	20.79	A	1.12	11.	0.10	NS
IP/SW1/17M/012/1/2/1	012	900514	23.67	A	5.56	5.56	A	5.56	13.89	A	1.11	10.	0.10	NS
IP/SW1/17M/018/1/2/1	018	900514	26.41	A	5.43	5.65	A	5.43	7.83	A	1.09	8.0	0.10	NS
IP/SW1/17M/027/1/2/1	027	900514	19.60	A	2.75	5.95	A	5.51	10.57	A	1.10	9.2	0.10	N
IP/SW1/17R/005/1/1/1	005	900404	161.54	A	15.38	490.77	A	7.69	1953.85	A	1.54	35.	0.10	NE

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Hide Residue Detected.....
Y - Detected
N - Not Detected
NS - Not Sampled
NA - Not Applicable
BS - Background Sample
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TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/17R/006/1/2/1	006	900514	818.18	A	181.82	1301.82	A	9.09	2109.09	A	1.82	45.	0.10	N
IP/SW1/17R/012/1/2/1	012	900514	79.45	A	34.25	61.64	A	6.85	183.56	A	1.37	27.	0.10	NE
IP/SW1/17R/018/1/2/1	018	900514	5.89	A	0.56	ND	U	5.56	8.78	A	1.11	10.	0.10	N
IP/SW1/17R/023/1/2/1	023	900514	7.17	A	0.54	10.43	A	5.43	14.89	A	1.09	8.0	0.10	N
IP/SW1/18L/006/1/1/1	006	900420	25.76	A	4.24	67.12	A	8.47	115.42	A	1.69	41.	0.10	N
IP/SW1/18L/006/1/2/1	006	900518	101.29	A	7.94	168.81	A	7.94	231.54	A	1.59	37.	0.10	N
IP/SW1/18L/006/1/D/1*	006	900518	94.51	A	8.47	148.53	A	8.47	206.83	A	1.69	41.	0.10	N
IP/SW1/18L/012/1/1/1	012	900420	7.80	A	1.22	9.39	A	6.10	16.83	A	1.22	18.	0.10	NE
IP/SW1/18L/018/1/1/1	018	900420	6.88	A	1.25	9.50	A	6.25	12.88	A	1.25	20.	0.10	N
IP/SW1/18L/027/1/1/1	027	900420	5.61	J	1.22	ND	U	6.10	11.83	A	1.22	18.	0.10	NE
IP/SW1/18L/030/1/1/1	030	900420	7.00	A	3.13	9.75	A	6.25	12.13	A	1.25	20.	0.10	N
IP/SW1/18M/006/1/1/1	006	900420	14.43	A	3.16	21.65	A	6.33	48.23	A	1.27	21.	0.10	N
IP/SW1/18M/006/1/2/1	006	900518	39.78	A	6.85	32.08	A	6.85	62.67	A	1.37	27.	0.10	N
IP/SW1/18M/012/1/1/1	012	900420	6.34	A	0.61	ND	U	6.10	9.76	A	1.22	18.	0.10	NE
IP/SW1/18M/018/1/1/1	018	900420	5.06	A	1.27	11.77	A	6.33	21.39	A	1.27	21.	0.10	N
IP/SW1/18R/006/1/1/1	006	900420	8.66	A	3.05	37.32	A	6.10	38.41	A	1.22	18.	0.10	N
IP/SW1/18R/006/1/2/1	006	900518	230.48	J	10.42	150.17	A	10.42	216.58	A	2.08	52.	0.10	N
IP/SW1/18R/012/1/1/1	012	900420	10.94	A	1.18	11.88	A	5.88	12.35	A	1.18	15.	0.10	NE
IP/SW1/18R/018/1/1/1	018	900420	12.35	A	3.09	8.40	A	6.17	14.57	A	1.23	19.	0.10	N
IP/SW1/18R/018/1/D/1*	018	900420	8.80	A	1.20	ND	U	6.02	8.92	A	1.20	17.	0.10	N
IP/SW1/19L/006/1/2/1	006	900518	1484.56	A	27.78	1271.61	A	27.78	1540.11	A	5.56	82.	0.10	N
IP/SW1/19L/012/1/2/1	012	900519	31.80	A	6.02	53.71	A	6.02	428.22	A	1.20	17.	0.10	NE
IP/SW1/19M/006/1/2/1	006	900518	35.14	A	3.29	27.01	A	6.58	93.84	A	1.32	24.	0.10	N
IP/SW1/19M/CMP/1/2/1	CMP	900519	22.69	A	1.18	48.45	A	5.88	523.19	A	1.18	15.	0.10	Y
IP/SW1/19R/006/1/2/1	006	900518	436.00	A	20.00	329.60	A	10.00	428.00	A	2.00	50.	0.10	N
IP/SW1/19R/CMP/1/2/1	CMP	900519	23.93	A	1.23	34.90	A	6.17	204.23	A	1.23	19.	0.10	Y
IP/SW1/20L/006/1/2/1	006	900519	595.58	A	26.32	359.42	A	13.16	424.53	A	2.63	62.	0.10	Y
IP/SW1/20L/CMP/1/2/1	CMP	900519	2.33	A	0.57	ND	U	5.68	27.11	A	1.14	12.	0.10	NS
IP/SW1/20M/006/1/2/1	006	900519	42.00	A	1.89	71.21	A	9.43	137.06	A	1.89	47.	0.10	N
IP/SW1/20M/CMP/1/2/1	CMP	900519	4.49	A	0.57	9.25	A	5.75	36.99	A	1.15	13.	0.10	NS
IP/SW1/20R/006/1/2/1	006	900519	30.86	A	3.47	66.56	A	6.94	88.54	A	1.39	28.	0.10	Y

NOTES: * - Duplicate Sample
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Hide Residue Detected.....
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TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/21L/006/1/2/1	006	900521	206.37	A	9.62	306.96	A	9.62	695.27	A	1.92	48.	0.10	Y
IP/SW1/21L/012/1/2/1	012	900521	21.19	A	1.23	43.28	A	6.17	142.05	A	1.23	19.	0.10	NE
IP/SW1/21L/018/1/2/1	018	900521	25.00	A	3.09	36.89	A	6.17	136.41	A	1.23	19.	0.10	Y
IP/SW1/21L/027/1/2/1	027	900521	5.54	A	0.59	ND	U	5.88	15.64	A	1.18	15.	0.10	NE
IP/SW1/21L/036/1/2/1	036	900521	7.93	A	0.62	9.30	A	6.17	14.02	A	1.23	19.	0.10	N
IP/SW1/21M/006/1/2/1	006	900521	19.72	A	1.28	35.18	A	6.41	44.22	A	1.28	22.	0.10	N
IP/SW1/21M/012/1/2/1	012	900521	20.84	A	1.27	34.13	A	6.33	38.46	A	1.27	21.	0.10	NE
IP/SW1/21M/018/1/2/1	018	900521	16.79	A	1.32	28.91	A	6.58	65.28	A	1.32	24.	0.10	Y
IP/SW1/21M/027/1/2/1	027	900521	12.34	A	1.20	22.06	A	6.02	97.69	A	1.20	17.	0.10	NE
IP/SW1/21M/036/1/2/1	036	900521	16.11	A	1.32	34.28	A	6.58	202.57	A	1.32	24.	0.10	Y
IP/SW1/21R/006/1/2/1	006	900521	17.42	A	1.20	31.94	A	6.02	66.19	A	1.20	17.	0.10	N
IP/SW1/21R/012/1/2/1	012	900521	19.23	A	1.30	25.81	A	6.49	44.19	A	1.30	23.	0.10	NE
IP/SW1/21R/018/1/2/1	018	900521	17.66	A	1.32	21.64	A	6.58	138.67	A	1.32	24.	0.10	Y
IP/SW1/21R/036/1/2/1	036	900521	6.51	A	0.59	13.01	A	5.88	45.67	A	1.18	15.	0.10	Y
IP/SW1/22L/006/1/2/1	006	900521	27.40	A	1.49	66.61	A	7.46	91.55	A	1.49	33.	0.10	Y
IP/SW1/22L/012/1/2/1	012	900521	5.94	A	0.62	ND	U	6.17	7.47	A	1.23	19.	0.10	NE
IP/SW1/22L/018/1/2/1	018	900521	5.87	A	0.67	9.07	A	6.67	12.44	A	1.33	25.	0.10	N
IP/SW1/22L/027/1/2/1	027	900521	6.24	A	0.66	9.87	A	6.58	11.95	A	1.32	24.	0.10	N
IP/SW1/22L/036/1/2/1	036	900521	8.33	A	0.61	8.04	A	6.10	9.82	A	1.22	18.	0.10	NE
IP/SW1/22M/006/1/2/1	006	900521	74.18	A	7.35	397.93	A	7.35	428.21	A	1.47	32.	0.10	N
IP/SW1/22M/012/1/2/1	012	900521	17.04	A	1.25	70.63	A	6.25	42.19	A	1.25	20.	0.10	NE
IP/SW1/22M/018/1/2/1	018	900521	18.31	J	1.33	73.24	A	6.67	40.71	A	1.33	25.	0.10	Y
IP/SW1/22M/027/1/2/1	027	900521	16.28	A	0.66	37.57	A	6.58	29.61	A	1.32	24.	0.10	NE
IP/SW1/22M/036/1/2/1	036	900521	29.74	A	3.05	35.70	A	6.10	31.23	A	1.22	18.	0.10	N
IP/SW1/22M/036/1/D/1*	036	900521	14.66	A	1.20	22.06	A	6.02	16.25	A	1.20	17.	0.10	N
IP/SW1/22R/006/1/2/1	006	900521	39.12	A	3.21	52.92	A	6.41	55.72	A	1.28	22.	0.10	N
IP/SW1/22R/012/1/2/1	012	900521	50.74	A	3.47	70.40	A	6.94	72.92	A	1.39	28.	0.10	N
IP/SW1/22R/027/1/2/1	027	900521	8.89	A	0.67	11.37	A	6.67	11.73	A	1.33	25.	0.10	NE
IP/SW1/22R/036/1/2/1	036	900521	30.19	A	1.19	ND	U	5.95	5.95	A	1.19	16.	0.10	N
IP/SW1/23L/006/1/2/1	006	900521	562.50	A	62.50	950.00	A	12.50	875.00	A	2.50	60.	0.10	N
IP/SW1/23L/012/1/2/1	012	900521	143.90	A	13.89	112.46	A	6.94	83.53	A	1.39	28.	0.10	NE
IP/SW1/23L/018/1/2/1	018	900521	17.77	A	1.33	20.44	A	6.67	15.11	A	1.33	25.	0.10	N
IP/SW1/23L/027/1/2/1	027	900521	40.18	A	3.38	13.32	A	6.76	13.15	A	1.35	26.	0.10	NE

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SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/23L/036/1/2/1	036	900521	32.12	A	3.05	10.26	A	6.10	11.30	A	1.22	18.	0.10	N
IP/SW1/23M/006/1/2/1	006	900521	106.53	A	7.14	68.16	A	7.14	49.19	A	1.43	30.	0.10	Y
IP/SW1/23M/012/1/2/1	012	900521	84.11	J	6.94	126.35	A	6.94	89.89	A	1.39	28.	0.10	N
IP/SW1/23M/018/1/2/1	018	900521	10.75	A	0.60	18.72	A	6.02	17.86	A	1.20	17.	0.10	N
IP/SW1/23M/027/1/2/1	027	900521	19.57	A	3.29	20.61	A	6.58	20.25	A	1.32	24.	0.10	NE
IP/SW1/23M/036/1/2/1	036	900521	10.67	A	0.62	9.30	A	6.17	15.54	A	1.23	19.	0.10	N
IP/SW1/23R/006/1/2/1	006	900523	10.80	A	1.18	49.41	A	5.88	41.66	A	1.18	15.	0.10	N
IP/SW1/23R/012/1/2/1	012	900523	53.73	J	5.10	199.51	A	10.20	184.92	J	2.04	51.	0.10	NE
IP/SW1/23R/018/1/2/1	018	900521	14.57	A	1.22	39.56	A	6.10	57.26	A	1.22	18.	0.10	N
IP/SW1/23R/018/1/2/1	018	900523	63.79	A	7.35	156.15	A	7.35	86.50	A	1.47	32.	0.10	N
IP/SW1/23R/027/1/2/1	027	900521	30.00	A	1.43	89.19	A	7.14	77.76	A	1.43	30.	0.10	NE
IP/SW1/23R/036/1/2/1	036	900521	19.35	A	1.35	52.41	A	6.76	107.01	A	1.35	26.	0.10	N
IP/SW1/24L/006/1/2/1	006	900524	72.04	A	7.25	63.22	A	7.25	54.83	A	1.45	31.	0.10	N
IP/SW1/24L/CMP/1/2/1	CMP	900524	18.40	A	1.11	14.93	A	5.56	13.21	A	1.11	10.	0.10	N
IP/SW1/24M/006/1/2/1	006	900524	61.73	A	6.76	577.07	A	6.76	52.23	A	1.35	26.	0.10	N
IP/SW1/24M/CP1/1/2/1	CP1	900524	29.13	A	2.78	9.88	A	5.56	31.60	A	1.11	10.	0.10	N
IP/SW1/24M/CP2/1/2/1	CP2	900524	20.77	A	2.75	6.64	A	5.49	10.26	A	1.10	9.0	0.10	N
IP/SW1/24M/CP2/1/D/1*	CP2	900524	19.01	A	1.10	ND	U	5.52	10.47	A	1.10	9.4	0.10	N
IP/SW1/24R/006/1/2/1	006	900524	56.75	A	5.88	210.38	A	5.88	58.27	A	1.18	15.	0.10	N
IP/SW1/24R/CP1/1/2/1	CP1	900524	23.86	A	2.72	7.00	A	5.45	21.00	A	1.09	8.2	0.10	N
IP/SW1/24R/CP2/1/2/1	CP2	900524	20.27	A	2.84	ND	U	5.68	12.66	A	1.14	12.	0.10	N
IP/SW1/25L/006/1/2/1	006	900524	397.80	A	18.52	493.83	A	9.26	932.78	A	1.85	46.	0.10	N
IP/SW1/25L/012/1/2/1	012	900524	665.11	A	27.78	956.78	A	13.89	2307.11	A	2.78	64.	0.10	NE
IP/SW1/25L/018/1/2/1	018	900524	698.27	J	35.21	2737.55	A	7.04	189.45	A	1.41	29.	0.10	N
IP/SW1/25L/018/1/D/1*	018	900524	200.88	J	13.51	885.69	A	6.76	295.84	A	1.35	26.	0.10	N
IP/SW1/25L/027/1/2/1	027	900524	304.88	A	60.98	3435.45	A	6.10	24.84	A	1.22	18.	0.10	NE
IP/SW1/25L/036/1/2/1	036	900524	89.56	A	6.49	509.36	A	6.49	11.97	A	1.30	23.	0.10	N
IP/SW1/25M/006/1/2/1	006	900524	175.68	A	13.51	189.92	A	6.76	290.35	A	1.35	26.	0.10	N
IP/SW1/25M/012/1/2/1	012	900524	199.67	A	16.39	335.93	A	8.20	569.74	A	1.64	39.	0.10	NE
IP/SW1/25M/018/1/2/1	018	900524	291.95	A	59.52	382.65	A	5.95	214.00	A	1.19	16.	0.10	Y
IP/SW1/25M/027/1/2/1	027	900524	142.56	A	11.76	175.78	A	5.88	17.72	A	1.18	15.	0.10	NE
IP/SW1/25M/036/1/2/1	036	900524	168.74	A	9.43	541.11	A	9.43	99.68	A	1.89	47.	0.10	N

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BS - Background Sample
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/25R/006/1/2/1	006	900524	72.25	A	3.42	130.23	A	6.85	189.53	A	1.37	27.	0.10	N
IP/SW1/25R/012/1/2/1	012	900524	2322.18	A	98.04	7381.78	A	9.80	3241.06	A	1.96	49.	0.10	NE
IP/SW1/25R/018/1/2/1	018	900524	370.38	A	34.72	306.71	A	6.94	109.18	A	1.39	28.	0.10	N
IP/SW1/25R/027/1/2/1	027	900524	79.82	A	6.58	25.97	A	6.58	12.29	A	1.32	24.	0.10	NE
IP/SW1/25R/036/1/2/1	036	900524	51.24	A	3.01	18.72	A	6.02	14.66	A	1.20	17.	0.10	N
IP/SW1/26L/006/1/2/1	006	900524	26.46	A	1.45	26.46	A	7.25	64.06	A	1.45	31.	0.10	N
IP/SW1/26L/012/1/2/1	012	900524	17.96	A	0.74	27.68	A	7.35	47.57	A	1.47	32.	0.10	NE
IP/SW1/26L/018/1/2/1	018	900524	11.82	A	0.68	ND	U	6.85	13.51	A	1.37	27.	0.10	N
IP/SW1/26L/027/1/2/1	027	900524	53.72	A	3.91	378.42	A	7.81	49.08	A	1.56	36.	0.10	NE
IP/SW1/26L/036/1/2/1	036	900524	4.42	A	0.62	8.07	A	6.17	7.62	A	1.23	19.	0.10	N
IP/SW1/26M/006/1/2/1	006	900524	14.97	A	0.68	25.74	A	6.76	79.26	A	1.35	26.	0.10	N
IP/SW1/26M/012/1/2/1	012	900524	13.75	A	0.63	15.79	A	6.25	46.73	A	1.25	20.	0.10	NE
IP/SW1/26M/018/1/2/1	018	900524	5.79	A	0.63	ND	U	6.25	10.31	A	1.25	20.	0.10	N
IP/SW1/26M/027/1/2/1	027	900524	24.31	A	6.94	45.92	A	6.94	48.03	A	1.39	28.	0.10	NE
IP/SW1/26M/036/1/2/1	036	900524	11.25	A	0.66	31.86	A	6.58	47.09	A	1.32	24.	0.10	N
IP/SW1/26R/006/1/2/1	006	900524	14.28	A	0.70	35.90	A	7.04	15.07	A	1.41	29.	0.10	N
IP/SW1/26R/006/1/D/1*	006	900524	18.04	A	0.75	46.55	A	7.46	25.39	A	1.49	33.	0.10	N
IP/SW1/26R/012/1/2/1	012	900524	15.87	A	0.70	25.20	A	7.04	15.07	A	1.41	29.	0.10	NE
IP/SW1/26R/018/1/2/1	018	900524	6.39	A	0.60	ND	U	6.02	10.45	A	1.20	17.	0.10	N
IP/SW1/26R/027/1/2/1	027	900524	7.98	A	0.63	30.16	A	6.25	14.38	A	1.25	20.	0.10	NE
IP/SW1/26R/036/1/2/1	036	900524	5.00	A	0.63	12.04	A	6.25	9.54	A	1.25	20.	0.10	N
IP/SW1/027/006/1/1/1	006	900607	2574.25	A	31.25	1523.44	A	31.25	168.00	A	6.25	84.	0.10	N
IP/SW1/027/012/1/1/1	012	900607	2.86	A	0.71	ND	U	7.14	5.30	A	1.41	30.	0.10	N
IP/SW1/027/018/1/1/1	018	900607	2.19	A	0.65	9.95	A	6.49	6.74	J	1.30	23.	0.10	N
IP/SW1/027/018/1/D/1*	018	900607	2.59	A	0.74	13.19	A	7.35	16.22	J	1.46	32.	0.10	N
IP/SW1/027/027/1/1/1	027	900607	2.92	A	0.68	ND	U	6.76	11.32	A	1.35	26.	0.10	N
IP/SW1/027/036/1/1/1	036	900607	3.37	A	0.67	ND	U	6.67	9.77	A	1.33	25.	0.10	Y
IP/SW1/028/006/1/1/1	006	900608	1614.95	A	26.32	4404.42	A	26.32	4099.74	A	5.26	81.	0.10	N
IP/SW1/028/006/1/D/1*	006	900608	1448.74	A	26.32	5595.58	A	26.32	6565.11	A	5.21	81.	0.10	N
IP/SW1/028/012/1/1/1	012	900608	651.04	A	52.08	1966.15	A	10.42	406.69	A	2.08	52.	0.10	N
IP/SW1/028/018/1/1/1	018	900608	312.43	A	15.87	1189.22	A	7.94	48.87	A	1.59	37.	0.10	N
IP/SW1/028/027/1/1/1	027	900608	411.52	A	46.30	1378.59	A	9.26	679.02	A	1.83	46.	0.10	Y
IP/SW1/029/006/1/1/1	006	900606	3019.39	A	131.58	7063.71	A	12.63	277.00	A	2.55	62.	0.10	N
IP/SW1/029/012/1/1/1	012	900606	1888.00	A	200.00	5680.00	A	9.60	175.60	A	1.92	50.	0.10	NE

NOTES: * - Duplicate Sample
RL - Reporting Limit
NA - Not Applicable

AC - Assessment Codes.....
A - Quantitative Data
R - Unusable Data
J - Estimated (Semiquantitative) Data
U - Not Detected/Quantitative
UJ - Not Detected/Semiquantitative Data

Hide Residue Detected.....
Y - Detected
NA - Not Applicable
N - Not Detected
BS - Background Sample
NS - Not Sampled
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/029/018/1/1/1	018	900606	849.58	A	45.45	2638.02	A	9.09	115.71	A	1.82	45.	0.10	N
IP/SW1/029/027/1/1/1	027	900606	56.89	A	3.33	44.80	A	6.40	10.49	A	1.28	25.	0.10	NE
IP/SW1/029/036/1/1/1	036	900606	52.23	A	3.38	13.88	A	6.49	9.68	A	1.30	26.	0.10	N
IP/SW1/030/006/1/1/1	006	900608	3760.36	A	45.45	11239.64	A	45.45	11652.91	A	9.09	89.	0.10	N
IP/SW1/030/012/1/1/1	012	900608	147.68	A	6.85	343.40	A	6.85	28.52	A	1.37	27.	0.10	N
IP/SW1/030/018/1/1/1	018	900608	9.00	A	0.60	18.87	A	6.02	11.47	A	1.20	17.	0.10	N
IP/SW1/030/027/1/1/1	027	900608	428.03	A	16.95	1016.95	A	8.47	259.41	A	1.69	41.	0.10	N
IP/SW1/031/006/1/1/1	006	900606	601.98	A	40.98	1577.54	A	8.03	259.34	A	1.61	39.	0.10	N
IP/SW1/031/012/1/1/1	012	900606	4431.31	A	256.41	8481.26	A	25.64	940.18	A	5.13	61.	0.10	NE
IP/SW1/031/018/1/1/1	018	900606	3043.48	A	217.39	5765.59	A	21.52	760.87	A	4.35	54.	0.10	N
IP/SW1/031/027/1/1/1	027	900606	621.31	A	48.08	2451.92	A	9.23	421.60	A	1.87	48.	0.10	NE
IP/SW1/031/036/1/1/1	036	900606	163.71	A	12.82	119.17	A	6.28	28.10	A	1.26	22.	0.10	N
IP/SW1/032/006/1/1/1	006	900608	269.89	A	18.52	3497.94	A	9.26	68.93	A	1.85	46.	0.10	Y
IP/SW1/032/012/1/1/1	012	900608	462.51	A	42.37	471.14	A	8.47	65.20	A	1.69	41.	0.10	NE
IP/SW1/032/012/1/D/1*	012	900608	361.60	A	16.13	533.31	A	8.06	52.29	A	1.60	38.	0.10	NE
IP/SW1/032/018/1/1/1	018	900608	342.59	A	13.51	49.68	A	13.51	19.00	A	2.70	63.	0.10	Y
IP/SW1/032/027/1/1/1	027	900608	23.54	A	1.32	12.12	A	6.58	8.13	A	1.32	24.	0.10	NE
IP/SW1/032/036/1/1/1	036	900608	15.62	A	1.28	ND	U	6.41	8.71	A	1.28	22.	0.10	N
IP/SW1/033/006/1/1/1	006	900607	322.32	A	11.36	911.14	A	22.73	1214.86	A	4.55	78.	0.10	Y
IP/SW1/033/012/1/1/1	012	900607	255.28	A	23.26	432.12	A	11.63	129.79	A	2.33	57.	0.10	N
IP/SW1/033/018/1/1/1	018	900607	12.03	A	0.75	14.03	A	7.46	8.24	A	1.49	33.	0.10	NE
IP/SW1/033/027/1/1/1	027	900607	11.37	A	0.67	ND	U	6.67	9.77	A	1.33	25.	0.10	Y
IP/SW1/033/036/1/1/1	036	900607	11.42	A	0.66	ND	U	6.58	9.00	A	1.32	24.	0.10	N
IP/SW1/034/006/1/1/1	006	900611	17.28	J	0.77	198.34	J	7.69	16.80	J	1.54	35.	0.10	N
IP/SW1/034/012/1/1/1	012	900611	3.12	A	0.66	ND	U	6.58	14.37	A	1.32	24.	0.10	NE
IP/SW1/034/018/1/1/1	018	900611	ND	U	0.78	ND	U	7.81	17.83	A	1.56	36.	0.10	N
IP/SW1/034/027/1/1/1	027	900611	8.00	A	0.67	ND	U	6.67	11.03	A	1.33	25.	0.10	NE
IP/SW1/034/036/1/1/1	036	900611	5.74	A	0.65	ND	U	6.49	12.31	A	1.30	23.	0.10	N
IP/SW1/034/036/1/D/1*	036	900611	5.29	A	0.63	ND	U	6.33	10.09	A	1.25	21.	0.10	N
IP/SW1/035/006/1/1/1	006	900606	43.89	A	0.93	93.28	A	8.89	48.35	A	1.80	46.	0.10	N
IP/SW1/035/012/1/1/1	012	900606	6.38	A	0.89	23.59	A	8.93	51.66	A	1.79	44.	0.10	NE
IP/SW1/035/018/1/1/1	018	900606	1.37	A	0.60	ND	U	6.02	3.34	A	1.19	17.	0.10	N
IP/SW1/035/027/1/1/1	027	900606	ND	U	0.63	ND	U	6.33	ND	U	1.25	21.	0.10	NE
IP/SW1/035/036/1/1/1	036	900606	ND	U	0.67	ND	U	6.67	9.96	A	1.32	25.	0.10	N

NOTES: * - Duplicate Sample
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Hide Residue Detected.....
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INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/036/006/1/1/1	006	900611	10.61	A	0.69	22.18	A	6.94	9.64	A	1.38	28.	0.10	N
IP/SW1/036/012/1/1/1	012	900611	3.47	A	0.68	16.62	A	6.76	58.80	A	1.35	26.	0.10	NE
IP/SW1/036/018/1/1/1	018	900611	2.61	A	0.60	ND	U	6.02	7.99	A	1.19	17.	0.10	N
IP/SW1/036/027/1/1/1	027	900611	2.33	A	0.60	ND	U	5.42	7.70	A	1.19	17.	0.10	N
IP/SW1/036/036/1/1/1	036	900611	4.51	A	0.68	13.14	A	6.85	49.16	A	1.37	27.	0.10	N
IP/SW1/037/006/1/1/1	006	900611	7.80	A	0.76	17.45	A	7.58	44.30	A	1.52	34.	0.10	Y
IP/SW1/037/012/1/1/1	012	900611	303.15	A	9.26	883.41	A	18.52	286.70	A	3.67	73.	0.10	Y
IP/SW1/037/018/1/1/1	018	900611	206.59	J	4.55	907.05	J	22.73	4173.55	J	4.50	78.	0.10	N
IP/SW1/037/018/1/D/1*	018	900611	20.16	J	0.91	115.04	J	9.09	482.64	J	1.82	45.	0.10	N
IP/SW1/037/027/1/1/1	027	900611	2.86	J	0.85	17.24	A	8.47	29.59	A	1.69	41.	0.10	N
IP/SW1/037/036/1/1/1	036	900611	10.56	A	0.61	ND	U	6.10	11.60	A	1.21	18.	0.10	N
IP/SW1/038/006/1/1/1	006	900608	622.82	A	29.41	653.97	A	14.71	8910.03	A	2.91	66.	0.10	Y
IP/SW1/038/012/1/1/1	012	900608	30.58	A	3.21	78.73	A	6.41	848.13	A	1.28	22.	0.10	N
IP/SW1/038/018/1/1/1	018	900608	34.08	A	1.54	80.48	A	7.69	468.65	A	1.54	35.	0.10	Y
IP/SW1/038/027/1/1/1	027	900608	6.25	A	0.63	ND	U	6.33	11.05	A	1.27	21.	0.10	Y
IP/SW1/039/006/1/1/1	006	900607	403.07	A	3.57	1091.86	A	35.71	2382.64	A	7.07	86.	0.10	N
IP/SW1/039/012/1/1/1	012	900607	26.67	A	3.33	ND	U	33.33	177.80	A	6.60	85.	0.10	NE
IP/SW1/039/018/1/1/1	018	900607	17.81	A	1.85	107.00	A	18.52	205.78	J	3.70	73.	0.10	N
IP/SW1/039/027/1/1/1	027	900607	4.65	A	1.16	31.91	A	11.63	55.70	A	2.30	57.	0.10	N
IP/SW1/039/027/1/D/1*	027	900607	2.60	A	0.81	18.21	A	8.06	33.82	A	1.61	38.	0.10	N
IP/SW1/039/036/1/1/1	036	900607	ND	U	0.63	ND	U	6.25	7.66	A	1.25	20.	0.10	Y
IP/SW1/040/006/1/1/1	006	900612	8.50	A	1.19	ND	U	11.90	35.71	A	2.38	58.	0.10	N
IP/SW1/040/012/1/1/1	012	900612	11.58	A	1.39	ND	U	13.89	68.67	A	2.78	64.	0.10	NE
IP/SW1/040/018/1/1/1	018	900612	1.64	A	0.64	ND	U	6.41	18.41	A	1.28	22.	0.10	N
IP/SW1/040/027/1/1/1	027	900612	ND	U	0.61	ND	U	6.10	4.76	A	1.22	18.	0.10	NE
IP/SW1/040/036/1/1/1	036	900612	ND	U	0.62	ND	U	6.17	5.33	A	1.22	19.	0.10	N
IP/SW1/041/006/1/1/1	006	900611	76.12	A	2.94	221.47	A	29.41	131.47	A	5.82	83.	0.10	N
IP/SW1/041/012/1/1/1	012	900611	4.03	A	0.79	ND	U	7.94	23.17	A	1.59	37.	0.10	NE
IP/SW1/041/018/1/1/1	018	900611	ND	U	0.63	ND	U	6.25	7.04	A	1.25	20.	0.10	N
IP/SW1/041/027/1/1/1	027	900611	3.05	A	0.62	ND	U	6.17	7.47	A	1.23	19.	0.10	NE
IP/SW1/041/036/1/1/1	036	900611	1.19	A	0.67	ND	U	6.67	11.20	A	1.33	25.	0.10	N
IP/SW1/042/012/1/1/1	012	900613	1.39	A	0.80	ND	U	6.33	7.37	A	1.27	21.	0.10	N
IP/SW1/042/018/1/1/1	018	900613	1.11	A	0.62	ND	U	6.17	8.84	A	1.22	19.	0.10	Y

NOTES: * - Duplicate Sample
RL - Reporting Limit
NA - Not Applicable

AC - Assessment Codes.....
A - Quantitative Data
J - Estimated (Semiquantitative) Data
UJ - Not Detected/Semiquantitative Data
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Hide Residue Detected.....
Y - Detected
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NS - Not Sampled
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TABLE 1

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INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/042/027/1/1/1	027	900613	0.76	A	0.61	ND	U	6.10	7.13	A	1.22	18.	0.10	N
IP/SW1/042/036/1/1/1	036	900613	ND	U	0.61	ND	U	6.10	6.99	A	1.21	18.	0.10	Y
IP/SW1/043/006/1/1/1	006	900612	10.28	A	1.16	36.77	A	11.63	19.47	A	2.30	57.	0.10	N
IP/SW1/043/012/1/1/1	012	900612	2.76	A	0.76	ND	U	7.58	16.53	A	1.50	34.	0.10	NE
IP/SW1/043/018/1/1/1	018	900612	1.24	A	0.67	ND	U	6.67	7.11	A	1.33	25.	0.10	N
IP/SW1/043/027/1/1/1	027	900612	0.94	A	0.61	ND	U	6.10	5.80	A	1.22	18.	0.10	NE
IP/SW1/043/036/1/1/1	036	900612	ND	U	1.33	ND	U	6.67	8.89	A	1.33	25.	0.10	N
IP/SW1/044/006/1/1/1	006	900612	50.00	A	3.57	ND	U	35.71	449.00	A	7.14	86.	0.10	N
IP/SW1/044/012/1/1/1	012	900612	32.53	A	2.94	ND	U	29.41	197.24	A	5.88	83.	0.10	NE
IP/SW1/044/018/1/1/1	018	900612	13.30	A	1.85	86.41	A	18.52	285.33	J	3.70	73.	0.10	N
IP/SW1/044/018/1/D/1*	018	900612	10.00	A	1.61	ND	U	16.13	95.74	J	3.23	69.	0.10	N
IP/SW1/044/027/1/1/1	027	900612	1.85	A	0.74	13.19	A	7.35	24.65	A	1.46	32.	0.10	NE
IP/SW1/044/036/1/1/1	036	900612	ND	U	0.62	ND	U	6.17	7.32	A	1.23	19.	0.10	N
IP/SW1/045/006/1/1/1	006	900612	5.76	A	0.64	11.18	A	6.41	8.87	A	1.28	22.	0.10	N
IP/SW1/045/012/1/1/1	012	900612	1.81	A	0.64	10.19	A	6.41	6.58	A	1.27	22.	0.10	NE
IP/SW1/045/018/1/1/1	018	900612	0.95	A	0.63	ND	U	6.25	3.29	A	1.25	20.	0.10	N
IP/SW1/045/027/1/1/1	027	900612	ND	U	0.62	ND	U	6.17	8.07	A	1.23	19.	0.10	NE
IP/SW1/045/036/1/1/1	036	900612	ND	U	0.61	ND	U	6.10	7.13	A	1.22	18.	0.10	N
IP/SW1/046/006/1/1/1	006	900612	4.08	A	0.96	19.60	A	9.62	24.77	A	1.92	48.	0.10	N
IP/SW1/046/012/1/1/1	012	900612	ND	U	0.64	ND	U	6.41	3.45	J	1.28	22.	0.10	NE
IP/SW1/046/012/1/D/1*	012	900612	ND	U	0.62	ND	U	6.17	8.69	J	1.22	19.	0.10	NE
IP/SW1/046/018/1/1/1	018	900612	0.91	A	0.62	ND	U	6.17	6.25	A	1.22	19.	0.10	N
IP/SW1/046/027/1/1/1	027	900612	ND	U	0.62	ND	U	6.17	9.60	A	1.23	19.	0.10	NE
IP/SW1/046/036/1/1/1	036	900612	ND	U	0.89	ND	U	8.93	13.39	A	1.79	44.	0.10	N
IP/SW1/047/006/1/1/1	006	900613	ND	U	0.85	16.95	A	8.47	12.36	A	1.69	41.	0.10	N
IP/SW1/047/012/1/1/1	012	900613	ND	U	0.64	ND	U	6.41	4.12	A	1.28	22.	0.10	NE
IP/SW1/047/018/1/1/1	018	900613	ND	U	0.63	ND	U	6.25	3.44	A	1.25	20.	0.10	N
IP/SW1/047/027/1/1/1	027	900613	ND	U	0.64	ND	U	6.41	4.77	A	1.28	22.	0.10	NE
IP/SW1/047/027/1/D/1*	027	900613	ND	U	0.67	ND	U	6.67	5.69	A	1.33	25.	0.10	NE
IP/SW1/047/036/1/1/1	036	900613	ND	U	0.62	ND	U	6.17	5.94	A	1.22	19.	0.10	N
IP/SW1/048/006/1/1/1	006	900611	3.93	A	1.22	29.76	A	12.20	72.59	A	2.44	59.	0.10	N
IP/SW1/048/012/1/1/1	012	900611	8.93	A	1.22	29.76	A	12.20	45.80	A	2.44	59.	0.10	NE
IP/SW1/048/018/1/1/1	018	900611	1.86	A	0.78	ND	U	7.81	15.63	A	1.56	36.	0.10	N
IP/SW1/048/027/1/1/1	027	900611	0.95	A	0.65	ND	U	6.49	7.08	A	1.30	23.	0.10	NE

NOTES: * - Duplicate Sample
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AC - Assessment Codes
A - Quantitative Data
J - Estimated (Semiquantitative) Data
UJ - Not Detected/Semiquantitative Data
R - Unusable Data
U - Not Detected/Quantitative

Hide Residue Detected
Y - Detected
N - Not Detected
NS - Not Sampled
NA - Not Applicable
BS - Background Sample
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/048/036/1/1/1	036	900611	ND	U	0.62	ND	U	6.17	6.10	A	1.23	19.	0.10	N
IP/SW1/049/006/1/1/1	006	900601	257.63	A	13.16	2149.58	A	26.32	235.47	A	5.26	81.	0.10	N
IP/SW1/049/012/1/1/1	012	900601	119.82	A	2.27	1466.95	A	22.73	161.14	A	4.55	78.	0.10	NE
IP/SW1/049/018/1/1/1	018	900601	6.90	A	1.69	142.49	J	8.47	23.56	A	1.69	41.	0.10	N
IP/SW1/049/018/1/D/1*	018	900601	9.25	A	0.91	74.05	J	9.09	20.82	A	1.82	45.	0.10	N
IP/SW1/049/027/1/1/1	027	900601	1.52	A	0.62	14.32	A	6.17	9.90	A	1.22	19.	0.10	NE
IP/SW1/049/036/1/1/1	036	900601	ND	U	0.65	ND	U	6.49	5.91	A	1.29	23.	0.10	N
IP/SW1/50L/006/1/2/1	006	900523	23.71	A	1.11	177.78	A	11.11	48.89	A	2.22	55.	0.10	N
IP/SW1/50L/012/1/2/1	012	900523	6.98	A	0.82	34.93	A	8.20	14.79	A	1.64	39.	0.10	NE
IP/SW1/50L/018/1/2/1	018	900523	13.37	A	0.93	61.72	A	9.26	36.00	A	1.85	46.	0.10	N
IP/SW1/50L/027/1/2/1	027	900523	9.96	A	1.06	49.79	A	10.64	32.60	A	2.13	53.	0.10	NE
IP/SW1/50L/036/1/2/1	036	900523	1.88	A	0.51	8.96	A	5.10	6.87	A	1.02	2.0	0.10	N
IP/SW1/50M/006/1/2/1	006	900523	3.18	A	0.54	16.24	A	5.42	6.82	A	1.08	7.8	0.10	N
IP/SW1/50M/012/1/2/1	012	900523	16.44	A	1.47	64.88	A	14.71	102.09	A	2.94	66.	0.10	NE
IP/SW1/50M/018/1/2/1	018	900523	2.04	A	0.63	ND	U	6.25	21.25	A	1.25	20.	0.10	N
IP/SW1/50M/018/1/D/1*	018	900523	3.58	A	0.70	10.51	A	7.04	30.35	A	1.41	29.	0.10	N
IP/SW1/50M/027/1/2/1	027	900523	2.67	A	0.67	ND	U	6.67	52.44	A	1.33	25.	0.10	NE
IP/SW1/50M/036/1/2/1	036	900523	3.44	A	0.57	ND	U	5.75	15.59	A	1.15	13.	0.10	N
IP/SW1/50R/006/1/2/1	006	900523	10.77	A	0.88	41.86	A	8.77	16.00	A	1.75	43.	0.10	N
IP/SW1/50R/012/1/2/1	012	900523	4.63	A	0.67	19.56	A	6.67	7.64	A	1.33	25.	0.10	NE
IP/SW1/50R/018/1/2/1	018	900523	6.13	A	0.71	27.96	A	7.14	20.61	A	1.43	30.	0.10	N
IP/SW1/50R/027/1/2/1	027	900523	11.84	A	1.43	12.24	A	7.14	21.63	A	1.43	30.	0.10	N
IP/SW1/50R/036/1/2/1	036	900523	8.58	A	0.56	6.94	A	5.62	10.61	A	1.12	11.	0.10	N
IP/SW1/51L/006/1/2/1	006	900519	33.52	A	3.79	ND	U	7.58	8.73	A	1.52	34.	0.10	N
IP/SW1/51L/012/1/2/1	012	900519	12.15	A	0.69	ND	U	6.94	7.53	A	1.39	28.	0.10	NE
IP/SW1/51L/018/1/2/1	018	900519	8.95	A	0.68	ND	U	6.76	8.04	A	1.35	26.	0.10	Y
IP/SW1/51L/027/1/2/1	027	900519	2.83	A	0.60	ND	U	5.95	5.52	A	1.19	16.	0.10	N
IP/SW1/51L/036/1/2/1	036	900519	5.50	A	0.61	ND	U	6.10	6.84	A	1.22	18.	0.10	N
IP/SW1/51M/006/1/2/1	006	900519	176.05	A	13.51	ND	U	13.51	21.19	A	2.70	63.	0.10	N
IP/SW1/51M/012/1/2/1	012	900519	14.70	A	0.75	ND	U	7.46	6.91	A	1.49	33.	0.10	NE
IP/SW1/51M/018/1/2/1	018	900519	6.58	A	0.66	ND	U	6.58	8.32	A	1.32	24.	0.10	N
IP/SW1/51M/027/1/2/1	027	900519	5.40	A	0.69	ND	U	6.94	9.07	A	1.39	28.	0.10	NE
IP/SW1/51M/036/1/2/1	036	900519	3.36	A	0.62	ND	U	6.17	6.56	A	1.23	19.	0.10	N

NOTES: * - Duplicate Sample
RL - Reporting Limit
NA - Not Applicable

AC - Assessment Codes.....
A - Quantitative Data
J - Estimated (Semiquantitative) Data
UJ - Not Detected/Semiquantitative Data
R - Unusable Data
U - Not Detected/Quantitative

Hide Residue Detected.....
Y - Detected
N - Not Detected
NS - Not Sampled
NA - Not Applicable
BS - Background Sample
NE - Not Examined

TABLE 1

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/51R/006/1/2/1	006	900519	5.15	A	0.70	ND	U	7.04	9.72	A	1.41	29.	0.10	N
IP/SW1/51R/012/1/2/1	012	900519	4.57	A	0.62	ND	U	6.17	7.62	A	1.23	19.	0.10	NE
IP/SW1/51R/018/1/2/1	018	900519	3.65	A	0.62	ND	U	6.17	7.78	A	1.23	19.	0.10	N
IP/SW1/51R/027/1/2/1	027	900519	3.91	A	0.63	12.98	A	6.25	7.50	A	1.25	20.	0.10	N
IP/SW1/51R/036/1/2/1	036	900519	3.19	A	0.60	ND	U	6.02	7.55	A	1.20	17.	0.10	N
IP/SW1/52L/006/1/2/1	006	900425	2.28	A	0.62	9.44	A	6.17	7.62	A	1.23	19.	0.10	N
IP/SW1/52L/012/1/2/1	012	900425	1.45	A	0.63	ND	U	6.25	8.91	A	1.25	20.	0.10	NE
IP/SW1/52L/018/1/2/1	018	900425	0.74	A	0.57	ND	U	5.75	7.67	A	1.15	13.	0.10	N
IP/SW1/52L/027/1/2/1	027	900425	1.16	A	0.56	ND	U	5.62	6.94	A	1.12	11.	0.10	N
IP/SW1/52M/006/1/2/1	006	900425	2.52	A	0.61	ND	U	6.10	7.59	A	1.22	18.	0.10	N
IP/SW1/52M/012/1/2/1	012	900425	1.02	A	0.60	ND	U	5.95	5.95	A	1.19	16.	0.10	NE
IP/SW1/52M/018/1/2/1	018	900425	1.24	A	0.61	ND	U	6.10	9.82	A	1.22	18.	0.10	N
IP/SW1/52M/027/1/2/1	027	900425	1.08	A	0.57	ND	U	5.75	9.91	A	1.15	13.	0.10	N
IP/SW1/52R/006/1/2/1	006	900425	8.82	A	0.68	9.58	A	6.85	8.44	A	1.37	27.	0.10	N
IP/SW1/52R/006/1/D/1*	006	900425	4.63	A	0.69	23.15	A	6.94	12.35	A	1.39	28.	0.10	N
IP/SW1/52R/012/1/2/1	012	900425	2.83	A	0.61	ND	U	6.10	9.51	A	1.22	18.	0.10	NE
IP/SW1/52R/018/1/2/1	018	900425	2.02	A	0.58	7.03	A	5.81	11.36	A	1.16	14.	0.10	N
IP/SW1/52R/027/1/2/1	027	900425	1.98	A	0.57	ND	U	5.75	12.02	A	1.15	13.	0.10	N
IP/SW1/053/006/1/1/1	006	900601	56.23	A	1.92	2144.96	A	19.23	180.46	A	3.81	74.	0.10	N
IP/SW1/053/012/1/1/1	012	900601	88.83	A	2.17	818.52	J	21.74	111.52	A	4.35	77.	0.10	NE
IP/SW1/053/012/1/D/1*	012	900601	92.95	A	2.27	1456.59	J	22.73	150.82	A	4.55	78.	0.10	NE
IP/SW1/053/018/1/1/1	018	900601	9.92	A	2.08	ND	U	20.83	65.96	A	4.17	76.	0.10	Y
IP/SW1/053/027/1/1/1	027	900601	ND	U	5.00	ND	U	25.00	87.50	A	5.00	80.	0.10	NE
IP/SW1/053/036/1/1/1	036	900601	ND	U	2.86	164.09	A	14.29	62.86	A	2.83	65.	0.10	N
IP/SW1/054/006/1/1/1	006	900601	61.10	A	1.67	2877.77	A	16.67	198.90	A	3.33	70.	0.10	N
IP/SW1/054/012/1/1/1	012	900601	73.60	A	2.00	1304.00	A	20.00	128.00	A	4.00	75.	0.10	NE
IP/SW1/054/018/1/1/1	018	900601	14.27	A	2.27	142.55	A	22.73	101.23	A	4.55	78.	0.10	N
IP/SW1/054/027/1/1/1	027	900601	13.70	A	1.85	163.22	A	18.52	131.70	A	3.70	73.	0.10	NE
IP/SW1/054/036/1/1/1	036	900601	9.57	A	1.67	106.67	A	16.67	160.00	A	3.33	70.	0.10	N
IP/SW1/055/006/1/1/1	006	900530	74.67	A	2.08	343.75	A	20.83	206.58	A	4.17	76.	0.10	N
IP/SW1/055/012/1/1/1	012	900530	32.50	A	2.50	180.00	A	25.00	290.00	A	5.00	80.	0.10	N
IP/SW1/055/027/1/1/1	027	900530	1.85	A	0.60	ND	U	5.95	6.94	A	1.19	16.	0.10	NE
IP/SW1/055/036/1/1/1	036	900530	1.22	A	0.60	ND	U	6.02	8.28	A	1.20	17.	0.10	N

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INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA Matrix:SOIL

SampleID	Depth (in.)	Date Sampled (yymmdd)	Arsenic (mg/kg)			Lead (mg/kg)			Chromium (mg/kg)			% Moisture		Hide Residue
			Result	AC	RL	Result	AC	RL	Result	AC	RL	Result	RL	
IP/SW1/056/006/1/1/1	006	900531	16.48	A	0.75	29.85	A	7.46	12.70	A	1.49	33.	0.10	N
IP/SW1/056/012/1/1/1	012	900531	9.43	A	0.67	22.57	A	6.67	8.71	A	1.33	25.	0.10	NE
IP/SW1/056/018/1/1/1	018	900531	7.29	A	0.61	15.61	A	6.10	7.73	A	1.22	18.	0.10	N
IP/SW1/056/027/1/1/1	027	900531	5.19	A	0.62	9.30	A	6.17	6.86	A	1.23	19.	0.10	NE
IP/SW1/056/027/1/D/1*	027	900531	5.20	A	0.66	12.99	A	6.58	7.79	A	1.32	24.	0.10	NE
IP/SW1/056/036/1/1/1	036	900531	8.29	J	0.63	16.25	A	6.25	9.06	A	1.25	20.	0.10	N
IP/SW1/057/006/1/1/1	006	900531	7.62	A	0.66	12.46	A	6.58	11.42	A	1.32	24.	0.10	N
IP/SW1/057/012/1/1/1	012	900531	4.44	A	0.67	ND	U	6.67	6.76	A	1.33	25.	0.10	NE
IP/SW1/057/018/1/1/1	018	900531	4.42	A	0.62	ND	U	6.17	7.01	A	1.23	19.	0.10	N
IP/SW1/057/027/1/1/1	027	900531	4.16	A	0.66	ND	U	6.58	7.45	A	1.32	24.	0.10	NS
IP/SW1/057/036/1/1/1	036	900531	4.22	A	0.65	ND	U	6.49	6.91	A	1.30	23.	0.10	NS
IP/SW1/058/006/1/1/1	006	900531	121.49	A	11.11	696.29	A	11.11	81.49	A	2.22	55.	0.10	Y
IP/SW1/058/012/1/1/1	012	900531	11.46	A	0.74	42.18	A	7.35	19.03	A	1.47	32.	0.10	NE
IP/SW1/058/018/1/1/1	018	900531	3.44	A	0.63	12.19	A	6.25	7.04	A	1.25	20.	0.10	N
IP/SW1/058/027/1/1/1	027	900531	9.51	A	0.74	55.79	A	7.35	10.16	A	1.47	32.	0.10	NE
IP/SW1/058/036/1/1/1	036	900531	2.13	A	0.67	16.00	A	6.67	9.24	A	1.33	25.	0.10	N
IP/SW1/059/006/1/1/1	006	900530	5.09	A	0.64	23.50	A	6.41	9.86	A	1.28	22.	0.10	N
IP/SW1/059/012/1/1/1	012	900530	5.42	A	0.64	40.10	A	6.41	12.49	A	1.28	22.	0.10	NE
IP/SW1/059/018/1/1/1	018	900530	2.38	A	1.22	ND	U	6.10	7.13	A	1.22	18.	0.10	N
IP/SW1/059/027/1/1/1	027	900530	2.43	A	0.58	7.84	A	5.81	6.76	A	1.16	14.	0.10	NE
IP/SW1/059/036/1/1/1	036	900530	2.38	A	0.61	ND	U	6.10	10.56	A	1.22	18.	0.10	N

NOTES: * - Duplicate Sample
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Hide Residue Detected.....
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TABLE 2

Summary of Task SW-1 CLP Inorganics Analyses

TABLE 2

SUMMARY OF TASK SW-1 CLP INORGANICS ANALYSES

NOTE: Sample ID is designated as described for the example given below.

IP/SW1/001/006/1/2/1

The first two characters (IP) stand for the Industri-Plex Site;

The third through fifth characters (SW1) stand for the Pre-Design task number;

The sixth through eighth characters (001) stand for the sample location number within that task (EB=equipment rinsate blank);

The ninth through eleventh characters (006) stand for the depth of the bottom of the sample interval in inches below ground surface, where applicable;

The twelfth character (1) stands for the matrix type (1=solid, 2=liquid, 3=gas);

The thirteenth character (2) stands for the sampling round number (D=field duplicate sample); and

The fourteenth character (1) stands for the analysis type (1=arsenic, lead and chromium; 2=TCL VOCs, 3=TCL semivolatile organic compounds, 4=TCL pesticides/PCBs; and 5=TAL metals. A DL at the end indicates a laboratory-diluted sample.

TABLE 2

SUMMARY OF CLP INORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL Sediment Samples

	Sample Point IP/SW1/001/036/1/2/5 Date Sampled: 05/16/90 Percent Solids: 64.4%				Sample Point IP/SW1/06L/018/1/2/5 Date Sampled: 05/14/90 Percent Solids: 78.3%				Sample Point IP/SW1/06L/018/1/D/5 Date Sampled: 05/14/90 Percent Solids: 80.6%				Sample Point IP/SW1/06M/023/1/2/5 Date Sampled: 05/14/90 Percent Solids: 76.2%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	62.1	9.3	2490	A	51.1	7.6	3730	A	49.6	7.4	3190	A	52.5	7.8	4480	A
Antimony	18.6	14.1	14.1	U	15.3	11.6	11.6	UJ	14.9	11.3	11.3	UJ	15.7	11.9	11.9	U
Arsenic	3.1	0.3	6.7	J	2.6	0.3	89.1	J	2.5	0.2	75.5	J	2.6	0.3	155	J
Barium	62.1	0.2	19.3	A	51.1	0.2	62.9	A	49.6	0.2	44.7	A	52.5	0.2	38.6	A
Beryllium	1.6	0.1	0.20	A	1.3	0.1	0.21	A	1.2	0.1	0.15	A	1.3	0.1	0.38	A
Cadmium	1.6	1.4	1.4	U	1.3	1.1	2.2	J	1.2	1.1	1.2	J	1.3	1.2	1.2	U
Calcium	1552.8	8.0	1270	A	1277.1	6.6	2250	A	1240.7	6.4	1270	A	1312.3	6.8	1240	A
Chromium	3.1	1.1	335	J	2.6	0.9	121	J	2.5	0.9	73.1	J	2.6	1.0	179	J
Cobalt	15.5	1.6	1.6	UJ	12.8	1.3	2.9	J	12.4	1.3	2.6	J	13.1	1.3	3.8	A
Copper	7.8	0.7	9.2	J	6.4	0.6	137	J	6.2	0.6	149	J	6.6	0.6	133	J
Iron	31.1	4.2	3580	A	25.5	3.4	11400	A	24.8	3.3	15100	A	26.2	3.5	15500	A
Lead	1.6	14.9	18.0	J	1.3	12.3	415	J	1.2	11.9	262	J	1.3	12.6	187	J
Magnesium	1552.8	29.9	364	A	1277.1	24.6	983	J	1240.7	23.9	951	J	1312.3	25.3	1090	J
Manganese	4.7	0.2	40.9	J	3.8	0.2	66.7	J	3.7	0.2	71.2	J	3.9	0.2	77.3	J
Mercury	0.1	0.1	0.2	UJ	0.1	0.1	1.5	J	0.0	0.0	0.4	J	0.1	0.1	0.4	J
Nickel	12.4	7.5	7.5	UJ	10.2	6.2	6.2	A	9.9	6.0	6.0	U	10.5	6.4	6.4	UJ
Potassium	1552.8	636.0	636	U	1277.1	523.1	523	A	1240.7	508.2	508	U	1312.3	537.5	570	A
Selenium	1.6	0.6	0.62	UJ	1.3	0.5	1.3	J	1.2	0.5	1.4	J	1.3	0.5	0.66	J
Silver	3.1	1.0	0.99	UJ	2.6	0.8	0.82	UJ	2.5	0.8	1.4	J	2.6	0.8	0.84	UJ
Sodium	1552.8	563.4	563	U	1277.1	463.3	463	U	1240.7	450.1	450	U	1312.3	476.1	476	U
Thallium	3.1	0.6	0.62	U	2.6	0.5	0.89	A	2.5	0.5	1.2	A	2.6	0.5	0.87	A
Vanadium	15.5	1.2	7.2	A	12.8	1.0	8.9	A	12.4	1.0	8.2	A	13.1	1.0	9.2	A
Zinc	6.2	1.0	29.0	J	5.1	0.8	381	J	5.0	0.8	468	J	5.2	0.9	325	J

Notes: All units are mg/kg

Qualifiers.....
A - Acceptable (Quantitative) Data UJ - Not Detected/Semiquantitative Data R - Unusable Data
J - Estimated (Semiquantitative) Data U - Not Detected/Quantitative Data

TABLE 2

SUMMARY OF CLP INORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL Sediment Samples

	Sample Point IP/SW1/008/012/1/1/5 Date Sampled: 06/05/90 Percent Solids: 38.3%				Sample Point IP/SW1/011/006/1/1/5 Date Sampled: 06/04/90 Percent Solids: 42.6%				Sample Point IP/SW1/011/006/1/D/5 Date Sampled: 06/04/90 Percent Solids: 35.7%				Sample Point IP/SW1/17M/027/1/2/5 Date Sampled: 05/14/90 Percent Solids: 87.4%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	104.4	15.6	4070	A	93.9	14.0	2840	A	112.0	16.7	3350	A	45.8	6.8	7190	A
Antimony	31.3	23.7	51.6	U	28.2	21.3	51.8	U	33.6	25.4	64.7	U	13.7	10.4	10.4	UJ
Arsenic	5.2	0.5	185	J	4.7	0.5	418	J	5.6	0.6	583	J	2.3	0.2	33.9	J
Barium	104.4	0.4	176	A	93.9	0.3	357	A	112.0	0.4	373	A	45.8	0.2	40.5	A
Beryllium	2.6	0.2	0.22	U	2.3	0.1	0.26	U	2.8	0.2	0.31	U	1.1	0.1	0.26	A
Cadmium	2.6	2.3	2.3	U	2.3	2.1	2.1	U	2.8	2.5	2.5	U	1.1	1.0	1.0	UJ
Calcium	2611.0	13.5	19100	A	2347.4	12.1	223000	A	2801.1	14.5	290000	A	1144.2	5.9	1090	A
Chromium	5.2	1.9	23100	J	4.7	1.7	14500	J	5.6	2.1	13800	J	2.3	0.8	123	J
Cobalt	26.1	2.7	8.5	A	23.5	2.4	8.3	A	28.0	2.9	10.6	A	11.4	1.2	2.2	J
Copper	13.1	1.2	362	J	11.7	1.1	369	J	14.0	1.3	382	J	5.7	0.5	43.9	J
Iron	52.2	7.0	30300	A	46.9	6.3	16500	A	56.0	7.6	18500	A	22.9	3.1	10000	A
Lead	2.6	25.1	628	J	2.3	22.6	651	J	2.8	26.9	594	J	1.1	11.0	26.3	J
Magnesium	2611.0	50.3	719	A	2347.4	45.2	1730	J	2801.1	53.9	2120	J	1144.2	22.0	2910	J
Manganese	7.8	0.4	147	J	7.0	0.4	756	J	8.4	0.4	933	J	3.4	0.2	86.3	J
Mercury	0.1	0.1	3.1	J	0.1	0.1	3.5	J	0.1	0.1	4.3	J	0.0	0.0	1.4	J
Nickel	20.9	12.6	15.9	UJ	18.8	11.4	13.1	J	22.4	13.6	14.8	J	9.2	5.5	11.8	A
Potassium	2611.0	1069.5	1070	UJ	2347.4	961.5	962	UJ	2801.1	1147.3	1150	UJ	1144.2	468.6	1290	A
Selenium	2.6	1.0	3.0	J	2.3	0.9	3.0	J	2.8	1.1	3.5	J	1.1	0.5	0.46	UJ
Silver	5.2	1.7	5.5	U	4.7	1.5	2.0	U	5.6	1.8	3.5	U	2.3	0.7	0.73	UJ
Sodium	2611.0	947.3	947	U	2347.4	851.6	852	U	2801.1	1016.2	1160	A	1144.2	415.1	415	U
Thallium	5.2	1.0	2.1	UJ	4.7	0.9	1.6	UJ	5.6	1.1	1.8	UJ	2.3	0.5	0.46	U
Vanadium	26.1	2.0	30.3	A	23.5	1.8	23.2	A	28.0	2.2	26.3	A	11.4	0.9	16.0	A
Zinc	10.4	1.7	1920	J	9.4	1.5	3590	J	11.2	1.8	4030	J	4.6	0.8	149	J

Notes: All units are mg/kg

Qualifiers.....
A - Acceptable (Quantitative) Data UJ - Not Detected/Semiquantitative Data R - Unusable Data
J - Estimated (Semiquantitative) Data U - Not Detected/Quantitative Data

TABLE 2

SUMMARY OF CLP INORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL Sediment Samples

	Sample Point IP/SW1/21R/027/1/2/5 Date Sampled: 05/21/90 Percent Solids: 88.3%				Sample Point IP/SW1/027/036/1/2/5 Date Sampled: 06/07/90 Percent Solids: 72.8%				Sample Point IP/SW1/028/036/1/1/5 Date Sampled: 06/08/90 Percent Solids: 84.0%				Sample Point IP/SW1/031/036/1/1/5 Date Sampled: 06/06/90 Percent Solids: 77.1%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	45.3	6.7	3540	A	54.9	8.2	2710	A	47.6	7.1	10600	A	51.9	7.7	9930	A
Antimony	13.6	10.3	10.3	UJ	16.5	12.5	6.4	U	14.3	10.8	10.8	U	15.6	11.8	6.1	U
Arsenic	2.3	0.2	11.9	J	2.7	0.3	4.3	J	2.4	0.2	63.8	J	2.6	0.3	46.7	J
Barium	45.3	0.2	12.3	A	54.9	0.2	4.9	A	47.6	0.2	47.6	A	51.9	0.2	5.8	A
Beryllium	1.1	0.1	0.10	A	1.4	0.1	0.22	U	1.2	0.1	0.43	A	1.3	0.1	0.31	U
Cadmium	1.1	1.0	1.0	UJ	1.4	1.2	0.69	U	1.2	1.1	1.1	U	1.3	1.2	0.65	U
Calcium	1132.5	5.8	573	A	1373.6	7.1	740	A	1190.5	6.1	882	A	1297.0	6.7	1180	A
Chromium	2.3	0.8	99.3	J	2.7	1.0	6.8	J	2.4	0.9	27.9	J	2.6	1.0	41.2	J
Cobalt	11.3	1.2	1.2	UJ	13.7	1.4	1.2	A	11.9	1.2	9.5	A	13.0	1.3	1.9	A
Copper	5.7	0.5	8.7	J	6.9	0.6	4.1	J	6.0	0.5	104	J	6.5	0.6	10.8	J
Iron	22.7	3.1	3750	A	27.5	3.7	1830	A	23.8	3.2	14400	A	25.9	3.5	5860	A
Lead	1.1	10.9	24.5	J	1.4	13.2	9.6	J	1.2	11.5	84.6	J	1.3	12.5	42.3	J
Magnesium	1132.5	21.8	1090	A	1373.6	26.5	627	A	1190.5	22.9	5130	A	1297.0	25.0	757	A
Manganese	3.4	0.2	36.5	J	4.1	0.2	34.3	J	3.6	0.2	185	J	3.9	0.2	48.4	J
Mercury	0.0	0.0	0.1	U	0.1	0.1	0.1	U	0.0	0.0	0.4	J	0.1	0.1	0.1	U
Nickel	9.1	5.5	6.0	A	11.0	6.6	3.4	U	9.5	5.8	13.7	J	10.4	6.3	4.4	A
Potassium	1132.5	463.9	464	U	1373.6	562.6	284	U	1190.5	487.6	1810	J	1297.0	531.3	268	U
Selenium	1.1	0.5	0.45	UJ	1.4	0.5	0.55	UJ	1.2	0.5	1.2	J	1.3	0.5	0.52	UJ
Silver	2.3	0.7	0.72	UJ	2.7	0.9	1.1	UJ	2.4	0.8	0.76	UJ	2.6	0.8	1.1	U
Sodium	1132.5	410.9	411	U	1373.6	498.4	509	U	1190.5	431.9	432	U	1297.0	470.6	481	U
Thallium	2.3	0.5	0.45	U	2.7	0.5	0.55	U	2.4	0.5	0.67	J	2.6	0.5	0.52	U
Vanadium	11.3	0.9	6.9	A	13.7	1.1	3.5	U	11.9	0.9	31.6	A	13.0	1.0	41.8	A
Zinc	4.5	0.7	30.5	J	5.5	0.9	7.1	U	4.8	0.8	149	J	5.2	0.9	33.9	J

Notes: All units are mg/kg

Qualifiers.....
A - Acceptable (Quantitative) Data UJ - Not Detected/Semiquantitative Data R - Unusable Data
J - Estimated (Semiquantitative) Data U - Not Detected/Quantitative Data

TABLE 2

SUMMARY OF CLP INORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL Sediment Samples

	Sample Point IP/SW1/035/036/1/1/5 Date Sampled: 06/06/90 Percent Solids: 75.6%				Sample Point IP/SW1/038/036/1/1/5 Date Sampled: 06/08/90 Percent Solids: 80.8%				Sample Point IP/SW1/039/018/1/1/5 Date Sampled: 06/07/90 Percent Solids: 41.2%				Sample Point IP/SW1/042/006/1/1/5 Date Sampled: 06/13/90 Percent Solids: 62.1%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	52.9	7.9	440	A	49.5	7.4	4990	A	97.1	14.5	17900	A	64.4	9.6	6440	J
Antimony	15.9	12.0	6.2	U	14.9	11.2	11.2	U	29.1	22.0	11.4	U	19.3	14.6	7.5	U
Arsenic	2.6	0.3	0.26	UJ	2.5	0.2	3.7	J	4.9	0.5	4.4	J	3.2	0.3	4.6	J
Barium	52.9	0.2	2.1	A	49.5	0.2	3.9	A	97.1	0.3	44.1	A	64.4	0.2	7.2	A
Beryllium	1.3	0.1	0.21	U	1.2	0.1	0.13	U	2.4	0.1	1.2	U	1.6	0.1	0.26	U
Cadmium	1.3	1.2	0.66	U	1.2	1.1	1.1	U	2.4	2.2	1.2	U	1.6	1.4	0.81	U
Calcium	1322.8	6.8	151	A	1237.6	6.4	368	A	2427.2	12.5	4850	A	1610.3	8.3	930	J
Chromium	2.6	1.0	2.0	J	2.5	0.9	7.4	J	4.9	1.8	50.7	J	3.2	1.2	12.6	J
Cobalt	13.2	1.3	1.1	U	12.4	1.3	1.3	U	24.3	2.5	2.6	A	16.1	1.6	1.4	U
Copper	6.6	0.6	1.2	R	6.2	0.6	1.8	U	12.1	1.1	8.7	J	8.1	0.7	4.3	J
Iron	26.5	3.6	142	A	24.8	3.3	4070	A	48.5	6.6	5980	A	32.2	4.3	1900	A
Lead	1.3	12.7	0.95	J	1.2	11.9	11.5	R	2.4	23.3	14.3	J	1.6	15.5	7.2	J
Magnesium	1322.8	25.5	29.8	U	1237.6	23.8	849	A	2427.2	46.7	2250	A	1610.3	31.0	286	J
Manganese	4.0	0.2	7.2	J	3.7	0.2	40.3	J	7.3	0.4	456	J	4.8	0.3	22.4	J
Mercury	0.1	0.1	0.1	U	0.0	0.0	0.1	U	0.1	0.1	0.2	U	0.1	0.1	0.2	U
Nickel	10.6	6.4	3.3	U	9.9	6.0	6.5	J	19.4	11.7	6.0	U	12.9	7.8	4.5	A
Potassium	1322.8	541.8	274	U	1237.6	506.9	507	UJ	2427.2	994.2	502	U	1610.3	659.6	332	U
Selenium	1.3	0.5	0.53	UJ	1.2	0.5	0.50	UJ	2.4	1.0	1.7	U	1.6	0.6	1.0	J
Silver	2.6	0.8	1.1	UJ	2.5	0.8	0.79	UJ	4.9	1.6	1.9	UJ	3.2	1.0	1.3	UJ
Sodium	1322.8	479.9	490	U	1237.6	449.0	449	U	2427.2	880.6	899	U	1610.3	584.2	597	U
Thallium	2.6	0.5	0.53	U	2.5	0.5	0.50	UJ	4.9	1.0	0.97	UJ	3.2	0.6	0.64	UJ
Vanadium	13.2	1.0	8.5	U	12.4	1.0	6.9	A	24.3	1.9	12.9	U	16.1	1.3	5.2	U
Zinc	5.3	0.9	0.75	U	5.0	0.8	6.1	U	9.7	1.6	22.0	J	6.4	1.1	11.8	J

Notes: All units are mg/kg

Qualifiers.....
A - Acceptable (Quantitative) Data UJ - Not Detected/Semiquantitative Data R - Unusable Data
J - Estimated (Semiquantitative) Data U - Not Detected/Quantitative Data

TABLE 2

SUMMARY OF CLP INORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL Sediment Samples

	Sample Point IP/SW1/049/036/1/1/5 Date Sampled: 06/01/90 Percent Solids: 47.6%				Sample Point IP/SW1/054/036/1/1/5 Date Sampled: 06/01/90 Percent Solids: 30.5%				Sample Point IP/SW1/057/006/1/1/5 Date Sampled: 05/31/90 Percent Solids: 77.8%				Sample Point IP/SW1/059/036/1/1/5 Date Sampled: 05/30/90 Percent Solids: 80.9%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	84.0	12.5	5850	A	131.1	19.5	16100	A	51.4	7.7	3520	A	49.4	7.4	3140	A
Antimony	25.2	19.1	19.1	U	39.3	29.8	29.8	U	15.4	11.7	11.7	U	14.8	11.2	11.2	U
Arsenic	4.2	0.4	1.4	J	6.6	0.7	1.6	J	2.6	0.3	4.3	J	2.5	0.2	2.4	J
Barium	84.0	0.3	48.4	A	131.1	0.5	81.6	A	51.4	0.2	4.0	A	49.4	0.2	10.6	A
Beryllium	2.1	0.1	0.16	U	3.3	0.2	2.7	A	1.3	0.1	0.13	A	1.2	0.1	0.12	U
Cadmium	2.1	1.9	1.9	U	3.3	3.0	3.0	U	1.3	1.2	1.2	U	1.2	1.1	1.1	U
Calcium	2100.8	10.8	1580	A	3278.7	16.9	10400	A	1285.3	6.6	595	A	1236.1	6.4	387	A
Chromium	4.2	1.6	9.7	J	6.6	2.4	39.4	J	2.6	1.0	4.8	J	2.5	0.9	7.5	J
Cobalt	21.0	2.1	2.7	A	32.8	3.3	3.3	U	12.9	1.3	1.3	U	12.4	1.3	1.5	A
Copper	10.5	1.0	6.9	U	16.4	1.5	10.0	U	6.4	0.6	0.59	R	6.2	0.6	5.5	J
Iron	42.0	5.7	5150	A	65.6	8.9	2460	A	25.7	3.5	2470	A	24.7	3.3	4190	A
Lead	2.1	20.2	29.6	J	3.3	31.5	46.3	J	1.3	12.4	11.8	R	1.2	11.9	11.4	R
Magnesium	2100.8	40.5	1300	A	3278.7	63.1	632	A	1285.3	24.8	822	A	1236.1	23.8	976	A
Manganese	6.3	0.3	132	J	9.8	0.5	42.0	J	3.9	0.2	25.6	J	3.7	0.2	36.0	J
Mercury	0.1	0.1	0.2	U	0.1	0.1	0.3	U	0.1	0.1	0.1	U	0.0	0.0	0.1	U
Nickel	16.8	10.2	10.2	UJ	26.2	15.9	15.9	UJ	10.3	6.2	6.2	UJ	9.9	6.0	6.0	UJ
Potassium	2100.8	860.5	861	UJ	3278.7	1343.0	1340	UJ	1285.3	526.5	527	UJ	1236.1	506.3	506	UJ
Selenium	2.1	0.8	0.84	UJ	3.3	1.3	6.2	J	1.3	0.5	0.51	UJ	1.2	0.5	0.49	UJ
Silver	4.2	1.3	1.3	UJ	6.6	2.1	2.1	U	2.6	0.8	0.82	UJ	2.5	0.8	1.7	U
Sodium	2100.8	762.2	762	U	3278.7	1189.5	1190	U	1285.3	466.3	466	U	1236.1	448.5	448	U
Thallium	4.2	0.8	0.84	UJ	6.6	1.3	1.3	UJ	2.6	0.5	0.51	UJ	2.5	0.5	0.49	UJ
Vanadium	21.0	1.6	11.2	A	32.8	2.6	6.8	A	12.9	1.0	3.6	A	12.4	1.0	6.9	A
Zinc	8.4	1.4	38.0	J	13.1	2.2	18.7	U	5.1	0.8	8.3	J	4.9	0.8	13.0	J

Notes: All units are mg/kg

Qualifiers.....
A - Acceptable (Quantitative) Data UJ - Not Detected/Semiquantitative Data R - Unusable Data
J - Estimated (Semiquantitative) Data U - Not Detected/Quantitative Data

TABLE 2

SUMMARY OF CLP INORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix Spike Results

Matrix: SOIL Sediment Samples

	Sample Point IP/SW1/06M/023/1/M/5 Date Sampled: 05/14/90 Percent Solids: 0.0%				Sample Point IP/SW1/06M/023/1/N/5 Date Sampled: 05/14/90 Percent Solids: 76.2%				Sample Point IP/SW1/039/018/1/M/5 Date Sampled: 06/07/90 Percent Solids: 0.0%				Sample Point IP/SW1/039/018/1/N/5 Date Sampled: 08/05/90 Percent Solids: 41.2%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	200.0	29.8	4620		52.5	7.8	3810		200.0	29.8	8300		97.1	14.5	9460	
Antimony	60.0	45.4	107		15.7	11.9	109		60.0	45.4	214		29.1	22.0	217	
Arsenic	10.0	1.0	634		2.6	0.3	161		10.0	1.0	17.8		4.9	0.5	17.2	
Barium	200.0	0.7	571		52.5	0.2	558		200.0	0.7	988		97.1	0.3	1000	
Beryllium	5.0	0.3	13.4		1.3	0.1	13.3		5.0	0.3	23.2		2.4	0.1	23.4	
Cadmium	5.0	4.5	11.5		1.3	1.2	12.1		5.0	4.5	21.1		2.4	2.2	21.7	
Calcium	5000.0	25.8	965		1312.3	6.8	773		5000.0	25.8	49100		2427.2	12.5	49600	
Chromium	10.0	3.7	183		2.6	1.0	136		10.0	3.7	116		4.9	1.8	119	
Cobalt	50.0	5.1	131		13.1	1.3	130		50.0	5.1	234		24.3	2.5	235	
Copper	25.0	2.3	140		6.6	0.6	136		25.0	2.3	126		12.1	1.1	126	
Iron	100.0	13.5	15100		26.2	3.5	13900		100.0	13.5	4440		48.5	6.6	4520	
Lead	5.0	48.1	270		1.3	12.6	247		5.0	48.1	16.7		2.4	23.3	17.7	
Magnesium	5000.0	96.3	982		1312.3	25.3	826		5000.0	96.3	26000		2427.2	46.7	26300	
Manganese	15.0	0.8	206		3.9	0.2	192		15.0	0.8	429		7.3	0.4	474	
Mercury	0.2	0.2	2.1		0.1	0.1	2.1		0.2	0.2	1.1		0.1	0.1	1.1	
Nickel	40.0	24.2	130		10.5	6.4	134		40.0	24.2	228		19.4	11.7	237	
Potassium	5000.0	2048.0	640		1312.3	537.5	538		5000.0	2048.0	25000		2427.2	994.2	25200	
Selenium	5.0	2.0	2.9		1.3	0.5	2.7		5.0	2.0	4.9		2.4	1.0	4.7	
Silver	10.0	3.2	7.0		2.6	0.8	6.8		10.0	3.2	20.8		4.9	1.6	21.6	
Sodium	5000.0	1814.0	476		1312.3	476.1	4.76		5000.0	1814.0	899		2427.2	880.6	50100	
Thallium	10.0	2.0	12.5		2.6	0.5	12.5		10.0	2.0	22.0		4.9	1.0	22.8	
Vanadium	50.0	3.9	138		13.1	1.0	136		50.0	3.9	255		24.3	1.9	255	
Zinc	20.0	3.3	406		5.2	0.9	399		20.0	3.3	230		9.7	1.6	233	

Notes: All units are mg/kg

Qualifiers.....
A - Acceptable (Quantitative) Data UJ - Not Detected/Semiquantitative Data R - Unusable Data
J - Estimated (Semiquantitative) Data U - Not Detected/Quantitative Data

Comment: Region I Data Validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate Samples.

TABLE 2

SUMMARY OF CLP INORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

QC Sample Results

Matrix: WATER Sediment Samples

	Sample Point IP/SW1/EB30/000/2/2/5 Date Sampled: 05/14/90 Percent Solids: 0.0%				Sample Point IP/SW1/EB48/000/2/2/5 Date Sampled: 06/07/90 Percent Solids: 0.0%				Sample Point Date Sampled: Percent Solids: %				Sample Point Date Sampled: Percent Solids: %			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	200.0	29.8	81.9	U	200.0	29.8	29.8	U								
Antimony	60.0	45.4	45.4	UJ	60.0	45.4	45.4	U								
Arsenic	10.0	1.0	1.6	J	10.0	1.0	1.0	U								
Barium	200.0	0.7	1.1	U	200.0	0.7	0.70	U								
Beryllium	5.0	0.3	0.30	U	5.0	0.3	0.30	U								
Cadmium	5.0	4.5	4.5	UJ	5.0	4.5	4.5	U								
Calcium	5000.0	25.8	348	U	5000.0	25.8	107	U								
Chromium	10.0	3.7	6.6	A	10.0	3.7	3.7	U								
Cobalt	50.0	5.1	5.1	UJ	50.0	5.1	5.1	U								
Copper	25.0	2.3	2.8	A	25.0	2.3	2.3	U								
Iron	100.0	13.5	987	A	100.0	13.5	13.7	A								
Lead	5.0	48.1	4.0	U	5.0	48.1	1.0	U								
Magnesium	5000.0	96.3	280	U	5000.0	96.3	96.3	U								
Manganese	15.0	0.8	23.3	A	15.0	0.8	1.1	U								
Mercury	0.2	0.2	0.2	UJ	0.2	0.2	0.2	U								
Nickel	40.0	24.2	24.2	U	40.0	24.2	24.2	U								
Potassium	5000.0	2048.0	2050	U	5000.0	2048.0	2050	U								
Selenium	5.0	2.0	2.0	U	5.0	2.0	2.0	UJ								
Silver	10.0	3.2	3.2	U	10.0	3.2	4.4	U								
Sodium	5000.0	1814.0	1810	U	5000.0	1814.0	1810	U								
Thallium	10.0	2.0	2.0	U	10.0	2.0	2.0	U								
Vanadium	50.0	3.9	3.9	UJ	50.0	3.9	3.9	U								
Zinc	20.0	3.3	12.7	U	20.0	3.3	6.3	A								

Notes: All units are ug/l

Qualifiers.....
A - Acceptable (Quantitative) Data UJ - Not Detected/Semiquantitative Data R - Unusable Data
J - Estimated (Semiquantitative) Data U - Not Detected/Quantitative Data

TABLE 3

SUMMARY OF TASK SW-1 CLP ORGANICS ANALYSES

TABLE 3

SUMMARY OF TASK SW-1 CLP ORGANICS ANALYSES

NOTE: Sample ID is designated as described for the example given below.

IP/SW1/001/006/1/2/1

The first two characters (IP) stand for the Industri-Plex Site;

The third through fifth characters (SW1) stand for the Pre-Design task number;

The sixth through eighth characters (001) stand for the sample location number within that task (EB=equipment rinsate blank);

The ninth through eleventh characters (006) stand for the depth of the bottom of the sample interval in inches below ground surface, where applicable;

The twelfth character (1) stands for the matrix type (1=solid, 2=liquid, 3=gas);

The thirteenth character (2) stands for the sampling round number (D=field duplicate sample); and

The fourteenth character (1) stands for the analysis type (1=arsenic, lead and chromium; 2=TCL VOCs, 3=TCL semivolatile organic compounds, 4=TCL pesticides/PCBs; and 5=TAL metals. A DL at the end indicates a laboratory-diluted sample.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Volatile Organics

	Sample Point IP/SW1/001/036/1/2/2 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/2_D/2 Date Sampled: 05/16/90 Percent Moisture: 35.0%			Sample Point IP/SW1/06L/018/1/2/2 Date Sampled: 05/14/90 Percent Moisture: 22.0%			Sample Point IP/SW1/06L/018/1/2DL/2 Date Sampled: 05/14/90 Percent Moisture: 22.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	15.38	1500	U		NA		12.66	13	U		NA	
Bromomethane	15.38	1500	U		NA		12.66	13	U		NA	
Vinyl Chloride	15.38	1500	U		NA		12.66	13	U		NA	
Chloroethane	15.38	1500	U		NA		12.66	13	U		NA	
Methylene Chloride	7.69	770	U		NA		6.33	6	U		NA	
Acetone	15.38	1500	U		NA		12.66	96	J		NA	
Carbon Disulfide	7.69	770	U		NA		6.33	6	U		NA	
1,1-Dichloroethene	7.69	770	U		NA		6.33	6	U		NA	
1,1-Dichloroethane	7.69	770	U		NA		6.33	6	U		NA	
1,2-Dichloroethene (total)	7.69	770	U		NA		6.33	6	U		NA	
Chloroform	7.69	770	U		NA		6.33	6	U		NA	
1,2-Dichloroethane	7.69	770	U		NA		6.33	6	U		NA	
2-Butanone	15.38	1500	U		NA		12.66	13	U		NA	
1,1,1-Trichloroethane	7.69	770	U		NA		6.33	6	U		NA	
Carbon Tetrachloride	7.69	770	U		NA		6.33	6	U		NA	
Vinyl Acetate	15.38	1500	U		NA		12.66	13	U		NA	
Bromodichloromethane	7.69	770	U		NA		6.33	6	U		NA	
1,2-Dichloropropane	7.69	770	U		NA		6.33	6	U		NA	
cis-1,3-Dichloropropene	7.69	770	U		NA		6.33	6	U		NA	
Trichloroethene	7.69	770	U		NA		6.33	6	U		NA	
Dibromochloromethane	7.69	770	U		NA		6.33	6	U		NA	
1,1,2-Trichloroethane	7.69	770	U		NA		6.33	6	U		NA	
Benzene	7.69	770	U		NA		6.33	6	U		NA	
trans-1,3-Dichloropropene	7.69	770	U		NA		6.33	6	U		NA	
Bromoform	7.69	770	U		NA		6.33	6	U		NA	
4-Methyl-2-Pentanone	15.38	1500	U		NA		12.66	13	U		NA	
2-Hexanone	15.38	1500	U		NA		12.66	13	U		NA	
Tetrachloroethene	7.69	770	U		NA		6.33	6	U		NA	
Toluene	7.69	770	U		NA		6.33	4	J		NA	
1,1,2,2-Tetrachloroethane	7.69	1500	U		NA		6.33	13	U		NA	
Chlorobenzene	7.69	770	U		NA		6.33	18	J		NA	
Ethylbenzene	7.69	770	U		NA		6.33	6	U		NA	
Styrene	7.69	770	U		NA		6.33	6	U		NA	
Xylenes (Total)	7.69	770	U		NA		6.33	6	U		NA	

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/001/036/1/2/3 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/2_D/3 Date Sampled: 05/16/90 Percent Moisture: 35.0%			Sample Point IP/SW1/06L/018/1/2/3 Date Sampled: 05/14/90 Percent Moisture: 22.0%			Sample Point IP/SW1/06L/018/1/2DL/3 Date Sampled: 05/14/90 Percent Moisture: 22.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
bis(2-Chloroethyl)ether	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2-Chlorophenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
1,3-Dichlorobenzene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
1,4-Dichlorobenzene	30462	30000	U	30462	61000	U	413.59	52	J		NA	
Benzyl alcohol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
1,2-Dichlorobenzene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2-Methylphenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
bis-2(Chloroisopropyl)ether	30462	30000	U	30462	61000	U	413.59	420	U		NA	
4-Methylphenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
N-Nitroso-di-n-propylamine	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Hexachloroethane	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Nitrobenzene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Isophorone	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2-Nitrophenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2,4-Dimethylphenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Benzoic acid	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
bis(2-Chloroethoxy)methane	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2,4-Dichlorophenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
1,2,4-Trichlorobenzene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Naphthalene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
4-Chloroaniline	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Hexachlorobutadiene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
4-Chloro-3-methylphenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2-Methylnaphthalene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Hexachlorocyclopentadiene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2,4,6-Trichlorophenol	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2,4,5-Trichlorophenol	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
2-Chloronaphthalene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2-Nitroaniline	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
Dimethylphthalate	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Acenaphthylene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2,6-Dinitrotoluene	30462	30000	U	30462	61000	U	413.59	420	U		NA	

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/001/036/1/2/3 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/2_D/3 Date Sampled: 05/16/90 Percent Moisture: 35.0%			Sample Point IP/SW1/06L/018/1/2/3 Date Sampled: 05/14/90 Percent Moisture: 22.0%			Sample Point IP/SW1/06L/018/1/2DL/3 Date Sampled: 05/14/90 Percent Moisture: 22.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
Acenaphthene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2,4-Dinitrophenol	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
4-Nitrophenol	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
Dibenzofuran	30462	30000	U	30462	61000	U	413.59	420	U		NA	
2,4-Dinitrotoluene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Diethylphthalate	30462	30000	U	30462	61000	U	413.59	420	U		NA	
4-Chlorophenyl-phenylether	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Fluorene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
4-Nitroaniline	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
4,6-Dinitro-2-methylphenol	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
N-Nitrosodiphenylamine	30462	15000	J	30462	32000	J	413.59	200	J		NA	
4-Bromophenyl-phenylether	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Hexachlorobenzene	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Pentachlorophenol	147692	150000	U	147692	300000	U	2005.2	2000	U		NA	
Phenanthrene	30462	7900	J	30462	18000	J	413.59	100	J		NA	
Anthracene	30462	30000	U	30462	17000	J	413.59	43	J		NA	
Di-n-butylphthalate	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Fluoranthene	30462	20000	J	30462	44000	J	413.59	240	J		NA	
Pyrene	30462	15000	J	30462	33000	J	413.59	250	J		NA	
Butylbenzylphthalate	30462	30000	U	30462	61000	U	413.59	420	U		NA	
3,3'-Dichlorobenzidine	60923	61000	U	60923	120000	U	827.17	840	U		NA	
Benzo(a)anthracene	30462	30000	U	30462	13000	J	413.59	420	U		NA	
Chrysene	30462	30000	U	30462	14000	J	413.59	180	J		NA	
bis(2-Ethylhexyl)phthalate	30462	540000	J	30462	1300000	A	413.59	7000	J		NA	
Di-n-octylphthalate	30462	30000	U	30462	61000	U	413.59	420	U		NA	
Benzo(b)fluoranthene	30462	4200	J	30462	9900	J	413.59	290	J		NA	
Benzo(k)fluoranthene	30462	30000	U	30462	5400	J	413.59	420	U		NA	
Benzo(a)pyrene	30462	30000	U	30462	3600	J	413.59	150	J		NA	
Indeno(1,2,3-cd)pyrene	30462	30000	U	30462	61000	U	413.59	97	J		NA	
Dibenz(a,h)anthracene	30462	30000	U	30462	61000	U	413.59	44	J		NA	
Benzo(g,h,i)perylene	30462	30000	U	30462	61000	U	413.59	99	J		NA	

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Pesticide Organics

	Sample Point IP/SW1/001/036/1/2/4 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/2_D/4 Date Sampled: 05/16/90 Percent Moisture: 35.0%			Sample Point IP/SW1/06L/018/1/2/4 Date Sampled: 05/14/90 Percent Moisture: 22.0%			Sample Point IP/SW1/06L/018/1/2DL/4 Date Sampled: 05/14/90 Percent Moisture: 22.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	375.00	190	U		NA		10.26	NA		20.51	21	U
beta-BHC	375.00	190	U		NA		10.26	NA		20.51	21	U
delta-BHC	375.00	190	U		NA		10.26	NA		20.51	21	U
gamma-BHC (Lindane)	375.00	190	U		NA		10.26	NA		20.51	21	U
Heptachlor	375.00	190	U		NA		10.26	NA		20.51	21	U
Aldrin	375.00	190	U		NA		10.26	NA		20.51	21	U
Heptachlor epoxide	375.00	190	U		NA		10.26	NA		20.51	21	U
Endosulfan I	375.00	190	U		NA		10.26	NA		20.51	21	U
Dieldrin	750.00	370	U		NA		20.51	NA		41.03	41	U
4,4'-DDE	750.00	370	U		NA		20.51	NA		41.03	41	U
Endrin	750.00	370	U		NA		20.51	NA		41.03	41	U
Endosulfan II	750.00	370	U		NA		20.51	NA		41.03	41	U
4,4'-DDD	750.00	370	U		NA		20.51	NA		41.03	41	U
Endosulfan sulfate	750.00	370	U		NA		20.51	NA		41.03	41	U
4,4'-DDT	750.00	370	U		NA		20.51	NA		41.03	41	U
Methoxychlor	3750.0	1900	U		NA		102.56	NA		205.13	210	U
Endrin ketone	750.00	370	U		NA		20.51	NA		41.03	41	U
alpha-Chlordane	3750.0	1900	U		NA		102.56	NA		205.13	210	U
gamma-Chlordane	3750.0	1900	U		NA		102.56	NA		205.13	210	U
Toxaphene	7500.0	3700	U		NA		205.13	NA		410.26	410	U
Aroclor-1016	3750.0	1900	U		NA		102.56	NA		205.13	210	U
Aroclor-1221	3750.0	1900	U		NA		102.56	NA		205.13	210	U
Aroclor-1232	3750.0	1900	U		NA		102.56	NA		205.13	210	U
Aroclor-1242	3750.0	1900	U		NA		102.56	NA		205.13	210	U
Aroclor-1248	3750.0	1900	U		NA		102.56	NA		205.13	210	U
Aroclor-1254	7500.0	3700	U		NA		205.13	NA		410.26	410	U
Aroclor-1260	7500.0	3700	U		NA		205.13	NA		410.26	410	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Volatile Organics

	Sample Point IP/SW1/06L/018/1/2_D/2 Date Sampled: 05/14/90 Percent Moisture: 21.0%			Sample Point IP/SW1/06L/018/1/D/2 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06L/018/1/DRE/2 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06M/023/1/2/2 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane		NA		12.35	12	U		NA		12.99	13	U
Bromomethane		NA		12.35	12	U		NA		12.99	13	U
Vinyl Chloride		NA		12.35	12	U		NA		12.99	13	U
Chloroethane		NA		12.35	12	U		NA		12.99	13	U
Methylene Chloride		NA		6.17	6	U		NA		6.49	6	U
Acetone		NA		12.35	54	J		NA		12.99	59	A
Carbon Disulfide		NA		6.17	6	U		NA		6.49	6	U
1,1-Dichloroethene		NA		6.17	6	U		NA		6.49	6	U
1,1-Dichloroethane		NA		6.17	6	U		NA		6.49	6	U
1,2-Dichloroethene (total)		NA		6.17	6	U		NA		6.49	6	U
Chloroform		NA		6.17	6	U		NA		6.49	6	U
1,2-Dichloroethane		NA		6.17	6	U		NA		6.49	6	U
2-Butanone		NA		12.35	12	U		NA		12.99	13	U
1,1,1-Trichloroethane		NA		6.17	6	U		NA		6.49	6	U
Carbon Tetrachloride		NA		6.17	6	U		NA		6.49	6	U
Vinyl Acetate		NA		12.35	12	U		NA		12.99	13	U
Bromodichloromethane		NA		6.17	6	U		NA		6.49	6	U
1,2-Dichloropropane		NA		6.17	6	U		NA		6.49	6	U
cis-1,3-Dichloropropene		NA		6.17	6	U		NA		6.49	6	U
Trichloroethene		NA		6.17	6	U		NA		6.49	6	U
Dibromochloromethane		NA		6.17	6	U		NA		6.49	6	U
1,1,2-Trichloroethane		NA		6.17	6	U		NA		6.49	6	U
Benzene		NA		6.17	6	U		NA		6.49	6	U
trans-1,3-Dichloropropene		NA		6.17	6	U		NA		6.49	6	U
Bromoform		NA		6.17	6	U		NA		6.49	6	U
4-Methyl-2-Pentanone		NA		12.35	12	U		NA		12.99	13	U
2-Hexanone		NA		12.35	12	U		NA		12.99	13	U
Tetrachloroethene		NA		6.17	6	U		NA		6.49	6	U
Toluene		NA		6.17	2	J		NA		6.49	5	J
1,1,2,2-Tetrachloroethane		NA		6.17	12	U		NA		6.49	13	U
Chlorobenzene		NA		6.17	7	J		NA		6.49	3	J
Ethylbenzene		NA		6.17	6	U		NA		6.49	6	U
Styrene		NA		6.17	6	U		NA		6.49	6	U
Xylenes (Total)		NA		6.17	6	U		NA		6.49	6	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/06L/018/1/2_D/3 Date Sampled: 05/14/90 Percent Moisture: 21.0%			Sample Point IP/SW1/06L/018/1/D/3 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06L/018/1/DRE/3 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06M/023/1/2/3 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
bis(2-Chloroethyl)ether	827.17	840	U	404.71	410	U		NA		428.57	430	U
2-Chlorophenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
1,3-Dichlorobenzene	827.17	840	U	404.71	410	U		NA		428.57	430	U
1,4-Dichlorobenzene	827.17	840	U	404.71	65	J		NA		428.57	430	U
Benzyl alcohol	827.17	840	U	404.71	410	U		NA		428.57	430	U
1,2-Dichlorobenzene	827.17	840	U	404.71	410	U		NA		428.57	430	U
2-Methylphenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
bis-2(Chloroisopropyl)ether	827.17	840	U	404.71	410	U		NA		428.57	430	U
4-Methylphenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
N-Nitroso-di-n-propylamine	827.17	840	U	404.71	410	U		NA		428.57	430	U
Hexachloroethane	827.17	840	U	404.71	410	U		NA		428.57	430	U
Nitrobenzene	827.17	840	U	404.71	410	U		NA		428.57	430	U
Isophorone	827.17	840	U	404.71	410	U		NA		428.57	430	U
2-Nitrophenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
2,4-Dimethylphenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
Benzoic acid	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
bis(2-Chloroethoxy)methane	827.17	840	U	404.71	410	U		NA		428.57	430	U
2,4-Dichlorophenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
1,2,4-Trichlorobenzene	827.17	840	U	404.71	410	U		NA		428.57	430	U
Naphthalene	827.17	840	U	404.71	410	U		NA		428.57	430	U
4-Chloroaniline	827.17	840	U	404.71	410	U		NA		428.57	430	U
Hexachlorobutadiene	827.17	840	U	404.71	410	U		NA		428.57	430	U
4-Chloro-3-methylphenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
2-Methylnaphthalene	827.17	840	U	404.71	410	U		NA		428.57	430	U
Hexachlorocyclopentadiene	827.17	840	U	404.71	410	U		NA		428.57	430	U
2,4,6-Trichlorophenol	827.17	840	U	404.71	410	U		NA		428.57	430	U
2,4,5-Trichlorophenol	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
2-Chloronaphthalene	827.17	840	U	404.71	410	U		NA		428.57	430	U
2-Nitroaniline	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
Dimethylphthalate	827.17	840	U	404.71	410	U		NA		428.57	430	U
Acenaphthylene	827.17	840	U	404.71	63	J		NA		428.57	430	U
2,6-Dinitrotoluene	827.17	840	U	404.71	410	U		NA		428.57	430	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/06L/018/1/2_D/3 Date Sampled: 05/14/90 Percent Moisture: 21.0%			Sample Point IP/SW1/06L/018/1/D/3 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06L/018/1/DRE/3 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06M/023/1/2/3 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
Acenaphthene	827.17	840	U	404.71	410	U		NA		428.57	430	U
2,4-Dinitrophenol	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
4-Nitrophenol	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
Dibenzofuran	827.17	840	U	404.71	410	U		NA		428.57	430	U
2,4-Dinitrotoluene	827.17	840	U	404.71	410	U		NA		428.57	430	U
Diethylphthalate	827.17	840	U	404.71	410	U		NA		428.57	430	U
4-Chlorophenyl-phenylether	827.17	840	U	404.71	410	U		NA		428.57	430	U
Fluorene	827.17	840	U	404.71	410	U		NA		428.57	430	U
4-Nitroaniline	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
4,6-Dinitro-2-methylphenol	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
N-Nitrosodiphenylamine	827.17	170	J	404.71	190	J		NA		428.57	140	J
4-Bromophenyl-phenylether	827.17	840	U	404.71	410	U		NA		428.57	430	U
Hexachlorobenzene	827.17	840	U	404.71	410	U		NA		428.57	430	U
Pentachlorophenol	4010.5	4100	U	1962.2	2000	U		NA		2077.9	2100	U
Phenanthrene	827.17	100	J	404.71	180	J		NA		428.57	140	J
Anthracene	827.17	840	U	404.71	72	J		NA		428.57	60	J
Di-n-butylphthalate	827.17	840	U	404.71	410	U		NA		428.57	430	U
Fluoranthene	827.17	240	J	404.71	450	J		NA		428.57	370	J
Pyrene	827.17	220	J	404.71	400	J		NA		428.57	350	J
Butylbenzylphthalate	827.17	840	U	404.71	410	U		NA		428.57	430	U
3,3'-Dichlorobenzidine	1654.3	1700	U	809.42	820	U		NA		857.14	860	U
Benzo(a)anthracene	827.17	840	U	404.71	410	U		NA		428.57	430	U
Chrysene	827.17	170	J	404.71	280	J		NA		428.57	230	J
bis(2-Ethylhexyl)phthalate	827.17	6500	A	404.71	4400	A		NA		428.57	13000	J
Di-n-octylphthalate	827.17	840	U	404.71	410	U		NA		428.57	430	U
Benzo(b)fluoranthene	827.17	250	J	404.71	460	A		NA		428.57	380	J
Benzo(k)fluoranthene	827.17	840	U	404.71	410	U		NA		428.57	430	U
Benzo(a)pyrene	827.17	140	J	404.71	240	J		NA		428.57	180	J
Indeno(1,2,3-cd)pyrene	827.17	840	U	404.71	170	J		NA		428.57	110	J
Dibenz(a,h)anthracene	827.17	840	U	404.71	85	J		NA		428.57	55	J
Benzo(g,h,i)perylene	827.17	840	U	404.71	150	J		NA		428.57	110	J

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Pesticide Organics

	Sample Point IP/SW1/06L/018/1/2_D/4 Date Sampled: 05/14/90 Percent Moisture: 21.0%			Sample Point IP/SW1/06L/018/1/D/4 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06L/018/1/DRE/4 Date Sampled: 05/14/90 Percent Moisture: 19.0%			Sample Point IP/SW1/06M/023/1/2/4 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC		NA		9.88	NA		98.77	99	U	10.53	11	U
beta-BHC		NA		9.88	NA		98.77	99	U	10.53	11	U
delta-BHC		NA		9.88	NA		98.77	99	U	10.53	11	U
gamma-BHC (Lindane)		NA		9.88	NA		98.77	99	U	10.53	11	U
Heptachlor		NA		9.88	NA		98.77	99	U	10.53	11	U
Aldrin		NA		9.88	NA		98.77	99	U	10.53	11	U
Heptachlor epoxide		NA		9.88	NA		98.77	99	U	10.53	11	U
Endosulfan I		NA		9.88	NA		98.77	99	U	10.53	11	U
Dieldrin		NA		19.75	NA		197.53	200	U	21.05	21	U
4,4'-DDE		NA		19.75	NA		197.53	200	U	21.05	21	U
Endrin		NA		19.75	NA		197.53	200	U	21.05	21	U
Endosulfan II		NA		19.75	NA		197.53	200	U	21.05	21	U
4,4'-DDD		NA		19.75	NA		197.53	200	U	21.05	21	U
Endosulfan sulfate		NA		19.75	NA		197.53	200	U	21.05	21	U
4,4'-DDT		NA		19.75	NA		197.53	200	U	21.05	21	U
Methoxychlor		NA		98.77	NA		987.65	990	U	105.26	110	U
Endrin ketone		NA		19.75	NA		197.53	200	U	21.05	21	U
alpha-Chlordane		NA		98.77	NA		987.65	990	U	105.26	110	U
gamma-Chlordane		NA		98.77	NA		987.65	990	U	105.26	110	U
Toxaphene		NA		197.53	NA		1975.3	2000	U	210.53	210	U
Aroclor-1016		NA		98.77	NA		987.65	990	U	105.26	110	U
Aroclor-1221		NA		98.77	NA		987.65	990	U	105.26	110	U
Aroclor-1232		NA		98.77	NA		987.65	990	U	105.26	110	U
Aroclor-1242		NA		98.77	NA		987.65	990	U	105.26	110	U
Aroclor-1248		NA		98.77	NA		987.65	990	U	105.26	110	U
Aroclor-1254		NA		197.53	NA		1975.3	2000	U	210.53	210	U
Aroclor-1260		NA		197.53	NA		1975.3	2000	U	210.53	210	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Volatile Organics

	Sample Point IP/SW1/06M/023/1/2_D/2 Date Sampled: 05/14/90 Percent Moisture: 23.0%			Sample Point IP/SW1/008/012/1/1/2 Date Sampled: 06/05/90 Percent Moisture: 62.0%			Sample Point IP/SW1/011/006/1/1/2 Date Sampled: 06/04/90 Percent Moisture: 57.0%			Sample Point IP/SW1/011/006/1/D/2 Date Sampled: 06/04/90 Percent Moisture: 64.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane		NA		25.64	26	U	23.26	23	U	27.78	28	U
Bromomethane		NA		25.64	26	U	23.26	23	U	27.78	28	U
Vinyl Chloride		NA		25.64	26	U	23.26	23	U	27.78	28	U
Chloroethane		NA		25.64	26	U	23.26	23	U	27.78	28	U
Methylene Chloride		NA		12.82	13	U	11.63	12	U	13.89	14	U
Acetone		NA		25.64	350	A	23.26	190	A	27.78	110	A
Carbon Disulfide		NA		12.82	13	U	11.63	12	U	13.89	14	U
1,1-Dichloroethene		NA		12.82	13	U	11.63	12	U	13.89	14	U
1,1-Dichloroethane		NA		12.82	13	U	11.63	12	U	13.89	14	U
1,2-Dichloroethene (total)		NA		12.82	13	U	11.63	12	U	13.89	14	U
Chloroform		NA		12.82	13	U	11.63	12	U	13.89	14	U
1,2-Dichloroethane		NA		12.82	13	U	11.63	12	U	13.89	14	U
2-Butanone		NA		25.64	55	J	23.26	23	U	27.78	28	U
1,1,1-Trichloroethane		NA		12.82	13	U	11.63	12	U	13.89	14	U
Carbon Tetrachloride		NA		12.82	13	U	11.63	12	U	13.89	14	U
Vinyl Acetate		NA		25.64	26	U	23.26	23	U	27.78	28	U
Bromodichloromethane		NA		12.82	13	U	11.63	12	U	13.89	14	U
1,2-Dichloropropane		NA		12.82	13	U	11.63	12	U	13.89	14	U
cis-1,3-Dichloropropene		NA		12.82	13	U	11.63	12	U	13.89	14	U
Trichloroethene		NA		12.82	13	U	11.63	12	U	13.89	14	U
Dibromochloromethane		NA		12.82	13	U	11.63	12	U	13.89	14	U
1,1,2-Trichloroethane		NA		12.82	13	U	11.63	12	U	13.89	14	U
Benzene		NA		12.82	13	U	11.63	12	U	13.89	14	U
trans-1,3-Dichloropropene		NA		12.82	13	U	11.63	12	U	13.89	14	U
Bromoform		NA		12.82	13	U	11.63	12	U	13.89	14	U
4-Methyl-2-Pentanone		NA		25.64	26	U	23.26	23	U	27.78	28	U
2-Hexanone		NA		25.64	26	U	23.26	23	U	27.78	28	U
Tetrachloroethene		NA		12.82	13	U	11.63	12	U	13.89	14	U
Toluene		NA		12.82	13	U	11.63	12	U	13.89	14	U
1,1,2,2-Tetrachloroethane		NA		12.82	26	U	11.63	23	U	13.89	28	U
Chlorobenzene		NA		12.82	6	J	11.63	12	U	13.89	14	U
Ethylbenzene		NA		12.82	13	U	11.63	12	U	13.89	14	U
Styrene		NA		12.82	13	U	11.63	12	U	13.89	14	U
Xylenes (Total)		NA		12.82	13	U	11.63	12	U	13.89	14	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/06M/023/1/2_D/3 Date Sampled: 05/14/90 Percent Moisture: 23.0%			Sample Point IP/SW1/008/012/1/1/3 Date Sampled: 06/05/90 Percent Moisture: 62.0%			Sample Point IP/SW1/011/006/1/1/3 Date Sampled: 06/04/90 Percent Moisture: 57.0%			Sample Point IP/SW1/011/006/1/D/3 Date Sampled: 06/04/90 Percent Moisture: 64.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
bis(2-Chloroethyl)ether	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2-Chlorophenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
1,3-Dichlorobenzene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
1,4-Dichlorobenzene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Benzyl alcohol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
1,2-Dichlorobenzene	1714.2	1700	U	837.78	200	J	767.44	770	U	910.60	920	U
2-Methylphenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
bis-2(Chloroisopropyl)ether	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
4-Methylphenol	1714.2	1700	U	837.78	230	J	767.44	770	U	910.60	920	U
N-Nitroso-di-n-propylamine	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Hexachloroethane	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Nitrobenzene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Isophorone	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2-Nitrophenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2,4-Dimethylphenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Benzoic acid	8311.6	8300	U	4061.9	4100	U	3720.9	3700	U	4415.0	4400	U
bis(2-Chloroethoxy)methane	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2,4-Dichlorophenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
1,2,4-Trichlorobenzene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Naphthalene	1714.2	1700	U	837.78	930	A	767.44	770	UJ	910.60	120	J
4-Chloroaniline	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Hexachlorobutadiene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
4-Chloro-3-methylphenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2-Methylnaphthalene	1714.2	1700	U	837.78	53	J	767.44	770	UJ	910.60	920	UJ
Hexachlorocyclopentadiene	1714.2	1700	U	837.78	850	UJ	767.44	770	U	910.60	920	U
2,4,6-Trichlorophenol	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2,4,5-Trichlorophenol	8311.6	8300	U	4061.9	4100	U	3720.9	3700	U	4415.0	4400	U
2-Chloronaphthalene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2-Nitroaniline	8311.6	8300	U	4061.9	4100	U	3720.9	3700	U	4415.0	4400	U
Dimethylphthalate	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Acenaphthylene	1714.2	1700	U	837.78	140	J	767.44	770	U	910.60	920	U
2,6-Dinitrotoluene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/06M/023/1/2_D/3 Date Sampled: 05/14/90 Percent Moisture: 23.0%			Sample Point IP/SW1/008/012/1/1/3 Date Sampled: 06/05/90 Percent Moisture: 62.0%			Sample Point IP/SW1/011/006/1/1/3 Date Sampled: 06/04/90 Percent Moisture: 57.0%			Sample Point IP/SW1/011/006/1/D/3 Date Sampled: 06/04/90 Percent Moisture: 64.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	8311.6	8300	U	4061.9	4100	U	3720.9	3700	U	4415.0	4400	U
Acenaphthene	1714.2	1700	U	837.78	160	J	767.44	770	U	910.60	920	U
2,4-Dinitrophenol	8311.6	8300	U	4061.9	4100	UJ	3720.9	3700	U	4415.0	4400	U
4-Nitrophenol	8311.6	8300	U	4061.9	4100	U	3720.9	3700	U	4415.0	4400	U
Dibenzofuran	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
2,4-Dinitrotoluene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Diethylphthalate	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
4-Chlorophenyl-phenylether	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Fluorene	1714.2	1700	U	837.78	190	J	767.44	770	U	910.60	920	U
4-Nitroaniline	8311.6	8300	U	4061.9	4100	U	3720.9	3700	U	4415.0	4400	U
4,6-Dinitro-2-methylphenol	8311.6	8300	U	4061.9	4100	U	3720.9	3700	U	4415.0	4400	U
N-Nitrosodiphenylamine	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
4-Bromophenyl-phenylether	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Hexachlorobenzene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Pentachlorophenol	8311.6	8300	U	4061.9	4100	U	3720.9	3700	UJ	4415.0	170	J
Phenanthrene	1714.2	1700	U	837.78	620	J	767.44	770	UJ	910.60	130	J
Anthracene	1714.2	1700	U	837.78	390	J	767.44	770	U	910.60	920	U
Di-n-butylphthalate	1714.2	1700	U	837.78	850	U	767.44	770	UJ	910.60	920	U
Fluoranthene	1714.2	360	J	837.78	1500	A	767.44	770	UJ	910.60	170	J
Pyrene	1714.2	290	J	837.78	1200	A	767.44	770	UJ	910.60	150	J
Butylbenzylphthalate	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
3,3'-Dichlorobenzidine	3428.5	3400	U	1675.5	1700	UJ	1534.8	1500	U	1821.1	1800	U
Benzo(a)anthracene	1714.2	1700	U	837.78	640	J	767.44	770	UJ	910.60	91	J
Chrysene	1714.2	210	J	837.78	670	J	767.44	770	UJ	910.60	110	J
bis(2-Ethylhexyl)phthalate	1714.2	13000	A	837.78	850	U	767.44	770	U	910.60	920	U
Di-n-octylphthalate	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Benzo(b)fluoranthene	1714.2	320	J	837.78	910	A	767.44	55	J	910.60	200	J
Benzo(k)fluoranthene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Benzo(a)pyrene	1714.2	1700	U	837.78	640	J	767.44	770	UJ	910.60	84	J
Indeno(1,2,3-cd)pyrene	1714.2	1700	U	837.78	380	J	767.44	770	U	910.60	920	U
Dibenz(a,h)anthracene	1714.2	1700	U	837.78	850	U	767.44	770	U	910.60	920	U
Benzo(g,h,i)perylene	1714.2	1700	U	837.78	360	J	767.44	770	U	910.60	920	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Pesticide Organics

	Sample Point IP/SW1/06M/023/1/2_D/4 Date Sampled: 05/14/90 Percent Moisture: 23.0%			Sample Point IP/SW1/008/012/1/1/4 Date Sampled: 06/05/90 Percent Moisture: 62.0%			Sample Point IP/SW1/011/006/1/1/4 Date Sampled: 06/04/90 Percent Moisture: 57.0%			Sample Point IP/SW1/011/006/1/D/4 Date Sampled: 06/04/90 Percent Moisture: 64.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC		NA		41.83	42	U	18.60	19	U	22.08	22	U
beta-BHC		NA		41.83	42	U	18.60	19	U	22.08	22	U
delta-BHC		NA		41.83	42	U	18.60	19	U	22.08	22	U
gamma-BHC (Lindane)		NA		41.83	42	U	18.60	19	U	22.08	22	U
Heptachlor		NA		41.83	42	U	18.60	19	U	22.08	22	U
Aldrin		NA		41.83	42	U	18.60	19	U	22.08	22	U
Heptachlor epoxide		NA		41.83	42	U	18.60	19	U	22.08	22	U
Endosulfan I		NA		41.83	42	U	18.60	19	U	22.08	22	U
Dieldrin		NA		83.65	84	U	37.21	37	U	44.15	44	U
4,4'-DDE		NA		83.65	84	U	37.21	37	UJ	44.15	48	J
Endrin		NA		83.65	84	U	37.21	37	U	44.15	44	U
Endosulfan II		NA		83.65	84	U	37.21	37	U	44.15	44	U
4,4'-DDD		NA		83.65	84	U	37.21	37	U	44.15	44	U
Endosulfan sulfate		NA		83.65	84	U	37.21	37	U	44.15	44	U
4,4'-DDT		NA		83.65	84	U	37.21	37	U	44.15	44	U
Methoxychlor		NA		418.26	420	U	186.05	190	U	220.75	220	U
Endrin ketone		NA		83.65	84	U	37.21	37	U	44.15	44	U
alpha-Chlordane		NA		418.26	420	U	186.05	190	U	220.75	220	U
gamma-Chlordane		NA		418.26	420	U	186.05	190	U	220.75	220	U
Toxaphene		NA		836.53	840	U	372.09	370	U	441.50	440	U
Aroclor-1016		NA		418.26	420	U	186.05	190	U	220.75	220	U
Aroclor-1221		NA		418.26	420	U	186.05	190	U	220.75	220	U
Aroclor-1232		NA		418.26	420	U	186.05	190	U	220.75	220	U
Aroclor-1242		NA		418.26	420	U	186.05	190	U	220.75	220	U
Aroclor-1248		NA		418.26	420	U	186.05	190	U	220.75	220	U
Aroclor-1254		NA		836.53	840	U	372.09	370	U	441.50	440	U
Aroclor-1260		NA		836.53	840	U	372.09	370	U	441.50	440	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Volatile Organics

	Sample Point IP/SW1/17M/027/1/2/2 Date Sampled: 05/14/90 Percent Moisture: 13.0%			Sample Point IP/SW1/21R/027/1/2/2 Date Sampled: 05/21/90 Percent Moisture: 19.0%			Sample Point IP/SW1/027/036/1/2/2 Date Sampled: 06/07/90 Percent Moisture: 27.0%			Sample Point IP/SW1/028/036/1/1/2 Date Sampled: 06/08/90 Percent Moisture: 16.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
Bromomethane	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
Vinyl Chloride	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
Chloroethane	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
Methylene Chloride	5.68	6	U	5.62	6	U	6.85	7	U	5.95	56	A
Acetone	11.36	11	U	11.24	22	J	13.70	39	U	11.90	79	J
Carbon Disulfide	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
1,1-Dichloroethene	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
1,1-Dichloroethane	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
1,2-Dichloroethene (total)	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Chloroform	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
1,2-Dichloroethane	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
2-Butanone	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
1,1,1-Trichloroethane	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Carbon Tetrachloride	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Vinyl Acetate	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
Bromodichloromethane	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
1,2-Dichloropropane	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
cis-1,3-Dichloropropene	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Trichloroethene	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Dibromochloromethane	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
1,1,2-Trichloroethane	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Benzene	5.68	6	U	5.62	6	U	6.85	26	A	5.95	6	U
trans-1,3-Dichloropropene	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Bromoform	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
4-Methyl-2-Pentanone	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
2-Hexanone	11.36	11	U	11.24	11	U	13.70	14	U	11.90	12	U
Tetrachloroethene	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Toluene	5.68	6	U	5.62	6	U	6.85	2	J	5.95	6	U
1,1,2,2-Tetrachloroethane	5.68	11	U	5.62	11	U	6.85	14	U	5.95	12	U
Chlorobenzene	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Ethylbenzene	5.68	6	U	5.62	6	U	6.85	2	J	5.95	6	U
Styrene	5.68	6	U	5.62	6	U	6.85	7	U	5.95	6	U
Xylenes (Total)	5.68	6	U	5.62	6	U	6.85	5	J	5.95	6	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/17M/027/1/2/3 Date Sampled: 05/14/90 Percent Moisture: 13.0%			Sample Point IP/SW1/21R/027/1/2/3 Date Sampled: 05/21/90 Percent Moisture: 19.0%			Sample Point IP/SW1/027/036/1/2/3 Date Sampled: 06/07/90 Percent Moisture: 27.0%			Sample Point IP/SW1/028/036/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 16.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
bis(2-Chloroethyl)ether	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2-Chlorophenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
1,3-Dichlorobenzene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
1,4-Dichlorobenzene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Benzyl alcohol	375.00	370	U	369.55	370	U	447.58	450	UJ	388.97	390	U
1,2-Dichlorobenzene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2-Methylphenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	UJ
bis-2(Chloroisopropyl)ether	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
4-Methylphenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
N-Nitroso-di-n-propylamine	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Hexachloroethane	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Nitrobenzene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Isophorone	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2-Nitrophenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2,4-Dimethylphenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Benzoic acid	1818.1	1800	U	1791.7	1800	UJ	2170.0	2200	U	1885.9	1900	U
bis(2-Chloroethoxy)methane	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2,4-Dichlorophenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
1,2,4-Trichlorobenzene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Naphthalene	375.00	370	U	369.55	92	J	447.58	450	U	388.97	390	U
4-Chloroaniline	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Hexachlorobutadiene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
4-Chloro-3-methylphenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2-Methylnaphthalene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Hexachlorocyclopentadiene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2,4,6-Trichlorophenol	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2,4,5-Trichlorophenol	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	U
2-Chloronaphthalene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2-Nitroaniline	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	U
Dimethylphthalate	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Acenaphthylene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2,6-Dinitrotoluene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/17M/027/1/2/3 Date Sampled: 05/14/90 Percent Moisture: 13.0%			Sample Point IP/SW1/21R/027/1/2/3 Date Sampled: 05/21/90 Percent Moisture: 19.0%			Sample Point IP/SW1/027/036/1/2/3 Date Sampled: 06/07/90 Percent Moisture: 27.0%			Sample Point IP/SW1/028/036/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 16.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	U
Acenaphthene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2,4-Dinitrophenol	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	UJ
4-Nitrophenol	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	U
Dibenzofuran	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
2,4-Dinitrotoluene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Diethylphthalate	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
4-Chlorophenyl-phenylether	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Fluorene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
4-Nitroaniline	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	U
4,6-Dinitro-2-methylphenol	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	U
N-Nitrosodiphenylamine	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
4-Bromophenyl-phenylether	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Hexachlorobenzene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Pentachlorophenol	1818.1	1800	U	1791.7	1800	U	2170.0	2200	U	1885.9	1900	U
Phenanthrene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Anthracene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Di-n-butylphthalate	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Fluoranthene	375.00	40	J	369.55	370	U	447.58	450	U	388.97	390	U
Pyrene	375.00	39	J	369.55	370	U	447.58	450	U	388.97	390	U
Butylbenzylphthalate	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
3,3'-Dichlorobenzidine	750.00	750	U	739.11	740	U	895.16	890	U	777.93	780	U
Benzo(a)anthracene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Chrysene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
bis(2-Ethylhexyl)phthalate	375.00	130	J	369.55	500	U	447.58	100	J	388.97	73	J
Di-n-octylphthalate	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Benzo(b)fluoranthene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Benzo(k)fluoranthene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Benzo(a)pyrene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Indeno(1,2,3-cd)pyrene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Dibenz(a,h)anthracene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U
Benzo(g,h,i)perylene	375.00	370	U	369.55	370	U	447.58	450	U	388.97	390	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Pesticide Organics

	Sample Point IP/SW1/17M/027/1/2/4 Date Sampled: 05/14/90 Percent Moisture: 13.0%			Sample Point IP/SW1/21R/027/1/2/4 Date Sampled: 05/21/90 Percent Moisture: 19.0%			Sample Point IP/SW1/027/036/1/2/4 Date Sampled: 06/07/90 Percent Moisture: 27.0%			Sample Point IP/SW1/028/036/1/1/4 Date Sampled: 06/08/90 Percent Moisture: 16.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
beta-BHC	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
delta-BHC	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
gamma-BHC (Lindane)	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
Heptachlor	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
Aldrin	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
Heptachlor epoxide	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
Endosulfan I	9.20	9.2	U	9.88	9.9	U	10.64	11	U	94.92	95	U
Dieldrin	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
4,4'-DDE	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
Endrin	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
Endosulfan II	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
4,4'-DDD	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
Endosulfan sulfate	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
4,4'-DDT	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
Methoxychlor	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
Endrin ketone	18.39	18	U	19.75	20	U	21.28	21	U	189.84	190	U
alpha-Chlordane	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
gamma-Chlordane	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
Toxaphene	183.91	180	U	197.53	200	U	212.79	210	U	1898.4	1900	U
Aroclor-1016	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
Aroclor-1221	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
Aroclor-1232	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
Aroclor-1242	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
Aroclor-1248	91.95	92	U	98.77	99	U	106.40	110	U	949.22	950	U
Aroclor-1254	183.91	180	U	197.53	200	U	212.79	210	U	1898.4	1900	U
Aroclor-1260	183.91	180	U	197.53	200	U	212.79	210	U	1898.4	1900	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Volatile Organics

	Sample Point IP/SW1/031/036/1/1/2 Date Sampled: 06/06/90 Percent Moisture: 23.0%			Sample Point IP/SW1/035/036/1/1/2 Date Sampled: 06/06/90 Percent Moisture: 24.0%			Sample Point IP/SW1/038/036/1/1/2 Date Sampled: 06/08/90 Percent Moisture: 19.0%			Sample Point IP/SW1/039/018/1/1/2 Date Sampled: 06/07/90 Percent Moisture: 59.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	12.82	13	U	13.16	13	U	12.35	12	U	23.81	24	U
Bromomethane	12.82	13	U	13.16	13	U	12.35	12	U	23.81	24	U
Vinyl Chloride	12.82	13	U	13.16	13	U	12.35	12	U	23.81	24	U
Chloroethane	12.82	13	U	13.16	13	U	12.35	12	U	23.81	24	U
Methylene Chloride	6.41	6	U	6.58	7	U	6.17	56	A	11.90	12	U
Acetone	12.82	28	J	13.16	15	J	12.35	57	U	23.81	89	U
Carbon Disulfide	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
1,1-Dichloroethene	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
1,1-Dichloroethane	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
1,2-Dichloroethene (total)	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Chloroform	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
1,2-Dichloroethane	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
2-Butanone	12.82	13	U	13.16	13	U	12.35	12	U	23.81	21	J
1,1,1-Trichloroethane	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Carbon Tetrachloride	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Vinyl Acetate	12.82	13	U	13.16	13	U	12.35	12	U	23.81	24	U
Bromodichloromethane	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
1,2-Dichloropropane	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
cis-1,3-Dichloropropene	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Trichloroethene	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Dibromochloromethane	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
1,1,2-Trichloroethane	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Benzene	6.41	6	U	6.58	7	U	6.17	16	A	11.90	21	A
trans-1,3-Dichloropropene	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Bromoform	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
4-Methyl-2-Pentanone	12.82	13	U	13.16	13	U	12.35	12	U	23.81	24	U
2-Hexanone	12.82	13	U	13.16	13	U	12.35	12	U	23.81	24	U
Tetrachloroethene	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Toluene	6.41	6	U	6.58	7	U	6.17	43	A	11.90	1200	J
1,1,2,2-Tetrachloroethane	6.41	13	U	6.58	13	U	6.17	12	U	11.90	24	U
Chlorobenzene	6.41	6	U	6.58	7	U	6.17	6	U	11.90	27	A
Ethylbenzene	6.41	6	U	6.58	2	J	6.17	6	U	11.90	12	U
Styrene	6.41	6	U	6.58	7	U	6.17	6	U	11.90	12	U
Xylenes (Total)	6.41	1	J	6.58	4	J	6.17	6	U	11.90	12	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/031/036/1/1/3 Date Sampled: 06/06/90 Percent Moisture: 23.0%			Sample Point IP/SW1/035/036/1/1/3 Date Sampled: 06/06/90 Percent Moisture: 24.0%			Sample Point IP/SW1/038/036/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 19.0%			Sample Point IP/SW1/039/018/1/1/3 Date Sampled: 06/07/90 Percent Moisture: 59.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
bis(2-Chloroethyl)ether	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2-Chlorophenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
1,3-Dichlorobenzene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
1,4-Dichlorobenzene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Benzyl alcohol	420.28	420	U	432.77	430	U	400.73	400	UJ	765.31	760	UJ
1,2-Dichlorobenzene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2-Methylphenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
bis-2(Chloroisopropyl)ether	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
4-Methylphenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
N-Nitroso-di-n-propylamine	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Hexachloroethane	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Nitrobenzene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Isophorone	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2-Nitrophenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2,4-Dimethylphenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Benzoic acid	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
bis(2-Chloroethoxy)methane	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2,4-Dichlorophenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
1,2,4-Trichlorobenzene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Naphthalene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
4-Chloroaniline	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Hexachlorobutadiene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
4-Chloro-3-methylphenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2-Methylnaphthalene	420.28	420	UJ	432.77	430	UJ	400.73	400	U	765.31	760	U
Hexachlorocyclopentadiene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2,4,6-Trichlorophenol	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2,4,5-Trichlorophenol	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
2-Chloronaphthalene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2-Nitroaniline	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
Dimethylphthalate	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Acenaphthylene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2,6-Dinitrotoluene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/031/036/1/1/3 Date Sampled: 06/06/90 Percent Moisture: 23.0%			Sample Point IP/SW1/035/036/1/1/3 Date Sampled: 06/06/90 Percent Moisture: 24.0%			Sample Point IP/SW1/038/036/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 19.0%			Sample Point IP/SW1/039/018/1/1/3 Date Sampled: 06/07/90 Percent Moisture: 59.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
Acenaphthene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2,4-Dinitrophenol	2037.7	2100	U	2098.2	2100	U	1942.9	1900	UJ	3710.5	3700	U
4-Nitrophenol	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
Dibenzofuran	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
2,4-Dinitrotoluene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Diethylphthalate	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
4-Chlorophenyl-phenylether	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Fluorene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
4-Nitroaniline	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
4,6-Dinitro-2-methylphenol	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
N-Nitrosodiphenylamine	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
4-Bromophenyl-phenylether	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Hexachlorobenzene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Pentachlorophenol	2037.7	2100	U	2098.2	2100	U	1942.9	1900	U	3710.5	3700	U
Phenanthrene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Anthracene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Di-n-butylphthalate	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Fluoranthene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Pyrene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Butylbenzylphthalate	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
3,3'-Dichlorobenzidine	840.55	850	U	865.54	870	U	801.46	800	U	1530.6	1500	U
Benzo(a)anthracene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Chrysene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
bis(2-Ethylhexyl)phthalate	420.28	610	U	432.77	750	U	400.73	400	U	765.31	270	J
Di-n-octylphthalate	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Benzo(b)fluoranthene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	150	J
Benzo(k)fluoranthene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Benzo(a)pyrene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Indeno(1,2,3-cd)pyrene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Dibenz(a,h)anthracene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U
Benzo(g,h,i)perylene	420.28	420	U	432.77	430	U	400.73	400	U	765.31	760	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Pesticide Organics

	Sample Point IP/SW1/031/036/1/1/4 Date Sampled: 06/06/90 Percent Moisture: 23.0%			Sample Point IP/SW1/035/036/1/1/4 Date Sampled: 06/06/90 Percent Moisture: 24.0%			Sample Point IP/SW1/038/036/1/1/4 Date Sampled: 06/08/90 Percent Moisture: 19.0%			Sample Point IP/SW1/039/018/1/1/4 Date Sampled: 06/07/90 Percent Moisture: 59.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
beta-BHC	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
delta-BHC	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
gamma-BHC (Lindane)	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
Heptachlor	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
Aldrin	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
Heptachlor epoxide	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
Endosulfan I	20.78	21	U	10.53	11	U	19.37	19	U	19.13	19	U
Dieldrin	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
4,4'-DDE	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
Endrin	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
Endosulfan II	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
4,4'-DDD	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
Endosulfan sulfate	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
4,4'-DDT	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
Methoxychlor	207.79	210	U	105.26	110	U	193.66	190	U	191.30	190	U
Endrin ketone	41.56	42	U	21.05	21	U	38.73	39	U	38.26	38	U
alpha-Chlordane	207.79	210	U	105.26	110	U	193.66	190	U	191.30	190	U
gamma-Chlordane	207.79	210	U	105.26	110	U	193.66	190	U	191.30	190	U
Toxaphene	415.58	420	U	210.53	210	U	387.32	390	U	382.59	380	U
Aroclor-1016	207.79	210	U	105.26	110	U	193.66	190	U	191.30	190	U
Aroclor-1221	207.79	210	U	105.26	110	U	193.66	190	U	191.30	190	U
Aroclor-1232	207.79	210	U	105.26	110	U	193.66	190	U	191.30	190	U
Aroclor-1242	207.79	210	U	105.26	110	U	193.66	190	U	191.30	190	U
Aroclor-1248	207.79	210	U	105.26	400	A	193.66	190	U	191.30	190	U
Aroclor-1254	415.58	420	U	210.53	210	U	387.32	390	U	382.59	380	U
Aroclor-1260	415.58	420	U	210.53	210	U	387.32	390	U	382.59	380	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Volatile Organics

	Sample Point IP/SW1/039/018/1/1DL/2 Date Sampled: 06/07/90 Percent Moisture: 58.0%			Sample Point IP/SW1/042/006/1/1/2 Date Sampled: 06/13/90 Percent Moisture: 38.0%			Sample Point IP/SW1/049/036/1/1/2 Date Sampled: 06/01/90 Percent Moisture: 52.0%			Sample Point IP/SW1/054/036/1/1/2 Date Sampled: 06/01/90 Percent Moisture: 70.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
Bromomethane	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
Vinyl Chloride	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
Chloroethane	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
Methylene Chloride	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Acetone	238.10	240	U	15.87	35	J	20.83	13	J	32.26	99	A
Carbon Disulfide	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
1,1-Dichloroethene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
1,1-Dichloroethane	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
1,2-Dichloroethene (total)	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Chloroform	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
1,2-Dichloroethane	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
2-Butanone	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
1,1,1-Trichloroethane	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Carbon Tetrachloride	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Vinyl Acetate	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
Bromodichloromethane	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
1,2-Dichloropropane	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
cis-1,3-Dichloropropene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Trichloroethene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Dibromochloromethane	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
1,1,2-Trichloroethane	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Benzene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
trans-1,3-Dichloropropene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Bromoform	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
4-Methyl-2-Pentanone	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
2-Hexanone	238.10	240	U	15.87	16	U	20.83	21	U	32.26	32	U
Tetrachloroethene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Toluene	119.05	650	A	7.94	8	U	10.42	10	U	16.13	16	U
1,1,2,2-Tetrachloroethane	119.05	240	U	7.94	16	U	10.42	21	U	16.13	32	U
Chlorobenzene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Ethylbenzene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Styrene	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U
Xylenes (Total)	119.05	120	U	7.94	8	U	10.42	10	U	16.13	16	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/039/018/1/1DL/3 Date Sampled: 06/07/90 Percent Moisture: 58.0%			Sample Point IP/SW1/042/006/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 38.0%			Sample Point IP/SW1/049/036/1/1/3 Date Sampled: 06/01/90 Percent Moisture: 52.0%			Sample Point IP/SW1/054/036/1/1/3 Date Sampled: 06/01/90 Percent Moisture: 70.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
bis(2-Chloroethyl)ether		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2-Chlorophenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
1,3-Dichlorobenzene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
1,4-Dichlorobenzene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Benzyl alcohol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
1,2-Dichlorobenzene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2-Methylphenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
bis-2(Chloroisopropyl)ether		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
4-Methylphenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
N-Nitroso-di-n-propylamine		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Hexachloroethane		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Nitrobenzene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Isophorone		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2-Nitrophenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2,4-Dimethylphenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Benzoic acid		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
bis(2-Chloroethoxy)methane		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2,4-Dichlorophenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
1,2,4-Trichlorobenzene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Naphthalene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
4-Chloroaniline		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Hexachlorobutadiene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
4-Chloro-3-methylphenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2-Methylnaphthalene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Hexachlorocyclopentadiene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2,4,6-Trichlorophenol		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2,4,5-Trichlorophenol		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
2-Chloronaphthalene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2-Nitroaniline		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
Dimethylphthalate		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Acenaphthylene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2,6-Dinitrotoluene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/039/018/1/1DL/3 Date Sampled: 06/07/90 Percent Moisture: 58.0%			Sample Point IP/SW1/042/006/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 38.0%			Sample Point IP/SW1/049/036/1/1/3 Date Sampled: 06/01/90 Percent Moisture: 52.0%			Sample Point IP/SW1/054/036/1/1/3 Date Sampled: 06/01/90 Percent Moisture: 70.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
Acenaphthene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2,4-Dinitrophenol		NA		2539.6	2500	U	3311.2	3300	UJ	5144.1	5200	UJ
4-Nitrophenol		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
Dibenzofuran		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
2,4-Dinitrotoluene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Diethylphthalate		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
4-Chlorophenyl-phenylether		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Fluorene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
4-Nitroaniline		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
4,6-Dinitro-2-methylphenol		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
N-Nitrosodiphenylamine		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
4-Bromophenyl-phenylether		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Hexachlorobenzene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Pentachlorophenol		NA		2539.6	2500	U	3311.2	3300	U	5144.1	5200	U
Phenanthrene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Anthracene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Di-n-butylphthalate		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Fluoranthene		NA		523.81	520	U	682.95	98	J	1060.9	1100	U
Pyrene		NA		523.81	520	U	682.95	95	J	1060.9	1100	U
Butylbenzylphthalate		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
3,3'-Dichlorobenzidine		NA		1047.6	1000	U	1365.8	1400	U	2121.9	2100	U
Benzo(a)anthracene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Chrysene		NA		523.81	520	U	682.95	72	J	1060.9	1100	U
bis(2-Ethylhexyl)phthalate		NA		523.81	230	J	682.95	690	U	1060.9	1100	U
Di-n-octylphthalate		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Benzo(b)fluoranthene		NA		523.81	520	U	682.95	110	J	1060.9	1100	U
Benzo(k)fluoranthene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Benzo(a)pyrene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Indeno(1,2,3-cd)pyrene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Dibenz(a,h)anthracene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U
Benzo(g,h,i)perylene		NA		523.81	520	U	682.95	690	U	1060.9	1100	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Pesticide Organics

	Sample Point IP/SW1/039/018/1/1DL/4 Date Sampled: 06/07/90 Percent Moisture: 58.0%			Sample Point IP/SW1/042/006/1/1/4 Date Sampled: 06/13/90 Percent Moisture: 38.0%			Sample Point IP/SW1/049/036/1/1/4 Date Sampled: 06/01/90 Percent Moisture: 52.0%			Sample Point IP/SW1/054/036/1/1/4 Date Sampled: 06/01/90 Percent Moisture: 70.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC		NA		12.69	13	U	16.56	17	U	26.58	27	U
beta-BHC		NA		12.69	13	U	16.56	17	U	26.58	27	U
delta-BHC		NA		12.69	13	U	16.56	17	U	26.58	27	U
gamma-BHC (Lindane)		NA		12.69	13	U	16.56	17	U	26.58	27	U
Heptachlor		NA		12.69	13	U	16.56	17	U	26.58	27	U
Aldrin		NA		12.69	13	U	16.56	17	U	26.58	27	U
Heptachlor epoxide		NA		12.69	13	U	16.56	17	U	26.58	27	U
Endosulfan I		NA		12.69	13	U	16.56	17	U	26.58	27	U
Dieldrin		NA		25.38	25	U	33.11	33	U	53.16	53	U
4,4'-DDE		NA		25.38	25	U	33.11	33	U	53.16	53	U
Endrin		NA		25.38	25	U	33.11	33	U	53.16	53	U
Endosulfan II		NA		25.38	25	U	33.11	33	U	53.16	53	U
4,4'-DDD		NA		25.38	25	U	33.11	33	U	53.16	53	U
Endosulfan sulfate		NA		25.38	25	U	33.11	33	U	53.16	53	U
4,4'-DDT		NA		25.38	25	U	33.11	33	U	53.16	53	U
Methoxychlor		NA		126.92	130	U	165.56	170	U	265.78	270	U
Endrin ketone		NA		25.38	25	U	33.11	33	U	53.16	53	U
alpha-Chlordane		NA		126.92	130	U	165.56	170	U	265.78	270	U
gamma-Chlordane		NA		126.92	130	U	165.56	170	U	265.78	270	U
Toxaphene		NA		253.83	250	U	331.13	330	U	531.56	530	U
Aroclor-1016		NA		126.92	130	U	165.56	170	U	265.78	270	U
Aroclor-1221		NA		126.92	130	U	165.56	170	U	265.78	270	U
Aroclor-1232		NA		126.92	130	U	165.56	170	U	265.78	270	U
Aroclor-1242		NA		126.92	130	U	165.56	170	U	265.78	270	U
Aroclor-1248		NA		126.92	130	U	165.56	170	U	265.78	270	U
Aroclor-1254		NA		253.83	250	U	331.13	330	U	531.56	530	U
Aroclor-1260		NA		253.83	250	U	331.13	330	U	531.56	530	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Volatile Organics

	Sample Point IP/SW1/057/006/1/1/2 Date Sampled: 05/31/90 Percent Moisture: 22.0%			Sample Point IP/SW1/059/036/1/1/2 Date Sampled: 05/30/90 Percent Moisture: 19.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	12.82	13	U	12.35	12	U						
Bromomethane	12.82	13	U	12.35	12	U						
Vinyl Chloride	12.82	13	U	12.35	12	U						
Chloroethane	12.82	13	U	12.35	12	U						
Methylene Chloride	6.41	6	U	6.17	6	U						
Acetone	12.82	28	A	12.35	12	U						
Carbon Disulfide	6.41	6	U	6.17	6	U						
1,1-Dichloroethene	6.41	6	U	6.17	6	U						
1,1-Dichloroethane	6.41	6	U	6.17	6	U						
1,2-Dichloroethene (total)	6.41	6	U	6.17	6	U						
Chloroform	6.41	6	U	6.17	6	U						
1,2-Dichloroethane	6.41	6	U	6.17	6	U						
2-Butanone	12.82	13	U	12.35	12	U						
1,1,1-Trichloroethane	6.41	6	U	6.17	6	U						
Carbon Tetrachloride	6.41	6	U	6.17	6	U						
Vinyl Acetate	12.82	13	U	12.35	12	U						
Bromodichloromethane	6.41	6	U	6.17	6	U						
1,2-Dichloropropane	6.41	6	U	6.17	6	U						
cis-1,3-Dichloropropene	6.41	6	U	6.17	6	U						
Trichloroethene	6.41	6	U	6.17	6	U						
Dibromochloromethane	6.41	6	U	6.17	6	U						
1,1,2-Trichloroethane	6.41	6	U	6.17	6	U						
Benzene	6.41	6	U	6.17	6	U						
trans-1,3-Dichloropropene	6.41	6	U	6.17	6	U						
Bromoform	6.41	6	U	6.17	6	U						
4-Methyl-2-Pentanone	12.82	13	U	12.35	12	U						
2-Hexanone	12.82	13	U	12.35	12	U						
Tetrachloroethene	6.41	6	U	6.17	6	U						
Toluene	6.41	6	U	6.17	6	U						
1,1,2,2-Tetrachloroethane	6.41	13	U	6.17	12	U						
Chlorobenzene	6.41	6	U	6.17	6	U						
Ethylbenzene	6.41	6	U	6.17	6	U						
Styrene	6.41	6	U	6.17	6	U						
Xylenes (Total)	6.41	6	U	6.17	6	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/057/006/1/1/3 Date Sampled: 05/31/90 Percent Moisture: 22.0%			Sample Point IP/SW1/059/036/1/1/3 Date Sampled: 05/30/90 Percent Moisture: 19.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	416.14	420	U	396.83	410	U						
bis(2-Chloroethyl)ether	416.14	420	U	396.83	410	U						
2-Chlorophenol	416.14	420	U	396.83	410	U						
1,3-Dichlorobenzene	416.14	420	U	396.83	410	U						
1,4-Dichlorobenzene	416.14	420	U	396.83	410	U						
Benzyl alcohol	416.14	420	U	396.83	410	U						
1,2-Dichlorobenzene	416.14	420	U	396.83	410	U						
2-Methylphenol	416.14	420	U	396.83	410	U						
bis-2(Chloroisopropyl)ether	416.14	420	U	396.83	410	U						
4-Methylphenol	416.14	420	U	396.83	410	U						
N-Nitroso-di-n-propylamine	416.14	420	U	396.83	410	U						
Hexachloroethane	416.14	420	U	396.83	410	U						
Nitrobenzene	416.14	420	U	396.83	410	U						
Isophorone	416.14	420	U	396.83	410	U						
2-Nitrophenol	416.14	420	U	396.83	410	U						
2,4-Dimethylphenol	416.14	420	U	396.83	410	U						
Benzoic acid	2017.6	2100	U	1924.0	2000	U						
bis(2-Chloroethoxy)methane	416.14	420	U	396.83	410	U						
2,4-Dichlorophenol	416.14	420	U	396.83	410	U						
1,2,4-Trichlorobenzene	416.14	420	U	396.83	410	U						
Naphthalene	416.14	420	U	396.83	410	U						
4-Chloroaniline	416.14	420	U	396.83	410	U						
Hexachlorobutadiene	416.14	420	U	396.83	410	U						
4-Chloro-3-methylphenol	416.14	420	U	396.83	410	U						
2-Methylnaphthalene	416.14	420	U	396.83	410	U						
Hexachlorocyclopentadiene	416.14	420	U	396.83	410	U						
2,4,6-Trichlorophenol	416.14	420	U	396.83	410	U						
2,4,5-Trichlorophenol	2017.6	2100	U	1924.0	2000	U						
2-Chloronaphthalene	416.14	420	U	396.83	410	U						
2-Nitroaniline	2017.6	2100	U	1924.0	2000	U						
Dimethylphthalate	416.14	420	U	396.83	410	U						
Acenaphthylene	416.14	420	U	396.83	410	U						
2,6-Dinitrotoluene	416.14	420	U	396.83	410	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Semivolatile Organics

	Sample Point IP/SW1/057/006/1/1/3 Date Sampled: 05/31/90 Percent Moisture: 22.0%			Sample Point IP/SW1/059/036/1/1/3 Date Sampled: 05/30/90 Percent Moisture: 19.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	2017.6	2100	U	1924.0	2000	U						
Acenaphthene	416.14	420	U	396.83	410	U						
2,4-Dinitrophenol	2017.6	2100	U	1924.0	2000	U						
4-Nitrophenol	2017.6	2100	U	1924.0	2000	U						
Dibenzofuran	416.14	420	U	396.83	410	U						
2,4-Dinitrotoluene	416.14	420	U	396.83	410	U						
Diethylphthalate	416.14	420	U	396.83	410	U						
4-Chlorophenyl-phenylether	416.14	420	U	396.83	410	U						
Fluorene	416.14	420	U	396.83	410	U						
4-Nitroaniline	2017.6	2100	U	1924.0	2000	U						
4,6-Dinitro-2-methylphenol	2017.6	2100	U	1924.0	2000	U						
N-Nitrosodiphenylamine	416.14	420	U	396.83	410	U						
4-Bromophenyl-phenylether	416.14	420	U	396.83	410	U						
Hexachlorobenzene	416.14	420	U	396.83	410	U						
Pentachlorophenol	2017.6	2100	U	1924.0	2000	U						
Phenanthrene	416.14	420	U	396.83	410	U						
Anthracene	416.14	420	U	396.83	410	U						
Di-n-butylphthalate	416.14	420	U	396.83	410	U						
Fluoranthene	416.14	420	U	396.83	410	U						
Pyrene	416.14	420	U	396.83	410	U						
Butylbenzylphthalate	416.14	420	U	396.83	410	U						
3,3'-Dichlorobenzidine	832.28	850	U	793.65	820	U						
Benzo(a)anthracene	416.14	420	U	396.83	410	U						
Chrysene	416.14	420	U	396.83	410	U						
bis(2-Ethylhexyl)phthalate	416.14	420	U	396.83	410	U						
Di-n-octylphthalate	416.14	420	U	396.83	410	U						
Benzo(b)fluoranthene	416.14	420	U	396.83	410	U						
Benzo(k)fluoranthene	416.14	420	U	396.83	410	U						
Benzo(a)pyrene	416.14	420	U	396.83	410	U						
Indeno(1,2,3-cd)pyrene	416.14	420	U	396.83	410	U						
Dibenz(a,h)anthracene	416.14	420	U	396.83	410	U						
Benzo(g,h,i)perylene	416.14	420	U	396.83	410	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Primary Sample Result - Pesticide Organics

	Sample Point IP/SW1/057/006/1/1/4 Date Sampled: 05/31/90 Percent Moisture: 22.0%			Sample Point IP/SW1/059/036/1/1/4 Date Sampled: 05/30/90 Percent Moisture: 19.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	10.19	10	U	9.88	9.9	U						
beta-BHC	10.19	10	U	9.88	9.9	U						
delta-BHC	10.19	10	U	9.88	9.9	U						
gamma-BHC (Lindane)	10.19	10	U	9.88	9.9	U						
Heptachlor	10.19	10	U	9.88	9.9	U						
Aldrin	10.19	10	U	9.88	9.9	U						
Heptachlor epoxide	10.19	10	U	9.88	9.9	U						
Endosulfan I	10.19	10	U	9.88	9.9	U						
Dieldrin	20.38	20	U	19.75	20	U						
4,4'-DDE	20.38	20	U	19.75	20	U						
Endrin	20.38	20	U	19.75	20	U						
Endosulfan II	20.38	20	U	19.75	20	U						
4,4'-DDD	20.38	20	U	19.75	20	U						
Endosulfan sulfate	20.38	20	U	19.75	20	U						
4,4'-DDT	20.38	20	U	19.75	20	U						
Methoxychlor	101.88	100	U	98.77	99	U						
Endrin ketone	20.38	20	U	19.75	20	U						
alpha-Chlordane	101.88	100	U	98.77	99	U						
gamma-Chlordane	101.88	100	U	98.77	99	U						
Toxaphene	203.77	200	U	197.53	200	U						
Aroclor-1016	101.88	100	U	98.77	99	U						
Aroclor-1221	101.88	100	U	98.77	99	U						
Aroclor-1232	101.88	100	U	98.77	99	U						
Aroclor-1242	101.88	100	U	98.77	99	U						
Aroclor-1248	101.88	100	U	98.77	99	U						
Aroclor-1254	203.77	200	U	197.53	200	U						
Aroclor-1260	203.77	200	U	197.53	200	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples Matrix Spikes - Volatile Organics

	Sample Point IP/SW1/001/036/1/M/2 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/N/2 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/06M/023/1/M/2 Date Sampled: 05/14/90 Percent Moisture: 24.0%			Sample Point IP/SW1/06M/023/1/N/2 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane		NA			NA		12.99	13	U	12.99	13	U
Bromomethane		NA			NA		12.99	13	U	12.99	13	U
Vinyl Chloride		NA			NA		12.99	13	U	12.99	13	U
Chloroethane		NA			NA		12.99	13	U	12.99	13	U
Methylene Chloride		NA			NA		6.49	6	U	6.49	6	U
Acetone		NA			NA		12.99	63	A	12.99	68	A
Carbon Disulfide		NA			NA		6.49	6	U	6.49	6	U
1,1-Dichloroethene		NA			NA		6.49	66.8	A1	6.49	68.3	A1
1,1-Dichloroethane		NA			NA		6.49	6	U	6.49	6	U
1,2-Dichloroethene (total)		NA			NA		6.49	6	U	6.49	6	U
Chloroform		NA			NA		6.49	6	U	6.49	6	U
1,2-Dichloroethane		NA			NA		6.49	6	U	6.49	6	U
2-Butanone		NA			NA		12.99	13	U	12.99	13	U
1,1,1-Trichloroethane		NA			NA		6.49	6	U	6.49	6	U
Carbon Tetrachloride		NA			NA		6.49	6	U	6.49	6	U
Vinyl Acetate		NA			NA		12.99	13	U	12.99	13	U
Bromodichloromethane		NA			NA		6.49	6	U	6.49	6	U
1,2-Dichloropropane		NA			NA		6.49	6	U	6.49	6	U
cis-1,3-Dichloropropene		NA			NA		6.49	6	U	6.49	6	U
Trichloroethene		NA			NA		6.49	57.9	A1	6.49	56.9	A1
Dibromochloromethane		NA			NA		6.49	6	U	6.49	6	U
1,1,2-Trichloroethane		NA			NA		6.49	6	U	6.49	6	U
Benzene		NA			NA		6.49	71.0	A1	6.49	74.8	A1
trans-1,3-Dichloropropene		NA			NA		6.49	6	U	6.49	6	U
Bromoform		NA			NA		6.49	6	U	6.49	6	U
4-Methyl-2-Pentanone		NA			NA		12.99	13	U	12.99	13	U
2-Hexanone		NA			NA		12.99	13	U	12.99	13	U
Tetrachloroethene		NA			NA		6.49	6	U	6.49	6	U
Toluene		NA			NA		6.49	83.2	A1	6.49	81.3	A1
1,1,2,2-Tetrachloroethane		NA			NA		6.49	13	U	6.49	13	U
Chlorobenzene		NA			NA		6.49	72.2	A1	6.49	70.3	A1
Ethylbenzene		NA			NA		6.49	6	U	6.49	6	U
Styrene		NA			NA		6.49	6	U	6.49	6	U
Xylenes (Total)		NA			NA		6.49	6	U	6.49	6	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples Matrix Spikes - Semivolatile Organics

	Sample Point IP/SW1/001/036/1/M/3 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/N/3 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/06M/023/1/M/3 Date Sampled: 05/14/90 Percent Moisture: 24.0%			Sample Point IP/SW1/06M/023/1/N/3 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	30462	204000	A1	30462	231000	A1	427.15	3920	A1	425.73	3730	A1
bis(2-Chloroethyl)ether	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2-Chlorophenol	30462	218000	A1	30462	250000	A1	427.15	4630	A1	425.73	4010	A1
1,3-Dichlorobenzene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
1,4-Dichlorobenzene	30462	112000	A1	30462	126000	A1	427.15	2590	A1	425.73	2110	A1
Benzyl alcohol	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
1,2-Dichlorobenzene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2-Methylphenol	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
bis-2(Chloroisopropyl)ether	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
4-Methylphenol	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
N-Nitroso-di-n-propylamine	30462	114000	A1	30462	126000	A1	427.15	2360	A1	425.73	2180	A1
Hexachloroethane	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Nitrobenzene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Isophorone	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2-Nitrophenol	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2,4-Dimethylphenol	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Benzoic acid	147692	150000	U	147692	150000	U	2071.0	2100	U	2064.1	2100	U
bis(2-Chloroethoxy)methane	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2,4-Dichlorophenol	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
1,2,4-Trichlorobenzene	30462	128000	A1	30462	148000	A1	427.15	3070	A1	425.73	2570	A1
Naphthalene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
4-Chloroaniline	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Hexachlorobutadiene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
4-Chloro-3-methylphenol	30462	234000	A1	30462	272000	A1	427.15	6390	A1	425.73	5890	A1
2-Methylnaphthalene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Hexachlorocyclopentadiene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2,4,6-Trichlorophenol	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2,4,5-Trichlorophenol	147692	150000	U	147692	150000	U	2071.0	2100	U	2064.1	2100	U
2-Chloronaphthalene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2-Nitroaniline	147692	150000	U	147692	150000	U	2071.0	2100	U	2064.1	2100	U
Dimethylphthalate	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Acenaphthylene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2,6-Dinitrotoluene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples Matrix Spikes - Semivolatile Organics

	Sample Point IP/SW1/001/036/1/M/3 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/N/3 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/06M/023/1/M/3 Date Sampled: 05/14/90 Percent Moisture: 24.0%			Sample Point IP/SW1/06M/023/1/N/3 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	147692	150000	U	147692	150000	U	2071.0	2100	U	2064.1	2100	U
Acenaphthene	30462	127000	A1	30462	134000	A1	427.15	3260	A1	425.73	3030	A1
2,4-Dinitrophenol	147692	150000	U	147692	150000	U	2071.0	2100	U	2064.1	2100	U
4-Nitrophenol	147692	231000	A1	147692	242000	A1	2071.0	9130	A1	2064.1	8600	A1
Dibenzofuran	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
2,4-Dinitrotoluene	30462	117000	A1	30462	121000	A1	427.15	3030	A1	425.73	3040	A1
Diethylphthalate	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
4-Chlorophenyl-phenylether	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Fluorene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
4-Nitroaniline	147692	150000	U	147692	150000	U	2071.0	2100	U	2064.1	2100	U
4,6-Dinitro-2-methylphenol	147692	150000	U	147692	150000	U	2071.0	2100	U	2064.1	2100	U
N-Nitrosodiphenylamine	30462	15000	J	30462	16000	J	427.15	190	J	425.73	210	J
4-Bromophenyl-phenylether	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Hexachlorobenzene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Pentachlorophenol	147692	232000	A1	147692	250000	A1	2071.0	8530	A1	2064.1	7390	A1
Phenanthrene	30462	30000	U	30462	30000	U	427.15	170	J	425.73	250	J
Anthracene	30462	30000	U	30462	30000	U	427.15	81	J	425.73	110	J
Di-n-butylphthalate	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Fluoranthene	30462	30000	U	30462	30000	U	427.15	320	J	425.73	670	A
Pyrene	30462	125000	A1	30462	130000	A1	427.15	3580	A1	425.73	3800	A1
Butylbenzylphthalate	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
3,3'-Dichlorobenzidine	60923	61000	U	60923	61000	U	854.30	860	U	851.47	860	U
Benzo(a)anthracene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Chrysene	30462	30000	U	30462	30000	U	427.15	240	J	425.73	440	A
bis(2-Ethylhexyl)phthalate	30462	560000	J	30462	520000	J	427.15	15000	J	425.73	16000	J
Di-n-octylphthalate	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Benzo(b)fluoranthene	30462	30000	U	30462	30000	U	427.15	430	A	425.73	670	A
Benzo(k)fluoranthene	30462	30000	U	30462	30000	U	427.15	430	U	425.73	430	U
Benzo(a)pyrene	30462	30000	U	30462	30000	U	427.15	170	J	425.73	340	J
Indeno(1,2,3-cd)pyrene	30462	30000	U	30462	30000	U	427.15	120	J	425.73	210	J
Dibenz(a,h)anthracene	30462	30000	U	30462	30000	U	427.15	54	J	425.73	120	J
Benzo(g,h,i)perylene	30462	30000	U	30462	30000	U	427.15	110	J	425.73	190	J

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples Matrix Spikes - Pesticide Organics

	Sample Point IP/SW1/001/036/1/M/4 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/001/036/1/N/4 Date Sampled: 05/16/90 Percent Moisture: 36.0%			Sample Point IP/SW1/06M/023/1/M/4 Date Sampled: 05/14/90 Percent Moisture: 24.0%			Sample Point IP/SW1/06M/023/1/N/4 Date Sampled: 05/14/90 Percent Moisture: 24.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	3750.0	1900	U	3750.0	1900	U	10.53	11	U	10.53	11	U
beta-BHC	3750.0	1900	U	3750.0	1900	U	10.53	11	U	10.53	11	U
delta-BHC	3750.0	1900	U	3750.0	1900	U	10.53	11	U	10.53	11	U
gamma-BHC (Lindane)	3750.0	3860	A1	3750.0	3480	A1	10.53	29.8	A1	10.53	31.7	A1
Heptachlor	3750.0	3610	A1	3750.0	3330	A1	10.53	25.5	A1	10.53	26.3	A1
Aldrin	3750.0	3510	A1	3750.0	3060	A1	10.53	16.4	A1	10.53	20.2	A1
Heptachlor epoxide	3750.0	1900	U	3750.0	1900	U	10.53	11	U	10.53	11	U
Endosulfan I	3750.0	1900	U	3750.0	1900	U	10.53	11	U	10.53	11	U
Dieldrin	7500.0	9120	A1	7500.0	8780	A1	21.05	62.2	A1	21.05	63.8	A1
4,4'-DDE	7500.0	3700	U	7500.0	3700	U	21.05	21	U	21.05	21	U
Endrin	7500.0	8610	A1	7500.0	8310	A1	21.05	62.8	A1	21.05	66.3	A1
Endosulfan II	7500.0	3700	U	7500.0	3700	U	21.05	21	U	21.05	21	U
4,4'-DDD	7500.0	3700	U	7500.0	3700	U	21.05	21	U	21.05	21	U
Endosulfan sulfate	7500.0	3700	U	7500.0	3700	U	21.05	21	U	21.05	21	U
4,4'-DDT	7500.0	9180	A1	7500.0	9750	A1	21.05	84.5	A1	21.05	83.8	A1
Methoxychlor	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
Endrin ketone	7500.0	3700	U	7500.0	3700	U	21.05	21	U	21.05	21	U
alpha-Chlordane	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
gamma-Chlordane	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
Toxaphene	75000	37000	U	75000	37000	U	210.53	210	U	210.53	210	U
Aroclor-1016	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
Aroclor-1221	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
Aroclor-1232	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
Aroclor-1242	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
Aroclor-1248	37500	19000	U	37500	19000	U	105.26	110	U	105.26	110	U
Aroclor-1254	75000	37000	U	75000	37000	U	210.53	210	U	210.53	210	U
Aroclor-1260	75000	37000	U	75000	37000	U	210.53	210	U	210.53	210	U

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples Matrix Spikes - Volatile Organics

	Sample Point IP/SW1/039/018/1/M/2 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point IP/SW1/039/018/1/N/2 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	238.10	240	U	238.10	240	U						
Bromomethane	238.10	240	U	238.10	240	U						
Vinyl Chloride	238.10	240	U	238.10	240	U						
Chloroethane	238.10	240	U	238.10	240	U						
Methylene Chloride	119.05	1700	J	119.05	1700	J						
Acetone	238.10	1300	J	238.10	760	J						
Carbon Disulfide	119.05	120	U	119.05	120	U						
1,1-Dichloroethene	119.05	1480	A1	119.05	1410	A1						
1,1-Dichloroethane	119.05	120	U	119.05	120	U						
1,2-Dichloroethene (total)	119.05	120	U	119.05	120	U						
Chloroform	119.05	120	U	119.05	120	U						
1,2-Dichloroethane	119.05	120	U	119.05	120	U						
2-Butanone	238.10	240	U	238.10	240	U						
1,1,1-Trichloroethane	119.05	120	U	119.05	120	U						
Carbon Tetrachloride	119.05	120	U	119.05	120	U						
Vinyl Acetate	238.10	240	U	238.10	240	U						
Bromodichloromethane	119.05	120	U	119.05	120	U						
1,2-Dichloropropane	119.05	120	U	119.05	120	U						
cis-1,3-Dichloropropene	119.05	120	U	119.05	120	U						
Trichloroethene	119.05	1100	A1	119.05	1120	A1						
Dibromochloromethane	119.05	120	U	119.05	120	U						
1,1,2-Trichloroethane	119.05	120	U	119.05	120	U						
Benzene	119.05	1150	A1	119.05	1150	A1						
trans-1,3-Dichloropropene	119.05	120	U	119.05	120	U						
Bromoform	119.05	120	U	119.05	120	U						
4-Methyl-2-Pentanone	238.10	240	U	238.10	240	U						
2-Hexanone	238.10	240	U	238.10	240	U						
Tetrachloroethene	119.05	120	U	119.05	120	U						
Toluene	119.05	1560	A1	119.05	1530	A1						
1,1,2,2-Tetrachloroethane	119.05	240	U	119.05	240	U						
Chlorobenzene	119.05	1180	A1	119.05	1200	A1						
Ethylbenzene	119.05	120	U	119.05	120	U						
Styrene	119.05	120	U	119.05	120	U						
Xylenes (Total)	119.05	120	U	119.05	120	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples Matrix Spikes - Semivolatile Organics

	Sample Point IP/SW1/039/018/1/M/3 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point IP/SW1/039/018/1/N/3 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	765.31	9750	A1	780.51	12500	A1						
bis(2-Chloroethyl)ether	765.31	770	U	780.51	780	U						
2-Chlorophenol	765.31	9600	A1	780.51	11700	A1						
1,3-Dichlorobenzene	765.31	770	U	780.51	780	U						
1,4-Dichlorobenzene	765.31	4760	A1	780.51	4560	A1						
Benzyl alcohol	765.31	770	U	780.51	780	U						
1,2-Dichlorobenzene	765.31	770	U	780.51	780	U						
2-Methylphenol	765.31	770	U	780.51	780	U						
bis-2(Chloroisopropyl)ether	765.31	770	U	780.51	780	U						
4-Methylphenol	765.31	770	U	780.51	780	U						
N-Nitroso-di-n-propylamine	765.31	5270	A1	780.51	6270	A1						
Hexachloroethane	765.31	770	U	780.51	780	U						
Nitrobenzene	765.31	770	U	780.51	780	U						
Isophorone	765.31	770	U	780.51	780	U						
2-Nitrophenol	765.31	770	U	780.51	780	U						
2,4-Dimethylphenol	765.31	770	U	780.51	780	U						
Benzoic acid	3710.5	3700	U	3784.3	3800	U						
bis(2-Chloroethoxy)methane	765.31	770	U	780.51	780	U						
2,4-Dichlorophenol	765.31	770	U	780.51	780	U						
1,2,4-Trichlorobenzene	765.31	5600	A1	780.51	6420	A1						
Naphthalene	765.31	770	U	780.51	780	U						
4-Chloroaniline	765.31	770	U	780.51	780	U						
Hexachlorobutadiene	765.31	770	U	780.51	780	U						
4-Chloro-3-methylphenol	765.31	13400	A1	780.51	15300	A1						
2-Methylnaphthalene	765.31	770	U	780.51	780	U						
Hexachlorocyclopentadiene	765.31	770	U	780.51	780	U						
2,4,6-Trichlorophenol	765.31	770	U	780.51	780	U						
2,4,5-Trichlorophenol	3710.5	3700	U	3784.3	3800	U						
2-Chloronaphthalene	765.31	770	U	780.51	780	U						
2-Nitroaniline	3710.5	3700	U	3784.3	3800	U						
Dimethylphthalate	765.31	770	U	780.51	780	U						
Acenaphthylene	765.31	770	U	780.51	780	U						
2,6-Dinitrotoluene	765.31	770	U	780.51	780	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples

Matrix Spikes - Semivolatile Organics

	Sample Point IP/SW1/039/018/1/M/3 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point IP/SW1/039/018/1/N/3 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	3710.5	3700	U	3784.3	3800	U						
Acenaphthene	765.31	5930	A1	780.51	6920	A1						
2,4-Dinitrophenol	3710.5	3700	U	3784.3	3800	U						
4-Nitrophenol	3710.5	20700	A1	3784.3	25500	A1						
Dibenzofuran	765.31	770	U	780.51	780	U						
2,4-Dinitrotoluene	765.31	5460	A1	780.51	6390	A1						
Diethylphthalate	765.31	770	U	780.51	780	U						
4-Chlorophenyl-phenylether	765.31	770	U	780.51	780	U						
Fluorene	765.31	770	U	780.51	780	U						
4-Nitroaniline	3710.5	3700	U	3784.3	3800	U						
4,6-Dinitro-2-methylphenol	3710.5	3700	U	3784.3	3800	U						
N-Nitrosodiphenylamine	765.31	770	U	780.51	780	U						
4-Bromophenyl-phenylether	765.31	770	U	780.51	780	U						
Hexachlorobenzene	765.31	770	U	780.51	780	U						
Pentachlorophenol	3710.5	12100	A1	3784.3	13400	A1						
Phenanthrene	765.31	770	U	780.51	780	U						
Anthracene	765.31	770	U	780.51	780	U						
Di-n-butylphthalate	765.31	770	U	780.51	780	U						
Fluoranthene	765.31	770	U	780.51	780	U						
Pyrene	765.31	6280	A1	780.51	7220	A1						
Butylbenzylphthalate	765.31	770	U	780.51	780	U						
3,3'-Dichlorobenzidine	1530.6	1500	U	1561.0	1600	U						
Benzo(a)anthracene	765.31	770	U	780.51	780	U						
Chrysene	765.31	770	U	780.51	780	U						
bis(2-Ethylhexyl)phthalate	765.31	300	J	780.51	300	J						
Di-n-octylphthalate	765.31	770	U	780.51	780	U						
Benzo(b)fluoranthene	765.31	250	J	780.51	190	J						
Benzo(k)fluoranthene	765.31	770	U	780.51	780	U						
Benzo(a)pyrene	765.31	770	U	780.51	780	U						
Indeno(1,2,3-cd)pyrene	765.31	770	U	780.51	780	U						
Dibenz(a,h)anthracene	765.31	770	U	780.51	780	U						
Benzo(g,h,i)perylene	765.31	770	U	780.51	780	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL Sediment Samples Matrix Spikes - Pesticide Organics

	Sample Point IP/SW1/039/018/1/M/4 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point IP/SW1/039/018/1/N/4 Date Sampled: 06/07/90 Percent Moisture: 59.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	19.13	19	U	19.26	19	U						
beta-BHC	19.13	19	U	19.26	19	U						
delta-BHC	19.13	19	U	19.26	19	U						
gamma-BHC (Lindane)	19.13	93.2	A1	19.26	138	A1						
Heptachlor	19.13	63.3	A1	19.26	104	A1						
Aldrin	19.13	67.8	A1	19.26	117	A1						
Heptachlor epoxide	19.13	19	U	19.26	19	U						
Endosulfan I	19.13	19	U	19.26	19	U						
Dieldrin	38.26	177	A1	38.51	119	A1						
4,4'-DDE	38.26	38	U	38.51	39	U						
Endrin	38.26	172	A1	38.51	114	A1						
Endosulfan II	38.26	38	U	38.51	39	U						
4,4'-DDD	38.26	38	U	38.51	39	U						
Endosulfan sulfate	38.26	38	U	38.51	39	U						
4,4'-DDT	38.26	203	A1	38.51	124	A1						
Methoxychlor	191.30	190	U	192.55	190	U						
Endrin ketone	38.26	38	U	38.51	39	U						
alpha-Chlordane	191.30	190	U	192.55	190	U						
gamma-Chlordane	191.30	190	U	192.55	190	U						
Toxaphene	382.59	380	U	385.11	390	U						
Aroclor-1016	191.30	190	U	192.55	190	U						
Aroclor-1221	191.30	190	U	192.55	190	U						
Aroclor-1232	191.30	190	U	192.55	190	U						
Aroclor-1242	191.30	190	U	192.55	190	U						
Aroclor-1248	191.30	190	U	192.55	190	U						
Aroclor-1254	382.59	380	U	385.11	390	U						
Aroclor-1260	382.59	380	U	385.11	390	U						

Notes:
All units are mg/kg

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Volatile Organics

	Sample Point IP/SW1/EB30/000/2/2/2 Date Sampled: 05/14/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/2 Date Sampled: 05/21/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/2 Date Sampled: 05/30/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/2 Date Sampled: 06/07/90 Percent Moisture: 0.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Bromomethane	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Vinyl Chloride	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Chloroethane	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Methylene Chloride	5.68	4	J	369.55	5	U	396.83	5	U	765.31	6	U
Acetone	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Carbon Disulfide	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
1,1-Dichloroethene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
1,1-Dichloroethane	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
1,2-Dichloroethene (total)	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Chloroform	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
1,2-Dichloroethane	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
2-Butanone	5.68	10	R	369.55	10	U	396.83	10	U	765.31	10	U
1,1,1-Trichloroethane	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Carbon Tetrachloride	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Vinyl Acetate	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Bromodichloromethane	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
1,2-Dichloropropane	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
cis-1,3-Dichloropropene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Trichloroethene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Dibromochloromethane	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
1,1,2-Trichloroethane	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Benzene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
trans-1,3-Dichloropropene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Bromoform	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
4-Methyl-2-Pentanone	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
2-Hexanone	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Tetrachloroethene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Toluene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
1,1,2,2-Tetrachloroethane	5.68	10	U	369.55	10	U	396.83	10	U	765.31	10	U
Chlorobenzene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Ethylbenzene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Styrene	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U
Xylenes (Total)	5.68	5	U	369.55	5	U	396.83	5	U	765.31	5	U

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Semivolatile Organics

	Sample Point IP/SW1/EB30/000/2/2/3 Date Sampled: 05/14/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/3 Date Sampled: 05/21/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/3 Date Sampled: 05/30/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/3 Date Sampled: 06/07/90 Percent Moisture: 0.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	375.00	10	U		NA			NA			NA	
bis(2-Chloroethyl)ether	375.00	10	U		NA			NA			NA	
2-Chlorophenol	375.00	10	U		NA			NA			NA	
1,3-Dichlorobenzene	375.00	10	U		NA			NA			NA	
1,4-Dichlorobenzene	375.00	10	U		NA			NA			NA	
Benzyl alcohol	375.00	10	U		NA			NA			NA	
1,2-Dichlorobenzene	375.00	10	U		NA			NA			NA	
2-Methylphenol	375.00	10	U		NA			NA			NA	
bis-2(Chloroisopropyl)ether	375.00	10	U		NA			NA			NA	
4-Methylphenol	375.00	10	U		NA			NA			NA	
N-Nitroso-di-n-propylamine	375.00	10	U		NA			NA			NA	
Hexachloroethane	375.00	10	U		NA			NA			NA	
Nitrobenzene	375.00	10	U		NA			NA			NA	
Isophorone	375.00	10	U		NA			NA			NA	
2-Nitrophenol	375.00	10	U		NA			NA			NA	
2,4-Dimethylphenol	375.00	10	U		NA			NA			NA	
Benzoic acid	375.00	50	U		NA			NA			NA	
bis(2-Chloroethoxy)methane	375.00	10	U		NA			NA			NA	
2,4-Dichlorophenol	375.00	10	U		NA			NA			NA	
1,2,4-Trichlorobenzene	375.00	10	U		NA			NA			NA	
Naphthalene	375.00	10	U		NA			NA			NA	
4-Chloroaniline	375.00	10	U		NA			NA			NA	
Hexachlorobutadiene	375.00	10	U		NA			NA			NA	
4-Chloro-3-methylphenol	375.00	10	U		NA			NA			NA	
2-Methylnaphthalene	375.00	10	U		NA			NA			NA	
Hexachlorocyclopentadiene	375.00	10	U		NA			NA			NA	
2,4,6-Trichlorophenol	375.00	10	U		NA			NA			NA	
2,4,5-Trichlorophenol	375.00	50	U		NA			NA			NA	
2-Chloronaphthalene	375.00	10	U		NA			NA			NA	
2-Nitroaniline	375.00	50	U		NA			NA			NA	
Dimethylphthalate	375.00	10	U		NA			NA			NA	
Acenaphthylene	375.00	10	U		NA			NA			NA	
2,6-Dinitrotoluene	375.00	10	U		NA			NA			NA	

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Semivolatile Organics

	Sample Point IP/SW1/EB30/000/2/2/3 Date Sampled: 05/14/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/3 Date Sampled: 05/21/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/3 Date Sampled: 05/30/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/3 Date Sampled: 06/07/90 Percent Moisture: 0.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	375.00	50	U		NA			NA			NA	
Acenaphthene	375.00	10	U		NA			NA			NA	
2,4-Dinitrophenol	375.00	50	U		NA			NA			NA	
4-Nitrophenol	375.00	50	U		NA			NA			NA	
Dibenzofuran	375.00	10	U		NA			NA			NA	
2,4-Dinitrotoluene	375.00	10	U		NA			NA			NA	
Diethylphthalate	375.00	10	U		NA			NA			NA	
4-Chlorophenyl-phenylether	375.00	10	U		NA			NA			NA	
Fluorene	375.00	10	U		NA			NA			NA	
4-Nitroaniline	375.00	50	U		NA			NA			NA	
4,6-Dinitro-2-methylphenol	375.00	50	U		NA			NA			NA	
N-Nitrosodiphenylamine	375.00	10	U		NA			NA			NA	
4-Bromophenyl-phenylether	375.00	10	U		NA			NA			NA	
Hexachlorobenzene	375.00	10	U		NA			NA			NA	
Pentachlorophenol	375.00	50	U		NA			NA			NA	
Phenanthrene	375.00	10	U		NA			NA			NA	
Anthracene	375.00	10	U		NA			NA			NA	
Di-n-butylphthalate	375.00	10	U		NA			NA			NA	
Fluoranthene	375.00	10	U		NA			NA			NA	
Pyrene	375.00	10	U		NA			NA			NA	
Butylbenzylphthalate	375.00	10	U		NA			NA			NA	
3,3'-Dichlorobenzidine	375.00	20	U		NA			NA			NA	
Benzo(a)anthracene	375.00	10	U		NA			NA			NA	
Chrysene	375.00	10	U		NA			NA			NA	
bis(2-Ethylhexyl)phthalate	375.00	10	U		NA			NA			NA	
Di-n-octylphthalate	375.00	10	U		NA			NA			NA	
Benzo(b)fluoranthene	375.00	10	U		NA			NA			NA	
Benzo(k)fluoranthene	375.00	10	U		NA			NA			NA	
Benzo(a)pyrene	375.00	10	U		NA			NA			NA	
Indeno(1,2,3-cd)pyrene	375.00	10	U		NA			NA			NA	
Dibenz(a,h)anthracene	375.00	10	U		NA			NA			NA	
Benzo(g,h,i)perylene	375.00	10	U		NA			NA			NA	

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Pesticide Organics

	Sample Point IP/SW1/EB30/000/2/2/4 Date Sampled: 05/14/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/4 Date Sampled: 05/21/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/4 Date Sampled: 05/30/90 Percent Moisture: 0.0%			Sample Point IP/SW1/TRIP_BLANK/4 Date Sampled: 06/07/90 Percent Moisture: 0.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	183.91	0.050	U		NA			NA			NA	
beta-BHC	183.91	0.050	U		NA			NA			NA	
delta-BHC	183.91	0.050	U		NA			NA			NA	
gamma-BHC (Lindane)	183.91	0.050	U		NA			NA			NA	
Heptachlor	183.91	0.050	U		NA			NA			NA	
Aldrin	183.91	0.050	U		NA			NA			NA	
Heptachlor epoxide	183.91	0.050	U		NA			NA			NA	
Endosulfan I	183.91	0.050	U		NA			NA			NA	
Dieldrin	183.91	0.10	U		NA			NA			NA	
4,4'-DDE	183.91	0.10	U		NA			NA			NA	
Endrin	183.91	0.10	U		NA			NA			NA	
Endosulfan II	183.91	0.10	U		NA			NA			NA	
4,4'-DDD	183.91	0.10	U		NA			NA			NA	
Endosulfan sulfate	183.91	0.10	U		NA			NA			NA	
4,4'-DDT	183.91	0.10	U		NA			NA			NA	
Methoxychlor	183.91	0.50	U		NA			NA			NA	
Endrin ketone	183.91	0.10	U		NA			NA			NA	
alpha-Chlordane	183.91	0.50	U		NA			NA			NA	
gamma-Chlordane	183.91	0.50	U		NA			NA			NA	
Toxaphene	183.91	1.0	U		NA			NA			NA	
Aroclor-1016	183.91	0.50	U		NA			NA			NA	
Aroclor-1221	183.91	0.50	U		NA			NA			NA	
Aroclor-1232	183.91	0.50	U		NA			NA			NA	
Aroclor-1242	183.91	0.50	U		NA			NA			NA	
Aroclor-1248	183.91	0.50	U		NA			NA			NA	
Aroclor-1254	183.91	1.0	U		NA			NA			NA	
Aroclor-1260	183.91	1.0	U		NA			NA			NA	

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Volatile Organics

	Sample Point IP/SW1/EB48/000/2/2/2 Date Sampled: 06/07/90 Percent Moisture: 0.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	119.05	10	U									
Bromomethane	119.05	10	U									
Vinyl Chloride	119.05	10	U									
Chloroethane	119.05	10	U									
Methylene Chloride	119.05	5	U									
Acetone	119.05	10	U									
Carbon Disulfide	119.05	5	U									
1,1-Dichloroethene	119.05	5	U									
1,1-Dichloroethane	119.05	5	U									
1,2-Dichloroethene (total)	119.05	5	U									
Chloroform	119.05	5	U									
1,2-Dichloroethane	119.05	5	U									
2-Butanone	119.05	10	U									
1,1,1-Trichloroethane	119.05	5	U									
Carbon Tetrachloride	119.05	5	U									
Vinyl Acetate	119.05	10	U									
Bromodichloromethane	119.05	5	U									
1,2-Dichloropropane	119.05	5	U									
cis-1,3-Dichloropropene	119.05	5	U									
Trichloroethene	119.05	5	U									
Dibromochloromethane	119.05	5	U									
1,1,2-Trichloroethane	119.05	5	U									
Benzene	119.05	5	U									
trans-1,3-Dichloropropene	119.05	5	U									
Bromoform	119.05	5	U									
4-Methyl-2-Pentanone	119.05	10	U									
2-Hexanone	119.05	10	U									
Tetrachloroethene	119.05	5	U									
Toluene	119.05	5	U									
1,1,2,2-Tetrachloroethane	119.05	10	U									
Chlorobenzene	119.05	5	U									
Ethylbenzene	119.05	5	U									
Styrene	119.05	5	U									
Xylenes (Total)	119.05	5	U									

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Semivolatile Organics

	Sample Point IP/SW1/EB48/000/2/2/3 Date Sampled: 06/07/90 Percent Moisture: 0.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	765.31	10	U									
bis(2-Chloroethyl)ether	765.31	10	U									
2-Chlorophenol	765.31	10	U									
1,3-Dichlorobenzene	765.31	10	U									
1,4-Dichlorobenzene	765.31	10	U									
Benzyl alcohol	765.31	10	U									
1,2-Dichlorobenzene	765.31	10	U									
2-Methylphenol	765.31	10	U									
bis-2(Chloroisopropyl)ether	765.31	10	U									
4-Methylphenol	765.31	10	U									
N-Nitroso-di-n-propylamine	765.31	10	U									
Hexachloroethane	765.31	10	U									
Nitrobenzene	765.31	10	U									
Isophorone	765.31	10	U									
2-Nitrophenol	765.31	10	U									
2,4-Dimethylphenol	765.31	10	U									
Benzoic acid	765.31	50	U									
bis(2-Chloroethoxy)methane	765.31	10	U									
2,4-Dichlorophenol	765.31	10	U									
1,2,4-Trichlorobenzene	765.31	10	U									
Naphthalene	765.31	10	U									
4-Chloroaniline	765.31	10	U									
Hexachlorobutadiene	765.31	10	U									
4-Chloro-3-methylphenol	765.31	10	U									
2-Methylnaphthalene	765.31	10	U									
Hexachlorocyclopentadiene	765.31	10	U									
2,4,6-Trichlorophenol	765.31	10	U									
2,4,5-Trichlorophenol	765.31	50	U									
2-Chloronaphthalene	765.31	10	U									
2-Nitroaniline	765.31	50	U									
Dimethylphthalate	765.31	10	U									
Acenaphthylene	765.31	10	U									
2,6-Dinitrotoluene	765.31	10	U									

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Semivolatile Organics

	Sample Point IP/SW1/EB48/000/2/2/3 Date Sampled: 06/07/90 Percent Moisture: 0.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	765.31	50	U									
Acenaphthene	765.31	10	U									
2,4-Dinitrophenol	765.31	50	UJ									
4-Nitrophenol	765.31	50	U									
Dibenzofuran	765.31	10	U									
2,4-Dinitrotoluene	765.31	10	U									
Diethylphthalate	765.31	10	U									
4-Chlorophenyl-phenylether	765.31	10	U									
Fluorene	765.31	10	U									
4-Nitroaniline	765.31	50	U									
4,6-Dinitro-2-methylphenol	765.31	50	U									
N-Nitrosodiphenylamine	765.31	10	U									
4-Bromophenyl-phenylether	765.31	10	U									
Hexachlorobenzene	765.31	10	U									
Pentachlorophenol	765.31	50	U									
Phenanthrene	765.31	10	U									
Anthracene	765.31	10	U									
Di-n-butylphthalate	765.31	10	U									
Fluoranthene	765.31	10	U									
Pyrene	765.31	10	U									
Butylbenzylphthalate	765.31	10	U									
3,3'-Dichlorobenzidine	765.31	20	U									
Benzo(a)anthracene	765.31	10	U									
Chrysene	765.31	10	U									
bis(2-Ethylhexyl)phthalate	765.31	10	U									
Di-n-octylphthalate	765.31	10	U									
Benzo(b)fluoranthene	765.31	10	U									
Benzo(k)fluoranthene	765.31	10	U									
Benzo(a)pyrene	765.31	10	U									
Indeno(1,2,3-cd)pyrene	765.31	10	U									
Dibenz(a,h)anthracene	765.31	10	U									
Benzo(g,h,i)perylene	765.31	10	U									

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

TABLE 3

SUMMARY OF CLP ORGANICS ANALYSES - TASK SW-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER Sediment Samples Equipment and Trip Blank Samples - Pesticide Organics

	Sample Point IP/SW1/EB48/000/2/2/4 Date Sampled: 06/07/90 Percent Moisture: 0.0%			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %			Sample Point Date Sampled: Percent Moisture: %		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	382.59	0.050	U									
beta-BHC	382.59	0.050	U									
delta-BHC	382.59	0.050	U									
gamma-BHC (Lindane)	382.59	0.050	U									
Heptachlor	382.59	0.050	U									
Aldrin	382.59	0.050	U									
Heptachlor epoxide	382.59	0.050	U									
Endosulfan I	382.59	0.050	U									
Dieldrin	382.59	0.10	U									
4,4'-DDE	382.59	0.10	U									
Endrin	382.59	0.10	U									
Endosulfan II	382.59	0.10	U									
4,4'-DDD	382.59	0.10	U									
Endosulfan sulfate	382.59	0.10	U									
4,4'-DDT	382.59	0.10	U									
Methoxychlor	382.59	0.50	U									
Endrin ketone	382.59	0.10	U									
alpha-Chlordane	382.59	0.50	U									
gamma-Chlordane	382.59	0.50	U									
Toxaphene	382.59	1.0	U									
Aroclor-1016	382.59	0.50	U									
Aroclor-1221	382.59	0.50	U									
Aroclor-1232	382.59	0.50	U									
Aroclor-1242	382.59	0.50	U									
Aroclor-1248	382.59	0.50	U									
Aroclor-1254	382.59	1.0	U									
Aroclor-1260	382.59	1.0	U									

Notes:
All units are mg/l

Qualifiers:
A - Acceptable (Quantitative) Data
J - Estimated (Semiquantitative) Data
UJ- Not Detected/Semiquantitative Data
U - Not Detected/Quantitative Data
R - Unusable Data

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike duplicate samples
NA- Due to dilution analysis of one or more fractions for any given sample, NA appears in the result field for several samples and their corresponding dilution samples.

LEGEND

- As, Pb AND Cr CONCENTRATIONS BELOW CONSENT DECREE ACTION LEVELS, DATA FROM RI BORINGS AND TEST PITS (DEPTH GIVEN IN PARENTHESES WHEN DOCUMENTED)
- As, Pb AND Cr CONCENTRATIONS BELOW CONSENT DECREE ACTION LEVELS, RI DATA AVAILABLE FOR 6–12 INCH SOIL HORIZON ONLY.
- As, Pb AND Cr CONCENTRATIONS BELOW CONSENT DECREE ACTION LEVELS, DATA AVAILABLE FOR MULTIPLE SOIL HORIZIONS WITHIN 36 INCHES OF GROUND SURFACE
- As, Pb AND Cr AT OR ABOVE CONSENT DECREE ACTION LEVELS AT ANY SOIL HORIZON WITHIN 36 INCHES OF GROUND SURFACE.
- PROPOSED SECONDARY PRE–DESIGN BORING FOR As, Pb, Cr AND HIDE RESIDUE ANALYSIS
- SECONDARY PRE–DESIGN BORINGS SHOWN IN PDI WORK PLAN FIGURES 10A AND 10B WHICH ARE NOT REQUIRED.
- HIDE RESIDUE PRESENT BASED ON RI DATA AND PDI DATA (IDENTIFIES HIDE PILES AND HIDE RESIDUE PRESENT AT SAMPLE LOCATIONS)
- SITE BOUNDARY
- PRELIMINARY LIMIT OF SOILS CONTAINING HIDE RESIDUE AND/OR As, Pb, AND Cr AT OR ABOVE CONSENT DECREE ACTION LEVELS (DASHED WHERE INFERRED PENDING RESULTS OF SECONDARY BORINGS)
- SOIL PILES
- STREAMS OR WATERCOURSES
- MARSH

NOTES

1.) RI DATA WEST AND NORTH OF COMMERCE WAY FROM DIGITAL FILE PROVIDED BY U.S. EPA REGION I. RI DATA IN BOSTON EDISON RIGHT OF WAY No.9 AND NORTHEAST OF COMMERCE WAY FROM RI PLATES (STAUFFER, 1983 AND 1984).

2.) CIRCULAR AND TRIANGULAR SYMBOLS WITH LOCATION NUMBERS ARE PRE–DESIGN INVESTIGATION BORINGS. ALL OTHER SYMBOLS REPRESENT RI SAMPLES.

200 0 200 400
scale feet

SEP 18 1990

REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE: AS SHOWN		PROJECT: INDUSTRI-PLEX SITE REMEDIAL TRUST WOBURN, MASSACHUSETTS
PROJECT No. 893–6255		
DES BY	RAC	07/13/90
DR BY	JSG	07/20/90
CHK BY	RMG	09/18/90
RVW BY	RMG	9/18/90

SHEET TITLE: SAMPLE LOCATIONS AND SUMMARY OF As, Pb, Cr AND HIDE RESIDUE DATA

Golder Associates
Mt. Laurel, New Jersey

SHEET 1 OF 1
DRAWING No. MA01–100

FIGURE 10

APPENDIX A

Assessment of Overall SW-846 Data Quality

INDUSTRI-PLEX PRE-DESIGN INVESTIGATION

ASSESSMENT OF OVERALL DATA QUALITY
FOR TASK SW-1

PERFORMED BY: Bob Glazier DATE: August 14, 1990

	YES/NO/NA
1. Were the QAPjP, laboratory reports, and field documentation available to support data assessment procedures?	yes
2. Precision:	
Are DCS RPD within control limits?	yes
Are lab duplicate RPD within control limits?	yes (91%)
Are field duplicate RPD within control limits?	yes (73%)*
Are MS/MSD RPD within control limits?	yes (83%)**
Overall assessment of precision	The overall precision is considered to be sufficient to support remedial design. The relative percent difference of field duplicates is greater than was anticipated, indicating that the stream sediments are very inhomogeneous.
3. Accuracy:	
Is absolute recovery within control limits for DCS?	yes
Is relative recovery within control limits for MS/MSD?	yes (83%)
Overall assessment of accuracy	Although spike recoveries are not within control limits for some specific MS/MSD samples, over 83% are in control. Those out of control are flagged as estimated. Overall accuracy is sufficient to support design.
4. Representativeness:	
Were procedures in the FSP followed?	yes
If not, were procedural variations approved and documented?	NA
Were sample preservation procedures given in the FSP followed?	yes
Were data reported in the proper units?	yes
Was blank contamination not evident or well documented at low levels?	yes
Were field duplicates within control limits?	yes (73%)
Overall assessment of representativeness	The data are considered representative of site conditions.

INDUSTRI-PLEX PRE-DESIGN INVESTIGATION

ASSESSMENT OF OVERALL DATA QUALITY
FOR TASK SW-1

(continued)

YES/NO/NA

5. Comparability:

Are data traceable to a standard method? yes
Are methods approved/accepted as giving valid results? yes
Are data reported in proper units? yes
Overall assessment of comparability The data are comparable to the data generated during the RI/FS.

6. Completeness:

Is the fraction of valid data within control limits? yes
If not, are the data sufficient to meet the task objectives? NA
Are critical (background) samples sufficient and valid? NA
Overall assessment of completeness Sufficient useable data have been collected to support Remedial Design.

7. Are the data useable and consistent with the objectives of the study? yes

8. Comments: * Although 27% of the field duplicates were not within control limits, over half of the field duplicates above background concentrations were not within control limits. This indicates that the sediments are very inhomogeneous when they contain As, Pb, and Cr above Action Levels.

** 24% of the MS/MSD results were not calculated because the initial sample concentration was more than 4 times the spike. 63% were within control limits, and 13% were outside the control limits. Neglecting the 24% not calculated, 83% were within the control limits.

C:6255:ODQFORM

APPENDIX B

Criteria Used to Assess SW-846 Data Quality

INDUSTRI-PLEX PRE-DESIGN INVESTIGATION

ASSESSMENT OF LABORATORY PERFORMANCE
FOR TASK _____

LABORATORY: _____ REPORT # _____

VALIDATED BY: _____ DATE: _____

		YES/NO/NA
1.	Release authorization with signature present?	_____
2.	Sample identification summary/description present?	_____
3.	Analytical results present, including:	
	correct units?	_____
	detection limits?	_____
	method used?	_____
	date sampled?	_____
	date received?	_____
	date prepared?	_____
	date analyzed?	_____
	dilutions noted?	_____
4.	Holding times met?	_____
5.	Lab duplicate RPDs within control limits (35%)?	_____
	Field duplicate RPDs within control limits (50%)?	_____
6.	MS/MSD % recoveries within control limits (75-125%)?	_____
7.	MS/MSD RPDs within control limits (50%)?	_____
8.	Duplicate control sample (DCS) accuracy within given control limits (80-120%)?	_____
9.	DCS precision within given control limits (20%)?	_____
10.	Method blanks "clean"?	_____
11.	Chain-of-Custody present and complete with signatures and dates?	_____
12.	Name of analyst/supervisor given?	_____
13.	Procedural deviations noted?	_____
14.	QC procedures given?	_____

INDUSTRI-PLEX PRE-DESIGN INVESTIGATION

ASSESSMENT OF LABORATORY PERFORMANCE
FOR TASK _____

(continued)

Note any violations to the assessment criteria listed above:

_____

_____

_____

_____

_____

_____

_____

C:6255:ALP1FORM

INDUSTRI-PLEX PRE-DESIGN INVESTIGATION

ASSESSMENT OF FIELD PERFORMANCE
FOR TASK _____

SAMPLER/ORGANIZATION:_____ REPORT #_____

VALIDATED BY:_____ DATE:_____

	YES/NO/NA
1. Does field documentation include:	
date/time samples collected?	_____
sample location?	_____
name of sampler?	_____
field measurements?	_____
sampling method?	_____
instruments/methods for field measurements?	_____
calibration/maintenance of field instruments?	_____
sampling containers used (COC*)?	_____
sample preservation procedures (see COC*)?	_____
Chain-of-Custody procedures?	_____
field quality control procedures?	_____
2. Were procedures in the Field Sampling Plan followed?	_____
If not, were procedural variances approved and documented?	_____
3. Was contamination of field blank samples not evident, or well documented at low levels?	_____
4. Are field duplicates within control limits?	_____

5. Comments:_____

_____

_____

_____

_____

* Chain-of-Custody Form

C:6255:FPFORM

APPENDIX C

CLP Data Validation Narrative

CLP Data Validation Narrative

1.0 INTRODUCTION

Golder Associates, Inc. (Golder) has performed a data validation of the Organic and Inorganic analytical data from the stream sediment samples collected from May 13, 1990 through June 13, 1990 at the Industri-Plex Site in Woburn, Massachusetts. These samples were part of the Pre-Design Investigation (PDI) Task SW-1 (Extent of Hazardous Substances in Wetlands and Surface Water Sediments) at the Site. The samples were analyzed for the Organic Target Compound List (TCL) and the Inorganic Target Analyte List (TAL) (metals only) in accordance with the most Contract Laboratory Program (CLP) Statements of Work (SOW) (SOW 2/88 for Organic Analyses and SOW 7/87 for Inorganic Analyses). The analyses were performed by Enseco-East (referred to as the Laboratory) of Somerset, New Jersey. Samples were collected from eighteen (18) primary locations. Two (2) locations were sampled in duplicate yielding two (2) Field Duplicate samples. Extra sample volume was collected from two (2) of the primary locations in order to obtain sufficient sample volumes to perform the analysis of the Matrix Spike/ Matrix Spike Duplicate (MS/MSD) pairs. The sample points are summarized in Table C-1.

Data Validation was performed in accordance with the U.S. Environmental Protection Agency (USEPA) Region I Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses (February 1, 1988 and modified November 1, 1988) and Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses (June 13, 1988 and modified February 1989). In addition, the Data Validation criteria from the Quality Assurance Project Plan (QAPjP) for Industri-Plex PDI were followed. When differing guidelines were encountered, the data validator used the more conservative (stricter) guideline. Data qualifiers are defined in Table C-2.

The data packages (reports) from the Laboratory were organized by Enseco Project numbers which were assigned to each set of samples received on any one day. The Laboratory performed their Quality Assurance/Quality Control procedures at the frequency specified by the appropriate SOW. The Laboratory considered each sampling day as a separate event and produced a data package for each of its Project numbers. Since the collection of samples for CLP analyses was performed on twelve (12) days, the Laboratory produced twelve reports containing data from this task. Golder considered all of the samples to be part of the same sampling event and the data validation procedure was performed with this in mind.

2.0 ORGANIC DATA

The data was evaluated based upon the following parameters:

* data completeness
* holding times
* GC/MS tuning
  calibration
  blanks
* surrogate recoveries
  matrix spike / matrix spike duplicate
  field duplicates
* internal standard performance
  pesticide instrument performance
* compound identification
* compound quantitation

* - All criteria were met for this parameter.

2.1 Data Completeness

The Laboratory produced twelve reports containing data from this task. It should be noted that while each data package was complete and contained all necessary information to perform data validation, the format of the data packages deviated somewhat (with regard to package order) from the format specified by the appropriate SOW.

2.2 Holding Times

All samples were extracted and/or analyzed within the required holding time for the Volatile, Semi-volatile and Pesticide/PCB fractions.

2.3 GC/MS Tuning

The gas chromatograph/mass spectrometer (GC/MS) tuning performance results were all within USEPA Region I guidelines.

2.4 Calibration

The USEPA Region I guidelines specify that certain criteria must be achieved during the instrument calibration for Volatile and Semi-volatile compounds. These criteria stipulate that: 1) the average and daily response factors (RRF) for each volatile and semi-volatile target analyte must be equal to or greater than 0.05; 2) the percent relative standard deviation (%RSD) for each volatile and semi-volatile target analyte in the initial calibration must be less than or equal to 30%; and 3) the percent difference (%D) for each volatile and semi-volatile target analyte in the continuing (daily) calibration must be less than or equal to 25%.

2.4.1 Volatiles

The daily relative response factor (RRF) for 2-Butanone in the aqueous volatile calibration analyzed on May 18, 1990 was less than 0.05. Furthermore, the Percent Difference (%D) for 2-Butanone in this aqueous calibration was greater than 25%. The non-detected result for this compound in the equipment blank IP/SW1/EB30/000/2/2 required qualification as an unusable value.

The Percent Difference (%D) for 2-Butanone in the volatile continuing calibration analyzed on May 29, 1990 is greater than 25%. The non-detected result for this compound in sample IP/SW1/21R/027/1/2 did not require qualification.

The Percent Difference (%D) for Acetone in the volatile continuing calibration analyzed on May 29, 1990 is greater than 25%. The positive result for this compound in sample IP/SW1/21R/027/1/2 required qualification as an estimated value.

The Percent Differences (%D) for Chloroethane and Acetone in the aqueous volatile continuing calibration analyzed on May 29, 1990 were greater than 25%. The non-detected results for these compounds in the TRIP BLANK (received by the Laboratory on May 22, 1990) did not require qualification.

The Percent Differences (%D) for 2-Butanone, 2-Hexanone and Chloroethane in the volatile continuing calibration analyzed on June 9, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/059/036/1/1, IP/SW1/057/006/1/1, IP/SW1/054/036/1/1, IP/SW1/049/036/1/1, IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D did not require qualification.

The Percent Differences (%D) for 2-Butanone, 2-Hexanone and Chloroethane in the volatile continuing calibration analyzed on June 9, 1990 were greater than 25%. The non-detected results for 2-Hexanone and Chloroethane in sample IP/SW1/008/012/1/1 did not require qualification. The positive result for 2-Butanone in this sample required qualification as an estimated value.

The Percent Relative Standard Deviation (%RSD) for 2-Butanone in the aqueous volatile initial calibration analyzed on June 6, 1990 was greater than 30%. The non-detected results for this compound in the TRIP BLANK (received by the Laboratory on May 31, 1990), the equipment blank IP/SW1/EB48/000/2/1 and the TRIP BLANK (received by the Laboratory on June 8, 1990) did not require qualification.

The Percent Differences (%D) for Bromomethane, 2-Hexanone, Carbon Tetrachloride, 1,1,1-Trichloroethane, 1,2-Dichloroethane and Chloroethane in the aqueous volatile continuing calibration analyzed on June 14, 1990 were greater than 25%. The non-detected results for these compounds in the equipment blank IP/SW1/EB48/000/2/1 and the TRIP BLANK (received by the Laboratory on June 8, 1990) did not require qualification.

The Percent Difference (%D) for Acetone in the volatile continuing calibration analyzed on June 12, 1990 was greater than 25%. The positive results for this compound in samples IP/SW1/039/018/1/1DL, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 required qualification as estimated values.

The Percent Difference (%D) for 2-Butanone in the volatile continuing calibration analyzed on June 12, 1990 was greater than 25%. The non-detected results for this compound in samples IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 did not require qualification.

The Percent Difference (%D) for Acetone in the volatile continuing calibration analyzed on June 17, 1990 was greater than 50%. The positive results for this compound in samples IP/SW1/031/036/1/1 and IP/SW1/035/036/1/1 required qualification as estimated values.

The Percent Differences (%D) for Bromomethane and Chloromethane in the volatile continuing calibration analyzed on June 17, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/031/036/1/1 and IP/SW1/035/036/1/1 did not require qualification.

The Percent Differences (%D) for Bromomethane and Chloroethane in the volatile continuing calibration analyzed on June 11, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/039/018/1/1 and IP/SW1/027/036/1/2 did not require qualification.

The Percent Difference (%D) for Acetone in the volatile continuing calibration analyzed on June 23, 1990 was greater than 25%. The positive result for this compound in sample IP/SW1/042/006/1/1 required qualification as an estimated value.

The Percent Differences (%D) for Bromomethane and Chloromethane in the volatile continuing calibration analyzed on June 23, 1990 were greater than 25%. The non-detected results for these compounds in sample IP/SW1/042/006/1/1 did not require qualification.

2.4.2 Semi-Volatiles

The Percent Relative Standard Deviations (%RSD) for Benzoic Acid, N-Nitroso-Di-n-Propylamine, 4,6-Dinitro-2-Methylphenol and 2,4-Dinitrophenol in the semi-volatile initial calibration analyzed on May 10, 1990 were greater than 30%. The non-detected results for these compounds in samples IP/SW1/17M/027/1/2, IP/SW1/EB30/000/2/2, IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D, and IP/SW1/06M/023/1/2, did not require qualification.

The Percent Differences (%D) for 2-Methylphenol, Benzyl Alcohol, bis(2-Chloroisopropyl) Ether, 2,4-Dinitrophenol, Benzoic Acid, N-Nitroso-Di-n-Propylamine and 4-Methylphenol in the semi-volatile continuing calibration analyzed on May 17, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/17M/027/1/2, IP/SW1/EB30/000/2/2, IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D, and IP/SW1/06M/023/1/2 did not require qualification.

The average and daily relative response factors (RRF) for the surrogate 2,4,6-Tribromophenol in the semi-volatile calibrations analyzed on May 10 and 17, 1990 were less than 0.05. The recoveries reported for this compound in samples IP/SW1/17M/027/1/2, IP/SW1/EB30/000/2/2, IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D, and IP/SW1/06M/023/1/2 and all associated Quality Control samples did not require qualification. None of these recoveries were near the lower limit of the Contract Required Recovery (CRR) range so while the recoveries reported might be higher than actual, it was unlikely that any recovery which could have been less than the lower limit of the CRR range had been reported above this limit.

The Percent Relative Standard Deviations (%RSD) for 4,6-Dinitro-2-Methylphenol and 2,4-Dinitrophenol in the semi-volatile initial calibration analyzed on May 18, 1990 were greater than 30%. The non-detected results for these compounds in samples IP/SW1/001/036/1/2, IP/SW1/001/036/1/2DL, IP/SW1/06L/018/1/2DL, and IP/SW1/06L/018/1/DDL did not require qualification.

The Percent Differences (%D) for 3,3'-Dichlorobenzidine and Benzyl Alcohol in the semi-volatile continuing calibration analyzed on May 19, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/001/036/1/2, IP/SW1/06L/018/1/2DL, and IP/SW1/06L/018/1/DDL did not require qualification.

The Percent Differences (%D) for N-Nitroso-Di-n-Propylamine, Benzyl Alcohol and 2,4-Dinitrophenol in the semi-volatile continuing calibration analyzed on May 23, 1990 were greater than 25%. The non-detected results for these compounds in sample IP/SW1/001/036/1/2DL did not require qualification.

The average and daily relative response factors (RRF) for the surrogate 2,4,6-Tribromophenol in the semi-volatile calibrations analyzed on May 18 (initial and continuing calibrations) and May 19, 1990 were less than 0.05. The recoveries reported for this compound in samples IP/SW1/001/036/1/2, IP/SW1/001/036/1/2DL, IP/SW1/06L/018/1/2DL, and IP/SW1/06L/018/1/DDL and all associated Quality Control samples required qualification as estimated values. None of these recoveries were near the lower limit of the Contract Required Recovery (CRR) range so while the reported recoveries might be higher than actual recoveries, it is unlikely that any recovery which could have been less than the lower limit of the CRR range had been reported above this limit.

The Percent Relative Standard Deviation (%RSD) for Benzoic Acid in the semi-volatile initial calibration analyzed on May 5, 1990 was greater than 50%. The Percent Difference (%D) for Benzoic Acid in the semi-volatile continuing calibration analyzed on May 24, 1990 was greater than 25%. The non-detected result for this compound in sample IP/SW1/21R/027/1/2 required qualification as an estimated quantitation limit.

The Percent Relative Standard Deviation (%RSD) for 2,4-Dinitro-phenol in the semi-volatile initial calibration analyzed on May 5, 1990 was greater than 30%. The non-detected result for this compound in sample IP/SW1/21R/027/1/2 did not require qualification.

The Percent Differences (%D) for 4,6-Dinitro-2-Methylphenol and Benzyl Alcohol in the semi-volatile continuing calibration analyzed on May 24, 1990 were greater than 25%. The non-detected results for these compounds in sample IP/SW1/21R/027/1/2 did not require qualification.

The Percent Difference (%D) for the surrogate 2,4,6-Tribromophenol in the semi-volatile continuing calibration analyzed on May 24,1990 was greater than 25%. The recoveries reported for this compound in sample IP/SW1/21R/027/1/2 and all associated Quality Control samples required qualification as estimated values. None of these recoveries were near the lower limit of the Contract Required Recovery (CRR) range so while the reported recoveries might be higher than actual recoveries, it is unlikely that any recovery which could have been less than the lower limit of the CRR range had been reported above this limit.

The Percent Relative Standard Deviation (%RSD) for 3,3'-Dichlorobenzidine in the semi-volatile initial calibration analyzed on June 4, 1990 was greater than 30%. The non-detected result for this compound in sample IP/SW1/057/006/1/1 did not require qualification.

The Percent Difference (%D) for 2,4-Dinitrophenol in the semi-volatile continuing calibration analyzed on June 4, 1990 was greater than 25%. The non-detected result for this compound in sample IP/SW1/057/006/1/1 did not require qualification.

The Percent Relative Standard Deviations (%RSD) for Benzoic Acid, 3,3'-Dichlorobenzidine and 2,4-Dinitrophenol in the semi-volatile initial calibration analyzed on June 4, 1990 were greater than 30%. The non-detected results for these compounds in samples IP/SW1/054/036/1/1, IP/SW1/049/036/1/1, IP/SW1/008/012/1/1, IP/SW1/039/018/1/1, IP/SW1/EB48/000/2/1, IP/SW1/027/036/1/2, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 did not require qualification.

The Percent Differences (%D) for 3,3'-Dichlorobenzidine, Benzoic Acid and Hexachlorocyclopentadiene in the semi-volatile continuing calibration analyzed on June 5, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/054/036/1/1 and IP/SW1/049/036/1/1 did not require qualification.

The Percent Difference (%D) for 2,4-Dinitrophenol in the semi-volatile continuing calibration analyzed on June 5, 1990 was greater than 50%. The non-detected results for this compound in samples IP/SW1/054/036/1/1 and IP/SW1/049/036/1/1 required qualification as estimated quantitation limits.

The Percent Differences (%D) for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 2,4-Dinitrophenol in the semi-volatile continuing calibration analyzed on June 7, 1990 were greater than 50%. The non-detected results for these compounds in sample IP/SW1/008/012/1/1 required qualification as estimated quantitation limits.

The Percent Differences (%D) for Hexachlorocyclopentadiene, Benzoic Acid and 4-Nitrophenol in the semi-volatile continuing calibration analyzed on June 14, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/039/018/1/1, IP/SW1/EB48/000/2/1, IP/SW1/027/036/1/2, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 did not require qualification.

The Percent Differences (%D) for 2,4-Dinitrophenol and Benzyl Alcohol in the semi-volatile continuing calibration analyzed on June 14, 1990 were greater than 50%. The non-detected results for these compounds in samples IP/SW1/039/018/1/1, IP/SW1/EB48/000/2/1, IP/SW1/027/036/1/2, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 required qualification as estimated quantitation limits.

The Percent Relative Standard Deviations (%RSD) for Benzoic Acid, 2,4-Dinitrophenol and 4,6-Dinitro-2-Methylphenol in the semi-volatile initial calibration analyzed on June 4, 1990 were greater than 30%. The non-detected results for these compounds in samples IP/SW1/011/006/1/1, IP/SW1/011/006/1/D, IP/SW1/031/036/1/1 and IP/SW1/035/036/1/1 did not require qualification.

The Percent Differences (%D) for 2,4-Dinitrophenol and Benzoic Acid in the semi-volatile continuing calibration analyzed on June 6, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D did not require qualification.

The Percent Difference (%D) for 2-Methylnaphthalene in the semi-volatile continuing calibration analyzed on June 6, 1990 is greater than 50%. The non-detected results for this compound in samples IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D required qualification as estimated quantitation limits.

The Percent Differences (%D) for 3,3'-Dichlorobenzidine, Benzoic Acid and 4-Nitrophenol in the semi-volatile continuing calibration analyzed on June 8, 1990 were greater than 25%. The non-detected results for these compounds in samples IP/SW1/031/036/1/1 and IP/SW1/035/036/1/1 did not require qualification.

The Percent Difference (%D) for 2-Methylnaphthalene in the semi-volatile continuing calibration analyzed on June 8, 1990 was greater than 50%. The non-detected results for this compound in samples IP/SW1/031/036/1/1 and IP/SW1/035/036/1/1 required qualification as estimated quantitation limits.

The average and daily relative response factors (RRF) for the surrogate 2,4,6-Tribromophenol in the semi-volatile calibrations analyzed on June 14 and 15, 1990 were less than 0.05. The recoveries reported for this compound in the equipment blank IP/SW1/EB48/000/2/1 and all associated Quality Control samples required qualification as estimated values. None of these recoveries were near the lower limit of the Contract Required Recovery (CRR) range so while the reported recoveries might be higher than actual recoveries, it was unlikely that any recovery which could have been less than the lower limit of the CRR range had been reported above this limit.

The Percent Relative Standard Deviations (%RSD) for Benzoic Acid, 2,4-Dinitrophenol and 4,6-Dinitro-2-Methylphenol in the semi-volatile initial calibration analyzed on June 14, 1990 were greater than 30%. The non-detected results for these compounds in the equipment blank IP/SW1/EB48/000/2/1 did not require qualification.

The Percent Difference (%D) for 3,3'-Dichlorobenzidine in the semi-volatile continuing calibration analyzed on June 15, 1990 was greater than 25%. The non-detected result for this compound in the equipment blank IP/SW1/EB48/000/2/1 did not require qualification.

The Percent Difference (%D) for 2,4-Dinitrophenol in the semi-volatile continuing calibration analyzed on June 15, 1990 was greater than 50%. The non-detected result for this compound in the sample IP/SW1/EB48/000/2/1 required qualification as an estimated quantitation limit.

The Percent Difference (%D) for 3,3'-Dichlorobenzidine in the semi-volatile continuing calibration analyzed on June 21, 1990 was greater than 25%. The non-detected result for this compound in the sample IP/SW1/042/006/1/1 did not require qualification.

2.4.3 Pesticides/PCBs

The Percent Difference (%D) for Methoxychlor in the Pesticide continuing calibration analyzed on June 22,1990 was greater than 20% for the confirmation column (RTX-35). The non-detected results for this compound in the samples IP/SW1/057/006/1/1, IP/SW1/054/036/1/1, IP/SW1/049/036/1/1, IP/SW1/011/006/1/1, IP/SW1/011/006/1/D, IP/SW1/008/012/1/1, IP/SW1/031/036/1/1, IP/SW1/035/036/1/1, IP/SW1/039/018/1/1, IP/SW1/EB48/000/2/1, IP/SW1/027/036/1/2, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 did not require qualification.

The Percent Difference (%D) for Methoxychlor in the Pesticide continuing calibration standard analyzed on July 15, 1990 at 10:20 was greater than 15% for the column used for quantitation (RTX-35). The non-detected result for this compound in the sample IP/SW1/042/006/1/1 did not require qualification.

The Percent Differences (%D) for Endosulfan II and Heptachlor Epoxide in the Pesticide continuing calibration standard analyzed on July 15, 1990 at 10:20 were greater than 20% for the confirmation column (RTX-5). The non-detected results for these compounds in the sample IP/SW1/042/006/1/1 did not require qualification.

The Percent Differences (%D) for delta-BHC, Endosulfan Sulfate and Endrin Ketone in the Pesticide continuing calibration standard analyzed on July 15, 1990 at 11:14 were greater than 20% for the confirmation column (RTX-5). The non-detected results for these compounds in the sample IP/SW1/042/006/1/1 did not require qualification.

2.5 Blanks

In evaluating the contaminants in the laboratory method blanks, the data validator applied the appropriate action levels to only those samples to which a particular blank applied. In evaluating the contaminants in the equipment blanks, the data validator applied the results from the blank using the split-spoon sampler (IP/SW1/EB30/000/2/2) to those samples collected with that sampling instrument (boreholes 1, 6 and 17). The data validator applied the results from the blank using the hand auger (IP/SW1/EB48/000/2/1) to those samples collected with that sampling instrument (all remaining samples). In evaluating the contaminants in the trip blanks, the data validator applied the appropriate action levels for both trip blanks to all of the samples collected for this event. Action levels for method blanks were applied on an individual sample batch basis.

Please note that sample weights, volumes, dilution factors, units and percent solids have been taken into consideration when applying the appropriate blank action levels to the samples.

Methylene Chloride was detected in the Volatile analysis of the equipment blank (IP/SW1/EB30/000/2/2) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was not detected in any of the associated samples and therefore, the non-detected results did not require qualification.

Acetone was detected in the Volatile laboratory method blank (VBLK061290 for Project 8109) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/038/036/1/1 at a concentration which was greater than the CRQL but less than the action level. The result for this compound required qualification as undetected at the concentration originally reported (i.e. 57 B --> 57 U).

Acetone was detected in the Volatile laboratory method blank (VBLK061290 for Project 8109) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/031/036/1/1 at a concentration which was greater than the CRQL and the action level. The result for this compound did not require qualification and remained as originally reported.

Methylene Chloride and Acetone were detected in the aqueous Volatile laboratory method blank (VBLK061490 for Project 8082) at concentrations which were less than the Contract Required Quantitation Limit (CRQL). These compounds are considered common laboratory contaminants; the action levels determined for these compounds were 10 times the highest concentration found in any of the associated blanks. Methylene Chloride was detected in the equipment blank IP/SW1/EB48/000/2/1 at a concentration which was less than the CRQL and the action level. The result for this compound required qualification as undetected at the CRQL (i.e. 4 BJ --> 5 U). Acetone was not detected in this equipment blank, and therefore, the non-detected result did not require qualification.

Methylene Chloride and Acetone were detected in the aqueous Volatile laboratory method blank (VBLK061490 for Project 8082) at concentrations which were less than the Contract Required Quantitation Limit (CRQL). These compounds are considered common laboratory contaminants; the action levels determined for these compounds were 10 times the highest concentration found in any of the associated blanks. Methylene Chloride was detected in the TRIP BLANK (received at the Laboratory on 6/8/90) at a concentration which was greater than the CRQL but less than the action level. The result for this compound required qualification as undetected at the concentration originally reported (i.e. 6 B --> 6 U). Acetone was not detected in this trip blank and therefore, the non-detected result did not require qualification.

Acetone was detected in the Volatile laboratory method blank (VBLK061290 for Project 8082) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in samples IP/SW1/039/018/1/1 and IP/SW1/027/036/1/2 at concentrations which were greater than the CRQL but less than the action level. The results for this compound required qualification as undetected at the concentration originally reported (i.e. 89 --> 89 U and 39 --> 39 U, respectively).

Acetone was detected in the Volatile laboratory method blank (VBLK061290) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/039/018/1/1DL at a concentration which was less than the CRQL and the action level. The result for this compound required qualification as undetected at the CRQL (i.e. 160 BDJ --> 240 U).

Bis(2-Ethylhexyl) Phthalate was detected in the aqueous Semi-volatile laboratory method blank (SBLK01 for Project 7720) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in the equipment blank IP/SW1/EB30/000/2/2 at a concentration which was less than the CRQL and the action level. The result for this compound required qualification as undetected at the CRQL (i.e. 5 BJ --> 10 U).

Di-n-Butylphthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 7807) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/21R/027/1/2 at a concentration which was less than the CRQL and the action level. The result for this compound required qualification as undetected at the CRQL (i.e. 65 BJ --> 370 U).

Bis(2-Ethylhexyl) Phthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 7807) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/21R/027/1/2 at a concentration which was greater than the CRQL but less than the action level. The result for this compound required qualification as undetected at the concentration originally reported (i.e. 500 B --> 500 U).

Bis(2-Ethylhexyl) Phthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 7918) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/059/036/1/1 at a concentration which was less than the CRQL and the action level. The result for this compound required qualification as undetected at the CRQL (i.e. 340 BJ --> 410 U).

Bis(2-Ethylhexyl) Phthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 7936) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/057/006/1/1 at a concentration which was less than the CRQL and the action level. The result for this compound required qualification as undetected at the CRQL (i.e. 100 BJ --> 420 U).

Bis(2-Ethylhexyl) Phthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 7953) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in samples IP/SW1/054/036/1/1 and IP/SW1/049/036/1/1 at concentrations which were less than the CRQL and the action level. The results for this compound required qualification as undetected at the CRQL (i.e. 740 BJ --> 1100 U and 630 BJ --> 690 U, respectively).

Bis(2-Ethylhexyl) Phthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 8002) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in samples IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D at concentrations which were less than the CRQL and the action level. The results for this compound required qualification as undetected at the CRQL (i.e. 220 BJ --> 770 U and 270 BJ --> 920 U, respectively).

Bis(2-Ethylhexyl) Phthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 8015) at a concentration which was less than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in sample IP/SW1/008/012/1/1 at a concentration which was less than the CRQL and the action level. The result for this compound required qualification as undetected at the CRQL (i.e. 780 BJ --> 850 U).

Bis(2-Ethylhexyl) Phthalate was detected in the Semi-volatile laboratory method blank (SBLK01 for Project 8037) at a concentration which was greater than the Contract Required Quantitation Limit (CRQL). This compound is considered a common laboratory contaminant; the action level determined for this compound was 10 times the highest concentration found in any of the associated blanks. This compound was detected in samples IP/SW1/031/036/1/1 and IP/SW1/035/036/1/1 at concentrations which were greater than the CRQL but less than the action level. The results for this compound required qualification as undetected at the concentration originally reported (i.e. 610 B --> 610 U and 750 B --> 750 U, respectively).

The Pesticide/PCB laboratory method blanks did not contain any of the analytes from the Target Compound List (TCL).

2.6 Surrogate Recoveries

The surrogate recoveries from the Volatile, Semi-volatile and Pesticide/PCB analyses of these samples were within the Contract Required Recovery ranges specified in the Statement of Work and the Quality Assurance Project Plan.

2.7 Matrix Spike/Matrix Spike Duplicate

Three primary samples (IP/SW1/06L/018/1/2, IP/SW1/001/036/1/2, and IP/SW1/039/018/1/1) were used for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. Sample IP/SW1/001/036/1/2 was not designated for MS/MDS analysis by the sampler. It was determined by the Laboratory that medium level MS/MSD analysis was necessary for the Semi-volatile and Pesticide/PCB fractions.

The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries from the Volatile, Semi-volatile and Pesticide/PCB analyses of spiked aliquots of sample IP/SW1/06M/023/1/2 were within the Contract Required Recovery ranges specified in the Statement of Work and the Quality Assurance Project Plan. It should be noted that the sampler did not collect a primary sample for this sample point. The Laboratory took an aliquot of sample from the jars designated for MS/MSD use and analyzed that as the unspiked sample.

Sample IP/SW1/001/036/1/2 required Medium Level extraction and analysis of the Semi-volatile and Pesticide/PCB fractions. Consequently, the Laboratory used this sample for QC purposes. The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries from the Semi-volatile and Pesticide/PCB analyses of spiked aliquots of this sample were within the Contract Required Recovery ranges specified in the Statement of Work and the Quality Assurance Project Plan.

The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries from the Volatile analysis of spiked aliquots of sample IP/SW1/039/018/1/1 were within the Contract Required Recovery ranges specified in the Statement of Work and the Quality Assurance Project Plan.

The MS/MSD recoveries of 4-Nitrophenol and gamma-BHC (Lindane) for IP/SW1/039/018/1/1 were greater than the Contract Required Recovery range (CRR) specified on the Form III for the analysis of the Semi-volatile and Pesticide/PCB Matrix Spike/Matrix Spike Duplicate (MS/MSD). The non-detected results for these compounds in the unspiked sample did not require qualification.

The Percent Relative Standard Deviation (%RSD) of Acetone was greater than 75% for the Matrix Spike (MS), the Matrix Spike Duplicate (MSD) and the unspiked sample. The positive result for this compound in the unspiked sample IP/SW1/039/018/1/1 required qualification as an estimated value.

2.8 Field Duplicates

Two (2) field duplicate samples IP/SW1/06L/018/1/D and IP/SW1/011/006/1/D were collected and analyzed with this set of samples. Region I guidelines specify that the Relative Percent Difference (RPD) for each compound detected in soil must be less than 50%.

The Percent Differences (%D) of Toluene, Chlorobenzene and Acetone were greater than 50% for the Volatile analysis of the Field Duplicate samples IP/SW1/06L/018/1/2 and IP/SW1/06L/018/1/D. The positive results for these compounds in these samples required qualification as estimated values.

The Percent Differences (%D) of Indeno(1,2,3-cd)Pyrene, Phenanthrene, Benzo(g,h,i)Perylene, Fluoranthene, Anthracene, Acenaphthylene and Dibenz(a,h)Anthracene were greater than 50% for the Semi-volatile analysis of the Field Duplicate samples IP/SW1/06L/018/1/2 and IP/SW1/06L/018/1/D. The positive results for these compounds in these samples required qualification as estimated values. The non-detected result for Acenaphthylene in sample IP/SW1/06L/018/1/2 required qualification as an estimated quantitation limit.

The Percent Difference (%D) of Benzo(b)fluoranthene was greater than 50% for the Semi-volatile analysis of the Field Duplicate samples IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D. The positive results for this compound in these samples required qualification as estimated values.

The Percent Differences (%D) of Naphthalene, Pentachlorophenol, Phenanthrene, Di-n-Butylphthalate, Fluoranthene, Pyrene, Benzo(a)Anthracene, Chrysene and Benzo(a)Pyrene were greater than 50% for the Semi-volatile analysis of the Field Duplicate samples IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D. The positive results for these compounds in sample IP/SW1/011/006/1/D required qualification as estimated values. The non-detected results for these compounds in sample IP/SW1/011/006/1/1 required qualification as estimated quantitation limits.

The Percent Difference (%D) of 4,4'-DDE was greater than 50% for the Pesticide/PCB analysis of the Field Duplicate samples IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D. The positive result for this compound in sample IP/SW1/011/006/1/D required qualification as an estimated value. The non-detected result for this compound in sample IP/SW1/011/006/1/1 required qualification as an estimated quantitation limit.

2.9 Internal Standard Performance

Internal Standard Performance criteria were met for the Volatile and Semi-volatile analyses for all of the samples.

2.10 Pesticide Instrument Performance

The retention time of Endosulfan I fell outside the retention time window of 23.78 - 23.88 minutes in the INDA standard analyzed on July 17, 1990 at 10:20 on the confirmation (RTX-5) column. Examination of the chromatograms for sample IP/SW1/042/006/1/1 did not reveal the presence of this compound within the expanded window surrounding the expected retention time of the peak in question. The non-detected result for this compound in this sample did not require qualification.

2.11 Compound Identification

The USEPA Statement of Work and the Region I guidelines specify that certain criteria must be satisfied in order to positively identify a peak as a Target Compound. For the identification of Volatile and Semi-volatile target compounds, the criteria are:

1) the target compound peak in the sample chromatogram must elute within ±0.06 Relative Retention Time (RRT) units of the RRT of that compound in the daily calibration standard; and

2) the mass spectrum of the compound in the sample must correlate with the mass spectrum of that compound in a current laboratory-generated standard such that:

   - all ions present in the standard mass spectrum at a relative intensity greater than 10% must be present in the sample spectrum;
   - the relative intensities of these ions must agree within ±20% between the standard and sample spectra; and
   - ions greater than 10% in the sample spectrum but not present in the standard spectrum must be explained.

   If all of the above criteria could not be satisfied, but in the technical judgement of the mass spectral interpretation specialist the identification of the compound is correct, the Laboratory is instructed to report the compound.

The identification of Volatile and Semi-volatile target compounds had been checked for all samples. Where there were questions concerning the identification of compounds because one or more criteria did not appear to be satisfied, the data validator contacted the Laboratory. The compounds in question were checked by a Senior GC/MS analyst and/or a QC Chemist. In most cases, the compound identification was verified. In a few cases, it was determined that a compound had been identified incorrectly; consequently, the Laboratory submitted corrected results for the sample.

The USEPA Statement of Work and the Region I guidelines specify that certain criteria must be satisfied in order to positively identify a peak as a Target Compound. For the identification of Pesticide and PCB target compounds, the criteria are:

1) positive presence of a TCL must be confirmed by analysis on a dissimilar chromatographic column;

2) the retention times of reported compounds must fall within the calculated retention time windows for both of the chromatographic columns;

3) the retention times and relative peak height ratios of major component peaks for the multi-response pesticides and PCBs in the sample must be compared to those in the calibration standard; and

4) confirmation by GC/MS must be performed if the concentration of an individual pesticide was present in the final sample extract in excess of 10 nanograms per microliter (ng/ul).

The identification of Pesticide and PCB target compounds had been checked for all samples. Where there were questions concerning the identification of compounds because one or more criteria did not appear to be satisfied, the data validator contacted the Laboratory. The compounds in question were checked by a Senior GC analyst and/or a QC Chemist. In most cases, the compound identification was verified. In a few cases, it was determined that a compound had been identified incorrectly; consequently, the Laboratory submitted corrected results for the sample.

2.12 Compound Quantitation

It is standard practice by the Laboratory to not report target compounds at concentrations less than 10% of the CRQL.

Bis(2-Ethylhexyl) Phthalate was reported from the dilution analysis of the Semi-volatile extracts for samples IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D and IP/SW1/001/036/1/2. The concentration of this compound in the undiluted extracts exceeded the instrument linear/calibration range; the positive results for this compound in the undiluted samples required qualification as estimated values.

Toluene was reported from the Volatile dilution analysis for sample IP/SW1/039/018/1/1. The concentration of this compound in the undiluted sample exceeded the instrument linear/calibration range; the positive result for this compound in the undiluted sample required qualification as an estimated value.

The Pesticide/PCB extracts for samples IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D, IP/SW1/031/036/1/1, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 were analyzed diluted due to matrix interference in the undiluted extract. Sample results were reported from the analysis of the diluted extracts.

3.0 INORGANIC DATA

The data was evaluated based upon the following parameters:

* data completeness
  holding times
  calibration verification
  blanks
  ICP interference check sample
  matrix spike recoveries
  laboratory and field duplicates
* laboratory control sample
  furnace atomic absorption results
* serial dilution results
  detection limit results
* sample results.

* - All criteria were met for this parameter.

3.1 Data Completeness

The Laboratory produced twelve reports containing data from this task. It should be noted that while each data package is complete and contains all necessary information to perform data validation, the format of the data packages deviated somewhat (with regard to package order) from the format specified by the appropriate SOW.

3.2 Holding Times

Samples IP/SW1/17M/027/1/2, IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D and IP/SW1/06M/023/1/2 were analyzed past the required holding time for Mercury. The positive results for Mercury in these samples required qualification as estimated values.

Sample IP/SW1/001/036/1/2 and the equipment blank IP/SW1/EB30/000/2/2 were analyzed past the required holding time for Mercury. The non-detected results (those below the Instrument Detection Limit (IDL)) for Mercury in these samples required qualification as estimated detection limits.

These sample point locations were resampled and submitted to the Laboratory for Mercury analysis. However, the holding times for these replacement samples have also been exceeded.

3.3 Calibration Verification

The CRDL standard for ICP metals must be analyzed to ensure linearity at the Instrument Detection Limit (IDL) as described on page E-6 of the Inorganic Statement of Work (7/87 SOW). Positive results less than or equal to two times the Contract Required Detection Limit (2xCRDL) and non-detected results require qualification as estimated values and detection limits. An additional criteria for Lead (as well as Selenium, Arsenic and Thallium) is that sample concentrations reported from analysis by ICP must be at least five times the IDL as determined by ICP for that analyte. If the sample contains one of these analytes at a concentration which is less than five times the IDL, then the positive results require qualification as estimated values and the non-detected results require qualification as unusable values. In this case, the samples are to be analyzed by graphite furnace atomic absorption spectroscopy (GFAA).

The positive results for Lead in samples IP/SW1/17M/027/1/2, IP/SW1/001/036/1/2, IP/SW1/21R/027/1/2, IP/SW1/054/036/1/1 and IP/SW1/049/036/1/1 were less than five times the IDL and therefore, required qualification as estimated values. The non-detected results for Lead in samples IP/SW1/059/036/1/1, IP/SW1/057/006/1/1 and IP/SW1/038/036/1/1 required qualification as unusable values. These samples are being reanalyzed by GFAA and the results will be submitted at a later date.

The recoveries of Antimony, Cadmium and Zinc in one of the CRDL standards for ICP metals were not within ±20%. The positive results less than three times the Contract Required Detection Limit (3xCRDL) for Cadmium in samples IP/SW1/06L/018/1/2 and IP/SW1/06L/018/1/D required qualification as estimated values. The non-detected results for Cadmium in samples IP/SW1/17M/027/1/2, IP/SW1/21R/027/1/2 and the equipment blank IP/SW1/EB30/000/2/2 required qualification as estimated detection limits. The non-detected result for Antimony in samples IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D, IP/SW1/17M/027/1/2, IP/SW1/21R/027/1/2 and the equipment blank IP/SW1/EB30/000/2/2 required qualification as estimated detection limits. The positive results greater than three times the CRDL for Zinc in the samples did not require qualification. The non-detected result for Zinc in the equipment blank IP/SW1/EB30/000/2/2 required qualification as an estimated detection limit.

The recoveries of Cobalt, Nickel, Manganese and Zinc in one of the CRDL standards for ICP metals were not within ±20%. The non-detected results for Cobalt and Nickel in sample IP/SW1/001/036/1/2 required qualification as estimated detection limits. The positive results greater than three

times the CRDL for Manganese and Zinc in this sample did not require qualification.

The recoveries of Nickel and Zinc in one of the CRDL standards for ICP metals were not within ±20%. The non-detected result for Nickel in sample IP/SW1/06M/023/1/2 required qualification as an estimated detection limit. The positive result greater than three times the CRDL for Zinc in this sample did not require qualification.

The recoveries of Silver and Nickel in one of the CRDL standards for ICP metals were not within ±20%. The positive results less than three times the Contract Required Detection Limit (3xCRDL) for Silver in samples IP/SW1/059/036/1/1, IP/SW1/054/036/1/1, IP/SW1/011/006/1/1, IP/SW1/011/006/1/D, and IP/SW1/008/012/1/1 required qualification as estimated values. The non-detected results for Silver in samples IP/SW1/057/006/1/1, IP/SW1/049/036/1/1, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1 required qualification as estimated detection limits. The positive results less than three times the Contract Required Detection Limit (3xCRDL) for Nickel in samples IP/SW1/028/036/1/1, IP/SW1/038/036/1/1, IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D required qualification as estimated values. The non-detected results for Nickel in samples IP/SW1/059/036/1/1, IP/SW1/057/006/1/1, IP/SW1/054/036/1/1, IP/SW1/049/036/1/1 and IP/SW1/008/012/1/1 required qualification as estimated detection limits.

The recovery of Chromium in one of the CRDL standards for ICP metals was not within ±20%. The positive results less than three times the Contract Required Detection Limit (3xCRDL) for Chromium in samples IP/SW1/027/036/1/1 and IP/SW1/035/036/1/1 required qualification as estimated values. The positive results greater than three times the CRDL for Chromium in samples IP/SW1/031/036/1/1, IP/SW1/039/018/1/1, and IP/SW1/042/006/1/1 did not require qualification.

The percent recovery (%R) of Antimony in the analysis of the ICV standard from June 22, 1990 was outside of the acceptance window of 90%-110% but within the expanded window of 75%-125%. The non-detected result (less than the IDL) for this analyte in sample IP/SW1/06M/023/1/2 did not require qualification.

3.4 Blanks

In evaluating the contaminants in the laboratory preparation blanks (PB), the Initial Calibration Blanks (ICB), and the Continuing Calibration Blanks (CCB), the data validator determined the appropriate action levels

from the associated blank having the highest level of contamination and applied these action levels to all of the associated samples within the analytical sequence. In evaluating the contaminants in the equipment (field) blanks, the data validator applied the results from the blank using the split-spoon sampler to those samples collected with that sampling instrument. The data validator applied the results from the equipment blank using the hand auger to those samples collected with that sampling instrument. When the same contaminant was present in the equipment blank as in the preparation or analysis blanks, the highest level of contamination was used to determine the action level.

Please note that sample weights, volumes, dilution factors, units and percent solids have been taken into consideration when applying the appropriate blank action levels to the samples.

Various contaminants were determined to be present in the blanks analyzed with the equipment blank IP/SW1/EB30/000/2/2. The positive results for Aluminum, Barium, Calcium, Copper, Lead, Magnesium and Zinc in the equipment blank were less than the action levels. Consequently, these positive results required qualification as undetected at the concentrations originally reported. The positive result for Manganese in the equipment blank was greater than the action level and did not require qualification. Non-detected results for Cobalt and Vanadium in the equipment blank required qualification as estimated detection limits because these analytes were detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced.

Various contaminants were determined to be present in the blanks analyzed with the equipment blank IP/SW1/EB48/000/2/1. The positive results for Calcium, Silver, and Manganese in the equipment blank were less than the action levels. Consequently, these positive results required qualification as undetected at the concentrations originally reported.

Various contaminants were determined to be present in the blanks analyzed with samples IP/SW1/17M/027/1/2, IP/SW1/06L/018/1/2, IP/SW1/06L/018/1/D, IP/SW1/06M/023/1/2 and IP/SW1/001/036/1/2. The positive and non-detected results for Aluminum, Arsenic, Chromium, Iron, Manganese , Beryllium, Barium, Calcium, Copper, Magnesium and Zinc in these samples were not affected by the concentrations in the blanks. Consequently, these positive and non-detected results did not require qualification. Cobalt was detected in samples IP/SW1/17M/027/1/2, IP/SW1/06L/018/1/2 and

IP/SW1/06L/018/1/D at concentrations which were less than the respective action level. These positive results required qualification as estimated values because this analyte was detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. Vanadium was detected in samples IP/SW1/17M/027/1/2, IP/SW1/06L/018/1/2 and IP/SW1/06L/018/1/D at concentrations which were greater than the respective action level. These positive results did not require qualification even though this analyte was detected in the laboratory blanks at negative absorbances.

Various contaminants were determined to be present in the blanks analyzed with sample IP/SW1/21R/027/1/2. The positive and non-detected results for Aluminum, Iron, Calcium, Copper and Magnesium in this sample were not affected by the concentrations in the blanks. Consequently, these positive and non-detected results did not require qualification. The non-detected result for Cobalt in this sample required qualification as an estimated detection limit because this analyte was detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. Vanadium was detected in this sample at a concentration which was greater than the respective action level. This positive result did not require qualification even though this analyte was detected in the laboratory blanks at negative absorbances.

Various contaminants were determined to be present in the blanks analyzed with samples IP/SW1/059/036/1/1, IP/SW1/057/006/1/1, IP/SW1/049/036/1/1, IP/SW1/054/036/1/1, IP/SW1/011/006/1/1, IP/SW1/011/018/1/D, IP/SW1/008/012/1/1, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1. The non-detected results for Potassium in all of the samples except IP/SW1/028/036/1/1 required qualification as estimated detection limits because this analyte was detected in the laboratory blanks at negative absorbances thereby causing sample results which may have been negatively influenced. The positive result for Potassium in sample IP/SW1/028/036/1/1 required qualification as an estimated value. Aluminum, Iron, Calcium, Manganese, Barium, Beryllium, Copper, Silver and Zinc were detected in the blanks analyzed with these samples. The positive values less than the action levels were qualified as estimated detection limits at the concentrations originally reported. The positive and non-detected results for these analytes were not affected by the concentrations in the blanks. Consequently, these positive and non-detected results did not require qualification.

Various contaminants were determined to be present in the blanks analyzed with samples IP/SW1/031/036/1/1, IP/SW1/035/036/1/1, IP/SW1/039/018/1/1, IP/SW1/027/036/1/1 and IP/SW1/042/006/1/1. Beryllium, Selenium, Silver, Iron, Mercury, Barium, Calcium, Manganese, Magnesium, Vanadium and Zinc were detected in the blanks analyzed with these samples. The positive values less than the action levels were qualified as estimated detection limits at the concentrations originally reported. The positive and non-detected results for these analytes were not affected by the concentrations in the blanks. Consequently, these positive and non-detected results did not require qualification.

3.5 ICP Interference Check Sample

The concentrations of Calcium in samples IP/SW1/011/006/1/1 and IP/SW1/011/006/1/D were greater than 50% of the respective levels in the Interference Check Samples. These Calcium concentrations produced an interference with Magnesium. Consequently, the positive results for Magnesium in these samples required qualification as estimated values.

The concentrations of Iron in samples IP/SW1/011/006/1/1, IP/SW1/011/006/1/D and IP/SW1/008/012/1/1 were greater than 50% of the respective levels in the Interference Check Samples. These Iron concentrations produced an interference with Antimony. Consequently, the positive results for Antimony in these samples required qualification as undetected at the concentration originally reported.

3.6 Matrix Spike Recoveries

Two primary samples (IP/SW1/06M/023/1/2 and IP/SW1/039/018/1/1) were used for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis. There were several analytes which did not meet the Contract Required Recovery criteria as specified in the Statement of Work and the Quality Assurance Project Plan. The actions resulting from the assessment of the MS/MSD data apply to all of the samples for this task.

The Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) recoveries of Mercury were greater than 125%. The non-detected results for this analyte in the samples did not require qualification. The positive results for this analyte in the samples require qualification as estimated values.

The Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) recoveries of Silver, Zinc, Selenium and Arsenic were less than 75% but greater than 30%. The non-detected results for these analytes in the samples required qualification as estimated detection limits. The positive results for these analytes in the samples required qualification as estimated values.

The Matrix Spike (MS) and the Matrix Spike Duplicate (MSD) recoveries of Lead, Chromium, Copper and Manganese were less than 30%. The non-detected results for these analytes in the samples required qualification as unusable values. The positive results for these analytes in the samples required qualification as estimated values.

3.7 Laboratory and Field Duplicates

Two primary samples (IP/SW1/06M/023/1/2 and IP/SW1/039/018/1/1) were used for Laboratory Duplicate Sample analysis. There were two analytes which did not meet the Contract Required Recovery criteria as specified in the Statement of Work and the Quality Assurance Project Plan. The actions resulting from the assessment of the Laboratory Duplicate data apply to all of the samples for this task.

The ±35% RPD criteria was not achieved for Chromium and Lead for sample IP/SW1/06M/023/1/2. These analytes were present in the sample at concentrations greater than 5x the CRDL. All positive results for these analytes greater than the IDL in the samples required qualification as estimated values. It should be noted however, that these two analytes were observed to have less than 30% recovery in the MS/MSD analysis. The data validator gave priority to the actions resulting from the MS/MSD assessment rather than the actions resulting from the Laboratory Duplicate assessment because the MS/MSD actions were stricter.

Two primary samples (IP/SW1/06L/018/1/2 and IP/SW1/011/006/1/1) were collected in duplicate to be used as Field Duplicate samples. There was one analyte which did not meet the Contract Required Recovery criteria as specified in the Statement of Work and the Quality Assurance Project Plan. The actions resulting from the assessment of the Field Duplicate data apply to all of the samples for this task.

The ±50% RPD criteria was not achieved for Mercury for sample IP/SW1/06L/018/1/1. This analyte was present in the primary sample at a concentration greater than 5x the CRDL. All positive results for this analyte greater than the IDL in the samples required qualification as estimated values. It should be noted that this analyte was observed to have greater than 125% recovery in the MS/MSD analysis. The actions resulting from the assessment of the MS/MSD data were the same actions resulting from the Field Duplicate assessment.

3.8 Laboratory Control Sample

The solid Laboratory Control Sample (LCS) was prepared and analyzed for the target analytes in each batch of samples. The recovery of each analyte was within the EPA control limits for the solid Laboratory Control Sample.

3.9 Furnace Atomic Absorption Results

Arsenic analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for sample IP/SW1/EB30/000/2/2. The post digestion spike recovery did not meet the 85%-115% criteria. The positive result for this analyte required qualification as an estimated value.

Samples IP/SW1/06L/018/1/2 and IP/SW1/06L/018/1/D were analyzed for Arsenic by the Method of Standard Addition. The Correlation coefficients were less than 0.995 for these samples. The positive results for this analyte in these samples required qualification as estimated values.
Sample IP/SW1/06M/023/1/2 was analyzed for Selenium by the Method of Standard Addition. The Correlation coefficient was less than 0.995 for this sample. The positive result for this analyte in this sample required qualification as an estimated value.

Selenium analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for samples IP/SW1/059/036/1/1, IP/SW1/057/006/1/1, IP/SW1/049/036/1/1 and IP/SW1/038/036/1/1. The post digestion spike recoveries did not meet the 85%-115% criteria. The non-detected results for this analyte required qualification as estimated detection limits.

Thallium analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for samples IP/SW1/059/036/1/1, IP/SW1/057/006/1/1, IP/SW1/049/036/1/1, IP/SW1/054/036/1/1, IP/SW1/011/006/1/1, IP/SW1/011/006/1/D, IP/SW1/008/012/1/1, IP/SW1/028/036/1/1 and IP/SW1/038/036/1/1. The post digestion spike recoveries did not meet the 85%-115% criteria. The non-detected results for this analyte required qualification as estimated detection limits.

Selenium analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for samples IP/SW1/039/018/1/1 and IP/SW1/042/006/1/1. The post digestion spike recoveries did not meet the 85%-115% criteria. The positive results for this analyte required qualification as estimated values.

Thallium analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for samples IP/SW1/039/018/1/1 and IP/SW1/042/006/1/1. The post digestion spike recoveries did not meet the 85%-115% criteria. The non-detected results for this analyte required qualification as estimated detection limits.

Thallium analysis by Graphite Furnace Atomic Absorption (GFAA) was performed for sample IP/SW1/EB48/000/2/1. The post digestion spike recovery did not meet the 85%-115% criteria. The non-detected result for this analyte required qualification as an estimated detection limit.

3.10 Serial Dilution Results

Serial dilutions were performed on samples which had a minimum of one ICP analyte with a concentration greater than 50 times the Instrument Detection Limit (IDL). In all cases, the results from the dilution analysis were within 15% of the results from the undiluted analysis.

3.11 Detection Limit Results

Sample results for Lead by ICP analysis were not at least five times the Instrument Detection Limit for all samples. Consequently, some of the samples required qualification of the Lead results which were reported. These qualifications were described earlier in this narrative in the Calibration Verification section.

3.12 Sample Results

All sample results were within the linear range for ICP analysis and within the calibration range for Graphite Furnace Atomic Absorption analysis and Mercury analysis.

TABLE C-1

CLP Sample Point Identifications for Task SW-1

The following sample points were collected using a split-spoon sampler:

Golder ID	Enseco-East ID
IP/SW1/17M/027/1/2	7720-0008-SA
IP/SW1/EB30/000/2/2	7720-0013-SA
IP/SW1/06L/018/1/2	7720-0016-SA
IP/SW1/06L/018/1/D	7720-0017-SA
IP/SW1/06M/023/1/2	7720-0021-SA
IP/SW1/06M/023/1/M	7720-0021-SD
IP/SW1/06M/023/1/N	7720-0021-MS
IP/SW1/001/036/1/2	7752-0001-SA

(Medium level MS/MSD analysis performed for Semi-volatiles and Pesticide/PCBs for 7752-0001.

The following sample points were collected using a hand auger:

Golder ID	Enseco-East ID
IP/SW1/21R/027/1/2	7807-0001-SA
TRIP BLANK	7807-0002-SA
IP/SW1/059/036/1/1	7918-0001-SA
TRIP BLANK	7918-0002-SA
IP/SW1/057/006/1/1	7936-0001-SA
IP/SW1/054/036/1/1	7953-0001-SA
IP/SW1/049/036/1/1	7953-0002-SA
IP/SW1/011/006/1/1	8002-0001-SA
IP/SW1/011/006/1/D	8002-0002-SA
IP/SW1/008/012/1/1	8015-0001-SA
IP/SW1/031/036/1/1	8037-0001-SA
IP/SW1/035/036/1/1	8037-0002-SA
IP/SW1/039/018/1/1	8082-0001-SA
IP/SW1/039/018/1/M	8082-0001-MS
IP/SW1/039/018/1/N	8082-0001-SD
IP/SW1/EB48/000/2/1	8082-0002-SA
IP/SW1/027/036/1/2	8082-0003-SA
TRIP BLANK	8082-0004-SA
IP/SW1/028/036/1/1	8109-0001-SA
IP/SW1/038/036/1/1	8109-0002-SA

TABLE C-2

Data Qualifiers

A - The data is acceptable (quantitative).

J - The associated numerical value was an estimated quantity (qualitative).

R - Reject data due to quality control criteria. The data were unusable (compound may or may not be present). Resampling and/or re-analysis was necessary for verification.

U - The compound was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

UJ - The compound was analyzed for but was not detected. The sample quantitation limit was an estimated quantity.