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PRE-DESIGN INVESTIGATION
TASK S-1
EXTENT OF HAZARDOUS SUBSTANCES IN SOILS
INTERIM FINAL REPORT

INDUSTRI-PLEX SITE
WOBURN, MASSACHUSETTS

Volume 1 of 2

Prepared for:

Industri-Plex Site Remedial Trust
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St. Louis, Missouri 63167

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September 1990 Project No.: 893-6255

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Golder Associates Inc.
CONSULTING ENGINEERS

September 18, 1990 Project No. 893-6255

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

Attn: Joseph DeCola, Remedial Project Manager

RE: INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION
TASK S-1 DETERMINE EXTENT OF HAZARDOUS SUBSTANCES IN SOILS, INTERIM FINAL REPORT

Gentlemen:

On behalf of the Industri-Plex Site Remedial Trust, we are submitting the attached Hazardous Sustances in Soils Interim Final Report for the Industri-Plex Site in Woburn, Massachusetts. This report is being submitted in accordance with the Pre-Design Investigation Work Plan (PDI) Task S-1 reporting requirements (PDI Sections 3.2.3.5 and 3.8.1.1.1, p. 37 and 126).

Based on the Task S-1 results presented in this report, 34 supplementary soil borings are needed to define the limits of areas that have soils above Consent Decree action levels. This fieldwork is tentatively scheduled to begin in early October, contingent upon the Agencies approval of the supplementary boring locations proposed in this report.

Please contact us if you have any questions.

Very truly yours,

GOLDER ASSOCIATES INC.

Kenneth R. Morey for

James W. Voss
Principal

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TABLE OF CONTENTS

Volume 1

SECTION	PAGE
Cover Letter	i
Table of Contents	ii
1.0 INTRODUCTION	1
1.1 Purpose	1
1.2 Consent Decree Objectives	2
1.3 Relationship to Other Pre-Design Investigation Tasks	3
2.0 SUMMARY OF REMEDIAL INVESTIGATION RESULTS	5
2.1 Phase I Remedial Investigation	5
2.2 Phase II Remedial Investigation	6
3.0 DATA NEEDS AND RATIONALE	9
3.1 Data Needs	9
3.2 Rationale	10
3.2.1 Soil Data Need Number 1	11
3.2.2 Soil Data Need Number 2a	11
3.2.3 Soil Data Need Number 2b	12
3.2.4 Soil Data Need Number 2c	13
3.2.5 Soil Data Need Number 2d	14
3.2.6 Soil Data Need Number 3	14
3.2.7 Soil Data Need Number 4	15
3.2.8 Rationale at Each Boring Location	16
4.0 METHOD OF INVESTIGATION	19
4.1 Field Methods	19
4.2 Laboratory Methods	20
5.0 RESULTS AND DISCUSSION	22
5.1 Arsenic, Lead, Chromium, and Hide Residue	22
5.2 Other Hazardous Substances	25
6.0 DATA QUALITY OBJECTIVES	28
7.0 SUMMARY	30
8.0 SUPPLEMENTAL BOREHOLE PROGRAM	31
9.0 REFERENCES	32

TABLE OF CONTENTS (continued)

Volume 1

LIST OF TABLES

In Order Following Page 32

Table 1 - Task S-1, Summary of Soil Boring Rationale
Table 2 - Analytical Methods, Container Type, Preservation, and Holding Times for Soil Samples
Table 3 - Summary of Arsenic, Lead, Chromium, and Hide Residue Analyses
Table 4 - Summary of Background Arsenic, Lead, and Chromium Analyses
Table 5 - Raw Arsenic, Lead, and Chromium Data in Ascending Rank Order
Table 6 - Statistical Data for Arsenic, Lead, and Chromium Background Samples
Table 7 - Summary of Target Analyte List Results
Table 8 - Summary of Target Compound List Results
Table 9 - Summary of Background Concentrations
Table 10 - Summary of Task S-1 Analyses

LIST OF FIGURES

Figure 1 - Site Location Map
Figure 2 - Site Boundary
Figure 3 - Soil Data Need No. 1
Figure 4 - Soil Data Need No. 2a
Figure 5 - Soil Data Need No. 2b
Figure 6 - Soil Data Need No. 2c
Figure 7 - Soil Data Need No. 2d
Figure 8 - Soil Data Need No. 2e
Figure 9 - Soil Data Need No. 3
Figure 10 - Sample Locations and Summary of Arsenic, Lead, Chromium, and Hide Residue Analyses
Figure 11 - Locations for Background Soil Sampling
Figure 12A - Cumulative Frequency Plot of Log Arsenic Values
Figure 12B - Cumulative Frequency Plot of Log Lead Values
Figure 12C - Cumulative Frequency Plot of Log Chromium Values
Figure 13A - Cumulative Frequency Plot of Arsenic Background Samples
Figure 13B - Cumulative Frequency Plot of Lead Background Samples
Figure 13C - Cumulative Frequency Plot of Chromium Background Samples
Figure 14 - Summary of Target Compound List/Target Analyte List Analyses
Figure 15 - Hazardous Substances Below Action Levels and Above Background

TABLE OF CONTENTS (continued)

Volume 2

LIST OF APPENDICES

Appendix A - Remedial Investigation Chemical Data for Soil
Appendix B - Technical Procedures
Appendix C - Field Change Orders
Appendix D - Borehole Logs
Appendix E - Chain of Custody Forms
Appendix F - Data Assessment Forms
Appendix G - CLP DATA Narrative

1.0 INTRODUCTION

1.1 Purpose

This report is submitted in fulfillment of the Interim Final Report deliverable in accordance with the Industri-Plex Site Pre-Design Investigation Work Plan (PDWP, Golder Associates Inc., 1989) Task S-1, Extent of Hazardous Substances in Soil, as specified in Sections 3.2.3.5 and 3.8.1.1.1 of the PDWP (pages 37 and 126). The purpose of this Interim Final Report is to present the results of the Task S-1 data collection activities, including areas where hide residue is present, where arsenic, lead, and chromium are found at or above Consent Decree action levels, and where Hazardous Substances are found above background levels. Areas which will receive Institutional Controls only are also identified in this report. The methods for developing background concentrations for Hazardous Substances are also presented.

Section 1 of this report presents background information for Task S-1 including the Consent Decree objectives. Section 2 summarizes the findings of the Phase I and Phase II Remedial Investigations (RI). Section 3 lists data needs identified in the PDWP based upon a review of the Consent Decree objectives and the data collected during the RI. Section 4 presents additional details of the field and laboratory methods, and the results are discussed in Section 5. Section 6 compares the data collected during the PDI to the Data Quality Objectives outlined in the PDWP. A summary is presented in Section 7, and a proposed supplemental borehole program is described in Section 8. Appendices to this report contain supporting documentation.

1.2 Consent Decree Objectives

The Consent Decree (USEPA, 1989a) entered between the Industri-Plex Site Remedial Trust (ISRT), the U.S. Environmental Protection Agency (USEPA), and the Massachusetts Department of Environmental Protection (MDEP) on April 24, 1989, incorporates the Remedial Design/Action Plan (RDAP, USEPA, 1989b) by reference and addresses Remedial Design/Remedial Action for the Industri-Plex Site in Woburn, Massachusetts. The location of the site is shown on Figures 1 and 2. The RDAP requires execution of a Pre-Design Investigation (PDI). The PDWP outlines the tasks to be performed such that sufficient data are available to support design and implementation of the remedial actions specified in the Consent Decree.

The Record of Decision (ROD, USEPA, 1986), the Consent Decree, and the RDAP present the details of the remedial actions. These documents should be consulted for the details of each remedy. In general, the remedy for Hazardous Substances in soil, as stated on page 1 of the RDAP, includes the following:

> "The remedial action for soils, sediments and sludges contaminated with Hazardous Substances, other than those emitting odors, shall include site grading, capping with a permeable soil cover, excavation, dredging, and/or consolidation for all areas containing Hazardous Substances at concentrations above established action levels, and development of Institutional Controls for all areas containing hazardous substances at greater than background levels to ensure the long-term effectiveness of the remedial action..."

The objectives of PDI Task S-1 are listed below and are designed to satisfy the requirements of the Future Actions as defined in the ROD, and Section E.2 of the RDAP. These

objectives/investigations are listed as stated in the RDAP and include the following:

> "An investigation to define, by soil borings and test pits, the horizontal and vertical extent of hazardous substances within the developed areas and, to the extent existing data is inadequate, all other areas of the Site. The objectives of the study shall be to accurately define those portions of the Site containing Hazardous Substances at or above the established action levels and those portions containing Hazardous Substances below the action levels but above background levels. Data from these studies will be used to determine the appropriate remedial actions consistent with available options (set forth in Section B of this Appendix) for areas of the property currently used as part of or necessary to the business operating on the property as well as undeveloped areas. In taking samples for this investigation, Settlers will not be required to drill through or otherwise penetrate existing structures or pavement. Included in the Site investigation shall be additional soil borings and test pits on the Boston Edison Right of Way Number 9 which extends to Commerce Way. (The general area of concern relative to this study is outlined on Attachment G.) This area is included within the definition of the Site (and is approximately outlined on Attachment E as "Area A")."

1.3 Relationship to Other Pre-Design Investigation Tasks

The results of Task S-1 must be used in conjunction with several other PDI tasks during the Remedial Design. These include:

1. Task S-2, Hide Pile Stability, where the permeable cover joins the East Hide Pile,

2. Task S-3, Sources of Cap Materials, which will identify sources of cap materials,

3. Task GW-2, Hydrogeologic Character-ization, if the subsurface leaching pit (part of the groundwater treatment system) is located in an area where Hazardous Substances occur at or above Consent Decree action levels, and

4. Task SW-1, Extent of Hazardous Substances in Wetlands and Surface Water Sediments, where the permeable cover is adjacent to streams and wetlands.

The results of Task S-1 will be interfaced with the results of the above four tasks during Remedial Design.

2.0 SUMMARY OF REMEDIAL INVESTIGATION RESULTS

The extent of Hazardous Substances in soil was evaluated during the Phase I and Phase II Remedial Investigations (RI) (Stauffer, 1983, 1984). These documents should be consulted for specific details and findings. Phase I and Phase II data summary tables for Hazardous Substances in soil are included in Appendix A of this report. The general findings of the Phase I and Phase II RI are summarized below.

2.1 Phase I Remedial Investigation

One of the objectives of the Phase I RI was to screen the site to locate waste deposits and assess the impact of any deposits on the groundwater. To locate waste deposits, a total of 175 test pits and soil borings were installed and 461 soil samples were collected. Of these samples, 199 were selected for heavy metals analysis based upon visual observation of the sample and 151 were screened for volatile organic compounds (VOCs). A conductivity survey was also performed to screen the site for "unnatural deposits" in order to assess their extent. The conductivity survey was calibrated using known areas of waste deposits to identify the signals associated with wastes.

The Phase I RI concluded that of the 244 acres evaluated, 32 acres east of Commerce Way contained no waste deposits, 120 acres include shallow bedrock or buildings, and 92 acres have some contamination. Within these 92 acres, the following conclusions were made in the RI:

1. lead and arsenic were found to be the most widespread contaminants in the soils and 22 acres had lead and/or arsenic levels greater than 1000 ppm;

2. chromium was generally found in areas containing hide residues and around the chromium lagoons, exceeding 1000 ppm on about 5 acres;

3. barium, copper, and zinc were widespread throughout the site at levels greater than 100 ppm;

4. mercury was found in a few samples above 100 ppm;

5. hide residues were found on about 8 acres; and

6. a few areas were found to contain volatile organic compounds, but the identity and concentrations were not determined.

The Phase I RI also concluded that waste materials and metal contaminated soil could be visually distinguished from natural soils.

2.2 Phase II Remedial Investigation

Phase II RI data for soil were collected to define the waste boundaries and evaluate remedial alternatives. The Phase II RI collected additional data on soil and waste deposits on 100 acres west of Commerce Way. About 350 on-site test pits were excavated to a depth of 8 to 10 feet and the presence of heavy metal waste deposits and hide residue were visually evaluated. The presence of waste deposits was also visually evaluated in about 70 test pits and 5 borings installed in off-site areas to the south and southwest of the site up to the Halls Brook Holding Area.

Visual classification of waste deposits was evaluated by analyzing 20 randomly selected samples which were visually classified as uncontaminated. These 20 samples were analyzed in the laboratory for arsenic, lead, chromium, mercury, copper, and zinc. The laboratory results correlated very well with the visual classification in that 19 of the 20 samples contained metals at concentrations less than 100 ppm.

Also during the Phase II RI, about 425 additional soil borings were drilled on a grid of 5 borings per acre on 85 accessible acres of the site west of Commerce Way. Soil samples were collected at three depths, where feasible, and analyzed for arsenic, lead, chromium, mercury, copper, and zinc. The depths which were sampled varied across the site in accordance with the thickness of the waste deposits. Natural soils beneath the waste deposits were also analyzed to assess if wastes had leached into these materials. In addition, 10 borings were sampled at three depths for Priority Pollutant + 20 analysis at locations where the largest concentrations of VOCs were detected during the Phase I RI screening for VOCs.

The Phase II RI confirmed that waste deposits can be visually distinguished from natural soils and made the following conclusions:

1. zinc is the most widespread metal found on the site,

2. mercury was found at only 8 locations greater than 100 ppm,

3. chromium is associated with hide residues and is greater than 1000 ppm on 18 acres,

4. lead and/or arsenic, which usually occur together on the site, are above 1000 ppm on 29 acres and above 100 ppm on 57 acres of the site,

5. RCRA EP Tox testing on composite samples of waste indicate that metals do not leach from the wastes at concentrations greater than those specified in 40 CFR 261.24 as indicative of a hazardous material,

6. hide residues occur in four distinct areas with a total area of 13 acres, and in smaller areas around the site including the Boston Edison Right of Way Number 9, and

7. organic compounds including benzene (typically 20 ppm), diethylene glycol (typically 500 ppm), and sporadic occurrences of other organic compounds at low ppm concentrations were found in site soils, but no waste deposits of benzene, toluene, or other organic compounds (other than hide residue) were identified.

3.0 DATA NEEDS AND RATIONALE

3.1 Data Needs

The results and conclusions presented in the Phase II RI Report were used to identify data gaps and a rationale for addressing those data gaps. The following data needs were presented in the PDWP based upon the Consent Decree objectives and the review of the RI:

Soil Data Need No. 1
The extent of Hazardous Substances at or above action levels in developed parts of the site.

Soil Data Need No. 2
The extent of Hazardous Substances at or above action levels in undeveloped parts of the site to the extent that existing data are inadequate including:

(a) arsenic, lead, chromium, and hide residue in undeveloped parts of the site where there are data gaps in the RI grid,

(b) arsenic, lead, chromium, and hide residue in undeveloped parts of the site where data currently exist for only one depth interval,

(c) arsenic, lead, chromium, and hide residue in off site areas where action levels are exceeded at the site boundary, and

(d) arsenic, lead, chromium, and hide residue in Boston Edison Right of Way Number 9.

Soil Data Need No. 3
Hazardous Substances other than arsenic, lead, chromium, and hide residue in all parts of the site.

Soil Data Need No. 4
The extent of Hazardous Substances greater than background levels but less than action levels.

The decision process for addressing each of these individual data needs is discussed below.

3.2 Rationale

PDI Task S-1 is intended to supplement the existing data base for Hazardous Substances in site soils which was developed during the Phase I and Phase II RI. Most of the soil data needs identified in Section 3.1 address the Hazardous Substances for which action levels have been established (i.e. arsenic, lead, and chromium). Data needs for other Hazardous Substances (i.e. Target Compound List/Target Analyte List substances) were addressed in areas suspected to contain these substances in parallel with the investigation for arsenic, lead, chromium, and hide residue. Decision diagrams are presented in Figures 3 through 9 which show the rationale for the selection of sample locations to address the data needs identified in Section 3.1. For each of the data needs, the following considerations apply:

1. Areas covered by buildings, roadways, and pavement were identified. As stated in the Consent Decree, these areas do not require sampling or a permeable cap. These areas are shown on Figure 10. Institutional Controls will address the potential for future penetration of these structures.

2. A sample from the East-Central Hide Pile was submitted for Priority Pollutant + 20 analysis during the RI. Therefore, the presence of Hazardous Substances in a representative sample of hide residue has been addressed. Areas where hide materials were found during the RI were delineated. These areas will be capped due to the presence of hides and hence, do not require further sampling.

3. Although the RDAP calls for a program of soil borings and test pits, soil borings were used exclusively. Soil borings allowed better vertical control, minimized damage to developed areas of the site, minimized the potential for release of odors, and avoided physical entry of a confined space (test pit).

3.2.1 Soil Data Need Number 1

Soil Data Need Number 1, the extent of Hazardous Substances at or above action levels in developed parts of the site, was addressed according to the following rationale. Most developed areas of the site are covered with roadways, parking lots and buildings and hence, in accordance with the Consent Decree, these structures will act as a protective barrier to prevent direct physical contact. Institutional Controls will be established for potential future penetration of these protective barriers. Areas of open ground in developed areas (landscaped areas and gravel lots, for example) required sampling and analysis to determine if Hazardous Substances are present. Sample locations were selected according to the rationale presented in Figure 3. The 37 borings used to address this data need are listed in Table 1 and shown on Figure 10.

3.2.2 Soil Data Need Number 2a

Soil Data Need Number 2a, the extent of Hazardous Substances at or above action levels in undeveloped parts of the site where there are gaps in the RI grid, was addressed according to the following rationale. Considering the cost of the cap versus the cost of sampling and analysis, it is advantageous to sample these areas and assess if soils are at or above action levels. However, for a single missing grid location, if data exist for numerous adjacent grid locations at several depths, all of which are below action levels, these existing data were considered sufficient to characterize that single missing grid location as below action levels. Sample locations were selected according to the rationale presented in Figure 4. In addition, samples were collected in areas east of Commerce Way which were not sampled during the RI to assess if waste deposits were undetected in those areas.

The 36 borings listed in Table 1 and shown on Figure 10 were used to address this data need.

3.2.3 Soil Data Need Number 2b

Soil Data Need Number 2b, the extent of Hazardous Substances at or above action levels in undeveloped parts of the site where data currently exist for only one depth interval, was addressed according to the following rationale.

1. Any grid locations in undeveloped parts of the site where soils were identified to be at or above action levels within 30 inches of the ground surface require a permeable cover.

2. For a given RI grid location, if data indicate that soils in the upper foot are not at or above action levels, but soils at 30-36 inches depth are at or above action levels and no data are available between these intervals, the intermediate depth soils most likely exceed action levels. No further sampling was planned for these areas and they will be capped.

3. At a given RI grid location, data for at least two depth intervals (6-12 inches and 30-36 inches in nearly all cases) were considered sufficient evidence that soils throughout the upper 30 inches are not at or above action levels. No further sampling was planned for these grid locations and they do not require a cap.

4. In all other areas, samples were collected for analysis.

The rationale presented in Figure 5 was then used to identify sample locations to address where additional data on the vertical distribution of Hazardous Substances was needed. Borehole locations were placed central to areas where multiple adjacent grid locations were analyzed for only one depth. These borings were used to extrapolate data at other depths to the adjacent grid locations. Geologic cross sections from the RI were reviewed to assure that no new borings were placed in an area where

insufficient depth coverage during the RI is due to the presence of shallow bedrock or the presence of only a thin layer of fill materials. The 16 boring locations listed on Table 1 and shown on Figure 10 were used to address this data need.

3.2.4 Soil Data Need Number 2c

Soil Data Need Number 2c, the extent of Hazardous Substances at or above action levels in off site areas where action levels are exceeded at the site boundary, was addressed according to the following rationale as outlined in Figure 6. These areas were addressed using a phased approach with a line of primary borehole locations adjacent to the site boundary to assess concentrations of arsenic, lead, chromium, and the potential presence of hide residue. If hide residue or these metals are present at or above Consent Decree action levels, then secondary soil borings will be sampled to determine the off-site extent. Such areas were identified and the physiography of the adjacent area was determined based upon aerial photos and site reconnaissance. Sample locations were identified at the nearest open ground (i.e. not covered by buildings, roads, or parking lots). Primary sample locations were selected to bound the area at or above action levels as closely as practicable. In addition, a profile of secondary boring locations was selected for sampling if the results from primary locations indicate that soils are still at or above action levels. If the areas containing soils at or above action levels are not bounded by the profile of secondary borings, additional locations will be selected for approval by USEPA and the Commonwealth prior to any additional sampling. The borings used to address this data need are listed in Table 1 and are shown on Figure 10.

3.2.5 Soil Data Need Number 2d

Soil Data Need Number 2d, the extent of Hazardous Substances at or above action levels in Boston Edison Right of Way Number 9, was addressed according to the following rationale as presented in Figure 7. Hazardous Substances may have been placed in these areas as discreet piles rather than widespread fill areas. Any areas of hide residue would have been detected during the extensive test pit program in the right of way during the RI. Therefore, the area needed to be chemically tested for the presence of other Hazardous Substances. Test pit logs were reviewed to identify any areas where brightly colored soils associated with high metal concentrations were noted during the RI. Two lines of borings on approximately 250 foot centers were sampled to screen the right of way for soils containing metals at or above Consent Decree action levels. The 19 borings are listed on Table 1 and shown on Figure 10.

3.2.6 Soil Data Need Number 3

Soil Data Need Number 3 was to assess the presence of Hazardous Substances other than arsenic, lead, chromium, and hide residue in all areas of the site and was addressed according to the following rationale as shown in Figure 8. VOCs are one of the most common and mobile groups of contaminants, and often can be used as indicators of areas where other Hazardous Substances occur. Large areas of the site were screened for the presence of VOCs during the Phase I RI, and the locations which contained the largest concentrations of VOCs during screening were sampled for full Priority Pollutant + 20 analysis during the Phase II RI. Nineteen new locations were sampled during PDI Task S-1 to supplement the data collected during the Phase II RI. These borings are located in areas suspected to contain or to have handled Hazardous Substances such as the Chromium Lagoons, potential source areas for the benzene

and toluene plumes in groundwater, and areas showing the presence of VOCs during the Phase I RI screening that were not sampled for Priority Pollutant analysis during the Phase II RI. A single boring was sampled at each of these areas to screen for Hazardous Substances. A composite sample from 0 to 36 inches depth was submitted for analysis. The compositing procedure did not involve rigorous mixing and quartering to avoid loss of VOCs. These borings have been coordinated with borings for Soil Data Needs 1, 2a, 2b, 2c, and 2d to the extent possible. The borings are listed on Table 1 and shown on Figure 10. According to the PDWP, if any areas are found to contain Hazardous Substances above background levels, the need for additional evaluations and/or investigations is to be assessed and submitted to USEPA and the Commonwealth for review and approval.

3.2.7 Soil Data Need Number 4

Soil Data Need Number 4, the extent of Hazardous Substances greater than background levels but below action levels, was addressed according to the following rationale as presented in Figure 9. Action levels have been established for only arsenic, lead, and chromium. The background concentration of these metals, as well as any other Hazardous Substances potentially detected pursuant to Soil Data Need 3, must be established such that areas above background levels can be delineated and Institutional Controls developed for these areas. The data collected pursuant to Soil Data Needs 1, 2a, 2b, 2c, 2d, and 3 was used to delineate these areas once background levels have been established.

Background levels must be established through either a literature review or off-site sampling. To utilize literature data, they must be considered representative of the geologic materials of interest and representative of the Woburn area. Sufficient raw or statistical data must be available to calculate the concentration corresponding to the mean plus two standard deviations (which corresponds to the 95 percent confidence interval for the range in background). Most geologic data (especially metal concentration distributions) are lognormally distributed, such that the logarithm of the data are used for statistical evaluations of normally distributed populations of data. If the literature data were found to be inadequate, sample locations were to be proposed for review and approval by USEPA and the Commonwealth prior to sampling and analysis. These locations were to be imported fill in the Woburn Mall area, peat and glacial outwash materials from the development north of the site, and at least one other area considered to be representative of the industrial/commercial areas of Woburn.

3.2.8 Rationale at Each Boring Location

For arsenic, lead, and chromium analyses to address Soil Data Needs 1 through 2d, at least three and up to five samples were submitted to the analytical laboratory from each boring at the following depth intervals:

1. 0-6 inches,
2. 6-18 inches,
3. 18-36 inches, and
4. up to two discreet intervals within 30 inches of the ground surface displaying colors which were associated with high concentrations of these metals during the RI.

In this way, the near surface soils receive extra emphasis and the entire depth of interest is addressed. By sampling discreet colored layers, the potential for diluting intervals at or above action levels with intervals below action levels is greatly reduced. Unless some indication of contamination such as stains (other than those associated with metals during the RI) were noted, samples for full TCL/TAL analysis were composited for the entire 36 inch interval. The compositing procedure did not involve rigorous mixing and quartering to avoid potential loss of VOCs. An oversize split spoon was used at these locations so that there would be enough sample available in case the USEPA wanted a split sample.

Analyses for the extent of arsenic, lead, and chromium in soil were performed according to Level III analyses using SW-846 methods. This level of analysis is considered sufficient to support the cap design. Target Compound List/Target Analyte List (TCL/TAL) samples were analyzed according to Level IV Contract Lab Program Routine Analytical Services (CLP-RAS). The CLP data report packages were validated independent of the analytical laboratory in accordance with EPA Region I guidance documents for data validation (USEPA, 1988, 1989c). Level IV analysis with data validation is considered necessary to provide defensible data regarding the potential presence of these Hazardous Substances and to document background concentrations of Hazardous Substances other than arsenic, lead, and chromium.

Hide residue was identified visually at the borehole site and with a binocular microscope for select samples (Level I analysis). A ninhydrin solution, which turns purple in the presence of amino acids, was considered for use in the field to detect hides. However, upon further literature

review, it was determined that ninhydrin would be too sensitive for field screening. It is used in forensic work to visualize fingerprints by reacting with amino acids in the oils of fingerprints. Therefore, it was determined that naturally occurring amino acids in the soil would probably cause an unacceptably high rate of false positive results. Although many other possible methods for screening hides were considered (conductivity and/or pH of pore water, x-ray fluorescence, organic content), none were considered to be easily implemented at the drilling site or to be definitive tests for hide materials.

4.0 METHOD OF INVESTIGATION

4.1 Field Methods

Samples for analysis of arsenic, lead, chromium, TCL/TAL, and hide residue analysis were collected in accordance with procedures given in the PDWP and the Field Sampling Plan (FSP, contained in Volume 2 of the PDWP). The procedures are included as Appendix B to this report. Several modifications to the PDWP were made in the field with concurrence of ISRT as well as NUS Corporation (NUS) personnel, USEPA's oversight contractor. These changes are documented on the Field Change Order forms included in Appendix C.

A small drill rig, set up to drive a split spoon sampler, was used to collect most soil samples. A portable tripod system was also used to drive a split spoon sampler and a stainless steel hand auger was also used at several locations. These samplers were decontaminated between each sampling interval within a borehole in accordance with the procedure "Sampling Surface Soils for Chemical Analysis" (given in Appendix B). These procedures include an Alconox wash, tap water rinse, distilled water rinse, trace metal analyses-grade nitric acid rinse, and a final distilled water rinse for boreholes where only arsenic, lead, chromium, and hide residue analysis samples were collected. At boreholes where TCL/TAL samples were collected, the above procedure was supplemented with a final HPLC-grade methanol rinse (which was allowed to air dry) and a distilled water rinse. The sample was transferred from the sampler to the sample jars using a disposable plastic spoon for arsenic, lead, and chromium analysis samples, and a stainless steel spoon for TCL/TAL samples. The stainless steel spoon was decontaminated in the same manner as the sampler. Any remaining sample was placed in air-tight plastic bags and labelled with a waterproof marker for hide

residue analysis. Sample containers, sample preservation, and holding times are given in Table 2.

The recovered soils were described and documented on borehole logs which are given in Appendix D. Chain of Custody forms (given in Appendix E) were used to document each sample submitted to the laboratory for analysis. Chain of custody procedures outlined in the Quality Assurance Project Plan (QAPjP, contained in Volume 2 of the PDWP) were followed.

Select samples were split with NUS. Additional field QA/QC procedures included collection of trip blank samples (for VOCs only), equipment rinsate blanks, field duplicates, and matrix spike/matrix spike duplicate (MS/MSD) samples. Decontamination solvents were not stored in the same site trailer with the sample bottles in order to reduce the possibility of TCL VOCs being detected in trip blank samples, which would result in high data validation action levels for these compounds.

Sample locations were documented in the field with a wooden stake labelled with the PDI task number and borehole number. The sample locations were surveyed by SAIC Engineering Inc. of Lakeville, Massachusetts. The surveyed sample locations are shown on Figure 10.

4.2 Laboratory Methods

Samples were analyzed in accordance with the methods listed in Table 2. These include SW-846 methods for arsenic, lead, and chromium; CLP-RAS for TCL/TAL analysis, and microscopy for identification of hide residue. Laboratory QA/QC procedures are discussed in the QAPjP and include use of standard operating procedures for sample analysis, data

reduction, and reporting, and specifications for instrument calibration, method blanks, and laboratory control samples.

Microscopy for identification of hide residue was performed in accordance with "Procedure for Laboratory Identification of Hide Residue in Soil" (Appendix B). This procedure involved inspection of both moist and oven-dried samples for the presence of hair fibers, which were used as indicators of the presence of hide residue. It was determined that hair fibers could be distinguished from fine roots much more reliably in the oven-dried samples. Therefore, the moist sample microscopy results were not used. Notations of the presence of hide residue on the field borehole log were also used to identify their extent, but field notations on borehole logs could be rejected based upon the results of microscopy. Over five percent of the samples were checked by a second microscopist, including all samples in which the first microscopist identified hair fibers. If the duplicate result differed from the primary result, the sample was examined by a third microscopist whose result was considered to be conclusive.

5.0 RESULTS AND DISCUSSION

5.1 Arsenic, Lead, Chromium, and Hide Residue

The results of arsenic, lead, chromium, and hide residue analysis are presented in Table 3 and summarized along with the results from the RI on Figure 10. Hide residue was detected in several locations where arsenic, lead, and chromium were below Consent Decree action levels, especially in the developed areas at the intersection of Commerce Way and Atlantic Avenue. Site areas shown on Figure 10 that contain Hazardous Substances above Consent Decree action levels incorporate the preliminary limits of the permeable and impermeable caps. These limits will be refined based upon constructability considerations during Remedial Design. Specific cap limits for developed areas of the site may include alternative remedies defined in the Consent Decree, such as asphalt paving or excavation/consolidation.

Although the Phase II RI indicated that large concentrations of chromium were associated with the presence of hide residue, this was not always found to be true (see Table 3). The highest concentrations of arsenic, lead, and chromium detected during the RI and PDI were 30,800 ppm, 89,109 ppm, and 145,455 ppm, respectively.

It was noted during hide residue microscopy that crystals formed in some of the soils during oven drying. A hydrogen sulfide odor was noted when a drop of hydrochloric acid was placed on these crystals.

Arsenic, lead, chromium, or hide residue were detected above Consent Decree action levels in several of the primary off-site boreholes, as well as in several on-site sample locations which were intended to bound areas containing these materials above Consent Decree action

levels. Therefore, additional secondary on- and off-site boreholes are required to determine the extent of soils containing arsenic, lead, and chromium above Consent Decree action levels. The proposed secondary borings are shown on Figure 10 and further discussed in Section 7.

Split spoon refusal occurred within 36 inches of the ground surface at 44 PDI borings. Less than 30 inches of soil was recovered at an additional 33 locations due to incomplete sample recovery. However, all but 19 of these 33 locations contained arsenic, lead, or chromium above Consent Decree action levels, or hide residue. Of these 19 borings, only 3 contained less than 22 inches of recovery. Therefore, sufficient data were obtained to assess the extent of Hazardous Substances to support Remedial Design.

As stated on page 34 of the PDWP, background levels must be established through either a literature review or off site sampling. A computerized literature search of the GEOREF database was conducted using the key words "Woburn, Massachusetts, geochemistry, surficial deposits, and Middlesex County" in various combinations. No useful data were identified during this search. Textbooks on geochemical exploration for mineral deposits were also consulted to identify any relevant background data. No region-specific data were identified, and only average concentrations and concentration ranges were identified using this approach. Therefore, background sample locations were proposed in PDWP Addendum No. 5, which was approved by USEPA in a letter from Marilyn Wade to Warren Smull dated July 17, 1990 (see Appendix C). These samples were collected in June 1990 at the end of the field sampling program.

Borings 143 through 146 (see Table 3) were used to determine the range in background concentrations of arsenic, lead, and chromium in the site area. These samples represent glacial till, imported fill, glacial outwash sand, and peat, respectively. The locations of these samples are shown on Figure 11. Although four distinct materials are represented, each of which might have its own unique concentration distribution, the combined set was used to define background concentrations. This is because the background concentrations will be used to apply Institutional Controls to properties in areas where Hazardous Substances exceed background concentrations irrespective of the geologic materials underlying each property.

Because background concentrations are commonly lognormally distributed, the PDWP specified that background would be defined as the average plus two standard deviations of the log-transformed background values, such that the background concentration would include 95 percent of the observed values. However, the data are not lognormally distributed (see Figures 12a, 12b, and 12c), and the value of the average plus two standard deviations is greater than the largest value in the data set. Therefore, background was determined in accordance with a method provided in Levinson (1974) which is one of the methods used in mineral exploration programs to determine background concentrations of metals in rock, soil, and stream sediments. The method uses a cumulative frequency diagram to identify the concentration containing 95 percent of the observed values. The background sample analytical results are presented in Table 4 and are arranged in increasing concentration in Table 5. Relevant statistical data are presented in Tables 6a, 6b, and 6c, and the frequency distributions are presented in Figures 13a, 13b, and 13c. The resulting

background concentrations for arsenic, lead, and chromium are 25 ppm, 85 ppm, and 23 ppm, respectively. Areas where the measured concentrations of arsenic, lead, and chromium are below Consent Decree action levels but at or above background concentrations are shown on Figure 15. Most of the sample results west of Commerce Way are above background. Arsenic, lead, and chromium are below background in most of the area east of Commerce Way, but chromium and lead do occur above background at five locations.

The results successfully addressed Soil Data Needs 1, 2b, 2d, and 4. Because results for the proposed secondary on- and off-site borings are not yet available, Soil Data Need Numbers 2a and 2c have not yet been satisfied.

5.2 Other Hazardous Substances

The results of TCL/TAL analysis are presented in Tables 7 and 8, and are summarized on Figure 14. Borings 144 through 146 are background samples which represent imported fill, glacial outwash sand, and peat, respectively. A TCL/TAL background sample was not collected from glacial till because only one on-site TCL/TAL sample (out of a total of 19) was collected from glacial till. Probability plots made for each of the TAL metals, similar to those in Figures 12a-c, define a curved distribution rather than a straight line. Therefore, they are not lognormally distributed and the frequency plots of these metals would produce artificially low background concentrations because only three data values are available for each TAL metal (i.e., there would only be two class intervals with class interval midpoints at the average of the lowest/middle, and middle/highest values). Therefore, the highest of the three values reported by the laboratory was used to define the background concentration. A similar approach was used

for TCL analytes. The detection limit was used to define background when all three values were below the detection limit. Background concentrations of Hazardous Substances are summarized in Table 9.

A variety of TAL metals were detected above background concentrations over much of the site west of Commerce Way. The most widespread (beside arsenic, lead, and chromium) in the PDI samples include zinc, copper, barium, cobalt, mercury, vanadium, and iron at concentrations up to 3590 ppm, 1180 ppm, 249 ppm, 116 ppm, 185 ppm, 130 ppm, and 193,000 ppm, respectively. Manganese, aluminum, magnesium, selenium, silver, cadmium, calcium, antimony, beryllium, sodium, thallium, and nickel were detected above background in less than 6 PDI TAL samples. Zinc, copper, barium, mercury, barium, silver, thallium, selenium, nickel, and cadmium were detected above background concentrations at over 50 sample locations during the Phase I and Phase II RI at maximum concentrations of 144 ppm, 330 ppm, 29 ppm, 167 ppm, 5612 ppm, 1900 ppm, 5612 ppm, 116 ppm, 258 ppm, and 500 ppm, respectively. Cobalt, vanadium, and iron were not analyzed during the RI.

Several TCL organic compounds were detected above background concentrations in the PDI samples. TCL VOCs include acetone at 5 separate locations (34, 35, 41, 49, and 66) along Atlantic Avenue at concentrations of 16 to 940 ppb, and toluene and 2-butanone just south of the East Hide Pile (location 66) at concentrations of 17 and 40 ppb, respectively. During the RI, benzene was detected in 9 of the 10 samples at concentrations up to 275,000 ppb; toluene was detected at three sample locations at concentrations up to 13,000 ppb; and methylene chloride was detected at one location at a concentration of 2800 ppb.

TCL semivolatile organic compounds detected in PDI TCL samples include a suite of polynuclear aromatic hydrocarbons (PAHs) at PDI locations 5, 13, 19, 25, 29, 55, and 76. These samples are located along New Boston Street, the Chromium Lagoons, adjacent to the former glue manufacturing facility, and in a red soil pile just south of the West Hide Pile. This suite of PAHs typically includes fluoranthene, pyrene, phenanthrene, benzo(a)anthracene, chrysene, and benzo(b)fluoranthene at concentrations up to 9800 ppb, 11,000 ppb, 3600 ppb, 5600 ppb, 5200 ppb, and 8000 ppb, respectively. The suite of PAHs detected in PDI TCL samples also includes anthracene and benzo(a)pyrene at fewer locations at concentrations up to 1200 and 4800 ppb, respectively. A slightly different suite of PAHs were also detected at RI locations 1, 2, 3, 5, 6, and 7. The PAH compounds most frequently detected during the RI include naphthalene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, and chrysene at concentrations up to 12,000 ppm, 47,000 ppm, 41,000 ppm, 33,000 ppm, 6,000 ppm, and 6,000 ppm, respectively. Phenanthrene, 4-chlorophenol, 4-methylphenol, and nitrobenzene were each detected at only one location during the RI.

Aroclor 1254 (a PCB compound) and 4,4'-DDE (a pesticide) were detected at one sample location along New Boston Street (location 2) at concentrations of 3000 and 28 ppb, respectively. Another pesticide, 4,4'-DDT, was also detected nearby (location 6) at a concentration of 29 ppb.

The results successfully address Soil Data Need No. 3.

6.0 DATA QUALITY OBJECTIVES

Duplicate samples, matrix spikes, matrix spike duplicates, field blanks, and trip blanks were used to assess data quality. QA/QC data for these samples were compared to data acceptance criteria presented in the QAPjP. The total number of analyses performed during this task are summarized and compared to those given in the PDWP in Table 10.

The PDI arsenic, lead, and chromium data were found to be precise, accurate, representative, comparable, and complete (see Appendix F). Over 87 percent of the lab duplicates, 88 percent of the field duplicates, and 87 percent matrix spike/matrix spike duplicate relative percent differences (MS/MSD RPDs) were within the control limits. Over 87 percent of the MS/MSD percent recoveries were within the control limits. The data are considered representative of site conditions and comparable to data collected during the RI because approved sampling and analysis procedures were used, and 88 percent of the field duplicates were within control limits. Inspection of Table 10 indicates that results were obtained for over 85 percent of the samples specified in the PDWP. Field duplicate, equipment blank, MS, and MSD samples were collected at a rate of at least one per twenty samples. Arsenic, lead, and chromium were not detected in any of the method or equipment blanks. All samples were analyzed within the specified holding times given in Table 2. No TCL VOCs were detected in either of the trip blank samples.

The CLP Data Narrative, given in Appendix G, addresses the quality of the TCL/TAL data. Although some of the TCL results for duplicate samples varied by more than 50 percent, the same groups of compounds were detected in both samples of a duplicate pair on the same order-of-magnitude

concentration for each sample of the duplicate pairs. This is also true for most TAL metals in the duplicate pairs, but there are a few exceptions. Much of the data are qualified as estimated (J), but they provide useful information on the types of other Hazardous Substances which occur at the site and an approximation of their concentrations. The holding time for the VOC samples at PDI location 2 were exceeded. Therefore, the primary, duplicate, MS, and MSD VOC samples collected at location 2 were not analyzed. Replacement samples were collected during August 1990. The results for the replacement samples are not yet available, but will be included in the supplemental report described in Section 8 below.

7.0 SUMMARY

The objectives of Task S-1 was to define areas of the site containing Hazardous Substances at or above Consent Decree action levels, as well as areas above background levels but below action levels. This objective was addressed by reviewing the data generated during the RI, identifying data needs, and executing a sampling and analysis program to address those data needs. Soil Data Needs 1, 2b, 2d, 3 and 4 have been satisfied by the Task S-1 results, but additional samples are needed to completely satisfy Soil Data Needs 2a and 2c. The currently defined extent of soils containing Hazardous Substances above Consent Decree action levels, and above background but below action levels, are given on Figures 10 and 15.

8.0 SUPPLEMENTAL BOREHOLE PROGRAM

In order to satisfy Soil Data Needs 2a and 2c, additional soil samples need to be collected at 34 locations (shown with a solid triangle on Figure 10). These samples are located in both on- and off-site areas. The on-site samples are located north of the East and West Hide Piles, north of the East-Central Hide Pile, south of the South Hide Pile, and along the Boston Edison Right of Way No. 9. The off-site samples are located along the western edge of the site, and along the MBTA railway. Upon review and approval of these locations by USEPA and MDEP, they will be sampled and analyzed for arsenic, lead, chromium, and hide residue in accordance with the PDWP.

Field work is tentatively scheduled for early October 1990, such that a supplementary Task S-1 report could be submitted in late November 1990. This supplementary report will present the results of the additional sampling and a final map defining the extent of soils containing Hazardous Substances at or above Consent Decree action levels.

C:REPORTS:S1TXTD

9.0 REFERENCES

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TABLE 1

Task S-1, Summary of Soil Boring Rationale

Soil Data Need	No. Holes	Boring Numbers (a)
1	37	2-15, 19-23, 32-49
2a	16 20	25, 51-53, 55B, 57-58, 60-69, 71-81, 101-109
2b	16	12, 16-18, 26-31, 50, 54-56, 59, 70
2c	32	1, 110-121, 122-140 (b)
2d	22	17, 18, 24, 82-100
3	19	2, 4-6, 8, 13, 19, 25, 29, 31, 34, 35, 41, 49, 50, 55, 63, 66, 76
4	--	143-146

Notes: (a) See Figure 10 for locations.

(b) Selected borings from 122-140 to be sampled only if metals are at or above action levels in borings 110-121.

TABLE 2

Analytical Methods, Container Type, Preservation, and Holding Times for Soil Samples

Measurement Parameter	Method Reference	Container Type	Preservations	Holding Times
Arsenic, Total	EPA-7060	P,G	$4^{o}C$	180 days
Lead, Total	EPA-6010	P,G	$4^{o}C$	180 days
Chromium, Total	EPA-6010	P,G	$4^{o}C$	180 days
Volatile Organics - TCL	EPA-CLP	Amber G	$4^{o}C$	14 days
Base-Neutral/Acid Extractables - TCL	EPA-CLP	Amber G	$4^{o}C$	7 days (a)
Pesticides/PCB's - TCL	EPA-CLP	Amber G	$4^{o}C$	7 days (a)
Metals - TAL	EPA-CLP	P,G	$4^{o}C$	180 days (b)

(a) 7 days for extraction, 40 days thereafter for analysis
(b) 28 days for mercury.

TCL = Target Compound List, see CLP Statement of Work
TAL = Target Analyte List, see CLP Statement of Work
P = Polyethylene
G = Glass

TABLE 2 (continued)

Analytical Methods, Container Type, Preservation, and Holding Times for Soil Samples

Measurement Parameter	Method Reference	Container Type	Preservations	Holding Times
Volatile Organics - TCL	EPA-CLP	Amber G	$4^{o}C$	14 days
Base-Neutral/Acid Extractables - TCL	EPA-CLP	Amber G	$4^{o}C$	7 days(a)
Pesitcides/PCB's - TCL	EPA-CLP	Amber G	$4^{o}C$	7 days(a)
Metals - TAL(22)	EPA-CLP	P,G	HNO_3, pH<2 $4^{o}C$	180 days(b)
Arsenic, Total	EPA-206.2	P,G	HNO_3, pH<2 $4^{o}C$	180 days
Lead, Total	EPA-239.2	P,G	HNO_3, pH<2 $4^{o}C$	180 days
Chromium, Total	EPA-200.7	P,G	HNO_3, pH<2 $4^{o}C$	180 days

(a) 7 days for extraction, 40 days thereafter for analysis
(b) 28 days for mercury.

NOTE: Sample preservation is performed by the sampler immediately upon sample collection.

TABLE 3

Summary of Arsenic, Lead, Chromium,
and Hide Residue Analyses

TABLE 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM
AND HIDE RESIDUE ANALYSES

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

IP/S-1/001/006/1/2/1

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

The third through fifth characters (S-1) 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 ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/EB1/000/2/1/1	000	900403	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB2/000/2/1/1	000	900404	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB3/000/2/1/1	000	900404	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB4/000/2/1/1	000	900404	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB5/000/2/1/1	000	900405	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB6/000/2/1/1	000	900405	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB7/000/2/1/1	000	900406	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB8/000/2/1/1	000	900406	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB9/000/2/1/1	000	900406	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB10/000/2/1/1	000	900407	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB11/000/2/1/1	000	900407	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB12/000/2/1/1	000	900408	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB13/000/2/1/1	000	900408	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB14/000/2/1/1	000	900409	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB15/000/2/1/1	000	900409	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB16/000/2/1/1	000	900411	ND	U	0.0050	ND	U	0.0050	ND	U	0.010	NA		NA
IP/S-1/EB40/000/2/1/1	000	900529	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/S-1/EB58/000/2/1/1	000	900613	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/S-1/EB59/000/2/1/1	000	900613	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA
IP/S-1/EB60/000/2/1/1	000	900614	ND	U	0.0050	ND	U	0.050	ND	U	0.010	NA		NA

NOTES: * - Field 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 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/001/006/1/1/1	006	900406	35.5	A	6.5	289	A	6.5	39.9	A	1.3	24.	0.10	N
IP/S-1/001/018/1/1/1	018	900406	52.1	A	5.3	156	A	5.3	9.0	A	1.1	6.3	0.10	N
IP/S-1/001/030/1/1/1	030	900406	23.2	A	3.3	6.9	A	6.6	7.5	A	1.3	24.	0.10	N
IP/S-1/002/006/1/1/1	006	900613	23.8	A	2.6	355	A	5.2	19.5	A	1.0	5.1	0.10	N
IP/S-1/002/018/1/1/1	018	900613	72.5	A	5.7	165	A	5.7	14.6	A	1.1	12.	0.10	N
IP/S-1/002/036/1/1/1	036	900613	9.4	A	0.58	54.6	A	5.7	16.3	A	1.1	13.	0.10	N
IP/S-1/003/006/1/1/1	006	900613	6.9	A	0.58	47.6	A	5.8	19.7	A	1.2	14.	0.10	N
IP/S-1/004/006/1/1/1	006	900613	49.6	A	10.7	453	A	5.4	17.4	A	1.1	6.9	0.10	N
IP/S-1/004/018/1/1/1	018	900613	102	A	11.9	687	A	6.0	9.3	J	1.2	16.	0.10	N
IP/S-1/004/018/1/D/1*	018	900613	104	A	11.8	475	A	5.9	17.2	J	1.2	16.	0.10	N
IP/S-1/004/027/1/1/1	027	900613	183	A	11.7	585	A	5.8	6.1	A	1.2	15.	0.10	NS
IP/S-1/005/006/1/1/1	006	900613	35.2	A	3.4	126	A	6.7	17.4	A	1.3	26.	0.10	N
IP/S-1/005/018/1/1/1	018	900613	233	A	29.9	705	A	6.0	16.9	A	1.2	16.	0.10	N
IP/S-1/005/030/1/1/1	030	900613	215	A	27.4	951	A	5.4	13.3	A	1.1	8.6	0.10	N
IP/S-1/006/006/1/1/1	006	900417	40.1	A	5.5	246	A	5.5	9.9	A	1.1	9.4	0.10	N
IP/S-1/006/018/1/1/1	018	900417	74.4	A	12.6	486	A	12.6	6.2	A	2.5	21.	0.10	N
IP/S-1/006/026/1/1/1	026	900417	114	A	12.3	611	A	12.3	11.5	A	2.5	18.	0.10	N
IP/S-1/007/006/1/1/1	006	900406	9.7	A	2.9	253	A	11.5	125	A	2.3	13.	0.10	N
IP/S-1/007/018/1/1/1	018	900406	12.3	A	1.1	63.9	A	5.7	26.0	A	1.1	12.	0.10	N
IP/S-1/007/029/1/1/1	029	900406	6.4	A	0.57	202	A	5.7	10.0	A	1.1	12.	0.10	N
IP/S-1/008/006/1/1/1	006	900417	12.7	A	2.7	1150	A	5.3	50.1	A	1.1	5.7	0.10	N
IP/S-1/008/018/1/1/1	018	900417	42.8	A	5.4	12900	A	10.9	12.2	A	2.2	8.1	0.10	N
IP/S-1/008/027/1/1/1	027	900417	268	A	31.0	1650	A	12.4	9.5	A	2.5	19.	0.10	N
IP/S-1/009/006/1/1/1	006	900407	11.4	A	1.2	42.0	A	6.0	29.5	A	1.2	17.	0.10	N
IP/S-1/009/018/1/1/1	018	900407	3.4	J	0.54	20.7	A	5.4	35.1	A	1.1	7.4	0.10	N
IP/S-1/009/018/1/D/1*	018	900407	5.0	J	0.54	25.4	A	5.4	32.5	A	1.1	7.4	0.10	N
IP/S-1/009/021/1/1/1	021	900407	5.1	A	0.57	11.5	A	5.7	24.4	A	1.1	12.	0.10	N
IP/S-1/010/006/1/1/1	006	900406	831	A	281	11000	A	5.6	195	A	1.1	11.	0.10	N
IP/S-1/010/018/1/1/1	018	900406	877	A	126.00	13900	A	12.6	290	A	2.5	21.	0.10	N
IP/S-1/010/024/1/1/1	024	900406	8.6	A	1.1	216.00	A	5.5	10.7	A	1.1	9.1	0.10	N

NOTES: * - Field 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 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/011/008/1/1/1	008	900406	171	A	11.2	37.7	A	5.6	7.6	A	1.1	11.	0.10	N
IP/S-1/011/010/1/1/1	010	900406	44.9	A	5.4	823	A	5.4	49.4	A	1.1	8.1	0.10	N
IP/S-1/011/013/1/1/1	013	900406	137	A	11.7	3330	A	11.7	13.9	A	2.3	14.	0.10	N
IP/S-1/011/013/1/D/1*	013	900406	165	A	58.9	3000	A	11.8	12.3	A	2.4	15.	0.10	N
IP/S-1/011/015/1/1/1	015	900406	154	A	12.9	290	A	12.9	5.8	A	2.6	22.	0.10	N
IP/S-1/011/020/1/1/1	020	900406	80.8	A	12.7	442	A	6.3	2.9	A	1.3	21.	0.10	N
IP/S-1/012/006/1/1/1	006	900407	4.1	A	0.55	8.8	A	5.5	19.4	A	1.1	9.6	0.10	N
IP/S-1/013/006/1/1/1	006	900417	7.5	A	1.1	37.4	A	5.6	17.6	A	1.1	11.	0.10	N
IP/S-1/013/018/1/1/1	018	900417	16.4	A	3.1	112	A	6.2	14.3	A	1.2	19.	0.10	N
IP/S-1/013/025/1/1/1	025	900417	10.4	A	1.3	45.0	A	6.3	12.1	A	1.3	21.	0.10	N
IP/S-1/014/006/1/1/1	006	900407	88.0	A	5.7	413	A	5.7	25.5	A	1.1	12.	0.10	N
IP/S-1/014/018/1/1/1	018	900407	128	A	11.7	171	A	5.8	11.0	A	1.2	14.	0.10	N
IP/S-1/014/026/1/1/1	026	900407	1150	A	65.8	6470	A	13.2	10.2	A	2.6	24.	0.10	NS
IP/S-1/015/006/1/1/1	006	900406	45.7	A	5.4	108	A	5.4	12.5	A	1.1	7.1	0.10	N
IP/S-1/015/018/1/1/1	018	900406	21.2	A	2.9	90.9	A	5.8	6.0	A	1.2	13.	0.10	N
IP/S-1/015/036/1/1/1	036	900406	18.3	A	3.2	332	A	6.3	8.6	A	1.3	21.	0.10	N
IP/S-1/016/006/1/1/1	006	900406	8.9	A	0.53	52.9	A	5.3	6.7	A	1.1	5.9	0.10	N
IP/S-1/016/018/1/1/1	018	900406	2.9	A	0.55	ND	U	5.5	4.7	A	1.1	9.6	0.10	N
IP/S-1/016/024/1/1/1	024	900406	5.2	A	0.58	ND	U	5.8	5.1	A	1.2	14.	0.10	N
IP/S-1/016/024/1/D/1*	024	900406	3.1	A	1.2	ND	U	5.9	5.6	A	1.2	15.	0.10	N
IP/S-1/017/006/1/1/1	006	900406	11.3	A	2.9	32.5	A	5.9	24.2	A	1.2	15.	0.10	N
IP/S-1/017/018/1/1/1	018	900406	3.2	A	0.57	ND	U	5.7	4.5	A	1.1	12.	0.10	N
IP/S-1/017/026/1/1/1	026	900406	3.6	A	0.54	ND	U	5.4	5.2	A	1.1	7.7	0.10	N
IP/S-1/018/006/1/1/1	006	900406	5.0	A	0.56	25.3	A	5.6	12.2	A	1.1	11.	0.10	N
IP/S-1/018/018/1/1/1	018	900406	3.2	A	1.1	16.6	A	5.3	8.3	A	1.1	6.4	0.10	N
IP/S-1/018/026/1/1/1	026	900406	6.4	A	1.1	51.6	A	5.5	10.5	A	1.1	8.6	0.10	N
IP/S-1/019/006/1/1/1	006	900417	13.9	A	3.0	60.0	A	6.0	16.3	A	1.2	16.	0.10	N
IP/S-1/019/018/1/1/1	018	900417	25.8	A	5.6	15.6	A	5.6	11.9	A	1.1	11.	0.10	N
IP/S-1/019/018/1/D/1*	018	900417	28.2	A	5.6	25.1	A	5.6	12.4	A	1.1	11.	0.10	N
IP/S-1/019/032/1/1/1	032	900417	1110	A	118	1100	A	5.9	27.3	A	1.2	15.	0.10	N
IP/S-1/020/006/1/1/1	006	900406	7.4	A	0.60	115	A	6.0	26.8	A	1.2	16.	0.10	N

NOTES: * - Field Duplicate Sample
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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 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/020/018/1/1/1	018	900406	11.0	A	1.2	124	A	5.8	13.4	A	1.2	14.	0.10	N
IP/S-1/020/028/1/1/1	028	900406	10.3	A	1.2	210	A	6.0	9.6	A	1.2	17.	0.10	N
IP/S-1/020/030/1/1/1	030	900406	130	A	11.9	1390	A	6.0	7.8	A	1.2	16.	0.10	N
IP/S-1/021/006/1/1/1	006	900613	9.0	A	0.57	130	A	5.7	18.1	A	1.1	13.	0.10	N
IP/S-1/021/018/1/1/1	018	900613	70.6	A	10.5	253	A	5.3	19.4	A	1.1	5.1	0.10	N
IP/S-1/021/018/1/D/1*	018	900613	118	A	10.6	267	A	5.3	15.9	A	1.1	6.1	0.10	N
IP/S-1/021/030/1/1/1	030	900613	64.5	A	11.0	409	A	5.5	35.3	A	1.1	9.5	0.10	NS
IP/S-1/022/006/1/1/1	006	900613	136	A	12.5	336	A	6.3	24.7	A	1.3	20.	0.10	N
IP/S-1/022/018/1/1/1	018	900613	179	A	12.5	347	A	6.3	118	A	1.3	20.	0.10	N
IP/S-1/022/036/1/1/1	036	900613	89.2	A	11.5	298	A	5.8	22.6	A	1.2	13.	0.10	N
IP/S-1/023/006/1/1/1	006	900417	256	A	27.6	646	A	5.5	76.6	A	1.1	9.4	0.10	N
IP/S-1/023/018/1/1/1	018	900417	1670	A	144	2830	A	7.2	64.9	A	1.4	31.	0.10	N
IP/S-1/023/022/1/1/1	022	900417	3460	A	316	1720	A	6.3	74.6	A	1.3	21.	0.10	Y
IP/S-1/024/006/1/1/1	006	900406	372	A	66.8	629	A	6.7	28.8	A	1.3	25.	0.10	N
IP/S-1/024/018/1/1/1	018	900406	18500	A	3450	18900	A	13.8	19.6	A	2.8	27.	0.10	N
IP/S-1/025/006/1/1/1	006	900417	168	A	32.0	413	A	6.4	541	A	1.3	22.	0.10	NS
IP/S-1/025/018/1/1/1	018	900417	47.0	A	6.0	197	A	6.0	265	A	1.2	17.	0.10	NS
IP/S-1/025/020/1/1/1	020	900417	37.0	A	6.2	292	A	6.2	256	A	1.2	20.	0.10	N
IP/S-1/026/004/1/1/1	004	900405	179	A	29.7	194	A	5.9	2090	A	1.2	16.	0.10	N
IP/S-1/027/006/1/1/1	006	900405	23.8	A	3.1	60.1	A	6.3	887	A	1.3	20.	0.10	N
IP/S-1/027/018/1/1/1	018	900405	6.4	A	1.1	9.7	A	5.6	12.4	A	1.1	11.	0.10	N
IP/S-1/027/022/1/1/1	022	900405	1.2	A	0.54	ND	U	5.4	9.0	A	1.1	7.7	0.10	N
IP/S-1/028/006/1/1/1	006	900407	8.3	A	0.54	29.8	A	5.4	184	A	1.1	6.9	0.10	N
IP/S-1/028/018/1/1/1	018	900407	2.6	A	0.53	ND	U	5.3	6.3	A	1.1	6.5	0.10	N
IP/S-1/028/019/1/1/1	019	900407	2.3	A	0.57	ND	U	5.7	5.8	A	1.1	12.	0.10	N
IP/S-1/029/006/1/1/1	006	900416	235	A	31.0	4180	A	6.2	186	A	1.2	19.	0.10	N
IP/S-1/029/018/1/1/1	018	900416	399	A	61.0	1160	A	6.1	2180	A	1.2	18.	0.10	Y
IP/S-1/029/025/1/1/1	025	900416	143	A	14.0	798	A	7.0	1020	A	1.4	29.	0.10	N
IP/S-1/029/035/1/1/1	035	900416	329	A	55.7	949	A	5.6	17.7	A	1.1	10.	0.10	NS
IP/S-1/030/006/1/1/1	006	900404	90.0	A	12.1	204	A	6.1	464	A	1.2	18.	0.10	N

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Hide Residue Detected.....
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TABLE 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/030/018/1/1/1	018	900404	15.2	A	2.8	18.8	A	5.5	93.7	A	1.1	9.2	0.10	N
IP/S-1/030/027/1/1/1	027	900404	3.2	A	0.55	ND	U	5.5	7.7	A	1.1	9.3	0.10	N
IP/S-1/031/006/1/1/1	006	900416	13.3	A	2.7	21.8	A	5.4	48.4	A	1.1	7.8	0.10	N
IP/S-1/031/018/1/1/1	018	900416	9.9	A	1.1	25.7	A	5.6	29.4	A	1.1	11.	0.10	N
IP/S-1/031/025/1/1/1	025	900416	3.1	A	0.55	7.0	A	5.5	20.3	A	1.1	8.4	0.10	N
IP/S-1/032/006/1/1/1	006	900404	43.0	A	5.9	82.4	A	5.9	235	A	1.2	16.	0.10	N
IP/S-1/032/011/1/1/1	011	900404	88.8	A	11.5	120	A	5.7	275	A	1.1	13.	0.10	N
IP/S-1/033/006/1/1/1	006	900404	7.6	A	0.61	121	A	6.1	111	A	1.2	18.	0.10	N
IP/S-1/033/018/1/1/1	018	900404	10.3	A	1.1	28.2	A	5.4	50.8	A	1.1	7.8	0.10	N
IP/S-1/033/024/1/1/1	024	900404	9.5	A	1.1	87.5	A	5.3	58.0	A	1.1	6.1	0.10	N
IP/S-1/034/006/1/1/1	006	900416	5.4	A	0.53	11.5	A	5.3	36.7	A	1.1	5.3	0.10	N
IP/S-1/034/018/1/1/1	018	900416	18.8	A	2.7	76.9	A	5.5	148	A	1.1	8.5	0.10	N
IP/S-1/034/024/1/1/1	024	900416	11.7	A	1.1	29.9	A	5.5	129	A	1.1	9.7	0.10	N
IP/S-1/035/006/1/1/1	006	900416	24.4	A	5.6	76.3	A	5.6	88.8	A	1.1	12.	0.10	N
IP/S-1/035/018/1/1/1	018	900416	39.8	A	11.7	131	A	5.9	218	A	1.2	15.	0.10	Y
IP/S-1/035/032/1/1/1	032	900416	8.2	A	0.56	24.3	A	5.6	57.4	A	1.1	11.	0.10	Y
IP/S-1/036/006/1/1/1	006	900405	43.5	A	5.8	132	A	5.8	251	A	1.2	13.	0.10	N
IP/S-1/036/018/1/1/1	018	900405	18.8	A	2.9	96.0	A	5.9	281	A	1.2	15.	0.10	N
IP/S-1/036/024/1/1/1	024	900405	24.6	A	2.9	94.6	A	5.9	267	A	1.2	15.	0.10	N
IP/S-1/037/006/1/1/1	006	900404	53.9	A	5.8	133	A	5.8	115	A	1.2	14.	0.10	N
IP/S-1/037/006/1/D/1*	006	900404	46.2	A	29.2	160	A	5.8	139	A	1.2	14.	0.10	N
IP/S-1/038/006/1/1/1	006	900405	69.2	A	12.5	94.9	R	6.2	116	A	1.2	20.	0.10	N
IP/S-1/038/018/1/1/1	018	900405	17.4	A	2.7	191	A	5.4	213	A	1.1	8.0	0.10	N
IP/S-1/038/019/1/1/1	019	900405	6.4	A	0.52	ND	U	5.2	10.1	A	1.0	3.5	0.10	N
IP/S-1/039/006/1/1/1	006	900405	7.2	A	0.62	11.4	A	6.2	275	A	1.2	19.	0.10	N
IP/S-1/039/018/1/1/1	018	900405	9.7	A	1.1	ND	U	5.7	276	A	1.1	12.	0.10	N
IP/S-1/039/030/1/1/1	030	900405	3.9	A	0.54	ND	U	5.4	34.9	A	1.1	7.0	0.10	Y
IP/S-1/040/006/1/1/1	006	900405	11.7	A	1.2	29.0	A	6.0	702	A	1.2	17.	0.10	N
IP/S-1/040/018/1/1/1	018	900405	11.8	A	1.1	21.1	A	5.7	473	A	1.1	12.	0.10	N
IP/S-1/040/024/1/1/1	024	900405	17.7	A	2.8	69.4	A	5.7	141	A	1.1	12.	0.10	Y

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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/S-1/041/006/1/1/1	006	900416	10.7	A	1.2	7.3	A	6.0	249	A	1.2	17.	0.10	N
IP/S-1/041/018/1/1/1	018	900416	11.3	A	1.1	ND	U	5.3	22.9	A	1.1	6.4	0.10	N
IP/S-1/041/033/1/1/1	033	900416	4.1	A	0.61	ND	U	6.1	10.4	A	1.2	18.	0.10	N
IP/S-1/042/006/1/1/1	006	900405	6.5	A	0.59	11.8	A	5.9	277	A	1.2	15.	0.10	N
IP/S-1/042/018/1/1/1	018	900405	1.8	A	0.54	ND	U	5.4	71.6	A	1.1	7.0	0.10	N
IP/S-1/043/006/1/1/1	006	900405	7.3	A	0.66	19.6	A	6.6	356	A	1.3	24.	0.10	N
IP/S-1/043/018/1/1/1	018	900405	7.7	A	0.57	7.9	A	5.7	850	A	1.1	12.	0.10	N
IP/S-1/043/022/1/1/1	022	900405	5.7	A	0.56	9.2	A	5.6	363	A	1.1	11.	0.10	N
IP/S-1/044/006/1/1/1	006	900407	25.6	A	6.7	100	A	6.7	125	A	1.3	26.	0.10	N
IP/S-1/044/018/1/1/1	018	900407	118	A	29.2	456	A	5.8	123	A	1.2	14.	0.10	N
IP/S-1/044/020/1/1/1	020	900407	134	A	11.2	238	A	5.6	242	A	1.1	11.	0.10	N
IP/S-1/045/006/1/1/1	006	900405	7.7	A	1.5	34.4	A	7.4	14.1	A	1.5	32.	0.10	N
IP/S-1/045/006/1/D/1*	006	900405	7.1	A	1.5	29.7	A	7.3	12.8	A	1.5	31.	0.10	N
IP/S-1/045/018/1/1/1	018	900405	6.9	A	1.1	7.8	A	5.6	104	A	1.1	11.	0.10	N
IP/S-1/045/027/1/1/1	027	900405	5.9	A	1.1	ND	U	5.7	22.2	A	1.1	12.	0.10	N
IP/S-1/046/006/1/1/1	006	900405	11.4	A	1.1	55.8	A	5.6	36.6	A	1.1	11.	0.10	N
IP/S-1/046/018/1/1/1	018	900405	9.7	A	1.3	16.7	A	6.5	143	A	1.3	23.	0.10	N
IP/S-1/047/006/1/1/1	006	900405	10.8	A	0.77	171	A	7.7	120	A	1.5	35.	0.10	Y
IP/S-1/047/018/1/1/1	018	900405	57.7	A	5.5	232	A	5.5	196	A	1.1	9.2	0.10	N
IP/S-1/047/023/1/1/1	023	900405	54.4	A	5.8	306	A	5.8	710	A	1.2	13.	0.10	Y
IP/S-1/048/006/1/1/1	006	900405	8.6	A	0.60	92.4	A	6.0	75.0	A	1.2	17.	0.10	N
IP/S-1/048/018/1/1/1	018	900405	10.3	A	1.1	62.3	A	5.6	58.9	A	1.1	10.	0.10	N
IP/S-1/048/018/1/D/1*	018	900405	6.7	A	0.56	61.8	A	5.6	84.5	A	1.1	10.	0.10	N
IP/S-1/048/024/1/1/1	024	900405	5.6	A	0.54	7.4	A	5.4	4.3	A	1.1	8.1	0.10	N
IP/S-1/049/006/1/1/1	006	900416	11.3	A	0.97	36.4	A	9.7	15.8	A	1.9	48.	0.10	N
IP/S-1/049/018/1/1/1	018	900416	2.5	A	0.55	ND	U	5.5	10.6	A	1.1	9.2	0.10	N
IP/S-1/049/032/1/1/1	032	900416	11.6	A	1.1	12.6	A	5.4	132	A	1.1	7.0	0.10	N
IP/S-1/050/006/1/1/1	006	900416	7.4	A	2.9	105	A	5.9	122	A	1.2	15.	0.10	N
IP/S-1/050/018/1/1/1	018	900416	8.1	A	0.57	85.9	A	5.7	111	A	1.1	12.	0.10	N
IP/S-1/050/034/1/1/1	034	900416	1.2	A	0.56	8.8	A	5.6	10.9	A	1.1	11.	0.10	N

NOTES: * - Field Duplicate Sample
RL - Reporting Limit
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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 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/051/006/1/1/1	006	900409	143	A	29.3	1080	A	5.9	17.6	A	1.2	15.	0.10	N
IP/S-1/051/018/1/1/1	018	900409	283	J	33.4	1560	J	6.7	58.6	A	1.3	25.	0.10	N
IP/S-1/051/018/1/D/1*	018	900409	423	J	30.7	501	J	6.1	20.3	A	1.2	19.	0.10	N
IP/S-1/051/020/1/1/1	020	900409	254	A	31.5	1920	A	6.3	263	A	1.3	21.	0.10	N
IP/S-1/052/006/1/1/1	006	900409	40.3	A	6.3	256	A	6.3	62.8	A	1.3	21.	0.10	N
IP/S-1/052/018/1/1/1	018	900409	206	A	29.8	322	A	6.0	11.1	A	1.2	16.	0.10	N
IP/S-1/052/025/1/1/1	025	900409	119	A	11.7	242	A	5.8	10.7	A	1.2	14.	0.10	N
IP/S-1/053/006/1/1/1	006	900409	138	A	13.1	220	A	6.5	63.1	A	1.3	23.	0.10	N
IP/S-1/053/018/1/1/1	018	900409	16.4	A	5.7	72.2	A	5.7	36.7	A	1.1	13.	0.10	N
IP/S-1/053/024/1/1/1	024	900409	2.0	A	0.55	7.1	A	5.5	47.4	A	1.1	8.8	0.10	N
IP/S-1/054/006/1/2/1	006	900608	242	A	29.1	4130	A	5.8	76.9	A	1.2	14.	0.10	N
IP/S-1/054/018/1/1/1	018	900407	35.9	A	12.3	135	A	6.2	26.4	A	1.2	19.	0.10	N
IP/S-1/054/018/1/2/1	018	900608	763	A	120	1960	A	5.9	54.8	A	1.2	17.	0.10	N
IP/S-1/054/036/1/2/1	036	900608	359	A	61.7	775	A	6.2	7.5	A	1.2	19.	0.10	N
IP/S-1/055/006/1/1/1	006	900608	21.3	A	1.2	232	A	6.2	112	A	1.2	19.	0.10	N
IP/S-1/055/018/1/1/1	018	900608	10.6	A	1.1	35.1	A	5.4	41.7	A	1.1	5.8	0.10	N
IP/S-1/055/036/1/1/1	036	900608	27.8	A	2.7	201	A	5.4	471	A	1.1	8.9	0.10	N
IP/S-1/055B/006/1/1/1	006	900408	11.4	A	1.2	49.3	A	5.8	37.8	A	1.2	13.	0.10	N
IP/S-1/055B/006/1/D/1*	006	900408	14.7	A	6.1	68.2	A	6.1	34.5	A	1.2	18.	0.10	N
IP/S-1/056/006/1/1/1	006	900409	104	A	14.1	103	A	7.0	30.6	A	1.4	29.	0.10	N
IP/S-1/056/018/1/1/1	018	900409	8.3	A	0.61	121	A	6.1	25.4	A	1.2	18.	0.10	N
IP/S-1/056/029/1/1/1	029	900409	7.3	A	0.57	ND	U	5.7	18.4	A	1.1	13.	0.10	N
IP/S-1/057/006/1/1/1	006	900409	26.9	A	5.7	135	A	5.7	378	A	1.1	12.	0.10	N
IP/S-1/057/012/1/1/1	012	900409	12.6	A	5.6	69.7	A	5.6	277	A	1.1	10.	0.10	N
IP/S-1/058/006/1/1/1	006	900409	41.2	A	6.4	234	A	64.3	1040	A	12.9	22.	0.10	N
IP/S-1/058/018/1/1/1	018	900409	47.2	A	13.2	397	A	6.6	1220	A	1.3	24.	0.10	N
IP/S-1/058/031/1/1/1	031	900409	104	A	11.9	470	A	59.6	301	J	11.9	16.	0.10	N
IP/S-1/058/031/1/D/1*	031	900409	107	A	29.1	334	A	29.1	132	J	5.8	14.	0.10	N
IP/S-1/059/006/1/1/1	006	900410	94.0	A	12.4	403	J	6.2	27.8	A	1.2	19.	0.10	N
IP/S-1/059/006/1/D/1*	006	900410	114	A	12.7	686	J	6.4	32.0	A	1.3	21.	0.10	N

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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 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/059/010/1/1/1	010	900410	9.4	A	0.57	26.9	A	5.7	33.9	A	1.1	12.	0.10	N
IP/S-1/060/006/1/1/1	006	900410	103	A	12.9	576	A	6.4	14.0	A	1.3	22.	0.10	N
IP/S-1/060/018/1/1/1	018	900410	2.3	A	0.62	8.4	A	6.2	7.7	A	1.2	19.	0.10	N
IP/S-1/060/036/1/1/1	036	900410	3.0	A	0.61	ND	U	6.1	13.0	A	1.2	18.	0.10	N
IP/S-1/061/006/1/1/1	006	900410	3.7	A	0.66	137	A	6.6	49.8	A	1.3	24.	0.10	N
IP/S-1/061/018/1/1/1	018	900410	12.5	A	1.2	59.8	A	5.8	42.1	A	1.2	14.	0.10	N
IP/S-1/061/023/1/1/1	023	900410	2.3	A	0.52	ND	U	5.2	18.2	A	1.0	3.9	0.10	N
IP/S-1/062/006/1/1/1	006	900410	19.9	A	1.3	105	A	6.3	48.1	A	1.3	21.	0.10	Y
IP/S-1/062/018/1/1/1	018	900410	5.2	A	0.57	13.5	A	5.7	22.4	A	1.1	12.	0.10	N
IP/S-1/062/025/1/1/1	025	900410	15.5	A	1.1	ND	U	5.4	13.4	A	1.1	8.1	0.10	N
IP/S-1/063/006/1/1/1	006	900418	21.1	A	3.1	238	A	6.2	671	A	1.2	19.	0.10	N
IP/S-1/063/018/1/1/1	018	900418	47.2	A	11.8	1890	A	5.9	8.7	A	1.2	15.	0.10	N
IP/S-1/063/036/1/1/1	036	900418	3.2	A	0.56	11.7	A	5.6	6.7	A	1.1	11.	0.10	N
IP/S-1/064/006/1/1/1	006	900408	114	A	12.6	1370	A	12.6	8400	A	2.5	21.	0.10	N
IP/S-1/064/018/1/1/1	018	900408	6.6	A	0.66	26.3	A	6.6	21.1	A	1.3	24.	0.10	N
IP/S-1/064/024/1/1/1	024	900408	6.3	A	0.79	12.3	A	7.9	4.7	A	1.6	37.	0.10	N
IP/S-1/065/006/1/1/1	006	900408	385	A	41.4	3320	A	8.3	2870	A	1.7	40.	0.10	N
IP/S-1/065/014/1/1/1	014	900408	20.2	A	3.4	3020	A	68.6	188	A	13.7	27.	0.10	N
IP/S-1/065/015/1/1/1	015	900408	154	A	13.9	3610	A	69.3	192	A	13.9	28.	0.10	N
IP/S-1/065/018/1/1/1	018	900408	513	A	64.4	2140	A	64.4	70.1	A	12.9	22.	0.10	N
IP/S-1/065/025/1/1/1	025	900408	88.0	A	12.6	36.1	A	6.3	9.3	A	1.3	21.	0.10	N
IP/S-1/066/006/1/1/1	006	900418	12.3	A	3.3	54.0	A	6.5	88.8	A	1.3	23.	0.10	N
IP/S-1/066/018/1/1/1	018	900418	7.7	A	0.69	14.3	A	6.9	18.1	A	1.4	27.	0.10	N
IP/S-1/066/026/1/1/1	026	900418	3.7	A	0.63	9.2	A	6.3	6.9	A	1.3	21.	0.10	N
IP/S-1/067/006/1/1/1	006	900522	473	A	65.7	2750	A	6.6	33.5	A	1.3	24.	0.10	N
IP/S-1/068/006/1/1/1	006	900522	706	A	65.5	6050	A	6.5	39.5	A	1.3	24.	0.10	N
IP/S-1/069/006/1/1/1	006	900411	76.1	A	31.5	888	A	12.6	170	A	2.5	21.	0.10	N
IP/S-1/069/018/1/1/1	018	900411	55.1	A	31.7	211	A	12.7	831	A	2.5	21.	0.10	N
IP/S-1/069/031/1/1/1	031	900411	118	A	58.0	933	J	5.8	675	J	1.2	14.	0.10	N

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Hide Residue Detected.....
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TABLE 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/070/006/1/1/1	006	900409	209	A	34.1	693	A	6.8	32.7	A	1.4	27.	0.10	N
IP/S-1/070/018/1/1/1	018	900409	4.7	A	0.58	18.0	A	5.8	15.1	A	1.2	13.	0.10	N
IP/S-1/072/006/1/1/1	006	900408	24.3	A	7.2	77.9	A	7.2	17.7	A	1.4	31.	0.10	N
IP/S-1/072/018/1/1/1	018	900408	146	A	37.1	354	A	7.4	31.0	A	1.5	33.	0.10	N
IP/S-1/072/020/1/1/1	020	900408	523	A	38.0	6300	A	15.2	7.7	A	3.0	34.	0.10	N
IP/S-1/073/006/1/1/1	006	900408	1240	A	76.6	8000	A	7.7	5.7	A	1.5	35.	0.10	N
IP/S-1/074/006/1/1/1	006	900408	183	A	47.5	4590	A	19.0	260	A	3.8	47.	0.10	N
IP/S-1/074/018/1/1/1	018	900408	169	A	38.3	2410	A	38.3	278	A	7.7	35.	0.10	N
IP/S-1/074/036/1/1/1	036	900408	15.4	J	3.8	908	A	37.6	352	J	7.5	34.	0.10	N
IP/S-1/074/036/1/D/1*	036	900408	23.9	J	7.6	929	A	15.2	155	J	3.0	34.	0.10	N
IP/S-1/075/006/1/1/1	006	900408	327	A	43.7	1820	A	8.7	71.8	A	1.7	43.	0.10	N
IP/S-1/075/015/1/1/1	015	900408	145	A	33.6	235	A	6.7	8.3	A	1.3	26.	0.10	N
IP/S-1/076/006/1/1/1	006	900417	38.4	A	8.4	1070	A	8.4	43.3	A	1.7	40.	0.10	NS
IP/S-1/076/018/1/1/1	018	900417	134	J	19.4	952	A	9.7	50.5	A	1.9	49.	0.10	NS
IP/S-1/076/022/1/1/1	022	900417	70.9	A	7.0	243	A	7.0	31.3	A	1.4	29.	0.10	N
IP/S-1/077/006/1/1/1	006	900408	41.0	A	11.4	448	A	11.4	114	A	2.3	56.	0.10	N
IP/S-1/078/006/1/1/1	006	900408	60.6	A	6.4	395	A	6.4	1030	A	1.3	22.	0.10	N
IP/S-1/078/018/1/1/1	018	900408	6.9	J	1.1	9.0	A	5.3	13.3	J	1.1	6.3	0.10	N
IP/S-1/078/022/1/1/1	022	900408	6.8	A	0.55	5.7	A	5.5	12.3	A	1.1	8.5	0.10	N
IP/S-1/079/006/1/1/1	006	900409	48.2	A	6.2	414	A	6.2	431	A	1.2	19.	0.10	N
IP/S-1/079/018/1/1/1	018	900409	24.6	A	2.9	422	A	5.8	176	A	1.2	14.	0.10	N
IP/S-1/080/006/1/1/1	006	900409	18.8	A	3.0	89.4	A	6.0	168	A	1.2	16.	0.10	N
IP/S-1/080/012/1/1/1	012	900409	13.8	A	2.9	64.1	A	5.9	72.6	A	1.2	15.	0.10	N
IP/S-1/081/006/1/1/1	006	900409	70.6	A	13.4	218	A	6.7	1050	A	1.3	25.	0.10	N
IP/S-1/081/018/1/1/1	018	900409	26.3	A	3.1	152	A	6.1	800	A	1.2	18.	0.10	NS
IP/S-1/081/025/1/1/1	025	900409	36.4	A	6.2	99.9	A	6.2	203	A	1.2	20.	0.10	N
IP/S-1/082/006/1/1/1	006	900404	66.1	A	12.8	111	A	6.4	520	A	1.3	22.	0.10	N
IP/S-1/082/018/1/1/1	018	900404	21.7	A	3.1	35.9	A	6.1	2030	A	1.2	19.	0.10	N
IP/S-1/082/034/1/1/1	034	900404	14.3	A	2.9	106	A	5.9	1200	A	1.2	15.	0.10	Y

NOTES: * - Field Duplicate Sample
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Hide Residue Detected.....
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TABLE 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/083/006/1/1/1	006	900404	9.7	A	1.2	ND	U	6.1	9.5	A	1.2	18.	0.10	N
IP/S-1/083/018/1/1/1	018	900404	8.8	A	0.66	16.0	A	6.6	14.7	A	1.3	24.	0.10	N
IP/S-1/083/018/1/D/1*	018	900404	7.0	A	1.2	19.1	A	6.1	11.8	A	1.2	17.	0.10	N
IP/S-1/083/032/1/1/1	032	900404	4.4	A	0.57	ND	U	5.7	7.6	A	1.1	12.	0.10	N
IP/S-1/084/006/1/1/1	006	900403	6.3	A	0.59	11.2	A	5.9	7.5	A	1.2	16.	0.10	N
IP/S-1/084/018/1/1/1	018	900403	7.4	A	0.56	ND	U	5.6	6.3	A	1.1	11.	0.10	N
IP/S-1/084/033/1/1/1	033	900403	4.2	A	0.61	6.3	A	6.1	5.9	A	1.2	18.	0.10	N
IP/S-1/085/006/1/1/1	006	900403	7.8	A	1.1	ND	U	5.6	13.4	A	1.1	11.	0.10	N
IP/S-1/085/018/1/1/1	018	900403	7.3	A	0.56	8.8	A	5.6	8.6	A	1.1	11.	0.10	N
IP/S-1/085/024/1/1/1	024	900403	10.3	A	1.2	13.0	A	6.1	6.9	A	1.2	18.	0.10	N
IP/S-1/086/006/1/1/1	006	900403	11.0	A	1.4	11.9	A	7.0	10.2	A	1.4	29.	0.10	N
IP/S-1/086/012/1/1/1	012	900403	8.2	A	0.60	7.3	A	6.0	9.4	A	1.2	17.	0.10	N
IP/S-1/086/036/1/1/1	036	900529	6.5	A	0.69	15.5	A	6.9	15.2	A	1.4	27.	0.10	N
IP/S-1/087/006/1/1/1	006	900403	8.4	A	1.4	ND	U	7.2	22.7	A	1.4	30.	0.10	N
IP/S-1/087/010/1/1/1	010	900403	6.9	A	0.65	9.9	A	6.5	24.4	A	1.3	23.	0.10	N
IP/S-1/087/036/1/1/1	036	900529	7.8	A	0.76	ND	U	7.6	19.5	A	1.5	35.	0.10	N
IP/S-1/088/006/1/1/1	006	900403	9.2	J	1.3	18.4	A	6.3	277	A	1.3	20.	0.10	N
IP/S-1/088/006/1/D/1*	006	900403	24.1	J	5.9	13.5	A	5.9	275	A	1.2	15.	0.10	N
IP/S-1/088/018/1/1/1	018	900403	26.0	A	3.6	99.1	A	7.2	931	A	1.4	31.	0.10	Y
IP/S-1/088/036/1/1/1	036	900529	9.2	A	0.73	10.8	A	7.3	315	A	1.5	31.	0.10	N
IP/S-1/089/006/1/1/1	006	900402	37.4	A	6.5	125	A	6.5	447	A	1.3	23.	0.10	N
IP/S-1/089/018/1/1/1	018	900402	35.5	A	6.4	238	A	6.4	755	A	1.3	21.	0.10	Y
IP/S-1/089/019/1/1/1	019	900402	37.0	A	6.1	133	A	6.1	615	A	1.2	18.	0.10	N
IP/S-1/089/030/1/1/1	030	900529	53.4	A	12.4	145	A	6.2	1040	A	1.2	19.	0.10	Y
IP/S-1/089/030/1/D/1*	030	900529	34.8	A	6.2	183	A	6.2	765	A	1.2	19.	0.10	N
IP/S-1/090/006/1/1/1	006	900402	9.8	A	0.65	29.4	A	6.5	461	A	1.3	23.	0.10	N
IP/S-1/090/018/1/1/1	018	900402	6.7	A	0.59	14.6	A	5.9	502	A	1.2	15.	0.10	N
IP/S-1/090/019/1/1/1	019	900402	8.4	A	0.59	8.3	A	5.9	594	A	1.2	15.	0.10	Y
IP/S-1/090/036/1/1/1	036	900529	9.9	A	0.59	16.9	A	5.9	364	A	1.2	16.	0.10	N
IP/S-1/091/006/1/1/1	006	900404	794	A	146	2750.	A	7.3	2160	A	1.5	31.	0.10	N
IP/S-1/091/018/1/1/1	018	900404	780	A	127	2820	A	6.3	2800	A	1.3	21.	0.10	N

NOTES: * - Field Duplicate Sample
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AC - Assessment Codes.....
A - Quantitative Data
J - Estimated (Semiquantitative) Data
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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 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/091/034/1/1/1	034	900404	940	A	124	1850	A	6.2	1690	A	1.2	20.	0.10	N
IP/S-1/092/006/1/1/1	006	900404	137	A	13.3	811	A	6.7	1580	A	1.3	25.	0.10	N
IP/S-1/092/018/1/1/1	018	900404	127	A	12.6	739	A	6.3	1470	A	1.3	21.	0.10	N
IP/S-1/092/032/1/1/1	032	900404	100	A	11.9	397	A	5.9	460	A	1.2	16.	0.10	N
IP/S-1/093/006/1/1/1	006	900404	78.2	A	12.5	130	A	6.3	43.6	A	1.3	20.	0.10	N
IP/S-1/093/018/1/1/1	018	900404	111	A	12.7	33.1	A	6.3	97.1	A	1.3	21.	0.10	N
IP/S-1/093/032/1/1/1	032	900404	6.5	A	0.59	6.9	A	5.9	9.0	A	1.2	15.	0.10	N
IP/S-1/094/006/1/1/1	006	900403	67.2	A	7.9	176	A	7.9	499	A	1.6	37.	0.10	N
IP/S-1/094/016/1/1/1	016	900403	33.6	A	6.5	55.8	A	6.5	609	A	1.3	23.	0.10	N
IP/S-1/095/006/1/1/1	006	900403	6.4	A	0.71	12.9	A	7.1	6.4	A	1.4	29.	0.10	N
IP/S-1/095/018/1/1/1	018	900403	12.8	A	0.93	ND	U	9.3	11.0	A	1.9	46.	0.10	N
IP/S-1/095/020/1/1/1	020	900403	5.4	A	0.64	18.8	A	6.4	9.4	A	1.3	22.	0.10	N
IP/S-1/095/036/1/1/1	036	900529	18.5	A	2.0	10.4	A	10.1	12.7	A	2.0	50.	0.10	NS
IP/S-1/096/006/1/1/1	006	900403	9.8	A	1.3	21.4	A	6.7	11.3	A	1.3	25.	0.10	N
IP/S-1/096/018/1/1/1	018	900403	7.5	A	0.62	9.1	A	6.2	8.7	A	1.2	19.	0.10	N
IP/S-1/096/036/1/1/1	036	900529	8.8	A	0.65	8.0	A	6.5	10.8	A	1.3	23.	0.10	N
IP/S-1/097/006/1/1/1	006	900402	3.5	A	0.85	9.4	A	8.5	62.1	A	1.7	41.	0.10	N
IP/S-1/097/036/1/1/1	036	900529	8.4	A	0.72	17.9	A	7.2	98	A	1.4	31.	0.10	N
IP/S-1/098/006/1/1/1	006	900402	14.4	A	1.3	82.5	A	6.3	1410	A	1.3	21.	0.10	N
IP/S-1/098/018/1/1/1	018	900402	15.3	A	1.2	65.2		6.2	314	A	1.2	20.	0.10	Y
IP/S-1/098/020/1/1/1	020	900402	24.8	A	3.1	49.0	A	6.2	822	A	1.2	19.	0.10	Y
IP/S-1/098/036/1/1/1	036	900529	53.0	A	8.8	42.9	A	8.8	1540	A	1.8	43.	0.10	Y
IP/S-1/099/006/1/1/1	006	900402	7.4	A	0.61	14.9	A	6.1	142	A	1.2	18.	0.10	Y
IP/S-1/099/015/1/1/1	015	900402	10.3	A	1.2	28.7	A	6.1	386	A	1.2	18.	0.10	Y
IP/S-1/099/036/1/1/1	036	900529	4.5	A	0.60	11.5	A	6.0	141	A	1.2	16.	0.10	Y
IP/S-1/100/006/1/1/1	006	900522	12.2	A	3.2	41.8	A	31.9	11.8	A	6.4	84.	0.10	N
IP/S-1/100/018/1/1/1	018	900522	ND	U	3.9	ND	U	38.7	ND	U	7.7	87.	0.10	N
IP/S-1/100/036/1/1/1	036	900522	ND	U	4.6	ND	U	45.8	ND	U	9.2	89.	0.10	N
IP/S-1/101/006/1/1/1	006	900408	11.0	A	0.77	145	A	7.7	10.1	A	1.5	35.	0.10	N
IP/S-1/101/018/1/1/1	018	900408	2.4	A	0.62	ND	U	6.2	6.3	A	1.2	19.	0.10	N

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Hide Residue Detected.....
Y - Detected
N - Not Detected
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TABLE 3

SUMMARY OF ARSENIC, LEAD, CHROMIUM AND HIDE RESIDUE ANALYSES - TASK S-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/S-1/101/027/1/1/1	027	900408	2.7	A	0.61	ND	U	6.1	5.6	A	1.2	18.	0.10	N
IP/S-1/102/006/1/1/1	006	900601	23.8	A	3.5	21.0	A	6.9	4.0	A	1.4	28.	0.10	N
IP/S-1/102/018/1/1/1	018	900601	2.2	A	0.64	ND	U	6.5	5.6	A	1.3	22.	0.10	N
IP/S-1/102/036/1/1/1	036	900601	1.5	A	0.63	6.6	A	6.3	6.4	A	1.3	21.	0.10	N
IP/S-1/103/006/1/1/1	006	900408	6.1	A	0.66	15.8	A	6.6	5.6	A	1.3	25.	0.10	N
IP/S-1/103/018/1/1/1	018	900408	1.7	A	0.62	ND	U	6.2	5.8	A	1.2	20.	0.10	N
IP/S-1/103/023/1/1/1	023	900408	3.9	A	0.62	ND	U	6.2	5.5	A	1.2	19.	0.10	N
IP/S-1/104/006/1/1/1	006	900410	6.5	A	0.58	28.8	A	5.8	6.1	A	1.2	14.	0.10	N
IP/S-1/104/018/1/1/1	018	900410	2.7	A	0.54	ND	U	5.4	6.2	A	1.1	7.6	0.10	N
IP/S-1/104/036/1/1/1	036	900410	2.4	A	0.52	ND	U	5.2	5.5	A	1.0	3.9	0.10	N
IP/S-1/105/006/1/1/1	006	900407	20.0	A	3.0	54.1	A	5.9	264	A	1.2	16.	0.10	N
IP/S-1/105/018/1/1/1	018	900407	21.0	A	2.8	64.2	A	5.6	240	A	1.1	11.	0.10	N
IP/S-1/105/024/1/1/1	024	900407	17.7	A	2.8	54.4	A	5.6	69.7	A	1.1	10.	0.10	N
IP/S-1/106/006/1/1/1	006	900420	7.3	A	1.2	ND	U	6.1	9.6	A	1.2	18.	0.10	NS
IP/S-1/106/015/1/1/1	015	900420	5.0	A	0.55	5.5	A	5.5	11.3	A	1.1	9.4	0.10	N
IP/S-1/107/006/1/1/1	006	900407	6.6	A	1.1	39.6	A	5.5	18.2	A	1.1	8.4	0.10	N
IP/S-1/107/013/1/1/1	013	900407	15.2	A	2.8	13.8	A	5.7	10.8	A	1.1	12.	0.10	N
IP/S-1/108/006/1/1/1	006	900407	11.9	A	0.56	21.1	A	5.6	36.5	A	1.1	11.	0.10	N
IP/S-1/108/018/1/1/1	018	900407	4.3	A	0.54	8.5	A	5.4	24.0	A	1.1	8.2	0.10	N
IP/S-1/108/025/1/1/1	025	900407	3.3	A	0.55	ND	U	5.5	17.5	A	1.1	9.1	0.10	N
IP/S-1/109/006/1/1/1	006	900407	5.1	A	0.61	10.6	A	6.1	12.7	A	1.2	18.	0.10	N
IP/S-1/109/006/1/D/1*	006	900407	4.4	A	0.59	15.0	A	5.9	12.8	A	1.2	15.	0.10	N
IP/S-1/109/018/1/1/1	018	900407	3.7	A	0.59	ND	U	5.9	8.7	A	1.2	16.	0.10	N
IP/S-1/109/025/1/1/1	025	900407	8.1	A	0.59	6.4	A	5.9	13.1	A	1.2	15.	0.10	N
IP/S-1/110/006/1/1/1	006	900409	9.3	A	1.2	33.4	A	5.9	6.1	A	1.2	16.	0.10	N
IP/S-1/110/018/1/1/1	018	900409	10.1	A	2.9	28.3	A	5.8	9.6	A	1.2	14.	0.10	N
IP/S-1/110/036/1/1/1	036	900409	3.1	A	0.57	ND	U	5.7	9.2	A	1.1	13.	0.10	N
IP/S-1/111/006/1/1/1	006	900410	ND	U	0.63	631	A	6.3	106	A	1.3	20.	0.10	N
IP/S-1/111/018/1/1/1	018	900410	7.2	A	0.61	154	A	6.1	158	A	1.2	17.	0.10	N
IP/S-1/111/034/1/1/1	034	900410	3.5	A	0.59	7.5	A	5.9	10.8	A	1.2	15.	0.10	N

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TABLE 3

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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/S-1/112/006/1/1/1	006	900410	4.1	A	0.54	11.0	A	5.4	29.9	A	1.1	7.7	0.10	N
IP/S-1/112/018/1/1/1	018	900410	2.6	A	0.54	ND	U	5.4	6.1	A	1.1	8.1	0.10	N
IP/S-1/112/030/1/1/1	030	900410	7.5	A	0.55	21.1	A	5.5	7.5	A	1.1	9.5	0.10	N
IP/S-1/113/006/1/1/1	006	900410	5.5	A	0.54	14.0	A	5.4	38.7	A	1.1	7.4	0.10	N
IP/S-1/113/017/1/1/1	017	900410	4.9	A	0.53	23.7	A	5.3	80.7	A	1.1	5.8	0.10	N
IP/S-1/114/006/1/1/1	006	900406	79.6	A	11.9	316.00	A	6.0	1020	A	1.2	16.	0.10	N
IP/S-1/115/006/1/1/1	006	900406	5.8	A	0.72	36.8	A	7.2	32.0	A	1.4	30.	0.10	N
IP/S-1/115/018/1/1/1	018	900406	ND	U	0.68	ND	U	6.8	2.3	A	1.4	27.	0.10	N
IP/S-1/115/020/1/1/1	020	900406	ND	U	0.65	ND	U	6.5	6.5	A	1.3	23.	0.10	N
IP/S-1/116/006/1/1/1	006	900406	2.8	A	0.55	9.0	A	5.5	13.7	A	1.1	8.7	0.10	N
IP/S-1/116/018/1/1/1	018	900406	3.0	A	0.54	ND	U	5.4	11.7	A	1.1	8.1	0.10	N
IP/S-1/116/026/1/1/1	026	900406	6.9	A	0.57	29.8	A	5.7	9.2	A	1.1	12.	0.10	N
IP/S-1/117/006/1/1/1	006	900406	3.2	A	.58	ND	U	5.8	15.1	A	1.2	13.	0.10	N
IP/S-1/117/018/1/1/1	018	900406	5.3	A	0.56	ND	U	5.6	9.7	A	1.1	10.	0.10	N
IP/S-1/117/022/1/1/1	022	900406	5.9	A	0.53	6.3	A	5.3	21.3	A	1.1	5.3	0.10	N
IP/S-1/118/006/1/1/1	006	900406	7.6	A	0.65	66.5	A	6.5	115	A	1.3	24.	0.10	N
IP/S-1/118/018/1/1/1	018	900406	2.1	A	0.60	19.4	A	6.0	13.8	A	1.2	17.	0.10	N
IP/S-1/118/024/1/1/1	024	900406	7.1	A	.65	49.9	A	6.5	136	A	1.3	23.	0.10	N
IP/S-1/119/006/1/1/1	006	900406	135	A	16.8	240	A	8.4.	1070	A	1.7	40.	0.10	N
IP/S-1/119/006/1/D/1*	006	900406	219	A	76.0	199	A	7.6	702	A	1.5	34.	0.10	N
IP/S-1/119/018/1/1/1	018	900406	2.7	A	0.63	ND	U	6.3	33.3	A	1.3	20.	0.10	N
IP/S-1/119/024/1/1/1	024	900406	1.7	A	.59	7.9	A	5.9	23.3	A	1.2	16.	0.10	N
IP/S-1/120/005/1/1/1	005	900406	15.1	A	1.2	41.4	A	6.2	80.9	A	1.2	19	0.10	N
IP/S-1/120/006/1/1/1	006	900406	46.5	A	6.0	226	A	6.0	23.7	A	1.2	16.	0.10	N
IP/S-1/120/016/1/1/1	016	900406	28.3	A	3.0	135	A	5.9	89.4	A	1.2	15.	0.10	N
IP/S-1/121/006/1/1/1	006	900404	492	A	68.2	1750	A	6.8	3270	A	1.4	27.	0.10	NS
IP/S-1/121/018/1/1/1	018	900404	821	A	129	4090	A	6.4	63.8	A	1.3	22.	0.10	N
IP/S-1/121/022/1/1/1	022	900404	1420	A	126	9110	A	6.3	21.4	A	1.3	20.	0.10	N
IP/S-1/141/006/1/1/1	006	900609	51.4	A	7.7	214	A	15.4	74.2	A	3.1	35.	0.10	Y

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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/S-1/141/018/1/1/1	018	900609	55.7	A	8.7	143	A	17.2	24.5	A	3.4	43.	0.10	N
IP/S-1/141/036/1/1/1	036	900609	56.1	A	8.1	111	A	16.1	57.5	A	3.2	38.	0.10	N
IP/S-1/142/006/1/1/1	006	900609	71.4	A	6.5	232	A	6.5	31.9	A	1.3	23.	0.10	N
IP/S-1/142/018/1/1/1	018	900609	54.9	A	7.5	145	A	15.0	51.9	A	3.0	34.	0.10	N
IP/S-1/142/036/1/1/1	036	900609	71.9	A	7.4	202	A	7.4	111	A	1.5	32.	0.10	N
IP/S-1/143/006/1/1/1	006	900614	4.4	A	0.56	51.9	A	5.6	15.2	A	1.1	11.	0.10	BS
IP/S-1/143/012/1/1/1	012	900614	3.8	A	0.57	61.3	A	5.7	14.6	A	1.1	12.	0.10	BS
IP/S-1/143/018/1/1/1	018	900614	4.4	A	0.56	85.2	A	5.6	27.3	A	1.1	11.	0.10	BS
IP/S-1/143/027/1/1/1	027	900614	4.7	A	0.57	85.8	A	5.7	17.0	A	1.1	12.	0.10	BS
IP/S-1/143/036/1/1/1	036	900614	4.3	A	0.56	50.3	A	5.6	14.0	A	1.1	10.	0.10	BS
IP/S-1/144/006/1/1/1	006	900614	28.3	A	5.5	23.0	A	5.5	22.8	A	1.1	8.3	0.10	BS
IP/S-1/144/012/1/1/1	012	900614	33.4	A	5.3	22.5	A	5.3	20.7	A	1.1	6.4	0.10	BS
IP/S-1/144/018/1/1/1	018	900614	10.7	A	2.6	9.2	A	5.2	13.3	A	1.0	4.5	0.10	BS
IP/S-1/144/027/1/1/1	027	900614	14.6	A	2.8	7.6	A	5.6	14.8	A	1.1	10.	0.10	BS
IP/S-1/144/036/1/1/1	036	900614	16.3	A	2.6	63.8	A	5.2	26.1	A	1.0	3.3	0.10	BS
IP/S-1/145/006/1/1/1	006	900614	14.1	A	2.6	19.6	A	5.2	16.8	A	1.0	4.2	0.10	BS
IP/S-1/145/012/1/1/1	012	900614	23.8	A	2.8	18.3	A	5.6	25.6	A	1.1	10.	0.10	BS
IP/S-1/145/018/1/1/1	018	900614	1.6	A	0.56	ND	U	5.6	7.8	A	1.1	11.	0.10	BS
IP/S-1/145/027/1/1/1	027	900614	1.3	A	0.57	ND	U	5.6	8.3	A	1.1	12.	0.10	BS
IP/S-1/145/036/1/1/1	036	900614	3.4	A	0.56	ND	U	5.6	8.9	A	1.1	10.	0.10	BS
IP/S-1/145/036/1/D/1*	036	900614	3.4	A	0.56	ND	U	5.6	9.1	A	1.1	11.	0.10	BS
IP/S-1/146/006/1/1/1	006	900614	9.4	A	1.4	95.7	A	14.1	19.7	A	2.8	64.	0.10	BS
IP/S-1/146/012/1/1/1	012	900614	4.2	A	2.4	ND	U	24.1	7.8	A	4.8	79.	0.10	BS
IP/S-1/146/018/1/1/1	018	900614	4.0	A	3.5	ND	U	35.2	12.4	A	7.0	86.	0.10	BS
IP/S-1/146/025/1/1/1	025	900614	4.1	A	1.9	ND	U	18.7	26.7	A	3.7	73.	0.10	BS
IP/S-1/146/036/1/1/1	036	900614	3.9	A	2.3	ND	U	22.6	6.2	A	4.5	78.	0.10	BS

NOTES: * - Field 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 4

SUMMARY OF
BACKGROUND ARSENIC, LEAD, AND CHROMIUM ANALYSES

Sample ID #	Soil Type	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)
IP/S-1/145/006/1/1/1	SAND	14.1	16.8	19.6
IP/S-1/145/012/1/1/1	SAND	23.8	25.6	18.3
IP/S-1/145/018/1/1/1	SAND	1.6	7.8	ND
IP/S-1/145/027/1/1/1	SAND	1.3	8.3	ND
IP/S-1/145/036/1/1/1	SAND	3.4	9.1	ND
IP/S-1/143/006/1/1/1	GLACIAL TILL	4.4	15.2	51.9
IP/S-1/143/012/1/1/1	GLACIAL TILL	3.8	14.6	61.3
IP/S-1/143/018/1/1/1	GLACIAL TILL	4.4	27.3	85.2
IP/S-1/143/027/1/1/1	GLACIAL TILL	4.7	17.0	85.8
IP/S-1/143/036/1/1/1	GLACIAL TILL	4.3	14.0	50.3
IP/S-1/144/006/1/1/1	IMPORTED FILL	28.3	22.8	23.0
IP/S-1/144/012/1/1/1	IMPORTED FILL	33.4	20.7	22.5
IP/S-1/144/018/1/1/1	IMPORTED FILL	10.7	13.3	9.2
IP/S-1/144/027/1/1/1	IMPORTED FILL	14.6	14.8	7.6
IP/S-1/144/036/1/1/1	IMPORTED FILL	16.3	26.1	63.8
IP/S-1/146/006/1/1/1	PEAT	9.4	19.7	95.7
IP/S-1/146/012/1/1/1	PEAT	4.2	7.8	ND
IP/S-1/146/018/1/1/1	PEAT	4.0	12.4	ND
IP/S-1/146/025/1/1/1	PEAT	4.1	26.7	ND
IP/S-1/146/036/1/1/1	PEAT	3.9	6.2	ND

TABLE 5

RAW ARSENIC, LEAD, CHROMIUM DATA
IN ASCENDING RANK ORDER

Arsenic	Lead	Chromium
1.3	ND	6.2
1.6	ND	7.8
3.4	ND	7.8
3.8	ND	8.3
3.9	ND	9.1
4.0	ND	12.4
4.1	ND	13.3
4.2	7.6	14.0
4.3	9.2	14.6
4.4	18.3	14.8
4.4	19.6	15.2
4.7	22.5	16.8
9.4	23.0	17.0
10.7	50.3	19.7
14.1	51.9	20.7
14.6	61.3	22.8
16.3	63.8	25.6
23.8	85.2	26.1
28.3	85.8	26.7
33.4	95.7	27.3

TABLE 6

Statistical Data for Arsenic, Lead
and Chromium Background Samples

	Class Interval	Interval Midpoint	Class Frequency	Relative Frequency	Cumulative Frequency	Cumulative Frequency %
	0–10	5	13	.65	13	65
	10–20	15	4	.2	17	85
Arsenic	20–30	25	2	.1	19	95
	30–40	35	1	.05	20	100

	Class Interval	Interval Midpoint	Class Frequency	Relative Frequency	Cumulative Frequency	Cumulative Frequency %
	0–10	5	9	.45	9	45
	10–20	15	2	.1	11	55
Lead	20–30	25	2	.1	13	65
	30–40	35	0	0	13	65
	40–50	45	0	0	13	65
	50–60	55	2	.1	15	75
	60–70	65	2	.1	17	85
	70–80	75	0	0	17	85
	80–90	85	2	.1	19	95
	90–100	95	1	.05	20	100

	Class Interval	Interval Midpoint	Class Frequency	Relative Frequency	Cumulative Frequency	Cumulative Frequency %
	0–10	5	5	.25	5	25
	10–20	15	9	.45	14	70
Chromium	20–30	25	6	.3	20	100

TABLE 7

Summary of Target Analyte List Results

TABLE 7

SUMMARY OF TARGET ANALYTE LIST RESULTS

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

IP/S-1/001/006/1/2/1

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

The third through fifth characters (S-1) 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 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL

	Sample Point IP/S-1/002/036/1/1/5 Date Sampled: 06/13/90 Percent Solids: 86.0%				Sample Point IP/S-1/002/036/1/D/5 Date Sampled: 06/13/90 Percent Solids: 86.0%				Sample Point IP/S-1/004/027/1/1/5 Date Sampled: 06/13/90 Percent Solids: 87.2%				Sample Point IP/S-1/005/030/1/1/5 Date Sampled: 06/13/90 Percent Solids: 91.0%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	46.5	10.0	6910	J	46.5	10.0	6810	J	45.9	9.9	4130	J	44.0	9.5	4190	J
Antimony	14.0	5.4	5.4	UJ	14.0	5.4	5.4	UJ	13.8	5.4	18.1	J	13.2	5.1	11.2	J
Arsenic	2.3	0.2	56.3	J	2.3	0.2	8.9	J	2.3	0.2	158	J	2.2	0.2	238	J
Barium	46.5	0.1	43.7	A	46.5	0.1	19.2	A	45.9	0.1	240	A	44.0	0.1	144	A
Beryllium	1.2	0.2	0.33	U	1.2	0.2	0.25	U	1.1	0.2	0.24	U	1.1	0.2	0.23	U
Cadmium	1.2	0.6	0.58	U	1.2	0.6	0.58	U	1.1	0.6	2.7	A	1.1	0.5	1.0	A
Calcium	1162.8	11.1	1100	J	1162.8	11.1	420	J	1146.8	11.0	1060	J	1098.9	10.5	1380	J
Chromium	2.3	1.2	17.5	A	2.3	1.2	10.5	A	2.3	1.2	10.4	R	2.2	1.1	17.2	J
Cobalt	11.6	1.0	4.9	A	11.6	1.0	2.4	A	11.5	1.0	5.9	A	11.0	0.9	5.2	A
Copper	5.8	1.0	77.9	J	5.8	1.0	34.8	J	5.7	1.0	410	J	5.5	1.0	170	J
Iron	23.3	1.3	15800	J	23.3	1.3	6790	J	22.9	1.3	91700	J	22.0	1.2	40300	J
Lead	1.2	6.0	244	J	1.2	6.0	47.9	J	1.1	6.0	614	J	1.1	5.7	1160	J
Magnesium	1162.8	15.0	2630	J	1162.8	15.0	1250	J	1146.8	14.8	1490	J	1098.9	14.2	1950	J
Manganese	3.5	0.2	111	J	3.5	0.2	61.9	J	3.4	0.2	91.6	J	3.3	0.2	76.5	J
Mercury	0.047	0.047	0.2	A	0.047	0.047	Not Analyzed		0.046	0.046	1.7	A	0.044	0.044	3.4	A
Nickel	9.3	2.9	8.5	A	9.3	2.9	5.9	A	9.2	2.8	13.3	A	8.8	2.7	6.7	A
Potassium	1162.8	239.5	787	A	1162.8	239.5	240	U	1146.8	236.2	830	A	1098.9	226.4	1530	A
Selenium	1.2	0.5	1.1	UJ	1.2	0.5	0.47	UJ	1.1	0.5	3.4	J	1.1	0.4	5.6	J
Silver	2.3	0.9	3.0	U	2.3	0.9	0.93	U	2.3	0.9	21.3	A	2.2	0.9	8.4	A
Sodium	1162.8	430.9	431	U	1162.8	430.9	431	U	1146.8	425.0	425	U	1098.9	407.3	407	U
Thallium	2.3	0.5	0.47	UJ	2.3	0.5	0.47	UJ	2.3	0.5	2.4	A	2.2	0.4	0.88	A
Vanadium	11.6	2.2	20.4	A	11.6	2.2	9.9	A	11.5	2.2	46.8	A	11.0	2.1	25.2	A
Zinc	4.7	0.5	85.3	J	4.7	0.5	23.3	J	4.6	0.5	794	J	4.4	0.5	270	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 NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL

	Sample Point IP/S-1/006/026/1/1/5 Date Sampled: 04/17/90 Percent Solids: 82.9%				Sample Point IP/S-1/008/027/1/1/5 Date Sampled: 04/17/90 Percent Solids: 88.5%				Sample Point IP/S-1/013/025/1/1/5 Date Sampled: 04/17/90 Percent Solids: 84.2%				Sample Point IP/S-1/019/032/1/1/5 Date Sampled: 04/17/90 Percent Solids: 85.1%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	48.3	7.2	2450	J	45.2	6.7	3770	J	47.5	7.1	8320	J	47.0	7.0	6260	J
Antimony	14.5	11.0	11.0	UJ	13.6	10.3	10.3	UJ	14.3	10.8	10.8	UJ	14.1	10.7	10.7	UJ
Arsenic	2.4	0.2	75.7	J	2.3	0.2	299	J	2.4	0.2	14.1	J	2.4	0.2	780	J
Barium	48.3	0.2	249	J	45.2	0.2	221	J	47.5	0.2	34.6	J	47.0	0.2	56.9	J
Beryllium	1.2	0.1	0.07	U	1.1	0.1	0.23	A	1.2	0.1	0.22	A	1.2	0.1	0.25	A
Cadmium	1.2	1.1	6.9	A	1.1	1.0	3.7	A	1.2	1.1	1.1	UJ	1.2	1.1	5.6	A
Calcium	1206.3	6.2	7750	J	1129.9	5.8	2520	J	1187.6	6.1	2590	J	1175.1	6.1	1370	J
Chromium	2.4	0.9	6.4	J	2.3	0.8	19.7	J	2.4	0.9	16.0	J	2.4	0.9	16.2	J
Cobalt	12.1	1.2	11.9	A	11.3	1.2	12.4	A	11.9	1.2	5.4	A	11.8	1.2	4.9	A
Copper	6.0	0.6	1180	J	5.6	0.5	1170	J	5.9	0.5	21.7	J	5.9	0.5	295	J
Iron	24.1	3.3	113000	J	22.6	3.1	40200	J	23.8	3.2	12700	J	23.5	3.2	23200	J
Lead	1.2	11.6	544	J	1.1	10.9	2580	J	1.2	11.4	51.5	J	1.2	11.3	262	J
Magnesium	1206.3	23.2	818	A	1129.9	21.8	1540	A	1187.6	22.9	3320	A	1175.1	22.6	1740	A
Manganese	3.6	0.2	68.7	J	3.4	0.2	116	J	3.6	0.2	155	J	3.5	0.2	160	J
Mercury	0.048	0.048	1.2	A	0.045	0.045	4.6	A	0.048	0.048	0.5	A	0.047	0.047	0.6	A
Nickel	9.7	5.8	5.8	UJ	9.0	5.5	9.4	J	9.5	5.7	12.8	J	9.4	5.7	6.4	J
Potassium	1206.3	494.1	1170	J	1129.9	462.8	1620	J	1187.6	486.5	487	UJ	1175.1	481.3	481	UJ
Selenium	1.2	0.5	2.7	J	1.1	0.5	7.3	J	1.2	0.5	0.48	UJ	1.2	0.5	1.0	J
Silver	2.4	0.8	21.8	A	2.3	0.7	13.0	A	2.4	0.8	0.76	UJ	2.4	0.8	1.3	U
Sodium	1206.3	437.6	438	U	1129.9	409.9	410	U	1187.6	430.9	667	A	1175.1	426.3	437	A
Thallium	2.4	0.5	0.55	J	2.3	0.5	1.5	A	2.4	0.5	0.48	U	2.4	0.5	0.61	J
Vanadium	12.1	0.9	16.6	A	11.3	0.9	17.1	A	11.9	0.9	21.2	A	11.8	0.9	18.5	A
Zinc	4.8	0.8	3480	J	4.5	0.7	3590	J	4.8	0.8	72.7	J	4.7	0.8	972	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
NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL

	Sample Point IP/S-1/025/020/1/1/5 Date Sampled: 04/17/90 Percent Solids: 83.0%				Sample Point IP/S-1/029/035/1/1/5 Date Sampled: 04/16/90 Percent Solids: 78.4%				Sample Point IP/S-1/029/035/1/D/5 Date Sampled: 04/16/90 Percent Solids: 82.0%				Sample Point IP/S-1/031/025/1/1/5 Date Sampled: 04/16/90 Percent Solids: 92.7%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	48.2	7.2	6350	J	51.0	7.6	1120	J	48.8	7.3	1290	J	43.1	6.4	11000	J
Antimony	14.5	10.9	10.9	UJ	15.3	11.6	674	J	14.6	11.1	486	J	12.9	9.8	9.8	UJ
Arsenic	2.4	0.2	338	J	2.6	0.3	805	J	2.4	0.2	491	J	2.2	0.2	5.4	J
Barium	48.2	0.2	41.2	J	51.0	0.2	47.0	J	48.8	0.2	64.1	J	43.1	0.2	39.6	J
Beryllium	1.2	0.1	0.15	A	1.3	0.1	0.08	U	1.2	0.1	0.07	U	1.1	0.1	0.26	A
Cadmium	1.2	1.1	1.1	UJ	1.3	1.1	2.4	J	1.2	1.1	1.2	J	1.1	1.0	0.97	UJ
Calcium	1204.8	6.2	9080	J	1275.5	6.6	13900	J	1219.5	6.3	15400	J	1078.7	5.6	1460	J
Chromium	2.4	0.9	330	J	2.6	0.9	313	J	2.4	0.9	442	J	2.2	0.8	45.9	J
Cobalt	12.0	1.2	4.6	A	12.8	1.3	3.6	A	12.2	1.2	4.5	A	10.8	1.1	6.8	A
Copper	6.0	0.6	94.0	J	6.4	0.6	84.6	J	6.1	0.6	91.1	J	5.4	0.5	33.1	J
Iron	24.1	3.3	14100	J	25.5	3.4	5970	J	24.4	3.3	5890	J	21.6	2.9	13700	J
Lead	1.2	11.6	214	J	1.3	12.3	1250	J	1.2	11.7	1170	J	1.1	10.4	21.7	J
Magnesium	1204.8	23.2	2960	A	1275.5	24.6	419	A	1219.5	23.5	517	A	1078.7	20.8	4750	A
Manganese	3.6	0.2	134	J	3.8	0.2	27.2	U	3.7	0.2	39.1	U	3.2	0.2	172	J
Mercury	0.048	0.048	0.8	A	0.051	0.051	185	A	0.049	0.049	251	A	0.043	0.043	0.3	A
Nickel	9.6	5.8	10.8	J	10.2	6.2	6.2	UJ	9.8	5.9	5.9	UJ	8.6	5.2	14.3	J
Potassium	1204.8	493.5	1040	J	1275.5	522.4	1140	J	1219.5	499.5	846	J	1078.7	441.9	2200	J
Selenium	1.2	0.5	0.60	J	1.3	0.5	71.3	J	1.2	0.5	64.1	J	1.1	0.4	0.43	UJ
Silver	2.4	0.8	0.77	UJ	2.6	0.8	1.8	U	2.4	0.8	2.1	U	2.2	0.7	0.69	UJ
Sodium	1204.8	437.1	437	U	1275.5	462.8	463	U	1219.5	442.4	442	U	1078.7	391.4	391	U
Thallium	2.4	0.5	0.63	A	2.6	0.5	1.2	J	2.4	0.5	1.3	J	2.2	0.4	0.43	UJ
Vanadium	12.0	0.9	29.1	A	12.8	1.0	6.4	A	12.2	1.0	7.5	A	10.8	0.8	30.1	A
Zinc	4.8	0.8	368	J	5.1	0.8	204	J	4.9	0.8	230	J	4.3	0.7	35.9	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
NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL

	Sample Point IP/S-1/034/024/1/1/5 Date Sampled: 04/16/90 Percent Solids: 91.2%				Sample Point IP/S-1/035/032/1/1/5 Date Sampled: 04/16/90 Percent Solids: 88.1%				Sample Point IP/S-1/041/033/1/1/5 Date Sampled: 04/16/90 Percent Solids: 82.5%				Sample Point IP/S-1/049/032/1/1/5 Date Sampled: 04/16/90 Percent Solids: 84.8%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	43.9	6.5	10800	J	45.4	6.8	5630	J	48.5	7.2	3300	J	47.2	7.0	4910	J
Antimony	13.2	10.0	10.0	UJ	13.6	10.3	10.3	UJ	14.5	11.0	11.0	UJ	14.2	10.7	10.7	UJ
Arsenic	2.2	0.2	14.5	J	2.3	0.2	38.7	J	2.4	0.2	6.4	J	2.4	0.2	7.0	J
Barium	43.9	0.2	77.9	J	45.4	0.2	31.7	J	48.5	0.2	12.2	J	47.2	0.2	20.4	J
Beryllium	1.1	0.1	0.24	A	1.1	0.1	0.17	A	1.2	0.1	0.12	A	1.2	0.1	0.16	A
Cadmium	1.1	1.0	0.99	UJ	1.1	1.0	1.0	UJ	1.2	1.1	1.1	UJ	1.2	1.1	1.1	UJ
Calcium	1096.5	5.7	4980	J	1135.1	5.9	24100	J	1212.1	6.3	585	J	1179.2	6.1	1440	J
Chromium	2.2	0.8	121	J	2.3	0.8	399	J	2.4	0.9	111	J	2.4	0.9	93.2	J
Cobalt	11.0	1.1	10.9	A	11.4	1.2	2.8	A	12.1	1.2	1.5	A	11.8	1.2	2.5	A
Copper	5.5	0.5	35.4	J	5.7	0.5	30.0	J	6.1	0.6	4.3	U	5.9	0.5	23.1	J
Iron	21.9	3.0	15300	J	22.7	3.1	10700	J	24.2	3.3	6130	J	23.6	3.2	7550	J
Lead	1.1	10.5	56.3	J	1.1	10.9	135	J	1.2	11.7	5.3	J	1.2	11.3	40.6	J
Magnesium	1096.5	21.1	6500	A	1135.1	21.9	2670	A	1212.1	23.3	1070	A	1179.2	22.7	1940	A
Manganese	3.3	0.2	195	J	3.4	0.2	113	J	3.6	0.2	48.6	U	3.5	0.2	85.8	J
Mercury	0.044	0.044	0.8	A	0.045	0.045	1.0	A	0.049	0.049	0.1	U	0.047	0.047	0.5	A
Nickel	8.8	5.3	25.0	J	9.1	5.5	14.8	J	9.7	5.9	6.0	J	9.4	5.7	5.7	UJ
Potassium	1096.5	449.1	2900	J	1135.1	464.9	871	J	1212.1	496.5	497	UJ	1179.2	483.0	1370	J
Selenium	1.1	0.4	0.59	J	1.1	0.5	0.82	J	1.2	0.5	0.48	UJ	1.2	0.5	0.47	UJ
Silver	2.2	0.7	0.70	UJ	2.3	0.7	0.73	UJ	2.4	0.8	0.78	UJ	2.4	0.8	0.75	UJ
Sodium	1096.5	397.8	398	U	1135.1	411.8	412	U	1212.1	439.8	440	U	1179.2	427.8	428	U
Thallium	2.2	0.4	0.44	U	2.3	0.5	0.61	UJ	2.4	0.5	0.48	UJ	2.4	0.5	0.47	U
Vanadium	11.0	0.9	30.8	A	11.4	0.9	21.9	A	12.1	0.9	7.6	A	11.8	0.9	14.3	A
Zinc	4.4	0.7	73.7	J	4.5	0.7	179	J	4.8	0.8	15.7	J	4.7	0.8	50.2	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
NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL

	Sample Point IP/S-1/050/034/1/1/5 Date Sampled: 04/16/90 Percent Solids: 86.8%				Sample Point IP/S-1/055/036/1/1/5 Date Sampled: 06/08/90 Percent Solids: 91.4%				Sample Point IP/S-1/063/036/1/1/5 Date Sampled: 04/18/90 Percent Solids: 85.1%				Sample Point IP/S-1/066/026/1/1/5 Date Sampled: 04/18/90 Percent Solids: 74.1%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	46.1	6.9	5960	J	43.8	6.5	7080	J	47.0	7.0	5010	J	54.0	8.0	4130	J
Antimony	13.8	10.5	10.5	UJ	13.1	9.9	9.9	UJ	14.1	10.7	10.7	UJ	16.2	12.3	12.3	UJ
Arsenic	2.3	0.2	1.8	J	2.2	0.2	15.3	J	2.4	0.2	9.6	J	2.7	0.3	15.9	J
Barium	46.1	0.2	27.0	J	43.8	0.2	59.6	A	47.0	0.2	23.8	J	54.0	0.2	17.3	J
Beryllium	1.2	0.1	0.18	A	1.1	0.1	0.23	U	1.2	0.1	0.16	A	1.3	0.1	0.09	A
Cadmium	1.2	1.0	1.0	UJ	1.1	1.0	0.98	U	1.2	1.1	1.1	UJ	1.3	1.2	1.2	UJ
Calcium	1152.1	5.9	1610	J	1094.1	5.6	4060	J	1175.1	6.1	248	J	1349.5	7.0	679	J
Chromium	2.3	0.9	40.2	J	2.2	0.8	87.6	A	2.4	0.9	10.6	J	2.7	1.0	94.1	J
Cobalt	11.5	1.2	3.7	A	10.9	1.1	4.8	A	11.8	1.2	1.7	A	13.5	1.4	1.4	U
Copper	5.8	0.5	22.9	J	5.5	0.5	51.6	J	5.9	0.5	12.7	J	6.7	0.6	9.4	J
Iron	23.0	3.1	9050	J	21.9	3.0	17700	J	23.5	3.2	5950	J	27.0	3.6	5580	J
Lead	1.2	11.1	39.9	J	1.1	10.5	116	J	1.2	11.3	101	J	1.3	13.0	41.8	J
Magnesium	1152.1	22.2	2900	A	1094.1	21.1	2920	A	1175.1	22.6	952	A	1349.5	26.0	675	A
Manganese	3.5	0.2	114	J	3.3	0.2	159	J	3.5	0.2	37.3	U	4.0	0.2	28.6	U
Mercury	0.046	0.046	0.4	A	0.044	0.044	0.3	A	0.047	0.047	0.1	U	0.054	0.054	0.1	U
Nickel	9.2	5.6	10.5	J	8.8	5.3	13.9	A	9.4	5.7	6.8	J	10.8	6.5	6.5	UJ
Potassium	1152.1	471.9	1030	J	1094.1	448.1	675	J	1175.1	481.3	481	UJ	1349.5	552.8	1310	J
Selenium	1.2	0.5	0.46	UJ	1.1	0.4	0.50	J	1.2	0.5	0.47	UJ	1.3	0.5	0.54	UJ
Silver	2.3	0.7	0.74	UJ	2.2	0.7	0.89	U	2.4	0.8	0.75	UJ	2.7	0.9	0.86	UJ
Sodium	1152.1	418.0	418	U	1094.1	396.9	397	U	1175.1	426.3	426	U	1349.5	489.6	490	U
Thallium	2.3	0.5	0.46	U	2.2	0.4	0.44	UJ	2.4	0.5	0.47	UJ	2.7	0.5	0.54	UJ
Vanadium	11.5	0.9	16.5	A	10.9	0.9	19.8	A	11.8	0.9	6.7	A	13.5	1.1	8.0	A
Zinc	4.6	0.8	38.7	J	4.4	0.7	183	J	4.7	0.8	20.5	J	5.4	0.9	13.3	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
NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Primary Sample Results

Matrix: SOIL

	Sample Point IP/S-1/076/000/1/1/5 Date Sampled: 06/08/90 Percent Solids: 69.6%				Sample Point IP/S-1/144/027/1/1/5 Date Sampled: 06/14/90 Percent Solids: 91.2%				Sample Point IP/S-1/145/036/1/1/5 Date Sampled: 06/14/90 Percent Solids: 90.1%				Sample Point IP/S-1/146/025/1/1/5 Date Sampled: 06/14/90 Percent Solids: 24.7%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	57.5	8.6	46200	J	43.9	6.5	7740	J	44.4	6.6	4860	J	161.9	24.1	2680	J
Antimony	17.2	13.0	14.3	J	13.2	10.0	10.0	UJ	13.3	10.1	10.1	UJ	48.6	36.8	36.8	UJ
Arsenic	2.9	0.3	6.0	J	2.2	0.2	12.2	J	2.2	0.2	3.6	J	8.1	0.8	1.7	J
Barium	57.5	0.2	204	A	43.9	0.2	13.7	A	44.4	0.2	10.1	A	161.9	0.6	38.9	A
Beryllium	1.4	0.1	6.4	A	1.1	0.1	0.30	U	1.1	0.1	0.17	U	4.0	0.2	0.50	U
Cadmium	1.4	1.3	1.3	U	1.1	1.0	0.99	U	1.1	1.0	1.0	U	4.0	3.6	3.6	U
Calcium	1436.8	7.4	10200	J	1096.5	5.7	1590	J	1109.9	5.7	222	J	4048.6	20.9	10800	J
Chromium	2.9	1.1	215	J	2.2	0.8	11.7	A	2.2	0.8	6.6	A	8.1	3.0	3.0	U
Cobalt	14.4	1.5	116	A	11.0	1.1	4.0	A	11.1	1.1	1.1	U	40.5	4.1	4.1	U
Copper	7.2	0.7	37.3	J	5.5	0.5	14.2	J	5.5	0.5	3.1	U	20.2	1.9	9.5	U
Iron	28.7	3.9	193000	J	21.9	3.0	11100	J	22.2	3.0	3980	J	81.0	10.9	3310	J
Lead	1.4	13.8	238	J	1.1	10.5	10.5	R	1.1	10.7	10.6	R	4.0	38.9	38.9	R
Magnesium	1436.8	27.7	27.7	U	1096.5	21.1	2680	A	1109.9	21.4	1150	A	4048.6	78.0	682	A
Manganese	4.3	0.2	10900	J	3.3	0.2	141	J	3.3	0.2	39.9	J	12.1	0.6	9.8	J
Mercury	0.058	0.058	0.1	U	0.044	0.044	0.1	U	0.044	0.044	0.1	U	0.162	0.162	0.2	U
Nickel	11.5	7.0	485	A	8.8	5.3	12.4	J	8.9	5.4	5.4	J	32.4	19.6	19.6	UJ
Potassium	1436.8	588.5	589	UJ	1096.5	449.1	449	UJ	1109.9	454.6	455	UJ	4048.6	1658.3	1660	UJ
Selenium	1.4	0.6	0.57	UJ	1.1	0.4	0.44	UJ	1.1	0.4	0.44	UJ	4.0	1.6	1.7	J
Silver	2.9	0.9	0.92	UJ	2.2	0.7	2.1	U	2.2	0.7	0.71	UJ	8.1	2.6	2.6	UJ
Sodium	1436.8	521.3	18200	A	1096.5	397.8	398	U	1109.9	402.7	403	U	4048.6	1468.8	1470	U
Thallium	2.9	0.6	0.57	UJ	2.2	0.4	0.44	UJ	2.2	0.4	0.44	UJ	8.1	1.6	1.6	UJ
Vanadium	14.4	1.1	130	J	11.0	0.9	17.2	A	11.1	0.9	7.3	A	40.5	3.2	3.6	A
Zinc	5.7	0.9	51.1	J	4.4	0.7	32.5	J	4.4	0.7	13.6	J	16.2	2.7	5.3	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
NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix Spike Sample Results

Matrix: SOIL

	Sample Point IP/S-1/002/036/1/M/5 Date Sampled: 06/13/90 Percent Solids: 86.0%				Sample Point IP/S-1/002/036/1/N/5 Date Sampled: 06/13/90 Percent Solids: 86.0%				Sample Point IP/S-1/031/025/1/M/5 Date Sampled: 04/16/90 Percent Solids: 92.7%				Sample Point IP/S-1/031/025/1/N/5 Date Sampled: 04/16/90 Percent Solids: 92.7%			
Parameter	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual	CRDL	IDL	Result	Qual
Aluminum	46.5	10.0	6920	NA	46.5	10.0	7200	NA	43.1	6.4	9010	NA	43.1	6.4	10000	NA
Antimony	14.0	5.4	101	NA	14.0	5.4	98.4	NA	12.9	9.8	70.3	NA	12.9	9.8	76.4	NA
Arsenic	2.3	0.2	67.4	NA	2.3	0.2	65.8	NA	2.2	0.2	16.0	NA	2.2	0.2	15.0	NA
Barium	46.5	0.1	509	NA	46.5	0.1	503	NA	43.1	0.2	435	NA	43.1	0.2	430	NA
Beryllium	1.2	0.2	11.1	NA	1.2	0.2	11.0	NA	1.1	0.1	10.2	NA	1.1	0.1	10.1	NA
Cadmium	1.2	0.6	10.8	NA	1.2	0.6	9.9	NA	1.1	1.0	11.8	NA	1.1	1.0	11.6	NA
Calcium	1162.8	11.1	23900	NA	1162.8	11.1	23700	NA	1078.7	5.6	20200	NA	1078.7	5.6	19800	NA
Chromium	2.3	1.2	60.9	NA	2.3	1.2	61.7	NA	2.2	0.8	86.3	NA	2.2	0.8	82.7	NA
Cobalt	11.6	1.0	116	NA	11.6	1.0	115	NA	10.8	1.1	106	NA	10.8	1.1	104	NA
Copper	5.8	1.0	139	NA	5.8	1.0	131	NA	5.4	0.5	79.1	NA	5.4	0.5	81.1	NA
Iron	23.3	1.3	16100	NA	23.3	1.3	15100	NA	21.6	2.9	10500	NA	21.6	2.9	11400	NA
Lead	1.2	6.0	360	NA	1.2	6.0	343	NA	1.1	10.4	116	NA	1.1	10.4	117	NA
Magnesium	1162.8	15.0	14300	NA	1162.8	15.0	14300	NA	1078.7	20.8	13500	NA	1078.7	20.8	13900	NA
Manganese	3.5	0.2	220	NA	3.5	0.2	218	NA	3.2	0.2	214	NA	3.2	0.2	224	NA
Mercury	0.047	0.047	0.7	NA	0.047	0.047	1.2	NA	0.043	0.043	1.1	NA	0.043	0.043	1.2	NA
Nickel	9.3	2.9	120	NA	9.3	2.9	119	NA	8.6	5.2	113	NA	8.6	5.2	114	NA
Potassium	1162.8	239.5	12600	NA	1162.8	239.5	12700	NA	1078.7	441.9	11200	NA	1078.7	441.9	12200	NA
Selenium	1.2	0.5	3.0	NA	1.2	0.5	3.2	NA	1.1	0.4	1.6	NA	1.1	0.4	1.7	NA
Silver	2.3	0.9	13.1	NA	2.3	0.9	12.7	NA	2.2	0.7	10.1	NA	2.2	0.7	9.8	NA
Sodium	1162.8	430.9	431	NA	1162.8	430.9	431	NA	1078.7	391.4	20900	NA	1078.7	391.4	20400	NA
Thallium	2.3	0.5	11.2	NA	2.3	0.5	11.4	NA	2.2	0.4	9.4	NA	2.2	0.4	9.6	NA
Vanadium	11.6	2.2	138	NA	11.6	2.2	138	NA	10.8	0.8	122	NA	10.8	0.8	122	NA
Zinc	4.7	0.5	182	NA	4.7	0.5	184	NA	4.3	0.7	137	NA	4.3	0.7	138	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
NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.
Region I Data Validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate Samples.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix Spike Sample Results

Matrix: SOIL

	Sample Point IP/S-1/035/032/1/M/5 Date Sampled: 04/16/90 Percent Solids: 88.1%				Sample Point IP/S-1/035/032/1/N/5 Date Sampled: 04/16/90 Percent Solids: 88.1%				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	45.4	6.8	5300	NA	45.4	6.8	6320	NA								
Antimony	13.6	10.3	79.5	NA	13.6	10.3	89.6	NA								
Arsenic	2.3	0.2	50.5	NA	2.3	0.2	46.5	NA								
Barium	45.4	0.2	437	NA	45.4	0.2	449	NA								
Beryllium	1.1	0.1	10.0	NA	1.1	0.1	10.2	NA								
Cadmium	1.1	1.0	12.2	NA	1.1	1.0	12.0	NA								
Calcium	1135.1	5.9	67700	NA	1135.1	5.9	45900	NA								
Chromium	2.3	0.8	420	NA	2.3	0.8	311	NA								
Cobalt	11.4	1.2	106	NA	11.4	1.2	107	NA								
Copper	5.7	0.5	88.4	NA	5.7	0.5	99.4	NA								
Iron	22.7	3.1	10400	NA	22.7	3.1	16400	NA								
Lead	1.1	10.9	257	NA	1.1	10.9	414	NA								
Magnesium	1135.1	21.9	12400	NA	1135.1	21.9	12400	NA								
Manganese	3.4	0.2	200	NA	3.4	0.2	215	NA								
Mercury	0.045	0.045	1.6	NA	0.045	0.045	2.0	NA								
Nickel	9.1	5.5	117	NA	9.1	5.5	119	NA								
Potassium	1135.1	464.9	11500	NA	1135.1	464.9	11300	NA								
Selenium	1.1	0.5	3.6	NA	1.1	0.5	3.0	NA								
Silver	2.3	0.7	11.0	NA	2.3	0.7	11.2	NA								
Sodium	1135.1	411.8	21000	NA	1135.1	411.8	19700	NA								
Thallium	2.3	0.5	11.0	NA	2.3	0.5	11.0	NA								
Vanadium	11.4	0.9	115	NA	11.4	0.9	117	NA								
Zinc	4.5	0.7	318	NA	4.5	0.7	279	NA								

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 NA - Not Applicable

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.
Region I Data Validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate Samples.

TABLE 7

SUMMARY OF CLP INORGANICS ANALYSES - TASK S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Equipment Blank Sample Results

Matrix: WATER

	Sample Point IP/S-1/EB20/000/2/1/5 Date Sampled: 04/16/90 Percent Solids: 0.0%				Sample Point IP/S-1/EB57/000/2/1/5 Date Sampled: 06/13/90 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	46.5	A	200.0	43.1	43.1	U								
Antimony	60.0	45.4	45.4	U	60.0	23.4	23.4	U								
Arsenic	10.0	1.0	1.0	U	10.0	1.0	1.0	U								
Barium	200.0	0.7	1.9	U	200.0	0.6	1.3	U								
Beryllium	5.0	0.3	0.30	U	5.0	0.8	0.8	U								
Cadmium	5.0	4.5	4.5	UJ	5.0	2.5	2.5	U								
Calcium	5000.0	25.8	178	U	5000.0	47.8	82.7	A								
Chromium	10.0	3.7	3.7	UJ	10.0	5.2	5.2	U								
Cobalt	50.0	5.1	5.1	U	50.0	4.2	4.2	U								
Copper	25.0	2.3	4.1	A	25.0	4.4	4.4	U								
Iron	100.0	13.5	858	J	100.0	5.5	22.4	U								
Lead	5.0	1.0	1.0	R	5.0	1.0	1.0	U								
Magnesium	5000.0	96.3	96.3	U	5000.0	64.7	64.7	U								
Manganese	15.0	0.8	42.4	A	15.0	1.0	1.0	U								
Mercury	0.200	0.200	0.2	U	0.200	0.200	0.2	U								
Nickel	40.0	24.2	24.2	U	40.0	12.4	12.4	U								
Potassium	5000.0	2048.0	3980	U	5000.0	1030.0	1030	U								
Selenium	5.0	2.0	2.0	UJ	5.0	2.0	2.0	U								
Silver	10.0	3.2	4.7	U	10.0	4.0	4.0	U								
Sodium	5000.0	1814.0	1810	U	5000.0	1853.0	1850	U								
Thallium	10.0	2.0	2.0	UJ	10.0	2.0	2.0	U								
Vanadium	50.0	3.9	3.9	U	50.0	9.4	9.4	U								
Zinc	20.0	3.3	7.8	U	20.0	2.2	4.9	U								

Notes: All units are ug/l

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

Comments: All sample results, CRDL and IDL columns, have been reported on a dry weight basis. CRDL and IDL values have been rounded and reported to one decimal place with the exception of Mercury which has been reported to three decimal places.

TABLE 8

Summary of Target Compound List Results

TABLE 8

SUMMARY OF TARGET COMPOUND LIST RESULTS

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

IP/S-1/001/006/1/2/1

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

The third through fifth characters (S-1) 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 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER

Equipment and Trip Blank Sample Results
Volatile Organics

	Sample Point TRIP_BLANK/2 Date Sampled: 04/20/90 Percent Moisture: 0.0%			Sample Point TRIP_BLANK/2 Date Sampled: 06/13/90 Percent Moisture: 0.0%			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	10	10	U	10	10	U						
Bromomethane	10	10	U	10	10	U						
Vinyl Chloride	10	10	U	10	10	U						
Chloroethane	10	10	U	10	10	U						
Methylene Chloride	5	5	U	5	5	U						
Acetone	10	10	U	10	10	U						
Carbon Disulfide	5	5	U	5	5	U						
1,1-Dichloroethene	5	5	U	5	5	U						
1,1-Dichloroethane	5	5	U	5	5	U						
1,2-Dichloroethene (total)	5	5	U	5	5	U						
Chloroform	5	5	U	5	5	U						
1,2-Dichloroethane	5	5	U	5	5	U						
2-Butanone	10	10	U	10	10	U						
1,1,1-Trichloroethane	5	5	U	5	5	U						
Carbon Tetrachloride	5	5	U	5	5	U						
Vinyl Acetate	10	10	U	10	10	U						
Bromodichloromethane	5	5	U	5	5	U						
1,2-Dichloropropane	5	5	U	5	5	U						
cis-1,3-Dichloropropene	5	5	U	5	5	U						
Trichloroethene	5	5	U	5	5	U						
Dibromochloromethane	5	5	U	5	5	U						
1,1,2-Trichloroethane	5	5	U	5	5	U						
Benzene	5	5	U	5	5	U						
trans-1,3-Dichloropropene	5	5	U	5	5	U						
Bromoform	5	5	U	5	5	U						
4-Methyl-2-Pentanone	10	10	U	10	10	U						
2-Hexanone	10	10	U	10	10	U						
Tetrachloroethene	5	5	U	5	5	U						
Toluene	5	5	U	5	5	U						
1,1,2,2-Tetrachloroethane	5	5	U	5	5	U						
Chlorobenzene	5	5	U	5	5	U						
Ethylbenzene	5	5	U	5	5	U						
Styrene	5	5	U	5	5	U						
Xylenes (Total)	5	5	U	5	5	U						

Notes:
All units are ug/l

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Volatile Organics

	Sample Point IP/S-1/002/036/1/1/2 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/D/2 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/004/027/1/1/2 Date Sampled: 06/13/90 Percent Moisture: 12.0%			Sample Point IP/S-1/005/030/1/1/2 Date Sampled: 06/13/90 Percent Moisture: 9.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	12	12	U		Not Analyzed		11	11	U	11	11	U
Bromomethane	12	12	U		Not Analyzed		11	11	U	11	11	U
Vinyl Chloride	12	12	U		Not Analyzed		11	11	U	11	11	U
Chloroethane	12	12	U		Not Analyzed		11	11	U	11	11	U
Methylene Chloride	6	6	U		Not Analyzed		6	6	U	5	5	U
Acetone	12	12	UJ		Not Analyzed		11	11	U	11	11	U
Carbon Disulfide	6	6	U		Not Analyzed		6	6	U	5	5	U
1,1-Dichloroethene	6	6	U		Not Analyzed		6	6	U	5	5	U
1,1-Dichloroethane	6	6	U		Not Analyzed		6	6	U	5	5	U
1,2-Dichloroethene (total)	6	6	U		Not Analyzed		6	6	U	5	5	U
Chloroform	2	2	J		Not Analyzed		6	6	U	5	5	U
1,2-Dichloroethane	6	6	U		Not Analyzed		6	6	U	5	5	U
2-Butanone	12	12	U		Not Analyzed		11	11	U	11	11	U
1,1,1-Trichloroethane	6	3	J		Not Analyzed		6	3	J	5	4	J
Carbon Tetrachloride	6	6	U		Not Analyzed		6	6	U	5	5	U
Vinyl Acetate	12	12	U		Not Analyzed		11	11	U	11	11	U
Bromodichloromethane	6	6	U		Not Analyzed		6	6	U	5	5	U
1,2-Dichloropropane	6	6	U		Not Analyzed		6	6	U	5	5	U
cis-1,3-Dichloropropene	6	6	U		Not Analyzed		6	6	U	5	5	U
Trichloroethene	6	6	U		Not Analyzed		6	6	U	5	5	U
Dibromochloromethane	6	6	U		Not Analyzed		6	6	U	5	5	U
1,1,2-Trichloroethane	6	6	U		Not Analyzed		6	6	U	5	5	U
Benzene	6	6	U		Not Analyzed		6	6	U	5	5	U
trans-1,3-Dichloropropene	6	6	U		Not Analyzed		6	6	U	5	5	U
Bromoform	6	6	U		Not Analyzed		6	6	U	5	5	U
4-Methyl-2-Pentanone	12	12	U		Not Analyzed		11	11	U	11	11	U
2-Hexanone	12	12	U		Not Analyzed		11	11	U	11	11	U
Tetrachloroethene	6	6	U		Not Analyzed		6	6	U	5	5	U
Toluene	6	6	U		Not Analyzed		6	6	U	5	5	U
1,1,2,2-Tetrachloroethane	6	6	U		Not Analyzed		6	6	U	5	5	U
Chlorobenzene	6	6	U		Not Analyzed		6	6	U	5	5	U
Ethylbenzene	6	6	U		Not Analyzed		6	6	U	5	5	U
Styrene	6	6	U		Not Analyzed		6	6	U	5	5	U
Xylenes (Total)	6	6	U		Not Analyzed		6	6	U	5	5	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/002/036/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/D/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/004/027/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 12.0%			Sample Point IP/S-1/005/030/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 9.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
bis(2-Chloroethyl)ether	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2-Chlorophenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
1,3-Dichlorobenzene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
1,4-Dichlorobenzene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Benzyl alcohol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
1,2-Dichlorobenzene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2-Methylphenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
bis-2(Chloroisopropyl)ether	380	380	U	380	380	UJ	3700	3700	U	360	360	U
4-Methylphenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
N-Nitroso-di-n-propylamine	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Hexachloroethane	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Nitrobenzene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Isophorone	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2-Nitrophenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2,4-Dimethylphenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Benzoic acid	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
bis(2-Chloroethoxy)methane	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2,4-Dichlorophenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
1,2,4-Trichlorobenzene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Naphthalene	380	380	U	380	380	UJ	3700	3700	U	360	67	J
4-Chloroaniline	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Hexachlorobutadiene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
4-Chloro-3-methylphenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2-Methylnaphthalene	380	48	J	380	62	J	3700	3700	U	360	55	J
Hexachlorocyclopentadiene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2,4,6-Trichlorophenol	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2,4,5-Trichlorophenol	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
2-Chloronaphthalene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2-Nitroaniline	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
Dimethylphthalate	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Acenaphthylene	380	380	U	380	380	UJ	3700	3700	U	360	130	J
2,6-Dinitrotoluene	380	380	U	380	380	UJ	3700	3700	U	360	360	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/002/036/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/D/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/004/027/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 12.0%			Sample Point IP/S-1/005/030/1/1/3 Date Sampled: 06/13/90 Percent Moisture: 9.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
Acenaphthene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2,4-Dinitrophenol	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
4-Nitrophenol	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
Dibenzofuran	380	380	U	380	380	UJ	3700	3700	U	360	360	U
2,4-Dinitrotoluene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Diethylphthalate	380	380	U	380	380	UJ	3700	3700	U	360	360	U
4-Chlorophenyl-phenylether	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Fluorene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
4-Nitroaniline	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
4,6-Dinitro-2-methylphenol	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
N-Nitrosodiphenylamine	380	380	U	380	380	UJ	3700	3700	U	360	360	U
4-Bromophenyl-phenylether	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Hexachlorobenzene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Pentachlorophenol	1900	1900	U	1900	1900	UJ	18000	18000	U	1800	1800	U
Phenanthrene	380	140	J	380	270	J	3700	580	J	360	420	A
Anthracene	380	380	UJ	380	51	J	3700	3700	U	360	130	J
Di-n-butylphthalate	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Fluoranthene	380	190	J	380	410	J	3700	1100	J	360	930	A
Pyrene	380	170	J	380	350	J	3700	1100	J	360	830	A
Butylbenzylphthalate	380	380	U	380	380	UJ	3700	3700	U	360	360	U
3,3'-Dichlorobenzidine	770	770	U	770	770	UJ	7500	7500	U	720	720	U
Benzo(a)anthracene	380	110	J	380	180	J	3700	3700	U	360	600	A
Chrysene	380	190	J	380	350	J	3700	910	J	360	690	A
bis(2-Ethylhexyl)phthalate	380	64	J	380	120	J	3700	3700	U	360	63	J
Di-n-octylphthalate	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Benzo(b)fluoranthene	380	260	J	380	440	J	3700	1300	J	360	1300	A
Benzo(k)fluoranthene	380	380	U	380	380	UJ	3700	3700	U	360	360	U
Benzo(a)pyrene	380	90	J	380	180	J	3700	3700	U	360	560	A
Indeno(1,2,3-cd)pyrene	380	63	J	380	110	J	3700	3700	U	360	380	A
Dibenz(a,h)anthracene	380	380	U	380	380	UJ	3700	3700	U	360	170	J
Benzo(g,h,i)perylene	380	64	J	380	120	J	3700	3700	U	360	340	J

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Pesticide Organics

	Sample Point IP/S-1/002/036/1/1/4 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/D/4 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/004/027/1/1/4 Date Sampled: 06/13/90 Percent Moisture: 12.0%			Sample Point IP/S-1/005/030/1/1/4 Date Sampled: 06/13/90 Percent Moisture: 9.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
beta-BHC	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
delta-BHC	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
gamma-BHC (Lindane)	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
Heptachlor	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
Aldrin	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
Heptachlor epoxide	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
Endosulfan I	9.2	9.2	U	9.3	9.3	UJ	18	18	U	17	17	U
Dieldrin	18	18	U	19	19	UJ	37	37	U	35	35	U
4,4'-DDE	18	28	A	19	26	J	37	37	U	35	35	U
Endrin	18	18	U	19	19	UJ	37	37	U	35	35	U
Endosulfan II	18	18	U	19	19	UJ	37	37	U	35	35	U
4,4'-DDD	18	18	U	19	19	UJ	37	37	U	35	35	U
Endosulfan sulfate	18	18	U	19	19	UJ	37	37	U	35	35	U
4,4'-DDT	18	18	U	19	19	UJ	37	37	U	35	35	U
Methoxychlor	92	92	U	93	93	UJ	180	180	U	170	170	U
Endrin ketone	18	18	U	19	19	UJ	37	37	U	35	35	U
alpha-Chlordane	92	92	U	93	93	UJ	180	180	U	170	170	U
gamma-Chlordane	92	92	U	93	93	UJ	180	180	U	170	170	U
Toxaphene	180	180	U	190	190	UJ	370	370	U	350	350	U
Aroclor-1016	92	92	U	93	93	UJ	180	180	U	170	170	U
Aroclor-1221	92	92	U	93	93	UJ	180	180	U	170	170	U
Aroclor-1232	92	92	U	93	93	UJ	180	180	U	170	170	U
Aroclor-1242	92	92	U	93	93	UJ	180	180	U	170	170	U
Aroclor-1248	92	92	U	93	93	UJ	180	180	U	170	170	U
Aroclor-1254	180	3000	A	190	2000	J	370	370	U	350	350	U
Aroclor-1260	180	180	U	190	190	UJ	370	370	U	350	350	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Volatile Organics

	Sample Point IP/S-1/006/026/1/1/2 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point IP/S-1/008/027/1/1/2 Date Sampled: 04/17/90 Percent Moisture: 11.0%			Sample Point IP/S-1/013/025/1/1/2 Date Sampled: 04/17/90 Percent Moisture: 16.0%			Sample Point IP/S-1/019/032/1/1/2 Date Sampled: 04/17/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	12	12	U	11	11	U	12	12	U	12	12	U
Bromomethane	12	12	U	11	11	U	12	12	U	12	12	U
Vinyl Chloride	12	12	U	11	11	U	12	12	U	12	12	U
Chloroethane	12	12	U	11	11	U	12	12	U	12	12	U
Methylene Chloride	6	6	U	6	6	U	6	6	U	6	6	U
Acetone	12	12	U	11	11	U	12	8	J	12	12	U
Carbon Disulfide	6	6	U	6	6	U	6	6	U	6	6	U
1,1-Dichloroethene	6	6	U	6	6	U	6	6	U	6	6	U
1,1-Dichloroethane	6	6	U	6	6	U	6	6	U	6	6	U
1,2-Dichloroethene (total)	6	6	U	6	6	U	6	6	U	6	6	U
Chloroform	6	6	U	6	6	U	6	6	U	6	6	U
1,2-Dichloroethane	6	6	U	6	6	U	6	6	U	6	6	U
2-Butanone	12	12	U	11	11	U	12	12	U	12	12	U
1,1,1-Trichloroethane	6	6	U	6	6	U	6	6	U	6	6	U
Carbon Tetrachloride	6	6	U	6	6	U	6	6	U	6	6	U
Vinyl Acetate	12	12	U	11	11	U	12	12	U	12	12	U
Bromodichloromethane	6	6	U	6	6	U	6	6	U	6	6	U
1,2-Dichloropropane	6	6	U	6	6	U	6	6	U	6	6	U
cis-1,3-Dichloropropene	6	6	U	6	6	U	6	6	U	6	6	U
Trichloroethene	6	6	U	6	6	U	6	6	U	6	6	U
Dibromochloromethane	6	6	U	6	6	U	6	6	U	6	6	U
1,1,2-Trichloroethane	6	6	U	6	6	U	6	6	U	6	6	U
Benzene	6	6	U	6	6	U	6	6	U	6	6	U
trans-1,3-Dichloropropene	6	6	U	6	6	U	6	6	U	6	6	U
Bromoform	6	6	U	6	6	U	6	6	U	6	6	U
4-Methyl-2-Pentanone	12	12	U	11	11	U	12	12	U	12	12	U
2-Hexanone	12	12	U	11	11	U	12	12	U	12	12	U
Tetrachloroethene	6	6	U	6	6	U	6	6	U	6	6	U
Toluene	6	6	U	6	6	U	6	6	U	6	6	U
1,1,2,2-Tetrachloroethane	6	6	U	6	6	U	6	6	U	6	6	U
Chlorobenzene	6	6	U	6	6	U	6	6	U	6	6	U
Ethylbenzene	6	6	U	6	6	U	6	6	U	6	6	U
Styrene	6	6	U	6	6	U	6	6	U	6	6	U
Xylenes (Total)	6	6	U	6	6	U	6	6	U	6	6	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/006/026/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point IP/S-1/008/027/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 11.0%			Sample Point IP/S-1/013/025/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 16.0%			Sample Point IP/S-1/019/032/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	400	400	U	370	370	U	390	390	U	760	760	U
bis(2-Chloroethyl)ether	400	400	U	370	370	U	390	390	U	760	760	U
2-Chlorophenol	400	400	U	370	370	U	390	390	U	760	760	U
1,3-Dichlorobenzene	400	400	U	370	370	U	390	390	U	760	760	U
1,4-Dichlorobenzene	400	400	U	370	370	U	390	390	U	760	760	U
Benzyl alcohol	400	400	U	370	370	U	390	390	U	760	760	U
1,2-Dichlorobenzene	400	400	U	370	370	U	390	390	U	760	760	U
2-Methylphenol	400	400	U	370	370	U	390	390	U	760	760	U
bis-2(Chloroisopropyl)ether	400	400	U	370	370	U	390	390	U	760	760	U
4-Methylphenol	400	400	U	370	370	U	390	390	U	760	760	U
N-Nitroso-di-n-propylamine	400	400	U	370	370	U	390	390	U	760	760	U
Hexachloroethane	400	400	U	370	370	U	390	390	U	760	760	U
Nitrobenzene	400	400	U	370	370	U	390	390	U	760	760	U
Isophorone	400	400	U	370	370	U	390	390	U	760	760	U
2-Nitrophenol	400	400	U	370	370	U	390	390	U	760	760	U
2,4-Dimethylphenol	400	400	U	370	370	U	390	390	U	760	760	U
Benzoic acid	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
bis(2-Chloroethoxy)methane	400	400	U	370	370	U	390	390	U	760	760	U
2,4-Dichlorophenol	400	400	U	370	370	U	390	390	U	760	760	U
1,2,4-Trichlorobenzene	400	400	U	370	370	U	390	390	U	760	760	U
Naphthalene	400	400	U	370	370	U	390	390	U	760	760	U
4-Chloroaniline	400	400	U	370	370	U	390	390	U	760	760	U
Hexachlorobutadiene	400	400	U	370	370	U	390	390	U	760	760	U
4-Chloro-3-methylphenol	400	400	U	370	370	U	390	390	U	760	760	U
2-Methylnaphthalene	400	400	U	370	370	U	390	390	U	760	760	U
Hexachlorocyclopentadiene	400	400	U	370	370	U	390	390	U	760	760	U
2,4,6-Trichlorophenol	400	400	U	370	370	U	390	390	U	760	760	U
2,4,5-Trichlorophenol	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
2-Chloronaphthalene	400	400	U	370	370	U	390	390	U	760	760	U
2-Nitroaniline	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
Dimethylphthalate	400	400	U	370	370	U	390	390	U	760	760	U
Acenaphthylene	400	400	U	370	370	U	390	40	J	760	140	J
2,6-Dinitrotoluene	400	400	U	370	370	U	390	390	U	760	760	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/006/026/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point IP/S-1/008/027/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 11.0%			Sample Point IP/S-1/013/025/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 16.0%			Sample Point IP/S-1/019/032/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
Acenaphthene	400	400	U	370	370	U	390	69	J	760	200	J
2,4-Dinitrophenol	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
4-Nitrophenol	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
Dibenzofuran	400	400	U	370	370	U	390	390	U	760	120	J
2,4-Dinitrotoluene	400	400	U	370	370	U	390	390	U	760	760	U
Diethylphthalate	400	400	U	370	370	U	390	390	U	760	760	U
4-Chlorophenyl-phenylether	400	400	U	370	370	U	390	390	U	760	760	U
Fluorene	400	400	U	370	370	U	390	75	J	760	280	J
4-Nitroaniline	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
4,6-Dinitro-2-methylphenol	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
N-Nitrosodiphenylamine	400	400	U	370	370	U	390	390	U	760	760	U
4-Bromophenyl-phenylether	400	400	U	370	370	U	390	390	U	760	760	U
Hexachlorobenzene	400	400	U	370	370	U	390	390	U	760	760	U
Pentachlorophenol	1900	1900	U	1800	1800	U	1900	1900	U	3800	3800	U
Phenanthrene	400	110	J	370	51	J	390	1200	A	760	3600	A
Anthracene	400	400	U	370	370	U	390	310	J	760	1200	A
Di-n-butylphthalate	400	400	U	370	370	U	390	390	U	760	760	U
Fluoranthene	400	150	J	370	86	J	390	1400	A	760	9800	A
Pyrene	400	150	J	370	75	J	390	1100	A	760	11000	A
Butylbenzylphthalate	400	400	U	370	370	U	390	390	U	760	760	U
3,3'-Dichlorobenzidine	800	800	U	740	740	U	780	780	U	1500	1500	U
Benzo(a)anthracene	400	98	J	370	42	J	390	590	A	760	5600	A
Chrysene	400	150	J	370	65	J	390	600	A	760	5200	A
bis(2-Ethylhexyl)phthalate	400	65	J	370	79	J	390	56	J	760	150	J
Di-n-octylphthalate	400	400	U	370	370	U	390	390	U	760	760	U
Benzo(b)fluoranthene	400	280	J	370	130	J	390	1000	A	760	8000	A
Benzo(k)fluoranthene	400	400	U	370	370	U	390	390	U	760	760	U
Benzo(a)pyrene	400	130	J	370	58	J	390	570	A	760	4800	A
Indeno(1,2,3-cd)pyrene	400	83	J	370	42	J	390	200	J	760	1700	A
Dibenz(a,h)anthracene	400	400	U	370	370	U	390	390	U	760	240	J
Benzo(g,h,i)perylene	400	95	J	370	370	U	390	240	J	760	1800	A

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Pesticide Organics

	Sample Point IP/S-1/006/026/1/1/4 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point IP/S-1/008/027/1/1/4 Date Sampled: 04/17/90 Percent Moisture: 11.0%			Sample Point IP/S-1/013/025/1/1/4 Date Sampled: 04/17/90 Percent Moisture: 16.0%			Sample Point IP/S-1/019/032/1/1/4 Date Sampled: 04/17/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
beta-BHC	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
delta-BHC	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
gamma-BHC (Lindane)	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
Heptachlor	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
Aldrin	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
Heptachlor epoxide	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
Endosulfan I	9.6	9.6	U	9.0	9.0	U	95	95	U	940	940	U
Dieldrin	19	19	U	18	18	U	190	190	U	1900	1900	U
4,4'-DDE	19	20	A	18	18	U	190	190	U	1900	1900	U
Endrin	19	19	U	18	18	U	190	190	U	1900	1900	U
Endosulfan II	19	19	U	18	18	U	190	190	U	1900	1900	U
4,4'-DDD	19	19	U	18	18	U	190	190	U	1900	1900	U
Endosulfan sulfate	19	19	U	18	18	U	190	190	U	1900	1900	U
4,4'-DDT	19	29	A	18	18	U	190	190	U	1900	1900	U
Methoxychlor	96	96	U	90	90	U	950	950	U	9400	9400	U
Endrin ketone	19	19	U	18	18	U	190	190	U	1900	1900	U
alpha-Chlordane	96	96	U	90	90	U	950	950	U	9400	9400	U
gamma-Chlordane	96	96	U	90	90	U	950	950	U	9400	9400	U
Toxaphene	190	190	U	180	180	U	1900	1900	U	19000	19000	U
Aroclor-1016	96	96	U	90	90	U	950	950	U	9400	9400	U
Aroclor-1221	96	96	U	90	90	U	950	950	U	9400	9400	U
Aroclor-1232	96	96	U	90	90	U	950	950	U	9400	9400	U
Aroclor-1242	96	96	U	90	90	U	950	950	U	9400	9400	U
Aroclor-1248	96	96	U	90	90	U	950	950	U	9400	9400	U
Aroclor-1254	190	190	U	180	180	U	1900	1900	U	19000	19000	U
Aroclor-1260	190	190	U	180	180	U	1900	1900	U	19000	19000	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Volatile Organics

	Sample Point IP/S-1/025/020/1/1/2 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point IP/S-1/029/035/1/1/2 Date Sampled: 04/16/90 Percent Moisture: 22.0%			Sample Point IP/S-1/029/035/1/D/2 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point IP/S-1/031/025/1/1/2 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	12	12	U	13	13	U	12	12	U	11	11	U
Bromomethane	12	12	U	13	13	U	12	12	U	11	11	U
Vinyl Chloride	12	12	U	13	13	U	12	12	U	11	11	U
Chloroethane	12	12	U	13	13	U	12	12	U	11	11	U
Methylene Chloride	6	6	U	6	6	U	6	6	U	5	5	U
Acetone	12	12	U	13	13	U	12	12	U	11	17	A
Carbon Disulfide	6	6	U	6	6	U	6	6	U	5	5	U
1,1-Dichloroethene	6	6	U	6	6	U	6	6	U	5	5	U
1,1-Dichloroethane	6	6	U	6	6	U	6	6	U	5	5	U
1,2-Dichloroethene (total)	6	6	U	6	6	U	6	6	U	5	5	U
Chloroform	6	6	U	6	6	U	6	6	U	5	5	U
1,2-Dichloroethane	6	6	U	6	6	U	6	6	U	5	5	U
2-Butanone	12	12	U	13	13	U	12	12	U	11	11	U
1,1,1-Trichloroethane	6	6	U	6	6	U	6	6	U	5	5	U
Carbon Tetrachloride	6	6	U	6	6	U	6	6	U	5	5	U
Vinyl Acetate	12	12	U	13	13	U	12	12	U	11	11	U
Bromodichloromethane	6	6	U	6	6	U	6	6	U	5	5	U
1,2-Dichloropropane	6	6	U	6	6	U	6	6	U	5	5	U
cis-1,3-Dichloropropene	6	6	U	6	6	U	6	6	U	5	5	U
Trichloroethene	6	6	U	6	6	U	6	6	U	5	5	U
Dibromochloromethane	6	6	U	6	6	U	6	6	U	5	5	U
1,1,2-Trichloroethane	6	6	U	6	6	U	6	6	U	5	5	U
Benzene	6	6	U	6	6	U	6	6	U	5	5	U
trans-1,3-Dichloropropene	6	6	U	6	6	U	6	6	U	5	5	U
Bromoform	6	6	U	6	6	U	6	6	U	5	5	U
4-Methyl-2-Pentanone	12	12	U	13	13	U	12	12	U	11	11	U
2-Hexanone	12	12	U	13	13	U	12	12	U	11	11	U
Tetrachloroethene	6	6	U	6	6	U	6	6	U	5	5	U
Toluene	6	6	U	6	6	U	6	6	U	5	5	U
1,1,2,2-Tetrachloroethane	6	6	U	6	6	U	6	6	U	5	5	U
Chlorobenzene	6	6	U	6	6	U	6	6	U	5	5	U
Ethylbenzene	6	6	U	6	6	U	6	6	U	5	5	U
Styrene	6	6	U	6	6	U	6	6	U	5	5	U
Xylenes (Total)	6	6	U	6	6	U	6	6	U	5	5	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point 1P/S-1/025/020/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point 1P/S-1/029/035/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 22.0%			Sample Point 1P/S-1/029/035/1/D/3 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point 1P/S-1/031/025/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	390	390	U	420	420	U	400	400	U	350	350	U
bis(2-Chloroethyl)ether	390	390	U	420	420	U	400	400	U	350	350	U
2-Chlorophenol	390	390	U	420	420	U	400	400	U	350	350	U
1,3-Dichlorobenzene	390	390	U	420	420	U	400	400	U	350	350	U
1,4-Dichlorobenzene	390	390	U	420	420	U	400	400	U	350	350	U
Benzyl alcohol	390	390	U	420	420	UJ	400	400	UJ	350	350	UJ
1,2-Dichlorobenzene	390	390	U	420	420	U	400	400	U	350	350	U
2-Methylphenol	390	390	U	420	420	U	400	400	U	350	350	U
bis-2(Chloroisopropyl)ether	390	390	U	420	420	U	400	400	U	350	350	U
4-Methylphenol	390	390	U	420	420	U	400	400	U	350	350	U
N-Nitroso-di-n-propylamine	390	390	U	420	420	U	400	400	U	350	350	U
Hexachloroethane	390	390	U	420	420	U	400	400	U	350	350	U
Nitrobenzene	390	390	U	420	420	U	400	400	U	350	350	U
Isophorone	390	390	U	420	420	U	400	400	U	350	350	U
2-Nitrophenol	390	390	U	420	420	U	400	400	U	350	350	U
2,4-Dimethylphenol	390	390	U	420	420	U	400	400	U	350	350	U
Benzoic acid	1900	51	J	2000	2000	U	2000	2000	U	1700	1700	U
bis(2-Chloroethoxy)methane	390	390	U	420	420	U	400	400	U	350	350	U
2,4-Dichlorophenol	390	390	U	420	420	U	400	400	U	350	350	U
1,2,4-Trichlorobenzene	390	390	U	420	420	U	400	400	U	350	350	U
Naphthalene	390	56	J	420	420	UJ	400	420	J	350	350	U
4-Chloroaniline	390	390	U	420	420	U	400	400	U	350	350	U
Hexachlorobutadiene	390	390	U	420	420	U	400	400	U	350	350	U
4-Chloro-3-methylphenol	390	390	U	420	420	U	400	400	U	350	350	U
2-Methylnaphthalene	390	390	U	420	420	U	400	400	U	350	350	U
Hexachlorocyclopentadiene	390	390	U	420	420	U	400	400	U	350	350	U
2,4,6-Trichlorophenol	390	390	U	420	420	U	400	400	U	350	350	U
2,4,5-Trichlorophenol	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
2-Chloronaphthalene	390	390	U	420	420	U	400	400	U	350	350	U
2-Nitroaniline	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
Dimethylphthalate	390	390	U	420	420	U	400	400	U	350	350	U
Acenaphthylene	390	390	U	420	420	U	400	400	U	350	350	U
2,6-Dinitrotoluene	390	390	U	420	420	U	400	400	U	350	350	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/025/020/1/1/3 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point IP/S-1/029/035/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 22.0%			Sample Point IP/S-1/029/035/1/D/3 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point IP/S-1/031/025/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
Acenaphthene	390	390	U	420	420	UJ	400	310	J	350	350	U
2,4-Dinitrophenol	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
4-Nitrophenol	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
Dibenzofuran	390	390	U	420	420	U	400	400	U	350	350	U
2,4-Dinitrotoluene	390	390	U	420	420	U	400	400	U	350	350	U
Diethylphthalate	390	390	U	420	420	U	400	400	U	350	350	U
4-Chlorophenyl-phenylether	390	390	U	420	420	U	400	400	U	350	350	U
Fluorene	390	390	U	420	77	J	400	320	J	350	350	U
4-Nitroaniline	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
4,6-Dinitro-2-methylphenol	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
N-Nitrosodiphenylamine	390	390	U	420	420	U	400	400	U	350	350	U
4-Bromophenyl-phenylether	390	390	U	420	420	U	400	400	U	350	350	U
Hexachlorobenzene	390	390	U	420	420	U	400	400	U	350	350	U
Pentachlorophenol	1900	1900	U	2000	2000	U	2000	2000	U	1700	1700	U
Phenanthrene	390	320	J	420	1000	J	400	2200	J	350	350	U
Anthracene	390	74	J	420	310	J	400	560	J	350	350	U
Di-n-butylphthalate	390	390	U	420	56	J	400	46	J	350	350	U
Fluoranthene	390	510	A	420	1500	J	400	2700	J	350	350	U
Pyrene	390	410	A	420	1200	J	400	2300	J	350	350	U
Butylbenzylphthalate	390	390	U	420	420	U	400	400	U	350	350	U
3,3'-Dichlorobenzidine	780	780	U	840	840	U	810	810	U	710	710	U
Benzo(a)anthracene	390	210	J	420	820	J	400	1400	J	350	350	U
Chrysene	390	260	J	420	890	A	400	1400	A	350	350	U
bis(2-Ethylhexyl)phthalate	390	60	J	420	230	J	400	48	J	350	350	U
Di-n-octylphthalate	390	390	U	420	420	U	400	400	U	350	350	U
Benzo(b)fluoranthene	390	500	A	420	1100	J	400	2100	J	350	350	U
Benzo(k)fluoranthene	390	390	U	420	420	U	400	400	U	350	350	U
Benzo(a)pyrene	390	230	J	420	620	J	400	1300	J	350	350	U
Indeno(1,2,3-cd)pyrene	390	91	J	420	290	J	400	580	J	350	350	U
Dibenz(a,h)anthracene	390	390	U	420	420	U	400	400	U	350	350	U
Benzo(g,h,i)perylene	390	390	U	420	300	J	400	620	J	350	350	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Pesticide Organics

	Sample Point IP/S-1/025/020/1/1/4 Date Sampled: 04/17/90 Percent Moisture: 17.0%			Sample Point IP/S-1/029/035/1/1/4 Date Sampled: 04/16/90 Percent Moisture: 22.0%			Sample Point IP/S-1/029/035/1/D/4 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point IP/S-1/031/025/1/1/4 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	960	960	U	10	10	U	980	980	U	8.6	8.6	U
beta-BHC	960	960	U	10	10	U	980	980	U	8.6	8.6	U
delta-BHC	960	960	U	10	10	U	980	980	U	8.6	8.6	U
gamma-BHC (Lindane)	960	960	U	10	10	U	980	980	U	8.6	8.6	U
Heptachlor	960	960	U	10	10	U	980	980	U	8.6	8.6	U
Aldrin	960	960	U	10	10	U	980	980	U	8.6	8.6	U
Heptachlor epoxide	960	960	U	10	10	U	980	980	U	8.6	8.6	U
Endosulfan I	960	960	U	10	10	U	980	980	U	8.6	8.6	U
Dieldrin	1900	1900	U	21	21	U	2000	2000	U	17	17	U
4,4'-DDE	1900	1900	U	21	21	U	2000	2000	U	17	17	U
Endrin	1900	1900	U	21	21	U	2000	2000	U	17	17	U
Endosulfan II	1900	1900	U	21	21	U	2000	2000	U	17	17	U
4,4'-DDD	1900	1900	U	21	21	U	2000	2000	U	17	17	U
Endosulfan sulfate	1900	1900	U	21	21	U	2000	2000	U	17	17	U
4,4'-DDT	1900	1900	U	21	21	U	2000	2000	U	17	17	U
Methoxychlor	9600	9600	U	100	100	U	9800	9800	U	86	86	U
Endrin ketone	1900	1900	U	21	21	U	2000	2000	U	17	17	U
alpha-Chlordane	9600	9600	U	100	100	U	9800	9800	U	86	86	U
gamma-Chlordane	9600	9600	U	100	100	U	9800	9800	U	86	86	U
Toxaphene	19000	19000	U	210	210	U	20000	20000	U	170	170	U
Aroclor-1016	9600	9600	U	100	100	U	9800	9800	U	86	86	U
Aroclor-1221	9600	9600	U	100	100	U	9800	9800	U	86	86	U
Aroclor-1232	9600	9600	U	100	100	U	9800	9800	U	86	86	U
Aroclor-1242	9600	9600	U	100	100	U	9800	9800	U	86	86	U
Aroclor-1248	9600	9600	U	100	100	U	9800	9800	U	86	86	U
Aroclor-1254	19000	19000	U	210	210	U	20000	20000	U	170	170	U
Aroclor-1260	19000	19000	U	210	210	U	20000	20000	U	170	170	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Volatile Organics

	Sample Point IP/S-1/034/024/1/1/2 Date Sampled: 04/16/90 Percent Moisture: 8.0%			Sample Point IP/S-1/035/032/1/1/2 Date Sampled: 04/16/90 Percent Moisture: 12.0%			Sample Point IP/S-1/041/033/1/1/2 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point IP/S-1/049/032/1/1/2 Date Sampled: 04/16/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	11	11	U	110	110	U	12	12	U	12	12	U
Bromomethane	11	11	U	110	110	U	12	12	U	12	12	U
Vinyl Chloride	11	11	U	110	110	U	12	12	U	12	12	U
Chloroethane	11	11	U	110	110	U	12	12	U	12	12	U
Methylene Chloride	5	2	J	57	57	U	6	6	U	6	6	U
Acetone	11	100	A	110	940	A	12	16	A	12	190	A
Carbon Disulfide	5	5	U	57	57	U	6	6	U	6	6	U
1,1-Dichloroethene	5	5	U	57	57	U	6	6	U	6	6	U
1,1-Dichloroethane	5	5	U	57	57	U	6	6	U	6	6	U
1,2-Dichloroethene (total)	5	5	U	57	57	U	6	6	U	6	6	U
Chloroform	5	5	U	57	57	U	6	6	U	6	6	U
1,2-Dichloroethane	5	5	U	57	57	U	6	6	U	6	6	U
2-Butanone	11	11	U	110	110	U	12	12	U	12	12	U
1,1,1-Trichloroethane	5	5	U	57	57	U	6	6	U	6	6	U
Carbon Tetrachloride	5	5	U	57	57	U	6	6	U	6	6	U
Vinyl Acetate	11	11	U	110	110	U	12	12	U	12	12	U
Bromodichloromethane	5	5	U	57	57	U	6	6	U	6	6	U
1,2-Dichloropropane	5	5	U	57	57	U	6	6	U	6	6	U
cis-1,3-Dichloropropene	5	5	U	57	57	U	6	6	U	6	6	U
Trichloroethene	5	5	U	57	57	U	6	6	U	6	6	U
Dibromochloromethane	5	5	U	57	57	U	6	6	U	6	6	U
1,1,2-Trichloroethane	5	5	U	57	57	U	6	6	U	6	6	U
Benzene	5	5	U	57	37	J	6	6	U	6	6	U
trans-1,3-Dichloropropene	5	5	U	57	57	U	6	6	U	6	6	U
Bromoform	5	5	U	57	57	U	6	6	U	6	6	U
4-Methyl-2-Pentanone	11	11	U	110	110	U	12	12	U	12	12	U
2-Hexanone	11	11	U	110	110	U	12	12	U	12	12	U
Tetrachloroethene	5	5	U	57	57	U	6	6	U	6	6	U
Toluene	5	5	U	57	57	U	6	6	U	6	6	U
1,1,2,2-Tetrachloroethane	5	5	U	57	57	U	6	6	U	6	6	U
Chlorobenzene	5	5	U	57	57	U	6	6	U	6	6	U
Ethylbenzene	5	5	U	57	57	U	6	6	U	6	6	U
Styrene	5	5	U	57	57	U	6	6	U	6	6	U
Xylenes (Total)	5	5	U	57	27	J	6	6	U	6	6	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/034/024/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 8.0%			Sample Point IP/S-1/035/032/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 12.0%			Sample Point IP/S-1/041/033/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point IP/S-1/049/032/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	360	360	U	22000	22000	U	350	400	U	390	390	U
bis(2-Chloroethyl)ether	360	360	U	22000	22000	U	350	400	U	390	390	U
2-Chlorophenol	360	360	U	22000	22000	U	350	400	U	390	390	U
1,3-Dichlorobenzene	360	360	U	22000	22000	U	350	400	U	390	390	U
1,4-Dichlorobenzene	360	360	U	22000	22000	U	350	400	U	390	390	U
Benzyl alcohol	360	360	UJ	22000	22000	UJ	350	400	UJ	390	390	UJ
1,2-Dichlorobenzene	360	360	U	22000	22000	U	350	400	U	390	390	U
2-Methylphenol	360	360	U	22000	22000	U	350	400	U	390	390	U
bis-2(Chloroisopropyl)ether	360	360	U	22000	22000	U	350	400	U	390	390	U
4-Methylphenol	360	360	U	22000	22000	U	350	400	U	390	390	U
N-Nitroso-di-n-propylamine	360	360	U	22000	22000	U	350	400	U	390	390	U
Hexachloroethane	360	360	U	22000	22000	U	350	400	U	390	390	U
Nitrobenzene	360	360	U	22000	22000	U	350	400	U	390	390	U
Isophorone	360	360	U	22000	22000	U	350	400	U	390	390	U
2-Nitrophenol	360	360	U	22000	22000	U	350	400	U	390	390	U
2,4-Dimethylphenol	360	360	U	22000	22000	U	350	400	U	390	390	U
Benzoic acid	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
bis(2-Chloroethoxy)methane	360	360	U	22000	22000	U	350	400	U	390	390	U
2,4-Dichlorophenol	360	360	U	22000	22000	U	350	400	U	390	390	U
1,2,4-Trichlorobenzene	360	360	U	22000	22000	U	350	400	U	390	390	U
Naphthalene	360	360	U	22000	22000	U	350	400	U	390	390	U
4-Chloroaniline	360	360	U	22000	22000	U	350	400	U	390	390	U
Hexachlorobutadiene	360	360	U	22000	22000	U	350	400	U	390	390	U
4-Chloro-3-methylphenol	360	360	U	22000	22000	U	350	400	U	390	390	U
2-Methylnaphthalene	360	360	U	22000	22000	U	350	400	U	390	390	U
Hexachlorocyclopentadiene	360	360	U	22000	22000	U	350	400	U	390	390	U
2,4,6-Trichlorophenol	360	360	U	22000	22000	U	350	400	U	390	390	U
2,4,5-Trichlorophenol	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
2-Chloronaphthalene	360	360	U	22000	22000	U	350	400	U	390	390	U
2-Nitroaniline	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
Dimethylphthalate	360	360	U	22000	22000	U	350	400	U	390	390	U
Acenaphthylene	360	360	U	22000	22000	U	350	400	U	390	390	U
2,6-Dinitrotoluene	360	360	U	22000	22000	U	350	400	U	390	390	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/034/024/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 8.0%			Sample Point IP/S-1/035/032/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 12.0%			Sample Point IP/S-1/041/033/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point IP/S-1/049/032/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
Acenaphthene	360	360	U	22000	22000	U	350	400	U	390	390	U
2,4-Dinitrophenol	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
4-Nitrophenol	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
Dibenzofuran	360	360	U	22000	22000	U	350	400	U	390	390	U
2,4-Dinitrotoluene	360	360	U	22000	22000	U	350	400	U	390	390	U
Diethylphthalate	360	360	U	22000	22000	U	350	400	U	390	390	U
4-Chlorophenyl-phenylether	360	360	U	22000	22000	U	350	400	U	390	390	U
Fluorene	360	360	U	22000	22000	U	350	400	U	390	390	U
4-Nitroaniline	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
4,6-Dinitro-2-methylphenol	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
N-Nitrosodiphenylamine	360	360	U	22000	22000	U	350	400	U	390	390	U
4-Bromophenyl-phenylether	360	360	U	22000	22000	U	350	400	U	390	390	U
Hexachlorobenzene	360	360	U	22000	22000	U	350	400	U	390	390	U
Pentachlorophenol	1700	1700	U	110000	110000	U	1700	1900	U	1900	1900	U
Phenanthrene	360	360	U	22000	22000	U	350	400	U	390	390	U
Anthracene	360	360	U	22000	22000	U	350	400	U	390	390	U
Di-n-butylphthalate	360	360	U	22000	22000	U	350	400	U	390	390	U
Fluoranthene	360	39	J	22000	22000	U	350	400	U	390	160	J
Pyrene	360	360	U	22000	22000	U	350	400	U	390	130	J
Butylbenzylphthalate	360	360	U	22000	22000	U	350	400	U	390	390	U
3,3'-Dichlorobenzidine	720	720	U	45000	45000	U	710	790	U	770	770	U
Benzo(a)anthracene	360	360	U	22000	22000	U	350	400	U	390	390	U
Chrysene	360	360	U	22000	22000	U	350	400	U	390	390	U
bis(2-Ethylhexyl)phthalate	360	360	U	22000	22000	U	350	400	U	390	69	J
Di-n-octylphthalate	360	360	U	22000	22000	U	350	400	U	390	390	U
Benzo(b)fluoranthene	360	360	U	22000	22000	U	350	400	U	390	120	J
Benzo(k)fluoranthene	360	44	J	22000	22000	U	350	400	U	390	130	J
Benzo(a)pyrene	360	360	U	22000	22000	U	350	400	U	390	390	U
Indeno(1,2,3-cd)pyrene	360	19	J	22000	22000	U	350	400	U	390	32	J
Dibenz(a,h)anthracene	360	360	U	22000	22000	U	350	400	U	390	390	U
Benzo(g,h,i)perylene	360	360	U	22000	22000	U	350	400	U	390	390	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Pesticide Organics

	Sample Point IP/S-1/034/024/1/1/4 Date Sampled: 04/16/90 Percent Moisture: 8.0%			Sample Point IP/S-1/035/032/1/1/4 Date Sampled: 04/16/90 Percent Moisture: 12.0%			Sample Point IP/S-1/041/033/1/1/4 Date Sampled: 04/16/90 Percent Moisture: 18.0%			Sample Point IP/S-1/049/032/1/1/4 Date Sampled: 04/16/90 Percent Moisture: 15.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	87	87	U	130	130	U	9.8	9.8	U	940	940	U
beta-BHC	87	87	U	130	130	U	9.8	9.8	U	940	940	U
delta-BHC	87	87	U	130	130	U	9.8	9.8	U	940	940	U
gamma-BHC (Lindane)	87	87	U	130	130	U	9.8	9.8	U	940	940	U
Heptachlor	87	87	U	130	130	U	9.8	9.8	U	940	940	U
Aldrin	87	87	U	130	130	U	9.8	9.8	U	940	940	U
Heptachlor epoxide	87	87	U	130	130	U	9.8	9.8	U	940	940	U
Endosulfan I	87	87	U	130	130	U	9.8	9.8	U	940	940	U
Dieldrin	170	170	U	270	270	U	20	20	U	1900	1900	U
4,4'-DDE	170	170	U	270	270	U	20	20	U	1900	1900	U
Endrin	170	170	U	270	270	U	20	20	U	1900	1900	U
Endosulfan II	170	170	U	270	270	U	20	20	U	1900	1900	U
4,4'-DDD	170	170	U	270	270	U	20	20	U	1900	1900	U
Endosulfan sulfate	170	170	U	270	270	U	20	20	U	1900	1900	U
4,4'-DDT	170	170	U	270	270	U	20	20	U	1900	1900	U
Methoxychlor	870	870	U	1300	1300	U	98	98	U	9400	9400	U
Endrin ketone	170	170	U	270	270	U	20	20	U	1900	1900	U
alpha-Chlordane	870	870	U	1300	1300	U	98	98	U	9400	9400	U
gamma-Chlordane	870	870	U	1300	1300	U	98	98	U	9400	9400	U
Toxaphene	1700	1700	U	2700	2700	U	200	200	U	19000	19000	U
Aroclor-1016	870	870	U	1300	1300	U	98	98	U	9400	9400	U
Aroclor-1221	870	870	U	1300	1300	U	98	98	U	9400	9400	U
Aroclor-1232	870	870	U	1300	1300	U	98	98	U	9400	9400	U
Aroclor-1242	870	870	U	1300	1300	U	98	98	U	9400	9400	U
Aroclor-1248	870	870	U	1300	1300	U	98	98	U	9400	9400	U
Aroclor-1254	1700	1700	U	2700	2700	U	200	200	U	19000	19000	U
Aroclor-1260	1700	1700	U	2700	2700	U	200	200	U	19000	19000	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Volatile Organics

	Sample Point IP/S-1/050/034/1/1/2 Date Sampled: 04/16/90 Percent Moisture: 13.0%			Sample Point IP/S-1/055/036/1/1/2 Date Sampled: 06/08/90 Percent Moisture: 8.0%			Sample Point IP/S-1/063/036/1/1/2 Date Sampled: 04/18/90 Percent Moisture: 14.0%			Sample Point IP/S-1/066/026/1/1/2 Date Sampled: 04/18/90 Percent Moisture: 25.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	11	11	U	11	11	U	12	12	U	13	13	U
Bromomethane	11	11	U	11	11	U	12	12	U	13	13	U
Vinyl Chloride	11	11	U	11	11	U	12	12	U	13	13	U
Chloroethane	11	11	U	11	11	U	12	12	U	13	13	U
Methylene Chloride	6	6	U	5	5	U	6	6	U	7	7	U
Acetone	11	8	J	11	5	J	12	65	U	13	253	J
Carbon Disulfide	6	6	U	5	5	U	6	6	U	7	7	U
1,1-Dichloroethene	6	6	U	5	5	U	6	6	U	7	7	U
1,1-Dichloroethane	6	6	U	5	5	U	6	6	U	7	7	U
1,2-Dichloroethene (total)	6	6	U	5	5	U	6	6	U	7	7	U
Chloroform	6	6	U	5	5	U	6	6	U	7	7	U
1,2-Dichloroethane	6	6	U	5	5	U	6	6	U	7	7	U
2-Butanone	11	11	U	11	11	U	12	12	U	13	40	A
1,1,1-Trichloroethane	6	6	U	5	5	U	6	6	U	7	7	U
Carbon Tetrachloride	6	6	U	5	5	U	6	6	U	7	7	U
Vinyl Acetate	11	11	U	11	11	U	12	12	U	13	13	U
Bromodichloromethane	6	6	U	5	5	U	6	6	U	7	7	U
1,2-Dichloropropane	6	6	U	5	5	U	6	6	U	7	7	U
cis-1,3-Dichloropropene	6	6	U	5	5	U	6	6	U	7	7	U
Trichloroethene	6	6	U	5	5	U	6	6	U	7	7	U
Dibromochloromethane	6	6	U	5	5	U	6	6	U	7	7	U
1,1,2-Trichloroethane	6	6	U	5	5	U	6	6	U	7	7	U
Benzene	6	6	U	5	5	U	6	6	U	7	7	U
trans-1,3-Dichloropropene	6	6	U	5	5	U	6	6	U	7	7	U
Bromoform	6	6	U	5	5	U	6	6	U	7	7	U
4-Methyl-2-Pentanone	11	11	U	11	11	U	12	12	U	13	13	U
2-Hexanone	11	11	U	11	11	U	12	12	U	13	13	U
Tetrachloroethene	6	6	U	5	5	U	6	6	U	7	7	U
Toluene	6	6	U	5	5	U	6	6	U	7	17	A
1,1,2,2-Tetrachloroethane	6	6	U	5	5	U	6	6	U	7	7	U
Chlorobenzene	6	6	U	5	5	U	6	6	U	7	7	U
Ethylbenzene	6	6	U	5	5	U	6	6	U	7	7	U
Styrene	6	6	U	5	5	U	6	6	U	7	7	U
Xylenes (Total)	6	6	U	5	3	J	6	6	U	7	6	J

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/050/034/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 13.0%			Sample Point IP/S-1/055/036/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 8.0%			Sample Point IP/S-1/063/036/1/1/3 Date Sampled: 04/18/90 Percent Moisture: 14.0%			Sample Point IP/S-1/066/026/1/1/3 Date Sampled: 04/18/90 Percent Moisture: 25.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	380	380	U	1800	1800	U	380	380	U	440	440	U
bis(2-Chloroethyl)ether	380	380	U	1800	1800	U	380	380	U	440	440	U
2-Chlorophenol	380	380	U	1800	1800	U	380	380	U	440	440	U
1,3-Dichlorobenzene	380	380	U	1800	1800	U	380	380	U	440	440	U
1,4-Dichlorobenzene	380	380	U	1800	1800	U	380	380	U	440	440	U
Benzyl alcohol	380	380	UJ	1800	1800	UJ	380	380	U	440	440	U
1,2-Dichlorobenzene	380	380	U	1800	1800	U	380	380	U	440	440	U
2 Methylphenol	380	380	U	1800	1800	U	380	380	U	440	440	U
bis-2(Chloroisopropyl)ether	380	380	U	1800	1800	U	380	380	U	440	440	U
4-Methylphenol	380	380	U	1800	1800	U	380	380	U	440	440	U
N-Nitroso-di-n-propylamine	380	380	U	1800	1800	U	380	380	U	440	440	U
Hexachloroethane	380	380	U	1800	1800	U	380	380	U	440	440	U
Nitrobenzene	380	380	U	1800	1800	U	380	380	U	440	440	U
Isophorone	380	380	U	1800	1800	U	380	380	U	440	440	U
2-Nitrophenol	380	380	U	1800	1800	U	380	380	U	440	440	U
2,4-Dimethylphenol	380	380	U	1800	1800	U	380	380	U	440	440	U
Benzoic acid	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
bis(2-Chloroethoxy)methane	380	380	U	1800	1800	U	380	380	U	440	440	U
2,4-Dichlorophenol	380	380	U	1800	1800	U	380	380	U	440	440	U
1,2,4-Trichlorobenzene	380	380	U	1800	1800	U	380	380	U	440	440	U
Naphthalene	380	380	U	1800	1800	U	380	380	U	440	73	J
4-Chloroaniline	380	380	U	1800	1800	U	380	380	U	440	440	U
Hexachlorobutadiene	380	380	U	1800	1800	U	380	380	U	440	440	U
4-Chloro-3-methylphenol	380	380	U	1800	1800	U	380	380	U	440	440	U
2-Methylnaphthalene	380	380	U	1800	1800	U	380	380	U	440	440	U
Hexachlorocyclopentadiene	380	380	U	1800	1800	U	380	380	U	440	440	U
2,4,6-Trichlorophenol	380	380	U	1800	1800	U	380	380	U	440	440	U
2,4,5-Trichlorophenol	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
2-Chloronaphthalene	380	380	U	1800	1800	U	380	380	U	440	440	U
2-Nitroaniline	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
Dimethylphthalate	380	380	U	1800	1800	U	380	380	U	440	440	U
Acenaphthylene	380	380	U	1800	1800	U	380	380	U	440	440	U
2,6-Dinitrotoluene	380	380	U	1800	1800	U	380	380	U	440	440	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/050/034/1/1/3 Date Sampled: 04/16/90 Percent Moisture: 13.0%			Sample Point IP/S-1/055/036/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 8.0%			Sample Point IP/S-1/063/036/1/1/3 Date Sampled: 04/18/90 Percent Moisture: 14.0%			Sample Point IP/S-1/066/026/1/1/3 Date Sampled: 04/18/90 Percent Moisture: 25.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
Acenaphthene	380	380	U	1800	200	J	380	380	U	440	440	U
2,4-Dinitrophenol	1800	1800	U	8600	8600	UJ	1900	1900	U	2100	2100	U
4-Nitrophenol	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
Dibenzofuran	380	380	U	1800	1800	U	380	380	U	440	440	U
2,4-Dinitrotoluene	380	380	U	1800	1800	U	380	380	U	440	440	U
Diethylphthalate	380	380	U	1800	1800	U	380	380	U	440	440	U
4-Chlorophenyl-phenylether	380	380	U	1800	1800	U	380	380	U	440	440	U
Fluorene	380	380	U	1800	160	J	380	380	U	440	440	U
4-Nitroaniline	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
4,6-Dinitro-2-methylphenol	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
N-Nitrosodiphenylamine	380	380	U	1800	1800	U	380	380	U	440	440	U
4-Bromophenyl-phenylether	380	380	U	1800	1800	U	380	380	U	440	440	U
Hexachlorobenzene	380	380	U	1800	1800	U	380	380	U	440	440	U
Pentachlorophenol	1800	1800	U	8600	8600	U	1900	1900	U	2100	2100	U
Phenanthrene	380	380	U	1800	2400	A	380	380	U	440	440	U
Anthracene	380	380	U	1800	550	J	380	380	U	440	440	U
Di-n-butylphthalate	380	380	U	1800	1800	U	380	34	J	440	440	U
Fluoranthene	380	380	U	1800	5100	A	380	380	U	440	440	U
Pyrene	380	380	U	1800	4400	A	380	380	U	440	440	U
Butylbenzylphthalate	380	380	U	1800	1800	U	380	380	U	440	440	U
3,3'-Dichlorobenzidine	760	760	U	1800	3600	U	770	770	U	880	880	U
Benzo(a)anthracene	380	380	U	1800	2600	A	380	380	U	440	440	U
Chrysene	380	380	U	1800	3000	A	380	380	U	440	440	U
bis(2-Ethylhexyl)phthalate	380	380	U	1800	1800	U	380	380	U	440	62	J
Di-n-octylphthalate	380	380	U	1800	1800	U	380	380	U	440	440	U
Benzo(b)fluoranthene	380	380	U	1800	4000	A	380	380	U	440	440	U
Benzo(k)fluoranthene	380	380	U	1800	1800	U	380	380	U	440	440	U
Benzo(a)pyrene	380	380	U	1800	2500	A	380	380	U	440	440	U
Indeno(1,2,3-cd)pyrene	380	380	U	1800	1400	J	380	380	U	440	440	U
Dibenz(a,h)anthracene	380	380	U	1800	770	J	380	380	U	440	440	U
Benzo(g,h,i)perylene	380	380	U	1800	1600	J	380	380	U	440	440	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Pesticide Organics

	Sample Point IP/S-1/050/034/1/1/4 Date Sampled: 04/16/90 Percent Moisture: 13.0%			Sample Point IP/S-1/055/036/1/1/4 Date Sampled: 06/08/90 Percent Moisture: 8.0%			Sample Point IP/S-1/063/036/1/1/4 Date Sampled: 04/18/90 Percent Moisture: 14.0%			Sample Point IP/S-1/066/026/1/1/4 Date Sampled: 04/18/90 Percent Moisture: 25.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
beta-BHC	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
delta-BHC	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
gamma-BHC (Lindane)	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
Heptachlor	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
Aldrin	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
Heptachlor epoxide	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
Endosulfan I	9.2	9.2	U	43	43	U	9.4	9.4	U	11	11	U
Dieldrin	18	18	U	86	86	U	19	19	U	22	22	U
4,4'-DDE	18	18	U	86	86	U	19	19	U	22	22	U
Endrin	18	18	U	86	86	U	19	19	U	22	22	U
Endosulfan II	18	18	U	86	86	U	19	19	U	22	22	U
4,4'-DDD	18	18	U	86	86	U	19	19	U	22	22	U
Endosulfan sulfate	18	18	U	86	86	U	19	19	U	22	22	U
4,4'-DDT	18	18	U	86	86	U	19	19	U	22	22	U
Methoxychlor	92	92	U	430	430	U	94	94	U	110	110	U
Endrin ketone	18	18	U	86	86	U	19	19	U	22	22	U
alpha-Chlordane	92	92	U	430	430	U	94	94	U	110	110	U
gamma-Chlordane	92	92	U	430	430	U	94	94	U	110	110	U
Toxaphene	180	180	U	860	860	U	190	190	U	220	220	U
Aroclor-1016	92	92	U	430	430	U	94	94	U	110	110	U
Aroclor-1221	92	92	U	430	430	U	94	94	U	110	110	U
Aroclor-1232	92	92	U	430	430	U	94	94	U	110	110	U
Aroclor-1242	92	92	U	430	430	U	94	94	U	110	110	U
Aroclor-1248	92	92	U	430	430	U	94	94	U	110	110	U
Aroclor-1254	180	180	U	860	860	U	190	190	U	220	220	U
Aroclor-1260	180	180	U	860	860	U	190	190	U	220	220	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Volatile Organics

	Sample Point IP/S-1/076/000/1/1/2 Date Sampled: 06/08/90 Percent Moisture: 30.0%			Sample Point IP/S-1/144/027/1/1/2 Date Sampled: 06/14/90 Percent Moisture: 8.0%			Sample Point IP/S-1/145/036/1/1/2 Date Sampled: 06/14/90 Percent Moisture: 9.0%			Sample Point IP/S-1/146/025/1/1/2 Date Sampled: 06/14/90 Percent Moisture: 75.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	14	14	U	11	11	U	11	11	U	40	40	U
Bromomethane	14	14	U	11	11	U	11	11	U	40	40	U
Vinyl Chloride	14	14	U	11	11	U	11	11	U	40	40	U
Chloroethane	14	14	U	11	11	U	11	11	U	40	40	U
Methylene Chloride	7	7	U	5	5	U	5	5	U	20	20	U
Acetone	14	14	UJ	11	11	U	11	11	U	40	40	U
Carbon Disulfide	7	7	U	5	5	U	5	5	U	20	43	J
1,1-Dichloroethene	7	7	U	5	5	U	5	5	U	20	20	U
1,1-Dichloroethane	7	7	U	5	5	U	5	5	U	20	20	U
1,2-Dichloroethene (total)	7	7	U	5	5	U	5	5	U	20	20	U
Chloroform	7	7	U	5	5	U	5	5	U	20	20	U
1,2-Dichloroethane	7	7	U	5	5	U	5	5	U	20	20	U
2-Butanone	14	14	U	11	11	U	11	11	U	40	40	U
1,1,1-Trichloroethane	7	7	U	1	1	J	5	5	U	20	20	U
Carbon Tetrachloride	7	7	U	5	5	U	5	5	U	20	20	U
Vinyl Acetate	14	14	U	11	11	U	11	11	U	40	40	U
Bromodichloromethane	7	7	U	5	5	U	5	5	U	20	20	U
1,2-Dichloropropane	7	7	U	5	5	U	5	5	U	20	20	UJ
cis-1,3-Dichloropropene	7	7	U	5	5	U	5	5	U	20	20	UJ
Trichloroethene	7	7	U	5	5	U	5	5	U	20	20	J
Dibromochloromethane	7	7	U	5	5	U	5	5	U	20	20	UJ
1,1,2-Trichloroethane	7	7	U	5	5	U	5	5	U	20	20	UJ
Benzene	7	7	U	5	5	U	5	5	U	20	20	UJ
trans-1,3-Dichloropropene	7	7	U	5	5	U	5	5	U	20	20	UJ
Bromoform	7	7	U	5	5	U	5	5	U	20	20	UJ
4-Methyl-2-Pentanone	14	14	U	11	11	U	11	11	U	40	40	UJ
2-Hexanone	14	14	U	11	11	U	11	11	U	40	40	UJ
Tetrachloroethene	7	7	U	5	5	U	5	5	U	20	20	UJ
Toluene	7	7	U	5	5	U	5	5	U	20	20	UJ
1,1,2,2-Tetrachloroethane	7	7	U	5	5	U	5	5	U	20	20	UJ
Chlorobenzene	7	7	U	5	5	U	5	5	U	20	20	UJ
Ethylbenzene	7	5	J	5	5	U	5	5	U	20	20	UJ
Styrene	7	7	U	5	5	U	5	5	U	20	20	UJ
Xylenes (Total)	7	4	J	5	5	U	5	5	U	20	20	UJ

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/076/000/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 30.0%			Sample Point IP/S-1/144/027/1/1/3 Date Sampled: 06/14/90 Percent Moisture: 8.0%			Sample Point IP/S-1/145/036/1/1/3 Date Sampled: 06/14/90 Percent Moisture: 9.0%			Sample Point IP/S-1/146/025/1/1/3 Date Sampled: 06/14/90 Percent Moisture: 75.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	470	470	U	360	360	U	360	360	U	1300	1300	U
bis(2-Chloroethyl)ether	470	470	U	360	360	U	360	360	U	1300	1300	U
2-Chlorophenol	470	470	U	360	360	U	360	360	U	1300	1300	U
1,3-Dichlorobenzene	470	470	U	360	360	U	360	360	U	1300	1300	U
1,4-Dichlorobenzene	470	470	U	360	360	U	360	360	U	1300	1300	U
Benzyl alcohol	470	470	UJ	360	360	U	360	360	U	1300	1300	U
1,2-Dichlorobenzene	470	470	U	360	360	U	360	360	U	1300	1300	U
2-Methylphenol	470	470	U	360	360	U	360	360	U	1300	1300	U
bis-2(Chloroisopropyl)ether	470	470	U	360	360	U	360	360	U	1300	1300	U
4-Methylphenol	470	470	U	360	360	U	360	360	U	1300	1300	U
N-Nitroso-di-n-propylamine	470	470	U	360	360	U	360	360	U	1300	1300	U
Hexachloroethane	470	470	U	360	360	U	360	360	U	1300	1300	U
Nitrobenzene	470	470	U	360	360	U	360	360	U	1300	1300	U
Isophorone	470	470	U	360	360	U	360	360	U	1300	1300	U
2-Nitrophenol	470	470	U	360	360	U	360	360	U	1300	1300	U
2,4-Dimethylphenol	470	470	U	360	360	U	360	360	U	1300	1300	U
Benzoic acid	2300	2300	U	1700	1700	U	1700	1700	U	6300	1700	J
bis(2-Chloroethoxy)methane	470	470	U	360	360	U	360	360	U	1300	1300	U
2,4-Dichlorophenol	470	470	U	360	360	U	360	360	U	1300	1300	U
1,2,4-Trichlorobenzene	470	470	U	360	360	U	360	360	U	1300	1300	U
Naphthalene	470	470	U	360	360	U	360	360	U	1300	1300	U
4-Chloroaniline	470	470	U	360	360	U	360	360	U	1300	1300	U
Hexachlorobutadiene	470	470	U	360	360	U	360	360	U	1300	1300	U
4-Chloro-3-methylphenol	470	470	U	360	360	U	360	360	U	1300	1300	U
2-Methylnaphthalene	470	470	U	360	360	U	360	360	U	1300	1300	U
Hexachlorocyclopentadiene	470	470	U	360	360	U	360	360	U	1300	1300	U
2,4,6-Trichlorophenol	470	470	U	360	360	U	360	360	U	1300	1300	U
2,4,5-Trichlorophenol	2300	2300	U	1700	1700	U	1700	1700	U	6300	6300	U
2-Chloronaphthalene	470	470	U	360	360	U	360	360	U	1300	1300	U
2-Nitroaniline	2300	2300	U	1700	1700	U	1700	1700	U	6300	6300	U
Dimethylphthalate	470	470	U	360	360	U	360	360	U	1300	1300	U
Acenaphthylene	470	470	U	360	360	U	360	360	U	1300	1300	U
2,6-Dinitrotoluene	470	470	U	360	360	U	360	360	U	1300	1300	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Semivolatile Organics

	Sample Point IP/S-1/076/000/1/1/3 Date Sampled: 06/08/90 Percent Moisture: 30.0%			Sample Point IP/S-1/144/027/1/1/3 Date Sampled: 06/14/90 Percent Moisture: 8.0%			Sample Point IP/S-1/145/036/1/1/3 Date Sampled: 06/14/90 Percent Moisture: 9.0%			Sample Point IP/S-1/146/025/1/1/3 Date Sampled: 06/14/90 Percent Moisture: 75.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	2300	2300	U	1700	1700	U	1700	1700	U	6300	6300	U
Acenaphthene	470	470	U	360	360	U	360	360	U	1300	1300	U
2,4-Dinitrophenol	2300	2300	UJ	1700	1700	U	1700	1700	U	6300	6300	U
4-Nitrophenol	2300	2300	U	1700	1700	U	1700	1700	U	6300	6300	U
Dibenzofuran	470	470	U	360	360	U	360	360	U	1300	1300	U
2,4-Dinitrotoluene	470	470	U	360	360	U	360	360	U	1300	1300	U
Diethylphthalate	470	470	U	360	360	U	360	360	U	1300	1300	U
4-Chlorophenyl-phenylether	470	470	U	360	360	U	360	360	U	1300	1300	U
Fluorene	470	470	U	360	360	U	360	360	U	1300	1300	U
4-Nitroaniline	2300	2300	U	1700	1700	U	1700	1700	U	6300	6300	U
4,6-Dinitro-2-methylphenol	2300	2300	U	1700	1700	U	1700	1700	U	6300	6300	U
N-Nitrosodiphenylamine	470	470	U	360	360	U	360	360	U	1300	1300	U
4-Bromophenyl-phenylether	470	470	U	360	360	U	360	360	U	1300	1300	U
Hexachlorobenzene	470	470	U	360	360	U	360	360	U	1300	1300	U
Pentachlorophenol	2300	2300	U	1700	1700	U	1700	1700	U	6300	6300	U
Phenanthrene	470	310	J	360	360	U	360	360	U	1300	1300	U
Anthracene	470	54	J	360	360	U	360	360	U	1300	1300	U
Di-n-butylphthalate	470	470	U	360	360	U	360	360	U	1300	1300	U
Fluoranthene	470	690	A	360	360	U	360	360	U	1300	1300	U
Pyrene	470	550	A	360	360	U	360	360	U	1300	1300	U
Butylbenzylphthalate	470	470	U	360	360	U	360	360	U	1300	1300	U
3,3'-Dichlorobenzidine	470	930	U	720	720	U	720	720	U	2600	2600	U
Benzo(a)anthracene	470	420	J	360	360	U	360	360	U	1300	1300	U
Chrysene	470	500	A	360	360	U	360	360	U	1300	1300	U
bis(2-Ethylhexyl)phthalate	470	59	J	360	360	U	360	400	A	1300	1400	A
Di-n-octylphthalate	470	470	U	360	360	U	360	360	U	1300	1300	U
Benzo(b)fluoranthene	470	750	A	360	360	U	360	360	U	1300	1300	U
Benzo(k)fluoranthene	470	470	U	360	360	U	360	360	U	1300	1300	U
Benzo(a)pyrene	470	410	J	360	360	U	360	360	U	1300	1300	U
Indeno(1,2,3-cd)pyrene	470	270	J	360	360	U	360	360	U	1300	1300	U
Dibenz(a,h)anthracene	470	130	J	360	360	U	360	360	U	1300	1300	U
Benzo(g,h,i)perylene	470	320	J	360	360	U	360	360	U	1300	1300	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Primary Sample Results
Pesticide Organics

	Sample Point IP/S-1/076/000/1/1/4 Date Sampled: 06/08/90 Percent Moisture: 30.0%			Sample Point IP/S-1/144/027/1/1/4 Date Sampled: 06/14/90 Percent Moisture: 8.0%			Sample Point IP/S-1/145/036/1/1/4 Date Sampled: 06/14/90 Percent Moisture: 9.0%			Sample Point IP/S-1/146/025/1/1/4 Date Sampled: 06/14/90 Percent Moisture: 75.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
beta-BHC	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
delta-BHC	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
gamma-BHC (Lindane)	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
Heptachlor	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
Aldrin	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
Heptachlor epoxide	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
Endosulfan I	11	11	U	8.6	8.6	U	8.7	8.7	U	32	32	U
Dieldrin	22	22	U	17	17	U	17	17	U	64	64	U
4,4'-DDE	22	22	U	17	17	U	17	17	U	64	64	U
Endrin	22	22	U	17	17	U	17	17	U	64	64	U
Endosulfan II	22	22	U	17	17	U	17	17	U	64	64	U
4,4'-DDD	22	22	U	17	17	U	17	17	U	64	64	U
Endosulfan sulfate	22	22	U	17	17	U	17	17	U	64	64	U
4,4'-DDT	22	22	U	17	17	U	17	17	U	64	64	U
Methoxychlor	110	110	U	86	86	U	87	87	U	320	320	U
Endrin ketone	22	22	U	17	17	U	17	17	U	64	64	U
alpha-Chlordane	110	110	U	86	86	U	87	87	U	320	320	U
gamma-Chlordane	110	110	U	86	86	U	87	87	U	320	320	U
Toxaphene	220	220	U	170	170	U	170	170	U	640	640	U
Aroclor-1016	110	110	U	86	86	U	87	87	U	320	320	U
Aroclor-1221	110	110	U	86	86	U	87	87	U	320	320	U
Aroclor-1232	110	110	U	86	86	U	87	87	U	320	320	U
Aroclor-1242	110	110	U	86	86	U	87	87	U	320	320	U
Aroclor-1248	110	110	U	86	86	U	87	87	U	320	320	U
Aroclor-1254	220	220	U	170	170	U	170	170	U	640	640	U
Aroclor-1260	220	220	U	170	170	U	170	170	U	640	640	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Matrix Spike and Matrix Spike Duplicate Sample Results
Volatile Organics

	Sample Point IP/S-1/002/036/1/M/2 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/N/2 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/031/025/1/M/2 Date Sampled: 04/16/90 Percent Moisture: 7.0%			Sample Point IP/S-1/031/025/1/N/2 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Chloromethane	12	12	U	12	12	U	11	11	U	11	11	U
Bromomethane	12	12	U	12	12	U	11	11	U	11	11	U
Vinyl Chloride	12	12	U	12	12	U	11	11	U	11	11	U
Chloroethane	12	12	U	12	12	U	11	11	U	11	11	U
Methylene Chloride	6	6	U	6	6	U	5	3	J	5	3	J
Acetone	12	6	J	12	6	J	11	38	A	11	20	A
Carbon Disulfide	6	6	U	6	6	U	5	5	U	5	5	U
1,1-Dichloroethene	6	65.2	A1	6	67.3	A1	5	52.4	A1	5	48.5	A1
1,1-Dichloroethane	6	6	U	6	6	U	5	5	U	5	5	U
1,2-Dichloroethene (total)	6	6	U	6	6	U	5	5	U	5	5	U
Chloroform	6	3	J	6	3	J	5	5	U	5	5	U
1,2-Dichloroethane	6	6	U	6	6	U	5	5	U	5	5	U
2-Butanone	12	12	U	12	12	U	11	11	U	11	11	U
1,1,1-Trichloroethane	6	5	J	6	5	J	5	5	U	5	5	U
Carbon Tetrachloride	6	6	U	6	6	U	5	5	U	5	5	U
Vinyl Acetate	12	12	U	12	12	U	11	11	U	11	11	U
Bromodichloromethane	6	6	U	6	6	U	5	5	U	5	5	U
1,2-Dichloropropane	6	6	U	6	6	U	5	5	U	5	5	U
cis-1,3-Dichloropropene	6	6	U	6	6	U	5	5	U	5	5	U
Trichloroethene	6	52.0	A1	6	53.5	A1	5	48.5	A1	5	45.8	A1
Dibromochloromethane	6	6	U	6	6	U	5	5	U	5	5	U
1,1,2-Trichloroethane	6	6	U	6	6	U	5	5	U	5	5	U
Benzene	6	59.8	A1	6	63.5	A1	5	56.6	A1	5	55.1	A1
trans-1,3-Dichloropropene	6	6	U	6	6	U	5	5	U	5	5	U
Bromoform	6	6	U	6	6	U	5	5	U	5	5	U
4-Methyl-2-Pentanone	12	12	U	12	12	U	11	11	U	11	11	U
2-Hexanone	12	12	U	12	12	U	11	11	U	11	11	U
Tetrachloroethene	6	6	U	6	6	U	5	5	U	5	5	U
Toluene	6	61.9	A1	6	65.0	A1	5	58.1	A1	5	57.6	A1
1,1,2,2-Tetrachloroethane	6	12	U	6	12	U	5	5	U	5	5	U
Chlorobenzene	6	56.9	A1	6	57.1	A1	5	56.6	A1	5	54.5	A1
Ethylbenzene	6	6	U	6	6	U	5	5	U	5	5	U
Styrene	6	6	U	6	6	U	5	5	U	5	5	U
Xylenes (Total)	6	6	U	6	6	U	5	5	U	5	5	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Matrix Spike and Matrix Spike Duplicate Sample Results
Semivolatile Organics

	Sample Point IP/S-1/002/036/1/M/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/N/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/031/025/1/M/3 Date Sampled: 04/16/90 Percent Moisture: 7.0%			Sample Point IP/S-1/031/025/1/N/3 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
Phenol	370	4280	A1	380	4360	A1	350	3970	A1	350	4940	A1
bis(2-Chloroethyl)ether	370	370	U	380	380	U	350	350	U	350	350	U
2-Chlorophenol	370	4210	A1	380	4060	A1	350	6050	A1	350	5800	A1
1,3-Dichlorobenzene	370	370	U	380	380	U	350	350	U	350	350	U
1,4-Dichlorobenzene	370	2380	A1	380	1960	A1	350	2460	A1	350	22900	A1
Benzyl alcohol	370	370	U	380	380	U	350	350	U	350	350	U
1,2-Dichlorobenzene	370	370	U	380	380	U	350	350	U	350	350	U
2-Methylphenol	370	370	U	380	380	U	350	350	U	350	350	U
bis-2(Chloroisopropyl)ether	370	370	U	380	380	U	350	350	U	350	350	U
4-Methylphenol	370	370	U	380	380	U	350	350	U	350	350	U
N-Nitroso-di-n-propylamine	370	2890	A1	380	2820	A1	350	2690	A1	350	2630	A1
Hexachloroethane	370	370	U	380	380	U	350	350	U	350	350	U
Nitrobenzene	370	370	U	380	380	U	350	350	U	350	350	U
Isophorone	370	370	U	380	380	U	350	350	U	350	350	U
2-Nitrophenol	370	370	U	380	380	U	350	350	U	350	350	U
2,4-Dimethylphenol	370	370	U	380	380	U	350	350	U	350	350	U
Benzoic acid	1800	1800	U	1800	1800	U	1700	1700	U	1700	1700	U
bis(2-Chloroethoxy)methane	370	370	U	380	380	U	350	350	U	350	350	U
2,4-Dichlorophenol	370	370	U	380	380	U	350	350	U	350	350	U
1,2,4-Trichlorobenzene	370	2530	A1	380	2380	A1	350	2780	A1	350	2520	A1
Naphthalene	370	370	U	380	380	U	350	350	U	350	350	U
4-Chloroaniline	370	370	U	380	380	U	350	350	U	350	350	U
Hexachlorobutadiene	370	370	U	380	380	U	350	350	U	350	350	U
4-Chloro-3-methylphenol	370	5880	A1	380	5360	A1	350	5660	A1	350	4760	A1
2-Methylnaphthalene	370	57	J	380	48	J	350	350	U	350	350	U
Hexachlorocyclopentadiene	370	370	U	380	380	U	350	350	U	350	350	U
2,4,6-Trichlorophenol	370	370	U	380	380	U	350	350	U	350	350	U
2,4,5-Trichlorophenol	1800	1800	U	1800	1800	U	1700	1700	U	1700	1700	U
2-Chloronaphthalene	370	370	U	380	380	U	350	350	U	350	350	U
2-Nitroaniline	1800	1800	U	1800	1800	U	1700	1700	U	1700	1700	U
Dimethylphthalate	370	370	U	380	380	U	350	350	U	350	350	U
Acenaphthylene	370	2760	A1	380	380	U	350	350	U	350	350	U
2,6-Dinitrotoluene	370	370	U	380	380	U	350	350	U	350	350	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Matrix Spike and Matrix Spike Duplicate Sample Results
Semivolatile Organics

	Sample Point IP/S-1/002/036/1/M/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/N/3 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/031/025/1/M/3 Date Sampled: 04/16/90 Percent Moisture: 7.0%			Sample Point IP/S-1/031/025/1/N/3 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
3-Nitroaniline	1800	1800	U	1800	1800	U	1700	1700	U	1700	1700	U
Acenaphthene	370	370	U	380	2660	A1	350	2700	A1	350	2550	A1
2,4-Dinitrophenol	1800	1800	U	1800	1800	U	1700	1700	U	1700	1700	U
4-Nitrophenol	1800	6180	A1	1800	6120	A1	1700	4440	A1	1700	6520	A1
Dibenzofuran	370	370	U	380	380	U	350	350	U	350	350	U
2,4-Dinitrotoluene	370	1690	A1	380	1610	A1	350	2550	A1	350	2640	A1
Diethylphthalate	370	370	U	380	380	U	350	350	U	350	350	U
4-Chlorophenyl-phenylether	370	370	U	380	380	U	350	350	U	350	350	U
Fluorene	370	370	U	380	380	U	350	350	U	350	350	U
4-Nitroaniline	1800	1800	U	1800	1800	U	1700	1700	U	1700	1700	U
4,6-Dinitro-2-methylphenol	1800	1800	U	1800	1800	U	1700	1700	U	1700	1700	U
N-Nitrosodiphenylamine	370	370	U	380	380	U	350	350	U	350	350	U
4-Bromophenyl-phenylether	370	370	U	380	380	U	350	350	U	350	350	U
Hexachlorobenzene	370	370	U	380	380	U	350	350	U	350	350	U
Pentachlorophenol	1800	8190	A1	1800	7960	A1	1700	6370	A1	1700	7300	A1
Phenanthrene	370	130	J	380	130	J	350	350	U	350	350	U
Anthracene	370	370	U	380	380	U	350	350	U	350	350	U
Di-n-butylphthalate	370	370	U	380	380	U	350	350	U	350	350	U
Fluoranthene	370	190	J	380	200	J	350	350	U	350	350	U
Pyrene	370	2980	A1	380	2900	A1	350	2720	A1	350	2780	A1
Butylbenzylphthalate	370	370	U	380	380	U	350	350	U	350	350	U
3,3'-Dichlorobenzidine	750	750	U	760	760	U	710	710	U	710	710	U
Benzo(a)anthracene	370	110	J	380	100	J	350	350	U	350	350	U
Chrysene	370	180	J	380	180	J	350	350	U	350	350	U
bis(2-Ethylhexyl)phthalate	370	370	UJ	380	73	J	350	350	U	350	350	U
Di-n-octylphthalate	370	370	U	380	380	U	350	350	U	350	350	U
Benzo(b)fluoranthene	370	280	J	380	270	J	350	350	U	350	350	U
Benzo(k)fluoranthene	370	370	U	380	380	U	350	350	U	350	350	U
Benzo(a)pyrene	370	93	J	380	97	J	350	350	U	350	350	U
Indeno(1,2,3-cd)pyrene	370	56	J	380	58	J	350	350	U	350	350	U
Dibenz(a,h)anthracene	370	370	U	380	380	U	350	350	U	350	350	U
Benzo(g,h,i)perylene	370	53	J	380	58	J	350	350	U	350	350	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Matrix Spike and Matrix Spike Duplicate Sample Results
Pesticide Organics

	Sample Point IP/S-1/002/036/1/M/4 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/002/036/1/N/4 Date Sampled: 06/13/90 Percent Moisture: 14.0%			Sample Point IP/S-1/031/025/1/M/4 Date Sampled: 04/16/90 Percent Moisture: 7.0%			Sample Point IP/S-1/031/025/1/N/4 Date Sampled: 04/16/90 Percent Moisture: 7.0%		
Parameter	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual	CRQL	Result	Qual
alpha-BHC	9.0	9.0	U	9.2	9.2	U	8.6	8.6	U	8.6	8.6	U
beta-BHC	9.0	9.0	U	9.2	9.2	U	8.6	8.6	U	8.6	8.6	U
delta-BHC	9.0	9.0	U	9.2	9.2	U	8.6	8.6	U	8.6	8.6	U
gamma-BHC (Lindane)	9.0	15.9	A1	9.2	13.2	A1	8.6	23.5	A1	8.6	25.0	A1
Heptachlor	9.0	8.73	A1	9.2	9.62	A1	8.6	21.0	A1	8.6	23.2	A1
Aldrin	9.0	8.13	A1	9.2	8.01	A1	8.6	22.0	A1	8.6	24.2	A1
Heptachlor epoxide	9.0	9.0	U	9.2	9.2	U	8.6	8.6	U	8.6	8.6	U
Endosulfan I	9.0	9.0	U	9.2	9.2	U	8.6	8.6	U	8.6	8.6	U
Dieldrin	18	23.5	A1	18	30.6	A1	17	57.9	A1	17	63.0	A1
4,4'-DDE	18	18	A	18	18	A	17	17	U	17	17	U
Endrin	18	35.0	A1	18	49.1	A1	17	53.3	A1	17	58.2	A1
Endosulfan II	18	18	U	18	18	U	17	17	U	17	17	U
4,4'-DDD	18	18	U	18	18	U	17	17	U	17	17	U
Endosulfan sulfate	18	18	U	18	18	U	17	17	U	17	17	U
4,4'-DDT	18	58.6	A1	18	109	A1	17	59.3	A1	17	64.6	A1
Methoxychlor	90	90	U	92	92	U	86	86	U	86	86	U
Endrin ketone	18	18	U	18	18	U	17	17	U	17	17	U
alpha-Chlordane	90	90	U	92	92	U	86	86	U	86	86	U
gamma-Chlordane	90	90	U	92	92	U	86	86	U	86	86	U
Toxaphene	180	180	U	180	180	U	170	170	U	170	170	U
Aroclor-1016	90	90	U	92	92	U	86	86	U	86	86	U
Aroclor-1221	90	90	U	92	92	U	86	86	U	86	86	U
Aroclor-1232	90	90	U	92	92	U	86	86	U	86	86	U
Aroclor-1242	90	90	U	92	92	U	86	86	U	86	86	U
Aroclor-1248	90	90	U	92	92	U	86	86	U	86	86	U
Aroclor-1254	180	2400	A	180	3600	A	170	170	U	170	170	U
Aroclor-1260	180	180	U	180	180	U	170	170	U	170	170	U

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Matrix Spike and Matrix Spike Duplicate Sample Results
Semivolatile Organics

	Sample Point IP/S-1/035/032/1/M/3 Date Sampled: 04/16/90 Percent Moisture: 11.0%			Sample Point IP/S-1/035/032/1/N/3 Date Sampled: 04/16/90 Percent Moisture: 11.0%			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	22000	87200	A1	22000	79300	A1						
bis(2-Chloroethyl)ether	22000	22000	U	22000	22000	U						
2-Chlorophenol	22000	81800	A1	22000	70100	A1						
1,3-Dichlorobenzene	22000	22000	U	22000	22000	U						
1,4-Dichlorobenzene	22000	43400	A1	22000	37500	A1						
Benzyl alcohol	22000	22000	U	22000	22000	U						
1,2-Dichlorobenzene	22000	22000	U	22000	22000	U						
2-Methylphenol	22000	22000	U	22000	22000	U						
bis-2(Chloroisopropyl)ether	22000	22000	U	22000	22000	U						
4-Methylphenol	22000	22000	U	22000	22000	U						
N-Nitroso-di-n-propylamine	22000	50300	A1	22000	47200	A1						
Hexachloroethane	22000	22000	U	22000	22000	U						
Nitrobenzene	22000	22000	U	22000	22000	U						
Isophorone	22000	22000	U	22000	22000	U						
2-Nitrophenol	22000	22000	U	22000	22000	U						
2,4-Dimethylphenol	22000	22000	U	22000	22000	U						
Benzoic acid	110000	110000	U	110000	110000	U						
bis(2-Chloroethoxy)methane	22000	22000	U	22000	22000	U						
2,4-Dichlorophenol	22000	22000	U	22000	22000	U						
1,2,4-Trichlorobenzene	22000	43400	A1	22000	42000	A1						
Naphthalene	22000	22000	U	22000	22000	U						
4-Chloroaniline	22000	22000	U	22000	22000	U						
Hexachlorobutadiene	22000	22000	U	22000	22000	U						
4-Chloro-3-methylphenol	22000	162000	A1	22000	164000	A1						
2-Methylnaphthalene	22000	22000	U	22000	22000	U						
Hexachlorocyclopentadiene	22000	22000	U	22000	22000	U						
2,4,6-Trichlorophenol	22000	22000	U	22000	22000	U						
2,4,5-Trichlorophenol	110000	110000	U	110000	110000	U						
2-Chloronaphthalene	22000	22000	U	22000	22000	U						
2-Nitroaniline	110000	110000	U	110000	110000	U						
Dimethylphthalate	22000	22000	U	22000	22000	U						
Acenaphthylene	22000	22000	U	22000	22000	U						
2,6-Dinitrotoluene	22000	22000	U	22000	22000	U						

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Matrix Spike and Matrix Spike Duplicate Sample Results
Semivolatile Organics

	Sample Point IP/S-1/035/032/1/M/3 Date Sampled: 04/16/90 Percent Moisture: 11.0%			Sample Point IP/S-1/035/032/1/N/3 Date Sampled: 04/16/90 Percent Moisture: 11.0%			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	110000	110000	U	110000	110000	U						
Acenaphthene	22000	83100	A1	22000	76600	A1						
2,4-Dinitrophenol	110000	110000	U	110000	110000	U						
4-Nitrophenol	110000	151000	A1	110000	229000	A1						
Dibenzofuran	22000	22000	U	22000	22000	U						
2,4-Dinitrotoluene	22000	84900	A1	22000	77300	A1						
Diethylphthalate	22000	22000	U	22000	22000	U						
4-Chlorophenyl-phenylether	22000	22000	U	22000	22000	U						
Fluorene	22000	22000	U	22000	22000	U						
4-Nitroaniline	110000	110000	U	110000	110000	U						
4,6-Dinitro-2-methylphenol	110000	110000	U	110000	110000	U						
N-Nitrosodiphenylamine	22000	22000	U	22000	22000	U						
4-Bromophenyl-phenylether	22000	22000	U	22000	22000	U						
Hexachlorobenzene	22000	22000	U	22000	22000	U						
Pentachlorophenol	110000	158000	A1	110000	188000	A1						
Phenanthrene	22000	22000	U	22000	22000	U						
Anthracene	22000	22000	U	22000	22000	U						
Di-n-butylphthalate	22000	22000	U	22000	22000	U						
Fluoranthene	22000	22000	U	22000	22000	U						
Pyrene	22000	95300	A1	22000	91200	A1						
Butylbenzylphthalate	22000	22000	U	22000	22000	U						
3,3'-Dichlorobenzidine	45000	45000	U	45000	45000	U						
Benzo(a)anthracene	22000	22000	U	22000	22000	U						
Chrysene	22000	22000	U	22000	22000	U						
bis(2-Ethylhexyl)phthalate	22000	22000	U	22000	22000	U						
Di-n-octylphthalate	22000	22000	U	22000	22000	U						
Benzo(b)fluoranthene	22000	22000	U	22000	22000	U						
Benzo(k)fluoranthene	22000	22000	U	22000	22000	U						
Benzo(a)pyrene	22000	22000	U	22000	22000	U						
Indeno(1,2,3-cd)pyrene	22000	22000	U	22000	22000	U						
Dibenz(a,h)anthracene	22000	22000	U	22000	22000	U						
Benzo(g,h,i)perylene	22000	22000	U	22000	22000	U						

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: SOIL

Matrix Spike and Matrix Spike Duplicate Sample Results
Pesticide Organics

	Sample Point IP/S-1/035/032/1/M/4 Date Sampled: 04/16/90 Percent Moisture: 11.0%			Sample Point IP/S-1/035/032/1/N/4 Date Sampled: 04/16/90 Percent Moisture: 11.0%			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	1300	1300	U	1300	1300	U						
beta-BHC	1300	1300	U	1300	1300	U						
delta-BHC	1300	1300	U	1300	1300	U						
gamma-BHC (Lindane)	1300	1920	A1	1300	1960	A1						
Heptachlor	1300	1910	A1	1300	2040	A1						
Aldrin	1300	2350	A1	1300	2240	A1						
Heptachlor epoxide	1300	1300	U	1300	1300	U						
Endosulfan I	1300	1300	U	1300	1300	U						
Dieldrin	2700	6120	A1	2700	6140	A1						
4,4'-DDE	2700	2700	U	2700	2700	U						
Endrin	2700	5950	A1	2700	6150	A1						
Endosulfan II	2700	2700	U	2700	2700	U						
4,4'-DDD	2700	2700	U	2700	2700	U						
Endosulfan sulfate	2700	2700	U	2700	2700	U						
4,4'-DDT	2700	6040	A1	2700	6300	A1						
Methoxychlor	13000	13000	U	13000	13000	U						
Endrin ketone	2700	2700	U	2700	2700	U						
alpha-Chlordane	13000	13000	U	13000	13000	U						
gamma-Chlordane	13000	13000	U	13000	13000	U						
Toxaphene	27000	27000	U	27000	27000	U						
Aroclor-1016	13000	13000	U	13000	13000	U						
Aroclor-1221	13000	13000	U	13000	13000	U						
Aroclor-1232	13000	13000	U	13000	13000	U						
Aroclor-1242	13000	13000	U	13000	13000	U						
Aroclor-1248	13000	13000	U	13000	13000	U						
Aroclor-1254	27000	27000	U	27000	27000	U						
Aroclor-1260	27000	27000	U	27000	27000	U						

Notes:
All units are ug/kg

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER

Equipment and Trip Blank Sample Results
Volatile Organics

	Sample Point IP/S-1/EB20/000/2/1/2 Date Sampled: 04/16/90 Percent Moisture: 0.0%			Sample Point IP/S-1/EB57/000/2/1/2 Date Sampled: 06/13/90 Percent Moisture: 0.0%			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	10	10	U	10	10	U						
Bromomethane	10	10	U	10	10	U						
Vinyl Chloride	10	10	U	10	10	U						
Chloroethane	10	10	U	10	10	U						
Methylene Chloride	5	5	U	5	5	U						
Acetone	10	10	U	10	15	A						
Carbon Disulfide	5	5	U	5	5	U						
1,1-Dichloroethene	5	5	U	5	5	U						
1,1-Dichloroethane	5	5	U	5	5	U						
1,2-Dichloroethene (total)	5	5	U	5	5	U						
Chloroform	5	5	U	5	5	U						
1,2-Dichloroethane	5	5	U	5	5	U						
2-Butanone	10	10	U	10	10	U						
1,1,1-Trichloroethane	5	5	U	5	5	U						
Carbon Tetrachloride	5	5	U	5	5	U						
Vinyl Acetate	10	10	U	10	10	U						
Bromodichloromethane	5	5	U	5	5	U						
1,2-Dichloropropane	5	5	U	5	5	U						
cis-1,3-Dichloropropene	5	5	U	5	5	U						
Trichloroethene	5	5	U	5	5	U						
Dibromochloromethane	5	5	U	5	5	U						
1,1,2-Trichloroethane	5	5	U	5	5	U						
Benzene	5	5	U	5	5	U						
trans-1,3-Dichloropropene	5	5	U	5	5	U						
Bromoform	5	5	U	5	5	U						
4-Methyl-2-Pentanone	10	10	U	10	10	U						
2-Hexanone	10	10	U	10	10	U						
Tetrachloroethene	5	5	U	5	5	U						
Toluene	5	5	U	5	5	U						
1,1,2,2-Tetrachloroethane	5	5	U	5	5	U						
Chlorobenzene	5	5	U	5	5	U						
Ethylbenzene	5	5	U	5	5	U						
Styrene	5	5	U	5	5	U						
Xylenes (Total)	5	5	U	5	5	U						

Notes:
All units are ug/l

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER

Equipment and Trip Blank Sample Results
Semivolatile Organics

	Sample Point IP/S-1/EB20/000/2/1/3 Date Sampled: 04/16/90 Percent Moisture: 0.0%			Sample Point IP/S-1/EB57/000/2/1/3 Date Sampled: 06/13/90 Percent Moisture: 0.0%			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	10	10	U	10	10	U						
bis(2-Chloroethyl)ether	10	10	U	10	10	U						
2-Chlorophenol	10	10	U	10	10	U						
1,3-Dichlorobenzene	10	10	U	10	10	U						
1,4-Dichlorobenzene	10	10	U	10	10	U						
Benzyl alcohol	10	10	UJ	10	10	U						
1,2-Dichlorobenzene	10	10	U	10	10	U						
2-Methylphenol	10	10	U	10	10	U						
bis-2(Chloroisopropyl)ether	10	10	U	10	10	U						
4-Methylphenol	10	10	U	10	10	U						
N-Nitroso-di-n-propylamine	10	10	U	10	10	U						
Hexachloroethane	10	10	U	10	10	U						
Nitrobenzene	10	10	U	10	10	U						
Isophorone	10	10	U	10	10	U						
2-Nitrophenol	10	10	U	10	10	U						
2,4-Dimethylphenol	10	10	U	10	10	U						
Benzoic acid	50	50	U	50	50	U						
bis(2-Chloroethoxy)methane	10	10	U	10	10	U						
2,4-Dichlorophenol	10	10	U	10	10	U						
1,2,4-Trichlorobenzene	10	10	U	10	10	U						
Naphthalene	10	10	U	10	10	U						
4-Chloroaniline	10	10	U	10	10	U						
Hexachlorobutadiene	10	10	U	10	10	U						
4-Chloro-3-methylphenol	10	10	U	10	10	U						
2-Methylnaphthalene	10	10	U	10	10	U						
Hexachlorocyclopentadiene	10	10	U	10	10	U						
2,4,6-Trichlorophenol	10	10	U	10	10	U						
2,4,5-Trichlorophenol	50	50	U	50	50	U						
2-Chloronaphthalene	10	10	U	10	10	U						
2-Nitroaniline	50	50	U	50	50	U						
Dimethylphthalate	10	10	U	10	10	U						
Acenaphthylene	10	10	U	10	10	U						
2,6-Dinitrotoluene	10	10	U	10	10	U						

Notes:
All units are ug/l

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER

Equipment and Trip Blank Sample Results
Semivolatile Organics

	Sample Point IP/S-1/EB20/000/2/1/3 Date Sampled: 04/16/90 Percent Moisture: 0.0%			Sample Point IP/S-1/EB57/000/2/1/3 Date Sampled: 06/13/90 Percent Moisture: 0.0%			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	50	50	U	50	50	U						
Acenaphthene	10	10	U	10	10	U						
2,4-Dinitrophenol	50	50	U	50	50	U						
4-Nitrophenol	50	50	U	50	50	U						
Dibenzofuran	10	10	U	10	10	U						
2,4-Dinitrotoluene	10	10	U	10	10	U						
Diethylphthalate	10	10	U	10	10	U						
4-Chlorophenyl-phenylether	10	10	U	10	10	U						
Fluorene	10	10	U	10	10	U						
4-Nitroaniline	50	50	U	50	50	U						
4,6-Dinitro-2-methylphenol	50	50	U	50	50	U						
N-Nitrosodiphenylamine	10	10	U	10	10	U						
4-Bromophenyl-phenylether	10	10	U	10	10	U						
Hexachlorobenzene	10	10	U	10	10	U						
Pentachlorophenol	50	50	U	50	50	U						
Phenanthrene	10	10	U	10	10	U						
Anthracene	10	10	U	10	10	U						
Di-n-butylphthalate	10	10	U	10	10	U						
Fluoranthene	10	10	U	10	10	U						
Pyrene	10	10	U	10	10	U						
Butylbenzylphthalate	10	10	U	10	10	U						
3,3'-Dichlorobenzidine	20	20	U	20	20	U						
Benzo(a)anthracene	10	10	U	10	10	U						
Chrysene	10	10	U	10	10	U						
bis(2-Ethylhexyl)phthalate	10	10	U	10	10	U						
Di-n-octylphthalate	10	10	U	10	10	U						
Benzo(b)fluoranthene	10	10	U	10	10	U						
Benzo(k)fluoranthene	10	10	U	10	10	U						
Benzo(a)pyrene	10	10	U	10	10	U						
Indeno(1,2,3-cd)pyrene	10	10	U	10	10	U						
Dibenz(a,h)anthracene	10	10	U	10	10	U						
Benzo(g,h,i)perylene	10	10	U	10	10	U						

Notes:
All units are ug/l

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 8

SUMMARY OF CLP ORGANICS ANALYSES - Task S-1

INDUSTRI-PLEX SITE PRE-DESIGN INVESTIGATION WOBURN, MA

Matrix: WATER

Equipment and Trip Blank Sample Results
Pesticide Organics

	Sample Point IP/S-1/EB20/000/2/1/4 Date Sampled: 04/16/90 Percent Moisture: 0.0%			Sample Point IP/S-1/EB57/000/2/1/4 Date Sampled: 06/13/90 Percent Moisture: 0.0%			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	0.050	0.050	U	0.050	0.050	U						
beta-BHC	0.050	0.050	U	0.050	0.050	U						
delta-BHC	0.050	0.050	U	0.050	0.050	U						
gamma-BHC (Lindane)	0.050	0.050	U	0.050	0.050	U						
Heptachlor	0.050	0.050	U	0.050	0.050	U						
Aldrin	0.050	0.050	U	0.050	0.050	U						
Heptachlor epoxide	0.050	0.050	U	0.050	0.050	U						
Endosulfan I	0.050	0.050	U	0.050	0.050	U						
Dieldrin	0.10	0.10	U	0.10	0.10	U						
4,4'-DDE	0.10	0.10	U	0.10	0.10	U						
Endrin	0.10	0.10	U	0.10	0.10	U						
Endosulfan II	0.10	0.10	U	0.10	0.10	U						
4,4'-DDD	0.10	0.10	U	0.10	0.10	U						
Endosulfan sulfate	0.10	0.10	U	0.10	0.10	U						
4,4'-DDT	0.10	0.10	U	0.10	0.10	U						
Methoxychlor	0.50	0.50	U	0.50	0.50	U						
Endrin ketone	0.10	0.10	U	0.10	0.10	U						
alpha-Chlordane	0.50	0.50	U	0.50	0.50	U						
gamma-Chlordane	0.50	0.50	U	0.50	0.50	U						
Toxaphene	1.0	1.0	U	1.0	1.0	U						
Aroclor-1016	0.50	0.50	U	0.50	0.50	U						
Aroclor-1221	0.50	0.50	U	0.50	0.50	U						
Aroclor-1232	0.50	0.50	U	0.50	0.50	U						
Aroclor-1242	0.50	0.50	U	0.50	0.50	U						
Aroclor-1248	0.50	0.50	U	0.50	0.50	U						
Aroclor-1254	1.0	1.0	U	1.0	1.0	U						
Aroclor-1260	1.0	1.0	U	1.0	1.0	U						

Notes:
All units are ug/l

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

Comments:
A1- Region 1 data validation procedures do not provide guidelines for applying qualifiers to the Matrix Spike and Matrix Spike Duplicate samples.

TABLE 9

Summary of Background Concentrations

Analyte	Concentration	
1,1,1-trichloroethane	20	ug/kg
Acetone	6	ug/kg
Carbon disulfide	6	ug/kg
Trichloroethene	9	ug/kg
Bis(2-ethylhexyl)phthalate	1400	ug/kg
Benzoic acid	1700	ug/kg
Aluminum	7740	mg/kg
Antimony	36.8	mg/kg
Arsenic	25	mg/kg
Barium	38.9	mg/kg
Beryllium	0.50	mg/kg
Cadmium	3.6	mg/kg
Calcium	10,800	mg/kg
Chromium	23	mg/kg
Cobalt	4.1	mg/kg
Copper	14.2	mg/kg
Iron	11,100	mg/kg
Lead	87	mg/kg
Magnesium	2,680	mg/kg
Manganese	141	mg/kg
Mercury	0.4	mg/kg
Nickel	19.6	mg/kg
Potassium	1,660	mg/kg
Selenium	1.7	mg/kg
Silver	2.6	mg/kg
Sodium	1,470	mg/kg
Thallium	1.6	mg/kg
Vanadium	17.2	mg/kg
Zinc	32.5	mg/kg

NOTE: Arsenic, lead, and chromium background concentrations determined from SW-846 analyses (see text). Background concentration of all other analytes is largest concentration reported in three samples analyzed by Contract Lab Program - Routine Analytical Services.

C:S1TAB9

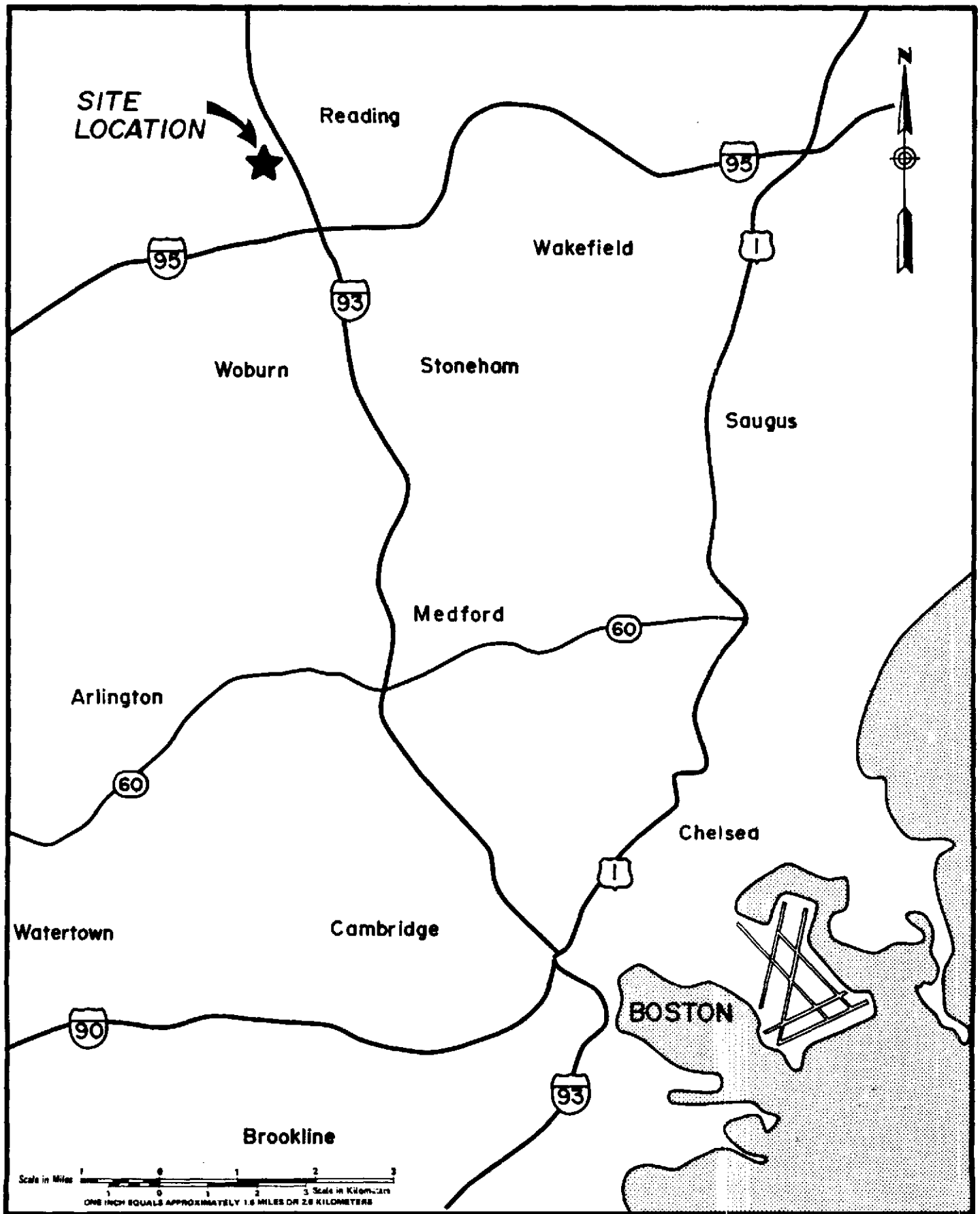
TABLE 10

Summary of Task S-1 Analyses

Analysis	Primary Samples		Field Duplicates		MS/MSD's		Equipment Blanks		Trip Blank	
	PDWP	Final	PDWP	Final	PDWP	Final	PDWP	Final	PDWP	Final
AS,Pb,Cr	363	365	18	20	36	38	18	20	0	0
Hide Residue	363	334	0	0	0	0	0	0	0	0
TCL VOCs	19	22	2	2	2	2	2	2	2	2
TCL SV	19	22	2	2(b)	2	2	2	2	0	0
TCL Pest/PCB	19	22	2	2(b)	2	2	2	2	0	0
TAL Metals(a)	19	22	2	2	2	2	2	2	0	0

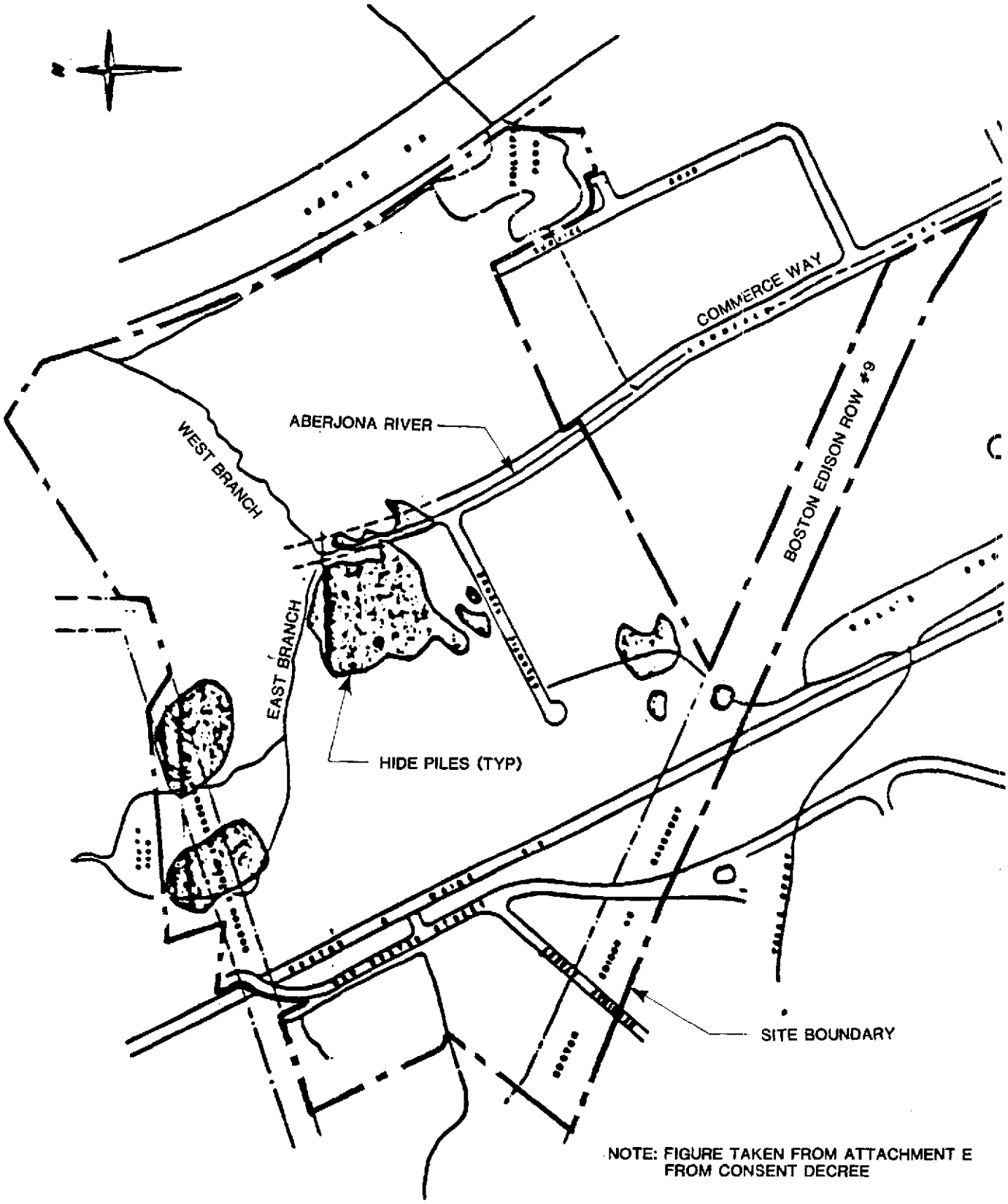
(a) TAL Pb results have been determined to be unusable. SW-846 results from the same borehole provide more detailed chemical data, although it is not considered to be as defensible as CLP-RAS data.

(b) The semivolatile and pesticide/pcb extraction holding time was exceeded for one of the field duplicates. See pages 26 and 27 of the text for a discussion of the usability of these data.



JOB NO. 893-6255	SCALE AS SHOWN	SITE LOCATION MAP	
DRAWN EAM	DATE 08/18/89		
CHECKED RMG	DWG. NO. MA01-003		
Golder Associates		ISRT/WOBURN/MA	FIGURE 1

140857

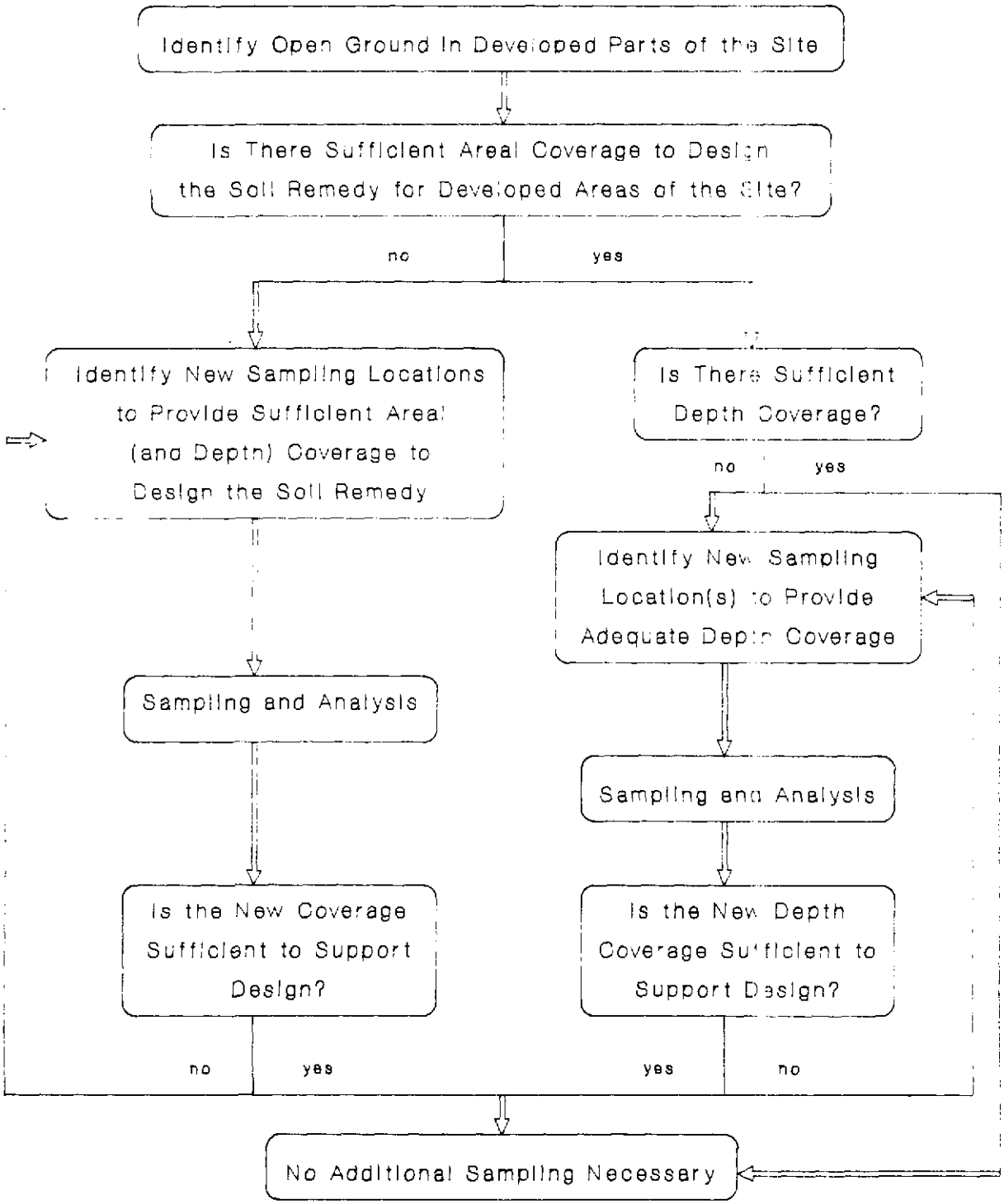


NOTE: FIGURE TAKEN FROM ATTACHMENT E FROM CONSENT DECREE

JOB NO. 893-6255	SCALE N.T.S.	SITE BOUNDARY		
DRAWN MRM	DATE 09/19/89			
CHECKED RMG	DWG NO. MA01-004			
Golder Associates		ISRT/WOBURN/MA	FIGURE 2	

140657

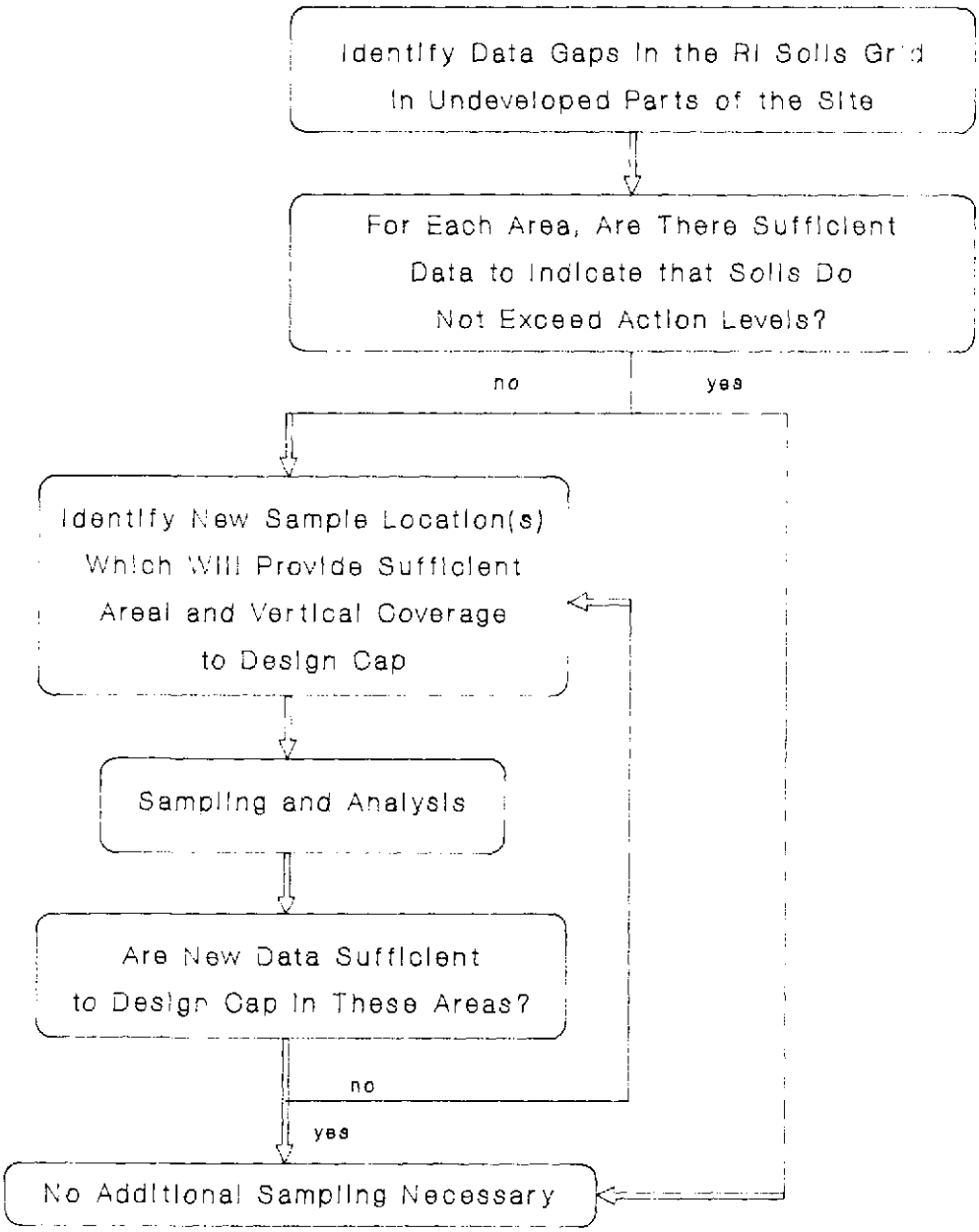
Determine Extent of Hazardous Substances At or Above Action Levels in Developed Parts of the Site



JOB NO. 893-6255	SCALE N/A	SOIL DATA NEED No. 1		
DRAWN MRM	DATE 11/15/89			
CHECKED RPG	DWG NO. MAO1-005			
Golder Associates		ISRT/WOBURN/MA	FIGURE 3	

140657

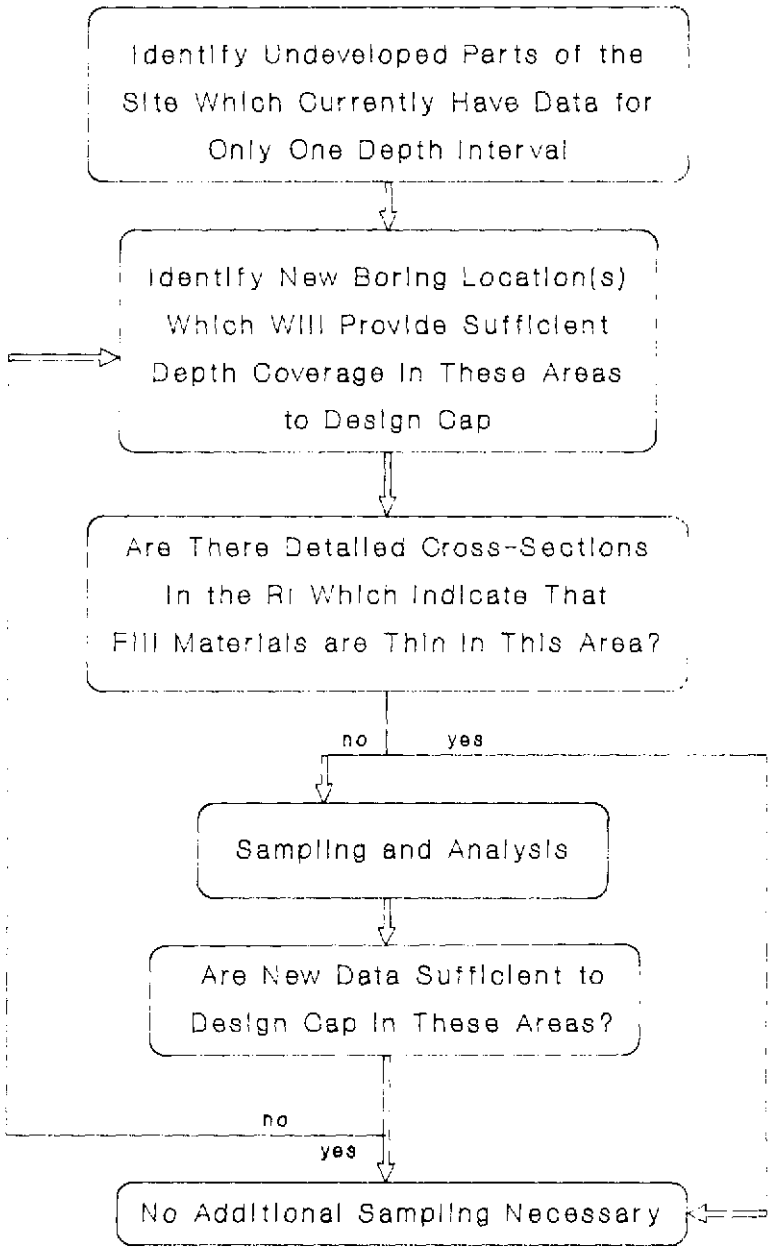
Determine the Extent of Hazardous Substances At or Above Action Levels in Undeveloped Parts of the Site Where There Are Data Gaps in the RI Soils Grid



JOB NO. 893-6255	SCALE N/A	SOIL DATA NEED No. 2a		
DRAWN MRM	DATE 11/15/89			
CHECKED KMG	DWG NO. MAO1-006			
Golder Associates		ISRT/WOBURN/MA	FIGURE 4	

140657

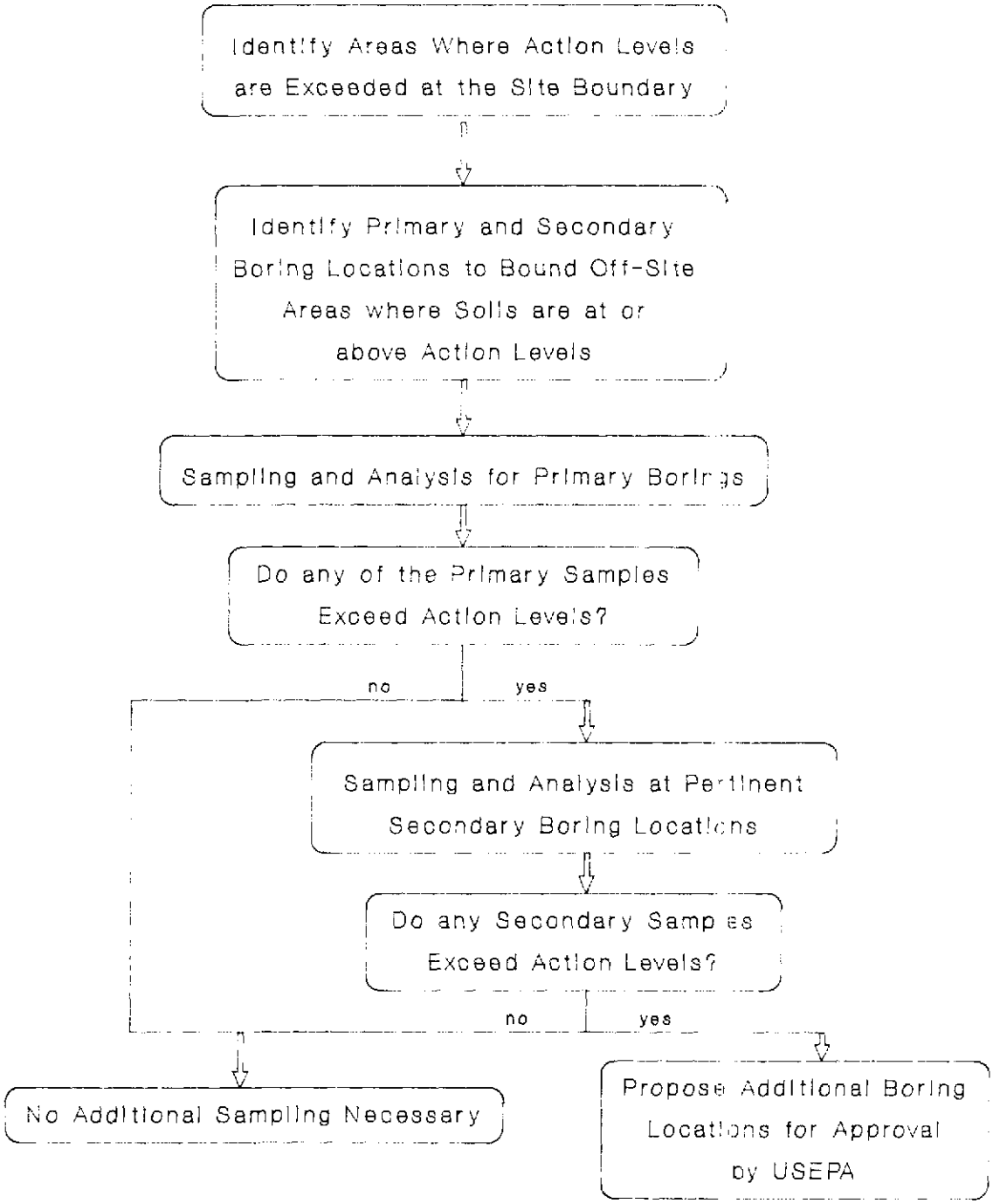
Determine Extent of Hazardous Substances At or Above Action Levels in Undeveloped Parts of the Site Where Data Currently Exists for Only One Depth Interval



JOB NO. 893-6255	SCALE N/A	SOIL DATA NEED No. 2b		
DRAWN MRM	DATE 11/15/89			
CHECKED RMG	DWG NO MAO1-007			
Golder Associates		ISRT/WOBURN/MA	FIGURE 5	

140657

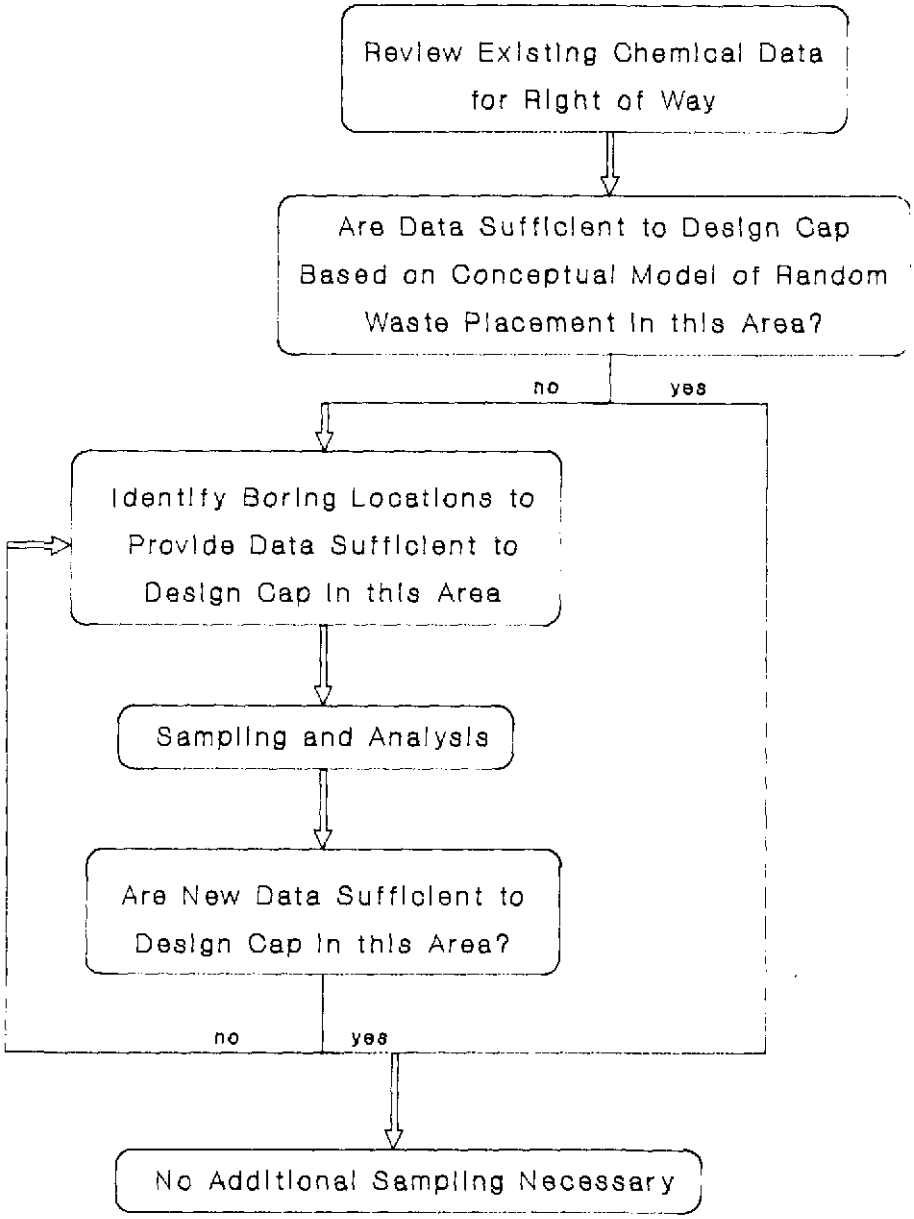
Determine Extent of Hazardous Substances At or Above Action Levels in Off-Site Areas Where Action Levels are Exceeded at the Site Boundary



JOB NO. 893-6255	SCALE N/A	SOIL DATA NEED No. 2c		
DRAWN MRM	DATE 11/15/89			
CHECKED RMG	DWG. NO MAO1-008			
Golder Associates		ISRT/WOBURN/MA	FIGURE 6	

140657

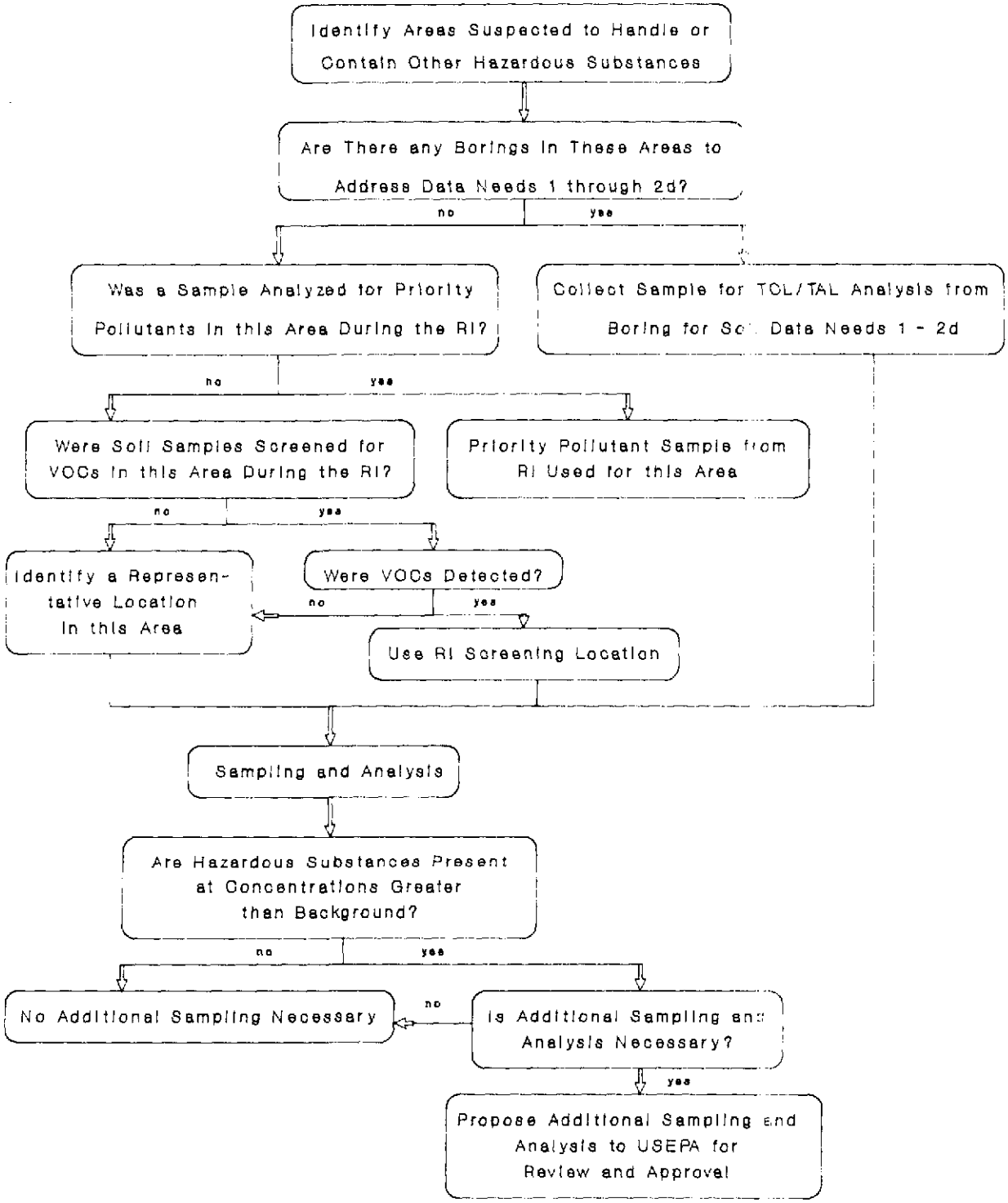
Determine the Extent of Hazardous Substances At or Above Action Levels in Boston Edison Right of Way No. 9



JOB NO. 893-6255	SCALE N/A	SOIL DATA NEED No. 2d		
DRAWN MRM	DATE 11/15/89			
CHECKED RMG	DWG. NO. MAO1-009			
Golder Associates		ISRT/WOBURN/MA	FIGURE 7	

140657

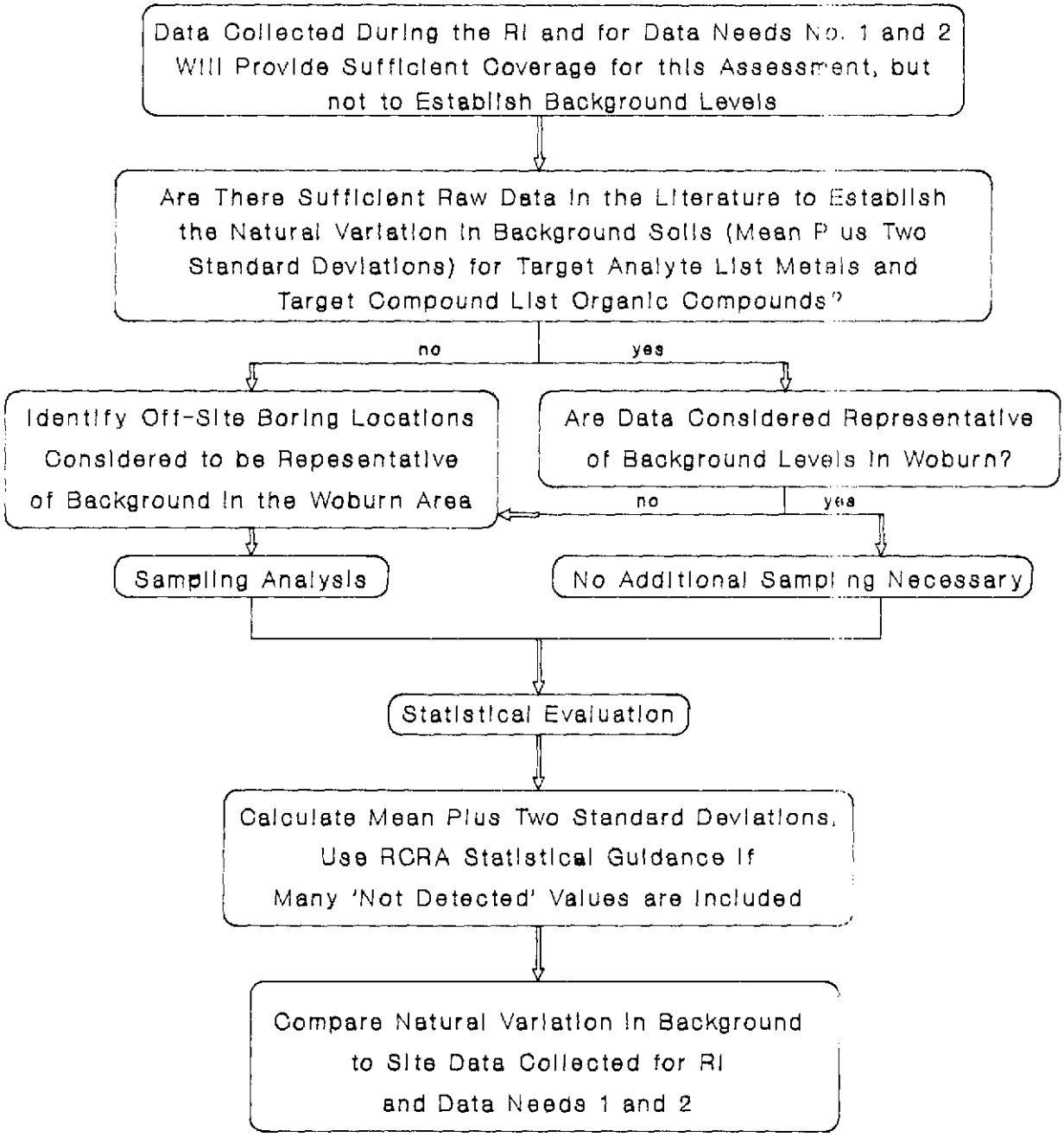
Assess the Presence of Hazardous Substances Other Than Arsenic, Lead, Chromium, and Hides in all Areas of the Site



JOB NO. 893-6255	SCALE N/A	SOIL DATA NEED No. 3		
DRAWN MRM	DATE 11/15/89			
CHECKED RMG	DWG. NO. MAO1-010			
Golder Associates		ISRT/WOBURN/MA	FIGURE 8	

140657

Determine Extent of Hazardous Substances Greater Than Background Levels but Less Than Action Levels



JOB NO. 893-6255	SCALE N/A	SOIL DATA NEED No. 4	
DRAWN MRM	DATE 11/15/89		
CHECKED RMG	DWG NO. MA01-011		
Golder Associates		ISRT/WOBURN/MA	FIGURE 9

140657

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

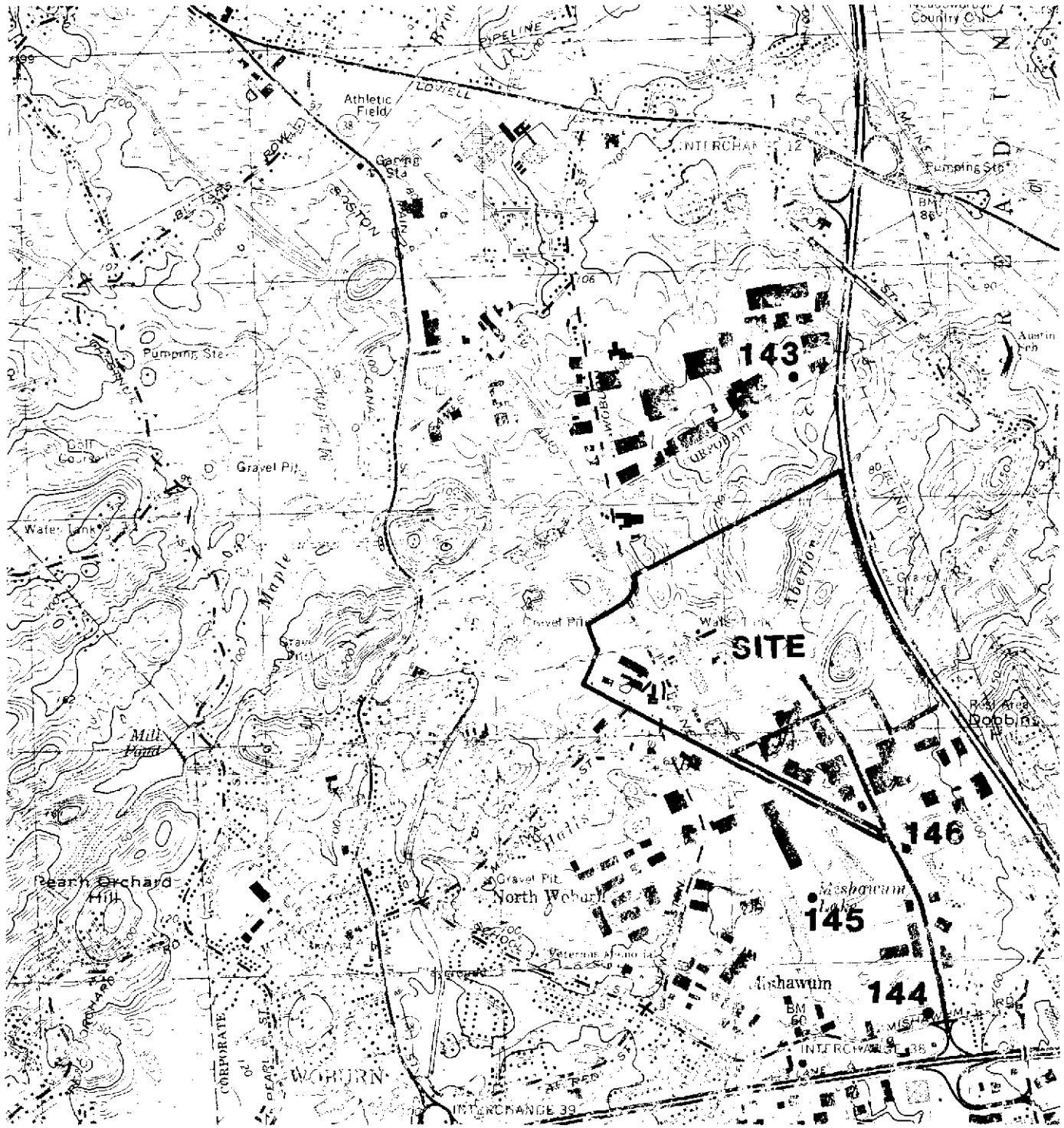
SEP 18 1990

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	RAC	09/18/90
RVW BY	[illegible]	9/18/90
SHEET TITLE: SAMPLE LOCATIONS AND SUMMARY OF As, Pb, Cr AND HIDE RESIDUE DATA		

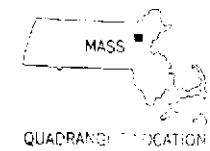
Golder Associates
Mt. Laurel, New Jersey

SHEET 1 OF 1
DRAWING No. MA01–100
FIGURE 10



REFERENCE

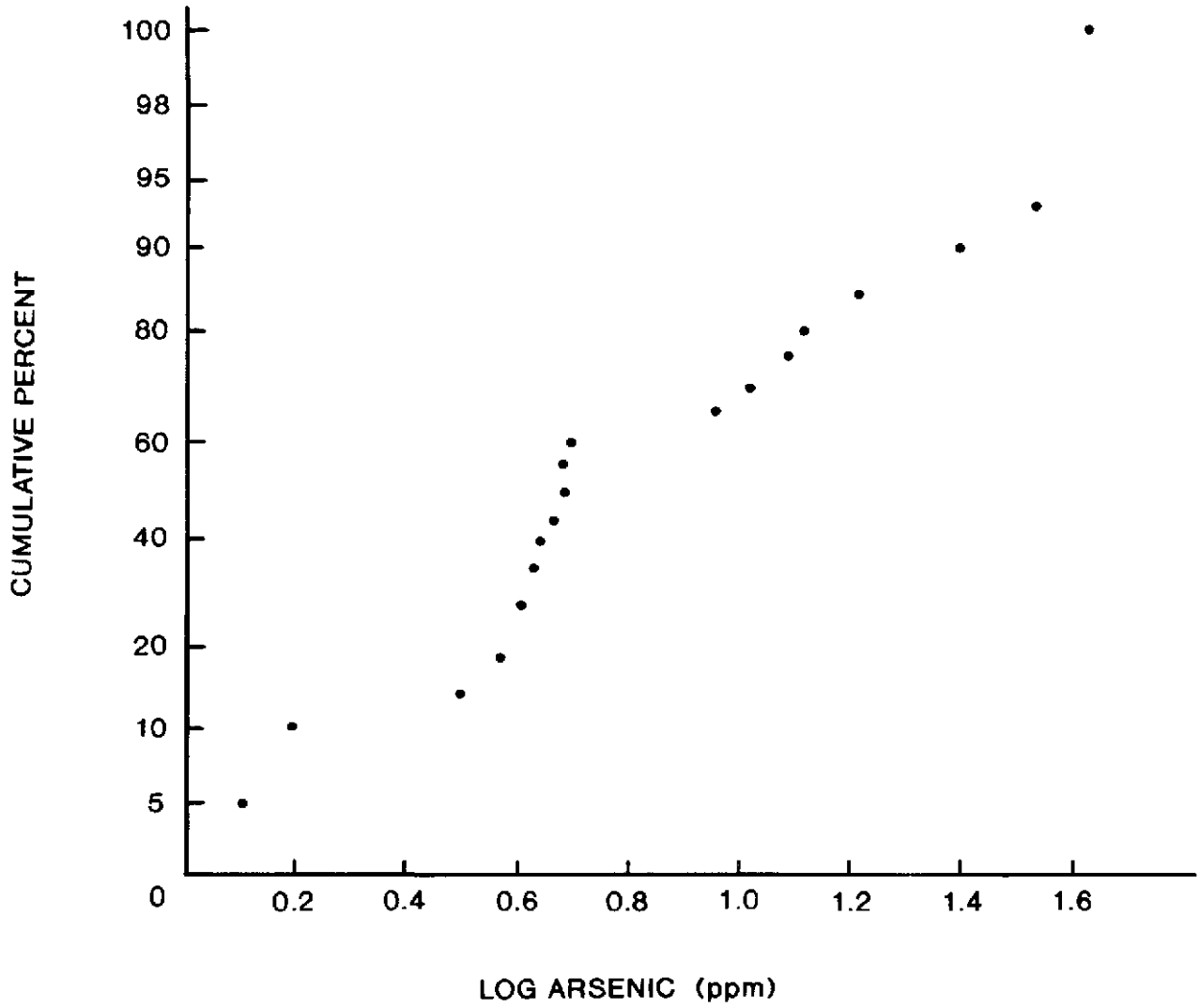
BASE MAP : U.S.G.S. WILMINGTON MASS. 7 1/2 MINUTE (1979)



QUADRANGLE LOCATION

JOB NO. 893-6255	SCALE 1"=2000'	LOCATIONS FOR BACKGROUND SOIL SAMPLING	
DRAWN MRM	DATE 09/18/90		
CHECKED KMG	DWG. NO. MA01-095		
Golder Associates		ISRT/WOBURN/MA	FIGURE 11

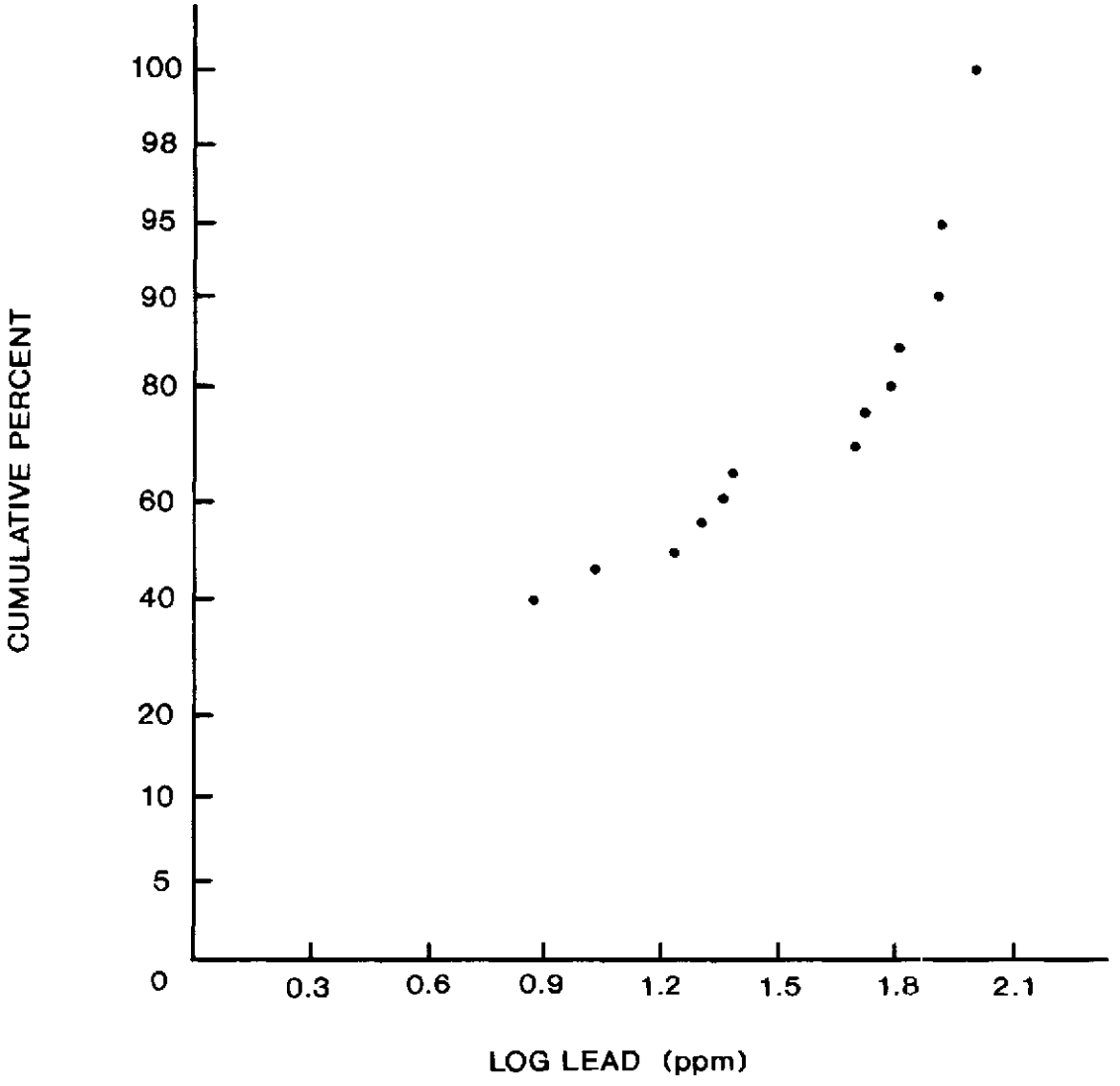
152978



NOTE: A STRAIGHT LINE OF DATA POINTS WOULD INDICATE A LOG NORMAL DISTRIBUTION.

JOB No.: 893-6255	SCALE: AS SHOWN	CUMULATIVE FREQUENCY PLOT OF LOG ARSENIC VALUES		
DRAWN: EAM	DATE: 09/07/90			
CHECKED: CA	DWG. No.: MAO1-012			
Golder Associates		ISRT/WOBURN/MA	FIGURE 12A	

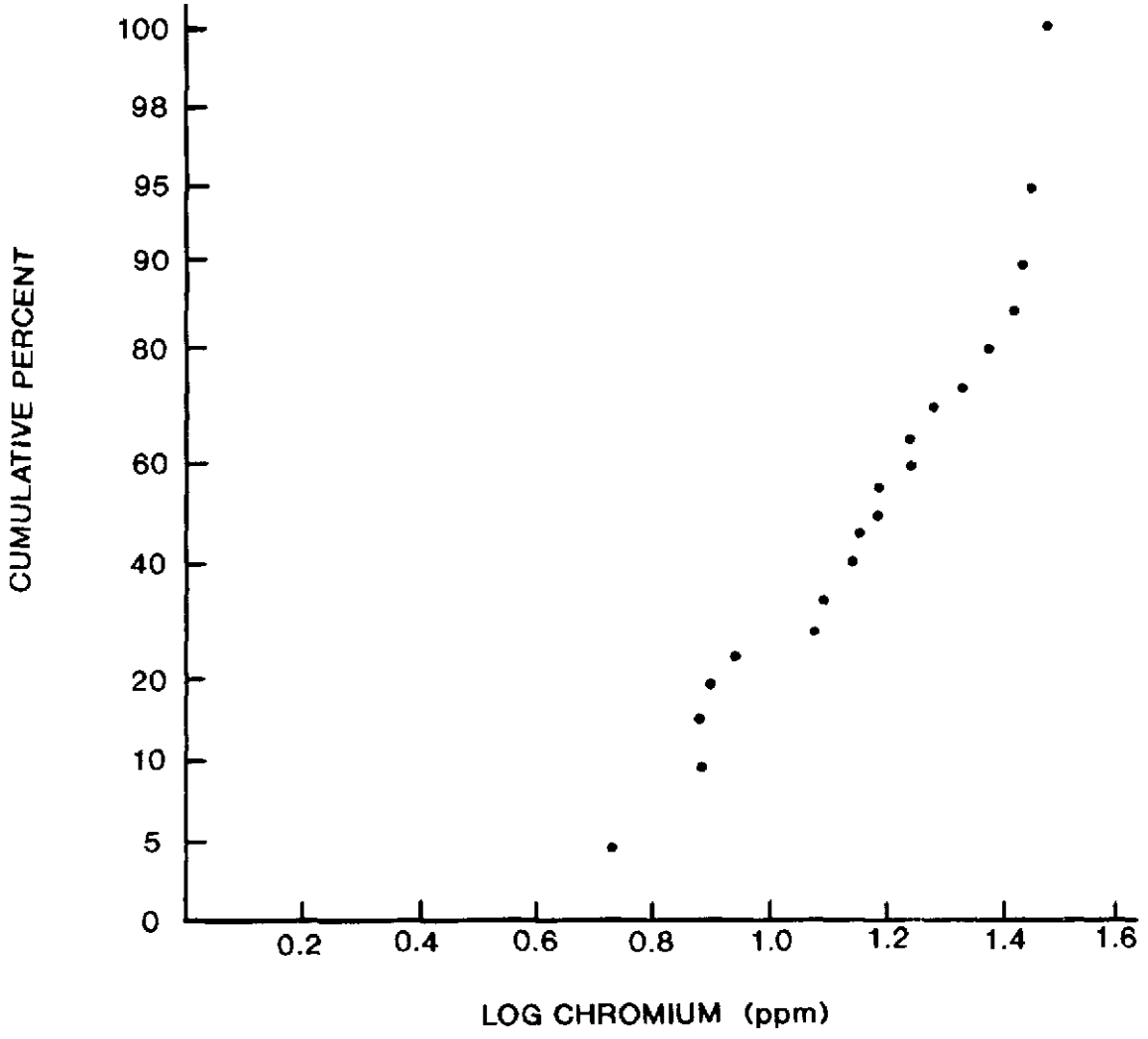
158696



NOTE: A STRAIGHT LINE OF DATA POINTS WOULD INDICATE A LOG NORMAL DISTRIBUTION.

JOB No.: 893-6255	SCALE: AS SHOWN	**CUMULATIVE FREQUENCY PLOT OF LOG LEAD VALUES**		
DRAWN: EAM	DATE: 09/07/90			
CHECKED: CA	DWG. No.: MAO1-013			
Golder Associates		ISRT/WOBURN/MA	FIGURE **12B**	

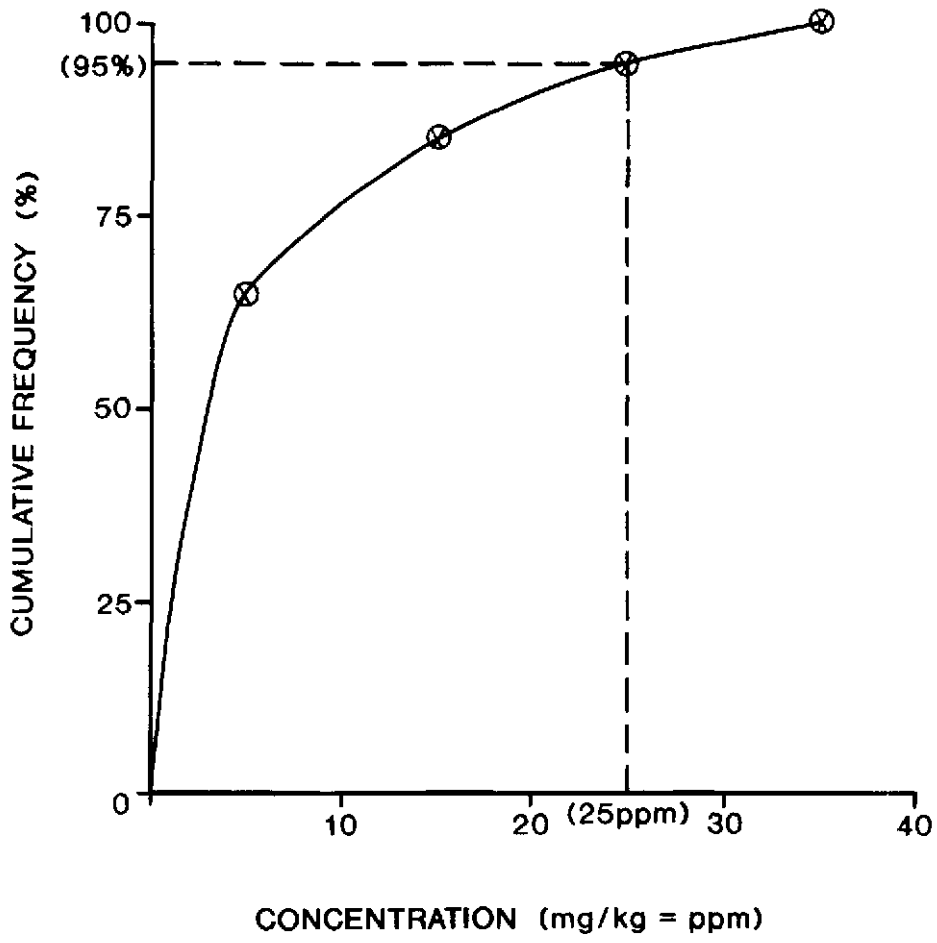
158696



NOTE: A STRAIGHT LINE OF DATA POINTS WOULD INDICATE A LOG NORMAL DISTRIBUTION.

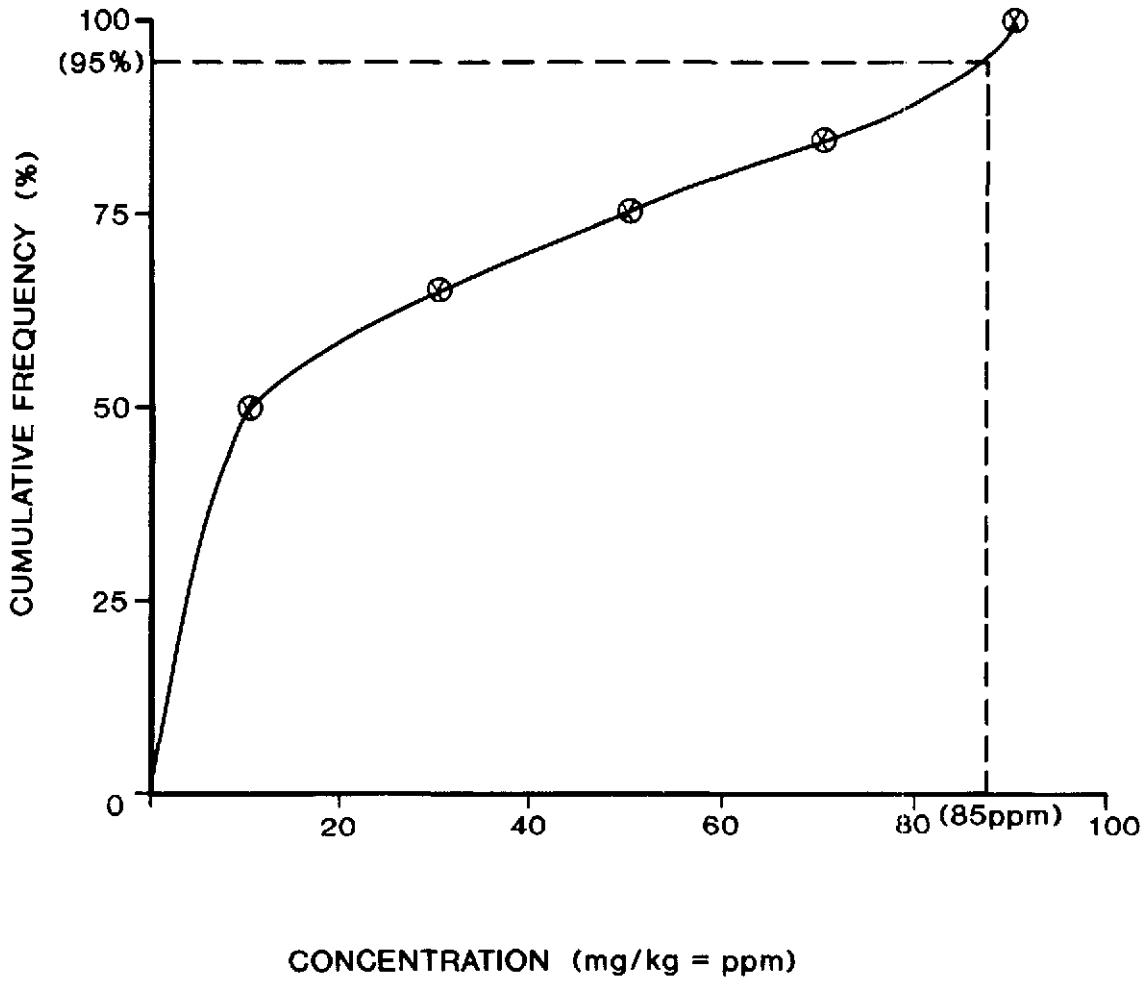
JOB No.: 893-6255	SCALE: AS SHOWN	CUMULATIVE FREQUENCY PLOT OF LOG CHROMIUM VALUES		
DRAWN: EAM	DATE: 09/07/90			
CHECKED:	DWG. No.: MAO1-014			
Golder Associates		ISRT/WOBURN/MA	FIGURE 12C	

158696



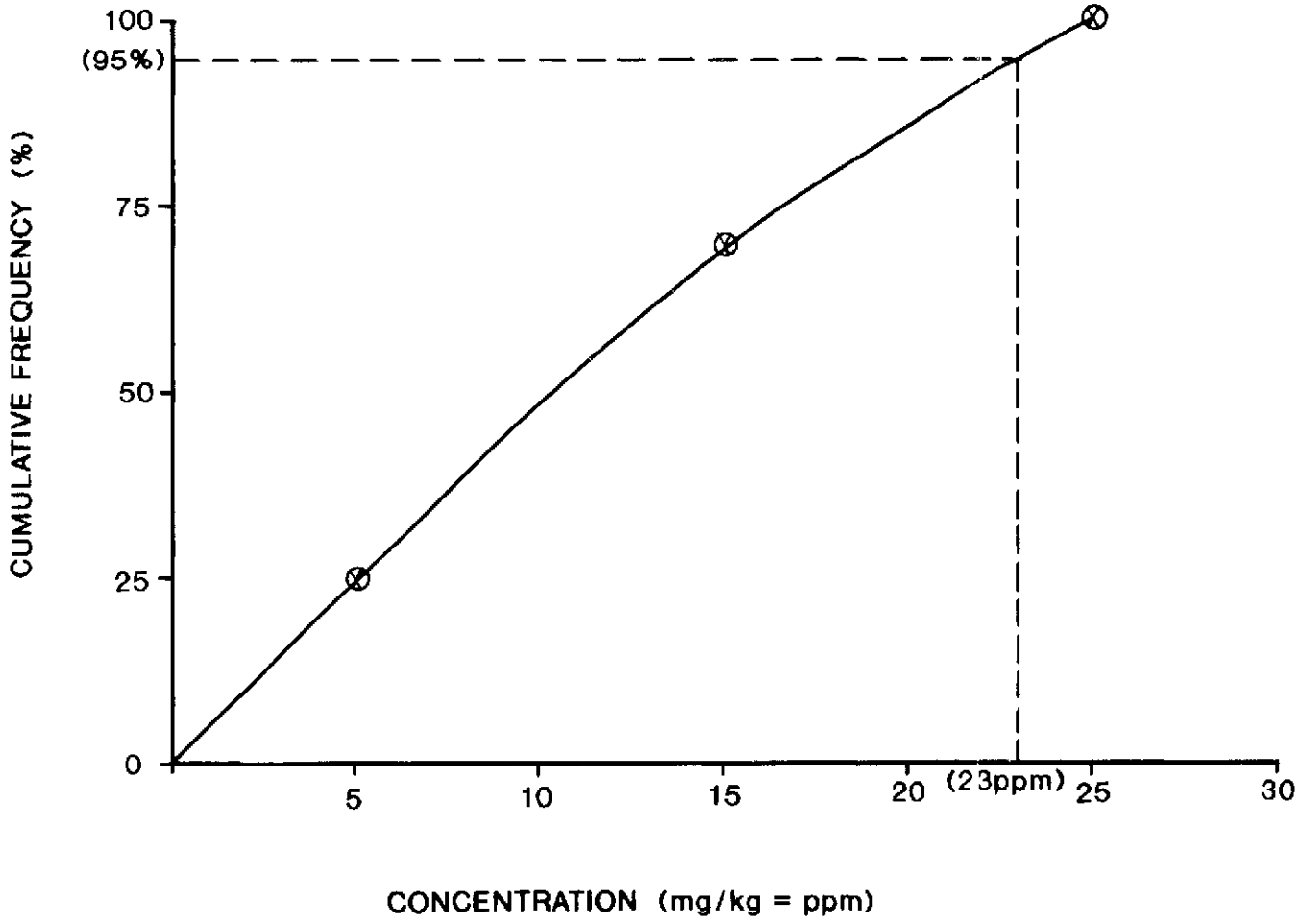
JOB No.: 893-6255	SCALE: AS SHOWN	CUMULATIVE FREQUENCY PLOT OF ARSENIC BACKGROUND SAMPLES		
DRAWN: EAM	DATE: 09/07/90			
CHECKED:	DWG. No.: MAO1-015			
Golder Associates		ISRT/WOBURN/MA	FIGURE 13A	

158696



JOB No.: 893-6255	SCALE: AS SHOWN	CUMULATIVE FREQUENCY PLOT OF LEAD BACKGROUND SAMPLES		
DRAWN: EAM	DATE: 09/07/90			
CHECKED:	DWG. No.: MAO1-016			
Golder Associates		ISRT/WOBURN/MA	FIGURE 13B	

158696



JOB No.: 893-6255	SCALE: AS SHOWN	CUMULATIVE FREQUENCY PLOT OF CHROMIUM BACKGROUND SAMPLES		
DRAWN: EAM	DATE: 09/07/90			
CHECKED: CA	DWG. No.: MAO1-017			
Golder Associates		ISRT/WOBURN/MA	FIGURE 13C	

158696

LEGEND

- ○ PRE-DESIGN INVESTIGATION TCL/TAL SAMPLE LOCATION
- RI-8 □ REMEDIAL INVESTIGATION PRIORITY POLLUTANT SAMPLE LOCATION (STAUFFER, 1984) TENTATIVELY IDENTIFIED COMPOUNDS NOT LISTED
- HIDE RESIDUE PRESENT BASED ON RI DATA (STAUFFER, 1984)
- SITE BOUNDARY
- SOIL PILES
- STREAMS OR WATERCOURSES
- MARSH

NOTES

1.) CONCENTRATIONS OF TCL ORGANIC COMPOUNDS GIVEN IN PARTS PER BILLION, (ug\kg).

2.) CONCENTRATIONS OF TAL METALS GIVEN IN PARTS PER MILLION, (mg/kg).

3.) SAMPLES DESIGNATED R1-3 ON THIS FIGURE WERE DESIGNATED OS-3 IN PHASE II RI/FS TABLE 3 (STAUFFER, 1984).

4.) RI REPORTED RESULT IS HIGHEST VALUE FOUND FROM MULTIPLE SAMPLES IN THAT BORING.

5.) TAL METALS FROM RI NOT SHOWN. Cu, Zn, Pb, Cr, As OCCUR ABOVE BACKGROUND OVER LARGE AREAS OF THE SITE (SEE FIGURE 14).

6.) ANALYTES DETECTED BELOW CRQL NOT SHOWN.

200 0 200 400
scale feet

SEP 18 1990

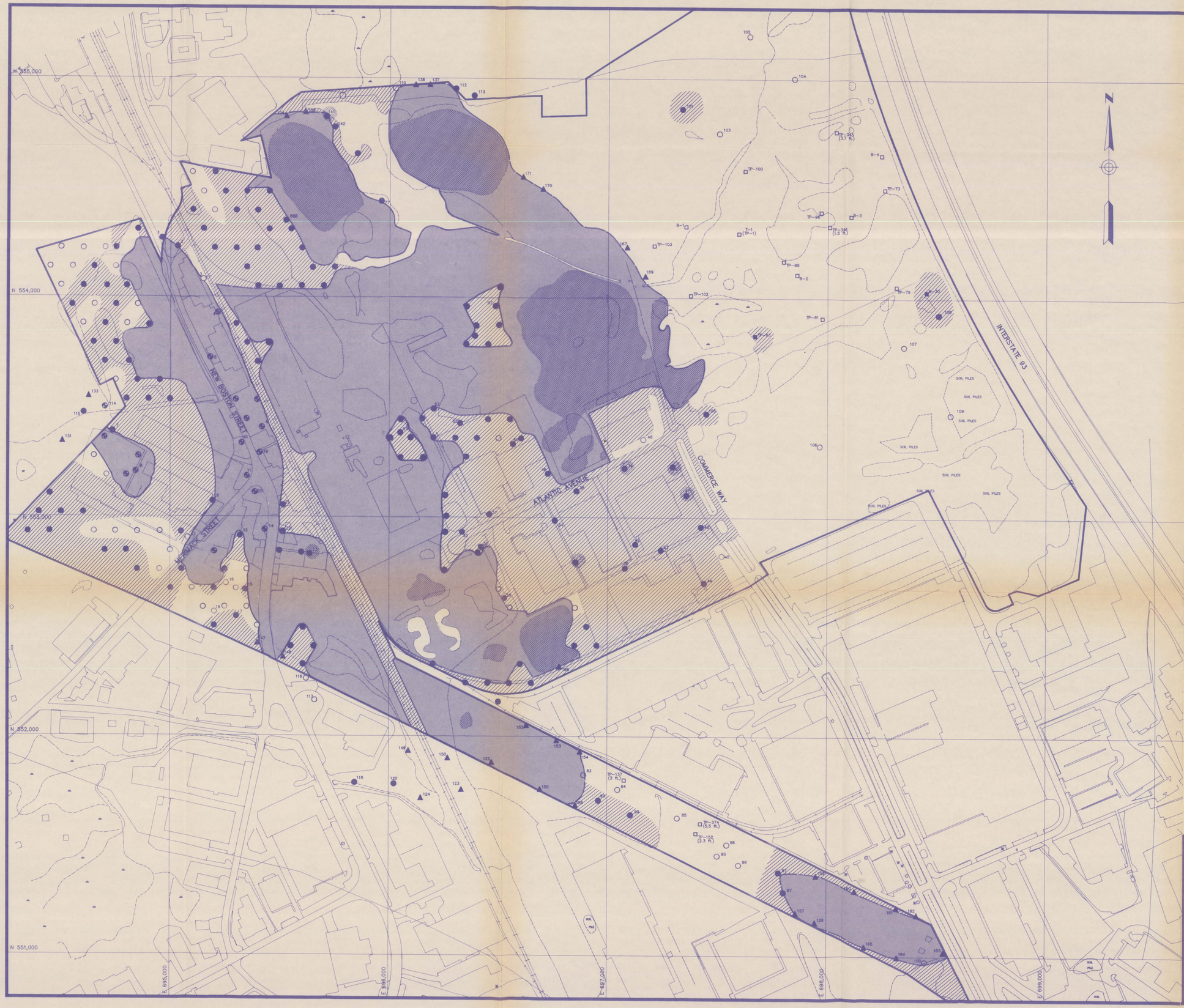
REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE: AS SHOWN			PROJECT: INDUSTRI-PLEX SITE REMEDIAL TRUST WOBURN, MASSACHUSETTS
PROJECT No. 893-6255			
DES BY	CA	09/06/90	SHEET TITLE: RESULTS OF TASK S-1 TCL/TAL ANALYSES
DR BY	JSG	09/06/90	
CHK BY	RMG	09/18/90	
RVW BY	[illegible]	9/18/90	

Golder Associates
Mt. Laurel, New Jersey

SHEET 1 OF 1
DRAWING No. MA01-137

FIGURE 14



LEGEND

- ARSENIC, LEAD OR CHROMIUM BELOW BACKGROUND CONCENTRATIONS
- ARSENIC, LEAD OR CHROMIUM AT OR ABOVE BACKGROUND CONCENTRATIONS BUT LESS THAN CONSENT DECREE ACTION LEVELS
- PROPOSED SECONDARY PRE-DESIGN BORING FOR As, Pb, Cr AND HIDE RESIDUE ANALYSIS
- As, Pb AND Cr AT OR ABOVE CONSENT DECREE ACTION LEVELS PRESENT AT ANY HORIZON WITHIN 36 INCHES OF GROUND SURFACE IN DEVELOPED PORTIONS OF THE SITE
- AREAS WHERE ARSENIC, LEAD OR CHROMIUM ARE AT OR ABOVE CONSENT DECREE ACTION LEVELS
- AREAS WHERE ARSENIC, LEAD OR CHROMIUM ARE BELOW CONSENT DECREE ACTION LEVELS BUT ABOVE BACKGROUND CONCENTRATIONS
- AREAS WHERE ARSENIC, LEAD OR CHROMIUM ARE BELOW BACKGROUND CONCENTRATIONS
- 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.

SEP 18 1990

200 0 200 400
scale feet

REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE: AS SHOWN		PROJECT: INDUSTRI-PLEX SITE REMEDIAL TRUST WOBURN, MASSACHUSETTS
PROJECT No. 893-6255		
DES BY	RMG	09/11/90
DR BY	JSG	09/11/90
CHK BY	[illegible]	9/16/90
RVW BY	[illegible]	9/17/90
SHEET TITLE: SUMMARY OF PDI TASK S-1 RESULTS FOR As, Pb, Cr AND HIDE RESIDUE		

Golder Associates
Mt. Laurel, New Jersey

SHEET 1 OF 1
DRAWING No. MA01-141

FIGURE 15