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OU1 DATA VALIDATION (CONTAINS USEPA REVIEW AND EVALUATION ON USDOE DATA SET FROM OU 1)

02/09/94

USEPA DOE-FN
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REPORT

H-2-425559
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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REPLY TO THE ATTENTION OF:

HRE-8J

Mr. Jack R. Craig
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: OU 1 Data Validation

Dear Mr. Craig:

The United States Environmental Protection Agency has completed its review and validation of the United States Department of Energy's data set for samples collected from Operable Unit 1 during the Remedial Investigation/Feasibility Study, the Characterization Investigation Study, and the Westinghouse Environmental Management Company of Ohio Study.

The attached report documents validation procedures, any quality control violations noted, summary tables that identify qualified data for each validated sample, and the raw data.

Overall, the data reviewed are acceptable with noted qualifications and biases.

Please contact me at (312) 886-0992 if you have any questions.

Sincerely,

James A. Saric
Remedial Project Manager

cc: Graham Mitchell, OEPA-SWDO
Pat Whitfield, U.S. DOE-HDQ
Don Ofte, FERMCO
Jim Thiesing, FERMCO
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ORIGINAL

PRC

ANALYTICAL DATA VALIDATION REPORT

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No.	:	C05014
EPA Region	:	5
Site No.	:	OH6 890 009 876
Date Prepared	:	January 7, 1994
Contract No.	:	68-W9-0006
PRC No.	:	009-C05014
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DATA VALIDATION SUMMARY TABLES

Attachment

QUALIFIED SAMPLE RESULTS

TABLES

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1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC) received Work Assignment No. C05014 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 to review technical documents and perform oversight at the U.S. Department of Energy (DOE) Fernald Environmental Management Project (FEMP). In partial fulfillment of this work assignment, PRC has reviewed analytical data and performed data validation on sample results for Operable Unit 1. The samples were collected during three environmental studies performed at the site: the remedial investigation and feasibility study (RI/FS); the characterization investigation study (CIS); and the Westinghouse Environmental Management Company of Ohio (WEMCO) study. PRC validated a representative data set for each of the studies and locations requested by EPA. The individual samples validated are presented in Table 1. The validation performed by PRC was based on EPA validation guidance (EPA 1988, 1991).

RI/FS sampling was conducted at FEMP in 1987. One sample from each of three monitoring wells was selected for data validation. The three well locations include monitoring wells 2004, 2022, and 1019. In addition, two samples from soil boring 1766 were selected for validation because no single sample from the boring was analyzed for all parameters. All analytical work for the samples was performed by International Technologies (IT) Corporation. The data for monitoring well 2004 was generated by PEI Associates, Inc., which is now part of IT Corporation.

CIS sampling was conducted at FEMP in 1989. One sample from each of four locations was reviewed. The locations were waste pit no. 4, waste pit no. 5, waste pit no. 6, and the burn pit. The analytical work for these samples was performed by Roy F. Weston except for the radiological analyses, which were performed by TMA Ebberline.

WEMCO study sampling was conducted at FEMP in 1992. One sample from each of the two locations was reviewed. The locations were waste pit no. 5 and waste pit no. 6. All analytical work for these samples was performed by EcoTek Laboratory Services, Incorporated.

TABLE 1

DATA VALIDATION SAMPLES

Study	Location	Matrix	Samples
RI/FS	Boring 1766	Soil	63060, 63061[a], S1-07-052[b]
	Well 2004	Groundwater	3250, R8-06-003[b]
	Well 2022	Groundwater	3170, R8-05-039[b]
	Well 1019	Groundwater	3944, R9-03-036[b]
CIS	Waste Pit 4	Waste	PS-04-001, PS-04-003[b]
	Waste Pit 5	Waste	PS-05-024, PS-05-078[b]
	Waste Pit 6	Waste	PS-06-001, PS-06-028[b]
	Burn Pit	Waste	PS-07-048, PS-07-015[b]
WEMCO	Waste Pit 5	Waste	100210
	Waste Pit 6	Waste	100225

Notes:

[a] Sample chosen for volatile organic analysis (VOA) only

[b] Sample chosen for radiological analysis only

This report presents an overview of the data validation process and a summary table (see the appendix) for each sample reviewed. Final sample analytical results are presented in the attachment, which includes the data qualifiers derived from the PRC data validation.

2.0 DATA VALIDATION PROCEDURE

All raw data and quality control (QC) summary data were reviewed according to EPA validation guidance (EPA 1988, 1991). The following sections describe the QC measures evaluated for each of the major analytical procedures: (1) volatile and semivolatile analyses by gas chromatography/mass spectrometry (GC/MS), (2) pesticide/polychlorinated biphenyl (PCB) and herbicide analyses by GC, (3) total and dissolved metals analyses, (4) general chemistry analyses, and (5) radiological analyses. The specific QC measures reviewed for each type of analysis are listed in Table 2. The following sections also include general comments on each study with regard to QC violations, which are noted in the appendix.

Following the data review, data qualifiers were applied to analytical results directly affected by deficient QC. The data qualifiers used are defined in the EPA validation guidance documents and are summarized in Table 3.

2.1 VOLATILE AND SEMIVOLATILE ANALYSES BY GC/MS

Volatile organic compounds and semivolatile organic compounds were analyzed by GC/MS. The following sections discuss the QC violations given in the appendix that affect sample data validity.

2.1.1 Holding Times

Technical holding times have been established only for water matrices. However, it is generally acceptable to apply the holding times to solid matrices as well, which PRC has done in its review of the data. A violation of the holding time results in data that is considered estimated and possibly biased low because of the potential for compound degradation or volatilization. Sample results obtained outside the established holding time should be used with caution.

TABLE 2

QC MEASURES REVIEWED DURING DATA VALIDATION

Analysis	QC Measures
Volatile and Semivolatile Analyses by GC/MS	Holding times, GC/MS instrument tuning, calibrations, blanks, system monitoring compounds, matrix spike/matrix spike duplicates, internal standards, compound identification, and compound quantitation
Pesticide/PCB and Herbicide Analyses by GC	Holding times, GC instrument performance check, calibrations, blanks, system monitoring compounds, matrix spike/matrix spike duplicates, cleanup checks, compound identification, and compound quantitation
Total and Dissolved Metals Analyses	Holding times, calibrations, blanks, interference checks, laboratory control samples, laboratory duplicates, matrix spikes, and sample result verification
General Chemistry Analyses	Various QC measures including (where applicable) calibrations, standards, laboratory control samples, laboratory duplicates, matrix spikes, and sample result verification
Radiological Analyses	General QC measures including standards traceability, instrument calibration, background counts, instrument counter efficiencies, tracer yields, carrier efficiencies, and sample result verification

TABLE 3

DATA VALIDATION QUALIFIERS

Qualifier	Definition
U	The analyte was analyzed for but was not detected at a level above the reported sample quantitation limit, or the laboratory reported a positive result for the sample analyte, but because of blank contamination, the analyte is considered undetected.
J	The analyte was positively identified, but its numerical value is an estimated value as a result of unacceptable QC. The result may be biased high or low.
UJ	The analyte was analyzed for but was not detected at a level above the reported sample quantitation limit, and the quantitation limit is an estimated value as a result of unacceptable QC.
R	The sample result is rejected because of serious deficiencies in QC measures. The presence or absence of the analyte cannot be verified.

The technical holding time of 7 days was violated for the aromatic volatile compounds in samples 3250 and 3170 of the RI/FS. Only the aromatic compound results are considered estimated because the 7-day holding time for aromatic compounds is less than the 14-day holding time for other volatile organic compounds.

The technical holding time of 14 days was violated for all volatile compounds in samples 100210 and 100225 of the WEMCO study. In both samples, all volatile compound results are considered estimated.

2.1.2 Initial and Continuing Calibrations

Initial and continuing calibration compliance is required to ensure that an instrument is capable of producing acceptable qualitative and quantitative data for compounds. In the data reviewed from all three studies, the initial and continuing calibration criteria were not met for a few compounds. These compounds are generally considered "poor performers," and the results for these compounds do not indicate a severe deficiency in the laboratory's ability to perform the required analyses. The data associated with the deficiencies noted in the appendix are qualified as estimated. The resulting bias cannot be determined.

2.1.3 Laboratory Blank Contamination

Laboratory blanks are used to determine the existence and magnitude of contamination resulting from laboratory activities. Detectable levels of analytes in the laboratory blanks are evaluated against the sample results. Sample results qualified because of blank contamination are usable to the extent that the quantitation limit reported meets the user's regulatory requirements.

For the laboratory blank data reviewed from all three studies, laboratory contamination was generally limited to common laboratory contaminants, including acetone, methylene chloride, and bis(2-ethylhexyl)phthalate. Where contaminants were detected in blanks, the associated sample results should be considered undetected.

The laboratory blank associated with sample PS-07-048 from the CIS contained detectable amounts of fluoranthene and phenanthrene, which resulted in the sample data for these two compounds being qualified as undetected.

2.1.4 Matrix Spike/Matrix Spike Duplicates

Data generated from matrix spike/matrix spike duplicates (MS/MSD) determine the precision and accuracy of the analytical method for various matrices, and demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. Sample results qualified as results of poor MS/MSD accuracy or precision are considered estimated. The bias in the reported data is determined from the percent recoveries of the MS/MSD. Semivolatile data for samples 63061 and 3170 from the RI/FS should be considered estimated and have been qualified as a result of low MS/MSD recoveries.

Semivolatile sample data for sample 100210 from the WEMCO study have been qualified as unusable due to low MS/MSD recoveries.

2.2 PESTICIDE/PCB AND HERBICIDE ANALYSES BY GC

For GC data validation, the data were reviewed for the QC measures presented in Table 2. The following sections discuss the QC violations given in the appendix that affect sample data validity.

2.2.1 Holding Times

The technical holding time of 7 days was violated for extraction of pesticide/PCB compounds in sample 3170 of the RI/FS. All pesticide/PCB compound results are considered estimated for sample 3170. All other samples reviewed were extracted within acceptable holding times.

2.2.2 System Monitoring Compounds

System monitoring compounds (surrogates) are nontarget compounds added to samples before extraction to determine the accuracy of the laboratory extraction and analysis procedures. Sample

results qualified as a result of poor surrogate recoveries are considered to be estimated. The bias in the reported data is determined from the percent recovery of the surrogate.

The surrogate recoveries were generally acceptable for all samples reviewed except sample 100210 of the WEMCO study. The pesticide surrogate recoveries for sample 100210 were below the acceptable limit and therefore imply the potential for a result biased low. As a result, all pesticide compound results for sample 100210 were qualified as estimated.

2.2.3 Matrix Spike/Matrix Spike Duplicates

Pesticide results for samples PS-04-001 and PS-07-048 from the CIS should be considered estimated and, the results have been qualified as a result of low MS/MSD recoveries. Herbicide results for sample 100210 from the WEMCO study have been qualified as estimated as a result of low MS/MSD recoveries.

2.2.4 Compound Identification

The raw data were reviewed to ensure that the compounds were correctly identified. The pesticide chromatogram for sample 63061 from the RI/FS indicated that the retention times for the surrogate compounds had shifted, making compound identification based on retention time uncertain. In response, the laboratory performed a dilution of the extract and reanalyzed the dilution. The dilution results are acceptable and should be used instead of the original results. However, the detection limits for the dilution run are higher than the quantitation limits for the original run.

In sample 3170 from the RI/FS, alpha-BHC, aldrin, and heptachlor were reported. Apparently the laboratory did not analyze the sample on a second column to confirm the presence of these compounds. The sample results for these compounds are therefore considered to be estimated.

2.3 TOTAL AND DISSOLVED METALS ANALYSES

For metals data validation, the data were reviewed for the QC measures presented in Table 2. The following sections discuss the QC violations given in the appendix that affect sample data validity.

2.3.1 Holding Times

The mercury holding time of 28 days was violated for sample PS-05-024 of the CIS. As a result, the mercury result is qualified and should be considered to be biased low. All other samples reviewed were analyzed within the holding time.

2.3.2 Laboratory Blank Contamination

Lead was detected in the laboratory blank associated with samples 3250 and 3170 from the RI/FS. In addition, vanadium was detected in the laboratory blank associated with sample PS-04-001 from the CIS. The sample results for these samples were qualified for lead and vanadium and should be considered undetected.

2.3.3 Matrix Spikes and Laboratory Duplicates

Data generated from MS and laboratory duplicates determine the precision and accuracy of the analytical method for various matrices and demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. Duplicate precision is determined by the relative percent difference (RPD) of the two measurements. Samples qualified for either MS or laboratory duplicate accuracy and precision are considered to be estimated. Bias can only be determined by evaluating the MS percent recovery.

Metals data were qualified based on MS and laboratory duplicate results. Most of the qualified results are considered to be estimated; however, some are to be considered unusable and are qualified as "R." The unusable results are for the following samples and analytes:

Sample	Analyte
63061	Silicon
100225	Selenium Vanadium
PS-04-001	Selenium
PS-07-048	Lead Selenium

The unusable results should not be used for any further environmental assessment.

2.3.4 Interference Checks

For metals analysis by inductively coupled plasma (ICP), matrix interference is determined by performing a serial dilution of the sample and evaluating the percent difference between the original and diluted analyses. Sample results qualified as a result of high serial dilution percent differences are considered to be estimated, and no bias can be determined. Some metals results from all three studies are qualified because of serial dilutions that did not meet QC criteria.

For metals analysis by graphite furnace atomic absorption (GFAA), matrix interference is determined by performing a postdigestion spike for each sample. Sample results qualified because of postdigestion spike recoveries are considered to be estimated. The bias is determined from the percent recoveries. Only a few sample results have been qualified on this basis.

2.4 GENERAL CHEMISTRY ANALYSES

For general chemistry data validation, the data were reviewed for the QC measures presented in Table 2. The following sections discuss the QC violations given in the appendix that affect sample data validity.

2.4.1 Holding Times

Technical holding times were violated for ammonia, cyanide, and oil and grease in several samples. For the samples affected, the results have been qualified and should be considered to be biased low.

2.4.2 Laboratory Blank Contamination

Ammonia and Kjeldahl nitrogen were detected in laboratory blanks associated with sample 3944 from the RI/FS. As a result, the data for sample 3944 are considered to be estimated.

2.4.3 Matrix Spikes and Laboratory Duplicates

The cyanide result for sample PS-06-001 from the CIS is qualified because of a low MS recovery in the associated QC sample. The total Kjeldahl nitrogen result for sample 3944 from the RI/FS is qualified because of poor precision associated with the laboratory duplicate. The sample result is considered to be estimated.

2.5 RADIOLOGICAL ANALYSES

For radiological data validation, the data were reviewed for the QC measures presented in Table 2. The following sections discuss the QC violations given in the appendix that affect sample data validity.

2.5.1 Instrument Calibration and Instrument Counter Efficiency

The cesium and ruthenium results for samples from the RI/FS are considered to be unusable because of inadequate instrument calibration. In addition, the neptunium result for sample R8-06-003 from the RI/FS is considered to be unusable because of low instrument counter efficiency. The unusable results for these sample analytes should not be used for further environmental assessment.

2.5.2 Tracer Yields

Tracers are added to samples in order to measure the accuracy of laboratory preparation and analysis of the samples. Most of the radiological data qualified was qualified because of low tracer yields. The qualified results should be considered to be estimated and biased low.

2.5.3 Laboratory Blank Contamination and Background Counts

Thorium contamination was noted in several of the laboratory blanks. The associated sample results should be considered to be estimated and biased high because of the potential thorium contamination.

High background counts were noted for cesium and ruthenium in sample PS-05-078 from the CIS. The associated sample results should be considered to be estimated and biased low.

2.5.4 Sample Results Verification

Sample results were recalculated for each sample. Discrepancies are noted in the appendix, and the qualified sample results should be considered to be estimated.

In the course of verifying sample results, other deficiencies were noted, including interference by other isotopes, quench problems, and an inadequate analysis for strontium. These deficiencies are indicated in the appendix. All sample results affected by these deficiencies should be considered to be estimated.

3.0 SUMMARY

The data were reviewed for the QC measures noted above. The sample results have been qualified according to the EPA guidance documents (EPA 1988, 1991) and are presented in the attachment. Generally, the data reviewed are acceptable with the noted qualifications and biases. Data qualified as estimated are usable only for limited purposes and should be used with caution. Data qualified as unusable should not be used for further environmental assessment. The qualified results are typical and do not indicate a severe problem with either the sampling schemes or laboratory performance.

The data deficiencies and qualifiers noted in this report are limited to the actual sample results presented in Attachment A. These specific deficiencies and qualifiers do not necessarily apply to other samples in the same data set.

The review of the selected samples indicates that FEMP is generally producing valid data from its studies. However, there are several variables to consider in this conclusion. The three studies were conducted at different times during the course of operation. During the three studies, numerous agents, both sampling and analytical, were contracted to perform work. In addition, the number of samples reviewed is only a portion of the total number taken. With regard to these variables, there is no reason to doubt the validity of the other data produced during the studies.

REFERENCES

U.S. Environmental Protection Agency (EPA). 1988. "Functional Guidelines for Evaluating Inorganics Analyses." Hazardous Site Evaluation Division. Washington, DC July 1.

U.S. Environmental Protection Agency (EPA). 1991. "Draft National Functional Guidelines for Organic Data Review." Hazardous Site Evaluation Division. Washington, DC June.

APPENDIX

DATA VALIDATION SUMMARY TABLES

(17 Sheets)

TABLE A-1
RI/FS DATA VALIDATION SUMMARY FOR SOIL BORING 1766

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample 63060				
Volatile Organic Compounds	Acetone	Continuing calibration	J	NA[a]
	Acetonitrile	Initial calibration	UJ	NA
	Acrolein	Initial calibration	UJ	NA
	Acrylonitrile	Initial and continuing calibration	UJ	NA
	2-Butanone	Continuing calibration	J	NA
	Dichlorodifluoromethane	Initial and continuing calibration	J	NA
	Isobutyl alcohol	Initial calibration	UJ	NA
	Methylene chloride	Laboratory blank contamination	U	NA
	Pyridine	Continuing calibration	UJ	NA
Sample 63061				
Semivolatile Organic Compounds	Benzoic acid	Initial and continuing calibration	UJ	NA
	2,4-Dinitrophenol	Continuing calibration	UJ	NA
	Hexachloroethane	Continuing calibration	UJ	NA
	2-Methylphenol	Continuing calibration	UJ	NA
	4,6-Dinitro-2-methylphenol	Continuing calibration	UJ	NA
	3,3'-Dichlorobenzidine	Continuing calibration	UJ	NA
	3-Nitroaniline	Continuing calibration	UJ	NA
	4-Nitroaniline	Continuing calibration	UJ	NA
	N-Nitroso-di-n-propylamine	MS/MSD recovery	UJ	Low
	1,2,4-Trichlorobenzene	MS/MSD recovery	UJ	Low
Pesticide/PCBs	All pesticide/PCB compounds	Original analysis unusable	R	NA
	All pesticide/PCB compounds	Dilution analysis acceptable	NA	NA
Herbicides	All herbicide compounds	Acceptable	NA	NA
Total Metals	Arsenic	MS recovery	J	Low
	Boron	MS recovery	J	Low
	Chromium	Serial dilution	J	NA
	Copper	MS recovery and serial dilution	J	High
	Iron	Serial dilution	J	NA

TABLE A-1 (Continued)
RI/FS DATA VALIDATION SUMMARY FOR
SOIL BORING 1766

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample 63061 (Continued)				
Total Metals (Continued)	Manganese	Serial dilution	J	NA
	Molybdenum	MS recovery	J	High
	Selenium	MS recovery	UJ	Low
	Silicon	MS recovery and serial dilution	R	Low
	Silver	Serial dilution	J	NA
	Thallium	MS recovery	UJ	Low
	Vanadium	Serial dilution	J	NA
	Zinc	MS recovery	J	Low
General Chemistry	Cyanide	Acceptable	NA	NA
	Sulfide	Acceptable	NA	NA
Sample S1-07-052				
Radiological Analysis	Neptunium (Np237)	Tracer yields	R	Low
	Technetium (Tc99)	Lower level of detection	J	NA
	Thorium (Th230, Th228, Th232, and total Th)	Tracer yields	J (Th230) UJ (others)	Low
	Plutonium (Pu238, Pu239/240)	Tracer yields	UJ	Low
	Uranium (U234, U235/236, and U238)	Tracer yields	J	Low

[a] NA = Not applicable; bias cannot be determined.

TABLE A-2
RI/FS DATA VALIDATION SUMMARY FOR MONITORING WELL 2004

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample 3250				
Volatile Organic Compounds	All aromatic compounds	Holding time	UJ	Low
	Methylene chloride	Laboratory blank contamination	U	NA
	Vinyl acetate	Continuing calibration	UJ	NA
Semivolatile Organic Compounds	Benzo(g,h,i)perylene	Continuing calibration	UJ	NA
	4-Bromophenyl-phenylether	Continuing calibration	UJ	NA
	Di-n-butylphthalate	Laboratory blank contamination	U	NA
	2,4-Dinitrophenol	Continuing calibration	UJ	NA
	Hexachlorobenzene	Continuing calibration	UJ	NA
	Pentachlorophenol	Continuing calibration	UJ	NA
Pesticide/PCBs	All pesticide compounds	Acceptable	NA	NA
Total Metals	Lead	Laboratory blank contamination and post-digestion spike recovery	UJ	Low
	Mercury	MS recovery	UJ	Low
	Selenium	Post-digestion spike recovery	UJ	Low
	Thallium	MS recovery and post-digestion spike recovery	UJ	Low
General Chemistry	Cyanide	Acceptable	NA	NA
Sample R8-06-003				
Radiological Analysis	Cesium (Cs137)	Initial calibration	R	NA
	Neptunium (Np237)	Instrument counter efficiency	R	Low
	Ruthenium (Ru106)	Initial calibration	R	NA

TABLE A-3
RI/FS DATA VALIDATION SUMMARY FOR MONITORING WELL 2022

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample 3170				
Volatile Organic Compounds	All aromatic compounds	Holding time	UJ	Low
	Vinyl acetate	Continuing calibration	UJ	NA
Semivolatile Organic Compounds	4-Chloroaniline	Initial calibration	UJ	NA
	1,4-Dichlorobenzene	MS/MSD recovery and RPD	UJ	Low
	2,4-Dinitrophenol	Initial calibration	UJ	NA
	bis(2-Ethylhexyl)phthalate	Laboratory blank contamination	U	NA
	3-Nitroaniline	Initial calibration	UJ	NA
	4-Nitroaniline	Continuing calibration	UJ	NA
	N-Nitroso-di-n-propylamine	MS/MSD recovery	UJ	Low
	1,2,4-Trichlorobenzene	MS/MSD recovery and RPD	UJ	Low
Pesticide/PCBs	alpha-BHC	Holding time and no confirmation	J	Low
	Aldrin	Holding time and no confirmation	J	Low
	Heptachlor	Holding time and no confirmation	J	Low
	All other pesticide and PCB compounds	Holding time	UJ	Low
Total Metals	Lead	Laboratory blank contamination and post-digestion spike recovery	UJ	Low
	Mercury	MS recovery	UJ	Low
	Selenium	Post-digestion spike recovery	UJ	Low
	Thallium	MS recovery and post-digestion spike recovery	UJ	Low
General Chemistry	Cyanide	Acceptable	NA	NA
	Chloride	QC unavailable	NA	NA
	Fluoride	QC unavailable	NA	NA
	Sulfate	QC unavailable	NA	NA
	Ammonia	Holding time	J	Low
	Nitrate	QC unavailable	NA	NA
	Total Organic Nitrogen	QC unavailable	NA	NA

TABLE A-3 (Continued)
RI/FS DATA VALIDATION SUMMARY FOR
MONITORING WELL 2022

Analysis	Analyte	Deficiency	Qualifier	Bias
General Chemistry (Continued)	Total Phenolics	QC unavailable	NA	NA
	Total Phosphorus	QC unavailable	NA	NA
Sample R8-05-039				
Radiological Analysis	Cesium (Cs137)	Initial calibration	R	NA
	Ruthenium (Ru106)	Initial calibration	R	NA

Table A-4
RI/FS DATA VALIDATION SUMMARY TABLE
MONITORING WELL 1019

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample 3944				
Dissolved Metals	All metals	QC and raw data unavailable	NA	NA
General Chemistry	Ammonia	Laboratory blank contamination	U	NA
	Chloride	Acceptable	NA	NA
	Fluoride	Acceptable	NA	NA
	Nitrate	Acceptable	NA	NA
	Total Organic Halides	Acceptable	NA	NA
	Total Kjeldahl Nitrogen	Laboratory blank contamination and duplicate RPD	UJ	NA
	Total Organic Nitrogen	Acceptable	NA	NA
	Total Phenolics	Acceptable	NA	NA
	Total Phosphorus	Acceptable	NA	NA
Sample R9-03-036				
Radiological Analysis	Cesium (Cs137)	Initial calibration	R	NA
	Ruthenium (Ru106)	Initial calibration	R	NA
	Thorium (Th230, Th228, Th232, and total Th)	Tracer yields	UJ	Low
	Uranium (U234, U235/236, and U238)	Tracer yields	J	Low

TABLE A-5
CIS DATA VALIDATION SUMMARY FOR WASTE PIT NO. 4

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample PS-04-001				
Volatile Organic Compounds	Acrolein	Initial calibration	UJ	NA
	Acrylonitrile	Initial calibration	UJ	NA
	Bromomethane	Continuing calibration	UJ	NA
	2-Chloroethylvinylether	Continuing calibration	UJ	NA
	Chloromethane	Initial calibration	UJ	NA
	2-Butanone	Initial calibration	UJ	NA
	4-Methyl-2-pentanone	Continuing calibration	UJ	NA
	Methylene chloride	Laboratory blank contamination	U	NA
	Vinyl acetate	Continuing calibration	UJ	NA
Semivolatile Organic Compounds	Benzoic acid	Initial and continuing calibration	UJ	NA
	bis(2-Chloroisopropyl)ether	Continuing calibration	UJ	NA
	Hexachlorocyclopentadiene	Continuing calibration	UJ	NA
	Indeno(1,2,3-cd)pyrene	Initial calibration	J	NA
	N-Nitroso-di-n-propylamine	Continuing calibration	UJ	NA
Pesticide/PCBs	gamma-BHC	MS/MSD recovery	UJ	Low
	Aldrin	MSD recovery	UJ	Low
Total Metals in Soil Matrix	Aluminum	Serial dilution	J	NA
	Arsenic	MS recovery	J	Low
	Chromium	MS recovery	J	Low
	Cobalt	MS recovery	J	Low
	Iron	Serial dilution	J	NA
	Magnesium	Serial dilution	J	NA
	Manganese	Serial dilution	J	NA
	Selenium	MS recovery	R	Low
	Silver	MS recovery	J	Low
	Thallium	MS recovery	UJ	Low
	Tin	MS recovery	J	High
	Vanadium	Laboratory blank contamination and MS recovery	UJ	Low

TABLE A-5 (Continued)
CIS DATA VALIDATION SUMMARY FOR
WASTE PIT NO. 4

Analysis	Analyte	Deficiency	Qualifier	Bias
Total Metals in Leachate	All metals	Acceptable	NA	NA
General Chemistry	Cyanide	Acceptable	NA	NA
	Corrosivity	Acceptable	NA	NA
	Ignitability	Acceptable	NA	NA
	Sulfide	Acceptable	NA	NA
	Fluoride	Acceptable	NA	NA
	Phenols	Acceptable	NA	NA
Sample PS-04-003				
Radiological Analysis	Thorium (Th230, Th228, and Th232)	Tracer yields	J	Low
	Uranium (U234, U235/236, and U238)	Tracer yields	J	Low

TABLE A-6
CIS DATA VALIDATION SUMMARY FOR WASTE PIT NO. 5

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample PS-05-024				
Volatile Organic Compounds	Acetone	Continuing calibration and laboratory blank contamination	UJ	NA
	Acrolein	Initial and continuing calibration	UJ	NA
	Carbon disulfide	Continuing calibration	UJ	NA
	Acrylonitrile	Continuing calibration	UJ	NA
	2-Butanone	Continuing calibration	UJ	NA
	2-Chloroethylvinylether	Continuing calibration	UJ	NA
	Methylene chloride	Laboratory blank contamination	U	NA
Semivolatile Organic Compounds	All semivolatile compounds	No data available for review	NA	NA
Pesticide/PCBs	All pesticide compounds	Acceptable	NA	NA
Total Metals in Soil Matrix	Antimony	MS recovery	J	High
	Aluminum	Serial dilution	J	NA
	Arsenic	Duplicate RPD	J	NA
	Calcium	Serial dilution	J	NA
	Chromium	Serial dilution	J	NA
	Copper	Serial dilution	J	NA
	Iron	Serial dilution	J	NA
	Manganese	Serial dilution	J	NA
	Mercury	Holding time	J	Low
	Selenium	MS recovery	J	Low
Total Metals in Leachate	All metals	Acceptable	NA	NA
General Chemistry	Cyanide	Acceptable	NA	NA
	Corrosivity	Acceptable	NA	NA
	Ignitability	Acceptable	NA	NA
	Sulfide	Acceptable	NA	NA

TABLE A-6 (Continued)
CIS DATA VALIDATION SUMMARY FOR
WASTE PIT NO. 5

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample PS-05-078				
Radiological Analysis	Cesium (Cs137)	High background count	UJ	Low
	Technetium (Tc99)	Reporting descrepancy	J	NA
	Ruthenium (Ru106)	High background count	UJ	Low

TABLE A-7
CIS DATA VALIDATION SUMMARY FOR WASTE PIT NO. 6

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample PS-06-001				
Volatile Organic Compounds	Acrolein	Initial and continuing calibration	UJ	NA
	Acetone	Continuing calibration	UJ	NA
	2-Butanone	Continuing calibration	UJ	NA
	2-Chloroethylvinylether	Continuing calibration	UJ	NA
	Methylene chloride	Continuing calibration	UJ	NA
Semivolatile Organic Compounds	Benzoic acid	Initial and continuing calibration	UJ	NA
	4,6-Dinitro-2-methylphenol	Continuing calibration	UJ	NA
	2,4-Dinitrophenol	Continuing calibration	UJ	NA
	bis(2-Ethylhexyl)phthalate	Continuing calibration	J	NA
	Pyrene	Initial and continuing calibration	UJ	NA
Pesticides/PCBs	All pesticide and PCB compounds	Acceptable	NA	NA
Total Metals in Soil Matrix	Aluminum	Serial dilution	J	NA
	Antimony	MS recovery	J	Low
	Iron	Serial dilution	J	NA
	Manganese	Serial dilution	J	NA
	Mercury	Holding time	UJ	Low
	Selenium	MS recovery	UJ	Low
	Silver	MS recovery	J	Low
	Zinc	Serial dilution	J	NA
Total Metals in Leachate	All metals	Acceptable	NA	NA
General Chemistry	Cyanide	Holding time and MS recovery	UJ	Low
	Corrosivity	Acceptable	NA	NA
	Ignitability	Acceptable	NA	NA
	Sulfide	Acceptable	NA	NA
Sample PS-06-028				
Radiological Analysis	Neptunium (Np237)	Reporting descrepancy	J	NA
	Strontium (Sr90)	Inadequate analysis	J	Low

TABLE A-8
CIS DATA VALIDATION SUMMARY FOR BURN PIT

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample PS-07-048				
Volatile Organic Compounds	Acetone	Laboratory blank contamination	U	NA
	Bromoform	Continuing calibration	UJ	NA
	Bromomethane	Continuing calibration	UJ	NA
	2-Butanone	Continuing calibration	J	NA
	Carbon tetrachloride	Continuing calibration	UJ	NA
	Chloroethane	Continuing calibration	UJ	NA
	1,2-Dichloroethane	Continuing calibration	UJ	NA
	1,1,1-Trichloroethane	Continuing calibration	UJ	NA
	Methylene chloride	Laboratory blank contamination	U	NA
Semivolatile Organic Compounds	Benzoic acid	Initial and continuing calibration	UJ	NA
	Indeno(1,2,3-cd)pyrene	Initial calibration	UJ	NA
	Fluoranthene	Laboratory blank contamination	U	NA
	bis(2-Ethylhexyl)phthalate	Continuing calibration	J	NA
	Hexachlorocyclopentadiene	Continuing calibration	UJ	NA
	Isophorone	Continuing calibration	UJ	NA
	Nitrobenzene	Continuing calibration	UJ	NA
	N-Nitroso-di-n-propylamine	Continuing calibration	UJ	NA
	Phenanthrene	Laboratory blank contamination	U	NA
	2,4,5-Trichlorophenol	Continuing calibration	UJ	NA
Pesticides/PCBs	gamma-BHC	MS/MSD recovery and RPD	UJ	Low
	Dieldrin	MS/MSD RPD	UJ	Low
Total Metals	Aluminum	Serial dilution	J	NA
	Antimony	MS recovery	UJ	Low
	Arsenic	MS recovery	J	Low
	Barium	MS recovery and duplicate RPD	J	Low
	Calcium	Duplicate RPD	J	NA
	Copper	MS recovery and duplicate RPD	J	Low
	Iron	Duplicate RPD and serial dilution	J	NA

TABLE A-8 (Continued)
CIS DATA VALIDATION SUMMARY FOR
BURN PIT

Analysis	Analyte	Deficiency	Qualifier	Bias
Total Metals (Continued)	Lead	MS recovery	R	Low
	Magnesium	Duplicate RPD and serial dilution	J	NA
	Manganese	MS recovery	J	High
	Selenium	MS recovery	R	Low
	Silver	MS recovery	UJ	Low
General Chemistry	Cyanide	Acceptable	NA	NA
	Corrosivity	Acceptable	NA	NA
	Ignitability	Acceptable	NA	NA
	Sulfide	Acceptable	NA	NA
Sample PS-07-015				
Radiological Analysis	All radiochemistries	Acceptable	NA	NA

TABLE A-9
WEMCO DATA VALIDATION SUMMARY FOR WASTE PIT NO. 5

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample 100210				
Volatile Organic Compounds in Soil Matrix	All volatile compounds	Holding time	UJ/J	Low
	Acetone	Initial and continuing calibration	J	NA
	1,2-Dichloroethane	Continuing calibration	UJ	NA
	1,4-Dioxane	Contining calibration	UJ	NA
	Vinyl acetate	Initial calibration	UJ	NA
Volatile Organic Compounds in Leachate	Acetone	Laboratory blank contamination	U	NA
	Methylene chloride	Initial calibration, continuing calibration, and laboratory blank contamination	UJ	NA
	2-Butanone	Continuing calibration	UJ	NA
Semivolatile Organic Compounds in Soil Matrix	All semivolatile compounds	Acceptable	NA	NA
Semivolatile Organic Compounds in Leachate	Benzyl alcohol	Continuing calibration	UJ	NA
	4-Nitrophenol	Continuing calibration and MS/MSD recoveries	R	Low
	4-Nitroaniline	Continuing calibration	UJ	NA
Pesticide/PCBs in Soil Matrix	All pesticide/PCB compounds	Acceptable	NA	NA
Pesticide/PCBs in Leachate	All pesticide compounds	Surrogate recovery	UJ	Low
	All PCB compounds	Acceptable	NA	NA
Herbicides in Soil Matrix	2,4,5-T	MS/MSD recoveries	UJ	Low
Total Metals in Soil Matrix	Arsenic	MS recovery	J	Low
	Chromium	Serial dilution	J	NA
	Iron	Serial dilution	J	NA
	Magnesium	Serial dilution	J	NA
	Manganese	Serial dilution	J	NA
	Mercury	MS recovery	J	Low
	Nickel	Serial dilution	J	NA

TABLE A-9 (Continued)
WEMCO DATA VALIDATION SUMMARY FOR WASTE PIT NO. 5

Analysis	Analyte	Deficiency	Qualifier	Bias
Total Metals in Soil Matrix (Continued)	Thallium	MS recovery	J	Low
	Vanadium	Serial dilution	J	NA
	Zinc	Serial dilution	J	NA
Total Metals in Leachate	Aluminum	MS recovery	J	Low
	Chromium	MS recovery	J	Low
	Iron	MS recovery	J	Low
	Lead	MS recovery	UJ	Low
	Manganese	MS recovery	J	Low
	Nickel	MS recovery	J	Low
	Silver	MS recovery	UJ	Low
	Thallium	MS recovery	UJ	Low
General Chemistry in Soil Matrix	Cyanide	Holding time	UJ	Low
	Oil and grease	Holding time	J	Low
	pH and specific gravity	Acceptable	NA	NA
	Total Organic Carbon	Acceptable	NA	NA
	Total Phosphorus	Acceptable	NA	NA
	Total Organic Nitrogen	Acceptable	NA	NA
	Total Kjeldahl Nitrogen	Acceptable	NA	NA
	Anions (bromide, nitrate/nitrite,ammonia, sulfate, and chloride)	Acceptable	NA	NA
	Total Organic Nitrogen	Acceptable	NA	NA
General Chemistry in Leachate	Cyanide	Holding time	UJ	Low
Radiological Analysis	Neptunium (Np237)	Uranium interference	R	High
	Thorium (Th230, Th228, and Th232)	Laboratory blank contamination	J	High

TABLE A-10
WEMCO DATA VALIDATION SUMMARY FOR WASTE PIT NO. 6

Analysis	Analyte	Deficiency	Qualifier	Bias
Sample 100225				
Volatile Organic Compounds in Soil Matrix	All volatile compounds	Acceptable	NA	NA
Volatile Organic Compounds in Leachate	All volatile compounds	Holding time	UJ/J	Low
	Acetone	Laboratory blank contamination	U	NA
Semivolatile Organic Compounds in Soil Matrix	All semivolatile compounds	Acceptable	NA	NA
Semivolatile Organic Compounds in Leachate	All semivolatile compounds	Acceptable	NA	NA
Pesticide/PCBs in Soil Matrix	All pesticide/PCB compounds	Acceptable	NA	NA
Pesticide/PCBs in Leachate	All pesticide/PCB compounds	Acceptable	NA	NA
Herbicides in Soil Matrix	All herbicide compounds	Acceptable	NA	NA
Total Metals in Soil Matrix	Antimony	MS recovery	UJ	Low
	Calcium	Duplicate RPD	J	NA
Total Metals in Leachate	Chromium	MS recovery	UJ	Low
	Copper	MS recovery	UJ	Low
	Selenium	MS recovery	R	Low
	Vanadium	MS recovery	R	Low
General Chemistry in Soil Matrix	Cyanide	Acceptable	NA	NA
	Oil and grease	Holding time	UJ	Low
	pH and specific gravity	Acceptable	NA	NA
	Total Organic Carbon	Acceptable	NA	NA
	Total Phosphorus	Holding time	J	Low
	Total Organic Nitrogen	Acceptable	NA	NA
	Total Kjeldahl Nitrogen	Acceptable	NA	NA

TABLE A-10 (Continued)
WEMCO DATA VALIDATION SUMMARY FOR
WASTE PIT NO. 6

Analysis	Analyte	Deficiency	Qualifier	Bias
General Chemistry in Soil Matrix (Continued)	Anions (bromide, nitrate/nitrite,ammonia, sulfate, and chloride)	Acceptable	NA	NA
	Total Organic Nitrogen	Acceptable	NA	NA
General Chemistry in Leachate	Cyanide	Acceptable	NA	NA
Radiological Analysis	Technetium (Tc99)	Quench problem	UJ	NA
	Thorium (all isotopes)	Cross-contamination problem	J	NA
	Rubidium (Ru106)	In equilibrium with rhodium 106	UJ	NA
	Strontium (Sr90)	Cannot confirm results	J	NA

ATTACHMENT

QUALIFIED SAMPLE RESULTS

RI/FS QUALIFIED DATA

(37 Sheets)

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

63060DL

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

Matrix: (soil/water) SOIL Lab Sample ID: FF9513

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FF9513D2

Level: (low/med) LOW Date Received: 07/16/91

% Moisture: not dec. 18 Date Analyzed: 07/25/91

Column: (pack/cap) PACK Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	61	U
74-83-9	Bromomethane	61	U
75-01-4	Vinyl Chloride	61	U
75-00-3	Chloroethane	61	U
75-09-2	Methylene Chloride	20	BDJ
67-64-1	Acetone	290	BD
75-15-0	Carbon Disulfide	30	U
75-35-4	1,1-Dichloroethene	30	U
75-34-3	1,1-Dichloroethane	30	U
540-59-0	1,2-Dichloroethene (total)	30	U
67-66-3	Chloroform	150	D
107-06-2	1,2-Dichloroethane	30	U
78-93-3	2-Butanone	36	DJ
71-55-6	1,1,1-Trichloroethane	6	DJ
56-23-5	Carbon Tetrachloride	30	U
108-05-4	Vinyl Acetate	61	U
75-27-4	Bromodichloromethane	30	U
78-87-5	1,2-Dichloropropane	30	U
10061-01-5	cis-1,3-Dichloropropene	30	U
79-01-6	Trichloroethene	30	U
124-48-1	Dibromochloromethane	30	U
79-00-5	1,1,2-Trichloroethane	30	U
71-43-2	Benzene	30	U
10061-02-6	Trans-1,3-Dichloropropene	30	U
75-25-2	Bromoform	30	U
108-10-1	4-Methyl-2-Pentanone	61	U
591-78-6	2-Hexanone	61	U
127-18-4	Tetrachloroethene	650	D
79-34-5	1,1,2,2-Tetrachloroethane	30	U
108-88-3	Toluene	27	DJ
108-90-7	Chlorobenzene	30	U
100-41-4	Ethylbenzene	220	D
100-42-5	Styrene	30	U
1330-20-7	Total Xylenes	1100	D

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

63060

Lab Name: ITAS-OAK RIDGE Contract: FERNALD

Lab Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

Matrix: (soil/water) SOIL Lab Sample ID: FF9513

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FF9513

Level: (low/med) LOW Date Received: 07/16/91

% Moisture: not dec. 18 Date Analyzed: 07/25/91

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	12	~~B~~ U
67-64-1	Acetone	170	~~B~~ J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	360	~~E~~ dilution
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	29	J
71-55-6	1,1,1-Trichloroethane	14	
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	4	J
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	3	J
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	840	~~E~~ dilution
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	300	E — dilution
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	1500	E

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1/87 Rev.

IT ANALYTICAL SERVICES
APPENDIX IX VOLATILE ORGANIC ANALYSIS
IN ADDITION TO EPA CLP TARGET COMPOUND LIST

CASE NO 36869 LABORATORY ITAS-OAK RIDGE CONTRACT FERNALD
SAS NO NA REPORTED 09/16/91 17:25 CUSTOMER ADV

FILE NAME FF9513 SAMPLE ID 63060 LEVEL LOW
TYPE EPA LAB SAMP ID FF9513 MATRIX SOIL
INST OWA1 ANALYZED 07/25/91 17:25 UNITS ug/Kg

CODE	CAS NO	COMPOUND	TYPES	CONC	FLAGS
A010	75-05-8	Acetonitrile		1230	~~U~~ UJ
A020	107-02-8	Acrolein		12.3	~~U~~ UJ
A030	107-13-1	Acrylonitrile		12.3	~~U~~ UJ
A040	126-99-8	2-Chloro-1,3-Butadiene		6.14	U
A050	107-05-1	3-Chloropropene		6.14	U
A060	96-12-8	1,2-Dibromo-3-chloropropane		12.3	U
A070	106-93-4	1,2-Dibromoethane		6.14	U
A080	74-95-3	Dibromomethane		12.3	U
A090	110-57-6	trans-1,4-Dichloro-2-butene		123	U
A100	75-71-8	Dichlorodifluoromethane		29600	J
A110	123-91-1	1,4-Dioxane		6140	U
A120	107-12-0	Ethyl Cyanide		123	U
A130	97-63-2	Ethyl Methacrylate		12.3	U
A140	74-88-4	Iodomethane		6.14	U
A150	78-83-1	Isobutyl Alcohol		24.6	~~U~~ UJ
A160	126-98-7	Methacrylonitrile		12.3	U
A170	80-62-6	Methyl Methacrylate		12.3	U
A180	110-86-1	Pyridine		24.6	~~U~~ UJ
A190	630-20-6	1,1,1,2-Tetrachloroethane		6.14	U
A200	75-69-4	Trichlorofluoromethane		6.14	U
A210	96-16-4	1,2,3-Trichloropropane		6.14	U

CDF 12/20/93

Notes and summary data for this report.
U - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.

See Form I VOA for TCL compounds

Form I Appendix IX

9/16/91

IT ANALYTICAL SERVICES
APPENDIX IX VOLATILE ORGANIC ANALYSIS
IN ADDITION TO EPA CLP TARGET COMPOUND LIST

CASE NO 36869 LABORATORY ITAS-OAK RIDGE CONTRACT FERNALD
SAS NO NA REPORTED 09/16/91 17:25 CUSTOMER ADV

FILE NAME FF9513D2 SAMPLE ID 63060DL LEVEL LOW
TYPE EPA LAB SAMP ID FF9513 MATRIX SOIL
INST OWA1 ANALYZED 07/25/91 20:53 UNITS ug/Kg

CODE	CAS NO	COMPOUND	TYPES	CONC	FLAGS
A010	75-05-8	Acetonitrile		6140	U
A020	107-02-8	Acrolein		61.4	U
A030	107-13-1	Acrylonitrile		61.4	U
A040	126-99-8	2-Chloro-1,3-Butadiene		30.7	U
A050	107-05-1	3-Chloropropene		30.7	U
A060	96-12-8	1,2-Dibromo-3-chloropropane		61.4	U
A070	106-93-4	1,2-Dibromoethane		30.7	U
A080	74-95-3	Dibromomethane		61.4	U
A090	110-57-6	trans-1,4-Dichloro-2-butene		614	U
A100	75-71-8	Dichlorodifluoromethane		1230	U
A110	123-91-1	1,4-Dioxane		30700	U
A120	107-12-0	Ethyl Cyanide		614	U
A130	97-63-2	Ethyl Methacrylate		61.4	U
A140	74-88-4	Iodomethane		30.7	U
A150	78-83-1	Isobutyl Alcohol		123	U
A160	126-98-7	Methacrylonitrile		61.4	U
A170	80-62-6	Methyl Methacrylate		61.4	U
A180	110-86-1	Pyridine		123	U
A190	630-20-6	1,1,1,2-Tetrachloroethane		30.7	U
A200	75-69-4	Trichlorofluoromethane		30.7	U
A210	96-16-4	1,2,3-Trichloropropane		30.7	U

Notes and summary data for this report.
U - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.

See Form I VOA for TCL compounds

Form I Appendix IX

9/16/91

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

63061

Name: ITAS-OAK RIDGE Contract: ADV

b Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

atrix: (soil/water) SOIL Lab Sample ID: FF9515

mple wt/vol: 24.4 (g/mL) G Lab File ID: FF9515

evel: (low/med) LOW Date Received: 07/16/91

Moisture: not dec. 16 dec. ____ Date Extracted: 07/26/91

traction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/30/91

PC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	480	U
111-44-4	bis(2-Chloroethyl)Ether	480	U
95-57-8	2-Chlorophenol	480	U
541-73-1	1,3-Dichlorobenzene	480	U
106-46-7	1,4-Dichlorobenzene	480	U
100-51-6	Benzyl Alcohol	480	U
95-50-1	1,2-Dichlorobenzene	480	U
95-48-7	2-Methylphenol	480	~~U~~ UJ ~~UJ~~
108-60-1	bis(2-Chloroisopropyl)Ether	480	U
106-44-5	4-Methylphenol	480	U
621-64-7	N-Nitroso-Di-n-Propylamine	480	~~U~~ UJ
67-72-1	Hexachloroethane	480	~~U~~ UJ
98-95-3	Nitrobenzene	480	U
78-59-1	Isophorone	480	U
88-75-5	2-Nitrophenol	480	U
105-67-9	2,4-Dimethylphenol	480	U
65-85-0	Benzoic Acid	2300	~~U~~ UJ
111-91-1	bis(2-Chloroethoxy)Methane	480	U
120-83-2	2,4-Dichlorophenol	480	U
120-82-1	1,2,4-Trichlorobenzene	480	~~U~~ UJ
91-20-3	Naphthalene	480	U
106-47-8	4-Chloroaniline	480	U
87-68-3	Hexachlorobutadiene	480	U
59-50-7	4-Chloro-3-Methylphenol	480	U
91-57-6	2-Methylnaphthalene	480	U
77-47-4	Hexachlorocyclopentadiene	480	U
88-06-2	2,4,6-Trichlorophenol	480	U
95-95-4	2,4,5-Trichlorophenol	2300	U
91-58-7	2-Chloronaphthalene	480	U
88-74-4	2-Nitroaniline	2300	U
131-11-3	Dimethyl Phthalate	480	U
208-96-8	Acenaphthylene	480	U
606-20-2	2,6-Dinitrotoluene	480	U

CMF 12/20/93

WDS080191

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

63061

Name: ITAS-OAK RIDGE Contract: ADV

ab Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

Matrix: (soil/water) SOIL Lab Sample ID: FF9515

Sample wt/vol: 24.4 (g/mL) G Lab File ID: FF9515

Level: (low/med) LOW Date Received: 07/16/91

% Moisture: not dec. 16 dec. ____ Date Extracted: 07/26/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/30/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2300	~~U~~ UJ
83-32-9	Acenaphthene	480	U
51-28-5	2,4-Dinitrophenol	2300	~~U~~ UJ
100-02-7	4-Nitrophenol	2300	U
132-64-9	Dibenzofuran	480	U
121-14-2	2,4-Dinitrotoluene	480	U
84-66-2	Diethylphthalate	480	U
7005-72-3	4-Chlorophenyl-phenylether	480	U
86-73-7	Fluorene	480	U
100-01-6	4-Nitroaniline	2300	~~U~~ UJ
534-52-1	4,6-Dinitro-2-Methylphenol	2300	~~U~~ UJ
86-30-6	N-Nitrosodiphenylamine (1)	480	~~U~~ UJ
101-55-3	4-Bromophenyl-phenylether	480	U
118-74-1	Hexachlorobenzene	480	U
87-86-5	Pentachlorophenol	2300	U
85-01-8	Phenanthrene	340	J
120-12-7	Anthracene	480	U
84-74-2	Di-n-Butylphthalate	480	U
206-44-0	Fluoranthene	480	U
129-00-0	Pyrene	480	U
85-68-7	Butylbenzylphthalate	480	U
91-94-1	3,3'-Dichlorobenzidine	970	~~U~~ UJ
56-55-3	Benzo(a)Anthracene	480	U
218-01-9	Chrysene	480	U
117-81-7	bis(2-Ethylhexyl)Phthalate	320	J
117-84-0	Di-n-Octyl Phthalate	480	U
205-99-2	Benzo(b)Fluoranthene	480	U
207-08-9	Benzo(k)Fluoranthene	480	U
50-32-8	Benzo(a)Pyrene	480	U
193-39-5	Indeno(1,2,3-cd)Pyrene	480	U
53-70-3	Dibenz(a,h)Anthracene	480	U
191-24-2	Benzo(g,h,i)Perylene	480	U

(1) - Cannot be separated from Diphenylamine

CMF 12/20/03

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

63061

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

Matrix: (soil/water) SOIL Lab Sample ID: FF9515

Sample wt/vol: 24.4 (g/mL) G Lab File ID: FF9515

Level: (low/med) LOW Date Received: 07/16/91

% Moisture: not dec. 16 dec. ____ Date Extracted: 07/26/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/30/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	30.52	3400	J
2.		UNKNOWN HYDROCARBON	28.82	3000	J
3.		UNKNOWN HYDROCARBON	31.37	3000	J
4.		UNKNOWN HYDROCARBON	30.26	2700	J
5.		UNKNOWN	28.17	2500	J
6.		UNKNOWN HYDROCARBON	29.71	2400	J
7.		UNKNOWN HYDROCARBON	27.61	2400	J
8.	126-73-8	PHOSPHORIC ACID TRIBUTYL EST	20.47	5000	J
9.		UNKNOWN HYDROCARBON	21.24	3000	J
10.	126-73-8	PHOSPHORIC ACID TRIBUTYL EST	20.52	4800	J
11.		UNKNONW HYDROCARBON	26.66	2200	J
12.		UNKNOWN HYDROCARBON	30.67	2200	J
13.		UNKNOWN HYDROCARBON	26.04	2700	J
14.		UNKNOWN HYDROCARBON	29.41	2000	J
15.		UNKNOWN HYDROCARBON	28.27	2000	J
16.		UNKNOWN HYDROCARBON	23.55	2600	J
17.		UNKNOWN HYDROCARBON	27.94	1900	J
18.		UNKNOWN	28.92	1700	J
19.	25429-29-2	1,1'-BIPHENYL, PENTACHLORO-	27.71	1700	J
20.		UNKNOWN HYDROCARBON	24.64	2300	J

CDC 12/20/93

UNKNOWNS1

5559 00008

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

63061

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

Matrix: (soil/water) SOIL Lab Sample ID: FF9515D6

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF9515

Level: (low/med) LOW Date Received: 07/16/91

% Moisture: not dec. 17 dec. __ Date Extracted: 07/26/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/02/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 6.00

do not use R

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	60	U
319-85-7	beta-BHC	60	U
319-86-8	delta-BHC	60	U
58-89-9	gamma-BHC (Lindane)	60	U
76-44-8	Heptachlor	60	U
309-00-2	Aldrin	60	U
1024-57-3	Heptachlor epoxide	60	U
959-98-8	Endosulfan I	60	U
60-57-1	Dieldrin	120	U
72-55-9	4,4'-DDE	120	U
72-20-8	Endrin	120	U
33213-65-9	Endosulfan II	120	U
72-54-8	4,4'-DDD	120	U
1031-07-8	Endosulfan sulfate	120	U
50-29-3	4,4'-DDT	120	U
72-43-5	Methoxychlor	600	U
53494-70-5	Endrin ketone	120	U
5103-71-9	alpha-Chlordane	600	U
5103-74-2	gamma-Chlordane	600	U
8001-35-2	Toxaphene	1200	U
12674-11-2	Aroclor-1016	600	U
11104-28-2	Aroclor-1221	600	U
11141-16-5	Aroclor-1232	600	U
53469-21-9	Aroclor-1242	600	U
12672-29-6	Aroclor-1248	4900	XFC
11097-69-1	Aroclor-1254	4000	XFC
11096-82-5	Aroclor-1260	1200	U

cmf 12pe M2

465-73-6	ISODRIN	60	U
143-50-0	KEPONE	120	U
510-15-6	CHLOROBENZILATE	120	U

FORM I PEST 1/87 Rev.

08/20/91

1G

HERBICIDE ORGANICS ANALYSIS DATA SHEET

5559

00003
EPA SAMPLE NO.

63061

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

Matrix: (soil/water) SOIL Lab Sample ID: FF9515

Sample wt/vol: 50.3 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 07/16/91

% Moisture: not dec. 17 dec. Date Extracted: 07/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/12/91

pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
94-75-7	2,4-D	240	U
93-72-1	SILVEX	43	U
93-76-5	2,4,5-T	47	U
88-85-7	DINOSEB	17	U

✓

CMF 12/20/91

FORM I HERB 1/87 Rev.

08/20/91

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

5559

00019 EPA SAMPLE NO.

63061DL

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36869 SAS No.: NA SDG No.: 63048

Matrix: (soil/water) SOIL Lab Sample ID: FF9515D60

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF9515

Level: (low/med) LOW Date Received: 07/16/91

% Moisture: not dec. 17 dec. __ Date Extracted: 07/26/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/02/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 60.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	600	U
319-85-7	beta-BHC	600	U
319-86-8	delta-BHC	600	U
58-89-9	gamma-BHC (Lindane)	600	U
76-44-8	Heptachlor	600	U
309-00-2	Aldrin	600	U
1024-57-3	Heptachlor epoxide	600	U
959-98-8	Endosulfan I	600	U
60-57-1	Dieldrin	1200	U
72-55-9	4,4'-DDE	1200	U
72-20-8	Endrin	1200	U
33213-65-9	Endosulfan II	1200	U
72-54-8	4,4'-DDD	1200	U
1031-07-8	Endosulfan sulfate	1200	U
50-29-3	4,4'-DDT	1200	U
72-43-5	Methoxychlor	6000	U
53494-70-5	Endrin ketone	1200	U
5103-71-9	alpha-Chlordane	6000	U
5103-74-2	gamma-Chlordane	6000	U
8001-35-2	Toxaphene	12000	U
12674-11-2	Aroclor-1016	6000	U
11104-28-2	Aroclor-1221	6000	U
11141-16-5	Aroclor-1232	6000	U
53469-21-9	Aroclor-1242	6000	U
12672-29-6	Aroclor-1248	7000	DXC
11097-69-1	Aroclor-1254	5100	DJXC
11096-82-5	Aroclor-1260	12000	U

465-73-6	ISODRIN	600	U
143-50-0	KEPONE	1200	U
510-15-6	CHLOROBENZILATE	1200	U

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FORM I PEST 1/87 Rev.

Rob 8/20/91

000048

0 5550 (63061)

ANALYSIS DATA SHEET

Analytical Services - San Jose
Code: ITASSJ
Project Name: ADV
Project Number: 36869
Project Sample Number: FF9515
Lab Sample ID: T109079-01

(63061)

Date Received: 09/06/91
Date Collected: 07/26/91
Matrix: solid
Sample Amount: 30 g
Level: Low
% Moisture: 17
Column: MEGA

000013

CAS No.	Compound	Lab File ID	Analysis Date	Units	Value	Q*
60-51-5	Dimethoate	57-671	09/18/91	mg/Kg	0.1	U
298-04-4	Disulfoton	57-671	09/18/91	mg/Kg	0.1	U
56-38-2	Parathion ethyl	57-671	09/18/91	mg/Kg	0.1	U
298-00-0	Parathion methyl	57-671	09/18/91	mg/Kg	0.1	U
298-02-2	Phorate	57-671	09/18/91	mg/Kg	0.1	U
3689-24-5	Sulfotepp	57-671	09/18/91	mg/Kg	0.1	U
107-49-3	TEPP	57-671	09/18/91	mg/Kg	0.4	U
0	Famphur	57-671	09/18/91	mg/Kg	0.1	U
0	Thionazin	57-671	09/18/91	mg/Kg	0.1	U
0	0,0,0-Triethylphosphorothioate	57-671	09/18/91	mg/Kg	0.1	U
950-37-8	Methidathion	57-671	09/18/91	% Recovery	84.	

*Qualifier Key:
- U - none detected
- J - estimated value (less than the sample quantitation limit)
- B - analyte is found in the associated blank as well as in the sample
- E - concentration exceeds calibration range
- Q - not analyzed (see Request for Analysis)
- D - compound identified at a secondary dilution factor
- R - resampling and reanalysis are necessary for verification
- 'blank' - positive result

000049

U.S. EPA - CLP

5559

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

63061

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36869 SAS No.: SDG No.: 63048

Matrix (soil/water): SOIL Lab Sample ID: FF 9516

Level (low/med): Date Received: 07/16/91

% Solids: 83.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	772			P	
7440-36-0	Antimony	8.5	B		P	
7440-38-2	Arsenic	1.3	B	~~N~~	F	J
7440-39-3	Barium	400			P	
7440-41-7	Beryllium	1.2			P	
7440-43-9	Cadmium	0.83	B		P	
7440-70-2	Calcium	9410			P	
7440-47-3	Chromium	14.8		~~E~~	P	J
7440-48-4	Cobalt	5.2	B		P	
7440-50-8	Copper	14.6		~~EN~~	P	J
7439-89-6	Iron	520		~~E~~	P	J
7439-92-1	Lead	9.8		*	F	
7439-95-4	Magnesium	3240		*	P	
7439-96-5	Manganese	793		~~E~~	P	J
7439-97-6	Mercury	0.09	U		CV	
7440-02-0	Nickel	13.2			P	
7440-09-7	Potassium	450	B		A	
7782-49-2	Selenium	0.38	U	~~N~~	F	UJ
7440-22-4	Silver	7.4		~~E~~	P	J
7440-23-5	Sodium	349	B		P	
7440-28-0	Thallium	0.38	U	~~N~~	F	UJ
7440-62-2	Vanadium	8.8	B	~~E~~	P	J
7440-66-6	Zinc	1.3	B	~~N~~	P	J
7439-98-7	Molybdenum	4.7		~~N~~	P	J
7440-42-8	Boron	43.3		~~N~~	P	J
7440-21-3	Silicon	1870		~~E~~	P	~~J~~ R
7440-31-5	Tin	40.7	U		P	
	Cyanide	0.15	B		AS	

CDF 12/20/93

Color Before: GRAY Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:
CYANIDE_SAMPLE_NO._IS_FF_9517.

FORM I - IN

7/88

Ch 8-20-91

36869. 3.7. 5559

Advanced Sciences, Inc.
Date: 08-NOV-91

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ADV36869

Sulfide - - WW 097

Client Sample ID: QXW97B107191

Sample Date: N/A
IT Sample ID: 97B107191
Prep Date: 07/19/91
Analysis Date: (Completed) 07/19/91
Blank Sample ID: QXW97B107191
Concentration Units: MG/KG

3/24/93

Parameter	Result	
Sulfide	.5	U

Client Sample ID: ~~93061~~ 63061

Sample Date: N/A
IT Sample ID: FF9517
Prep Date: 07/19/91
Analysis Date: (Completed) 07/19/91
Blank Sample ID: QXW97B107191
Concentration Units: MG/KG

✓ 12/20/93

Parameter	Result		Q3
Sulfide	.5	U	—

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 5559

CC2077
03250
AL 7/14/88

Name: PEI Contract:

Code: PEI Case No.: SAS No.: SDG No.: CC1856

trix: (soil/water) WATER Lab Sample ID: T8-06-027-03A

ple wt/vol: 5. (g/mL) ML Lab File ID: CC2077

el: (low/med) LOW Date Received: 6/ 3/88

Moisture: not dec. 100. Date Analyzed: 6/10/88

umn: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	10.	U	
74-83-9	Bromomethane	10.	U	
75-01-4	Vinyl Chloride	10.	U	
75-00-3	Chloroethane	10.	U	
75-09-2	Methylene Chloride	~~5.~~	~~B~~	10U
67-64-1	Acetone	10.	U	
75-15-0	Carbon Disulfide	5.	U	
75-35-4	1,1-Dichloroethene	5.	U	
75-34-3	1,1-Dichloroethane	5.	U	
540-59-0	1,2-Dichloroethene (total)	5.	U	
67-66-3	Chloroform	5.	U	
107-06-2	1,2-Dichloroethane	5.	U	
78-93-3	2-Butanone	10.	U	
71-55-6	1,1,1-Trichloroethane	5.	U	
56-23-5	Carbon Tetrachloride	5.	U	
108-05-4	Vinyl Acetate	10.	~~U~~	UJ
75-27-4	Bromodichloromethane	5.	U	
78-87-5	1,2-Dichloropropane	5.	U	
10061-01-5	cis-1,3-Dichloropropene	5.	U	
79-01-6	Trichloroethene	5.	U	
124-48-1	Dibromochloromethane	5.	U	
79-00-5	1,1,2-Trichloroethane	5.	U	
71-43-2	Benzene	5.	~~U~~	UJ
10061-02-6	trans-1,3-Dichloropropene	5.	U	
75-25-2	Bromoform	5.	U	
108-10-1	4-Methyl-2-Pentanone	10.	U	
591-78-6	2-Hexanone	10.	U	
127-18-4	Tetrachloroethene	5.	U	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	
108-88-3	Toluene	5.	~~U~~	UJ
108-90-7	Chlorobenzene	5.	~~U~~	UJ
100-41-4	Ethylbenzene	5.	~~U~~	UJ
100-42-5	Styrene	5.	~~U~~	UJ
1330-20-7	Xylene (total)	5.	~~U~~	UJ

CDJ 12/21/88

FORM I VOA 1/87 Rev.

1E

EPA SAMPLE NO.
5559

CC2077
03250
AR 7/14/88

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Name: PEI Contract:

Code: PEI Case No.: SAS No.: SDG No.: CC1856

Matrix: (soil/water) WATER Lab Sample ID: T8-06-027-03A

Sample wt/vol: 5. (g/mL) ML Lab File ID: CC2077

Level: (low/med) LOW Date Received: 6/ 3/88

Moisture: not dec. 100. Date Analyzed: 6/10/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
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9.				
10.				
11.				
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17.				
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21.				
22.				
23.				
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25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC 1/87 Rev.

CM 12/20/93

5550

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CC2083 03250

AR 7/14/88

Name: PEI Contract:

Lab Code: PEI Case No.: SAS No.: SDG No.: CC1864

Matrix: (soil/water) WATER Lab Sample ID: T8-06-028-03A

Sample wt/vol: 1000. (g/mL) ML Lab File ID: 602803A

Level: (low/med) LOW Date Received: 6/ 3/88

% Moisture: not dec. 100. dec. 0. Date Extracted: 6/ 6/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

FORM I SV-1

CMF 12/20/93

1/87 Rev.

1C

EPA SAMPLE NO.

5559

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CC2083 03250 AR 7/14/88

' Name: PEI Contract:

.ab Code: PEI Case No.: SAS No.: SDG No.: CC1864

trix: (soil/water) WATER Lab Sample ID: T8-06-028-03A

'mple wt/vol: 1000. (g/mL) ML Lab File ID: 602803A

.evel: (low/med) LOW Date Received: 6/ 3/88

Moisture: not dec. 100. dec. 0. Date Extracted: 6/ 6/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/20/88

C Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	50.	U	
83-32-9	Acenaphthene	10.	U	
51-28-5	2,4-Dinitrophenol	50.	~~U~~	UJ
100-02-7	4-Nitrophenol	50.	U	
132-64-9	Dibenzofuran	10.	U	
121-14-2	2,4-Dinitrotoluene	10.	U	
84-66-2	Diethylphthalate	10.	U	
7005-72-3	4-Chlorophenyl-phenylether	10.	U	
86-73-7	Fluorene	10.	U	
100-01-6	4-Nitroaniline	50.	U	
534-52-1	4,6-Dinitro-2-methylphenol	50.	U	
86-30-6	N-Nitrosodiphenylamine (1)	50.	U	
101-55-3	4-Bromophenyl-phenylether	10.	~~U~~	UJ
118-74-1	Hexachlorobenzene	10.	~~U~~	UJ
87-86-5	Pentachlorophenol	50.	~~U~~	UJ
85-01-8	Phenanthrene	10.	U	
120-12-7	Anthracene	10.	U	
84-74-2	Di-n-butylphthalate	~~8.~~	~~BJ~~	10 U
206-44-0	Fluoranthene	10.	U	
129-00-0	Pyrene	10.	U	
85-68-7	Butylbenzylphthalate	10.	U	
91-94-1	3,3'-Dichlorobenzidine	20.	U	
56-55-3	Benzo(a)anthracene	10.	U	
218-01-9	Chrysene	10.	U	
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U	
117-84-0	Di-n-octylphthalate	10.	U	
205-99-2	Benzo(b)fluoranthene	10.	U	
207-08-9	Benzo(k)fluoranthene	10.	U	
50-32-8	Benzo(a)pyrene	10.	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	
53-70-3	Dibenz(a,h)anthracene	10.	U	
191-24-2	Benzo(g,h,i)perylene	10.	~~U~~	UJ

(1) - Cannot be separated from diphenylamine

CMF 12/22/89

FORM I SV-2 1/87 Rev.

Received: 07/16/91

TRUEL OAK RIDGE REPORT

Results by Sample

Work Order # K1-07-052

5559

ID 63061 FRACTION 01A TEST CODE AGINPT RANGE FORM TO REPORT DECR

Date & Time Collected 07/13/91 16:45:00 Category SLUDGE WASTE

	PARAMETER	RESULT	2-SIGMA ERROR	UNITS
	RU-106	<2.2		pCi/g
	CS-137	<0.2		pCi/g
	RA-226	99.6	7.0	pCi/g
	RA-228	41.0	3.3	pCi/g
	U-TOTAL	2966	418	ug/g
R	NP-237	*		
UJ	PU-238	<0.6		pCi/g
UJ	PU-239/240	<0.6		pCi/g
	SR-90	1.87	0.36	pCi/g
J	TC-99	1.10	0.51	pCi/g
UJ	TH-228	<710		pCi/g
J	TH-230	5460	1190	pCi/g
UJ	TH-232	<300		pCi/g
UJ	TH-TOTAL	<2800		ug/g
J	U-234	830	203	pCi/g
J	U-235/236	47.3	21.4	pCi/g
J	U-238	915	222	pCi/g
	GROSS ALPHA	6785	1346	pCi/g
	GROSS BETA	1544	310	pCi/g

CMF
12/20/93

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CC2083 03250 065559

AR 7/14/88

me: PEI Contract:

Code: PEI Case No.: SAS No.: SDG No.: CC1864

rix: (soil/water) WATER Lab Sample ID: T8-06-028-03A

ple wt/vol: 1000. (g/mL) ML Lab File ID: 602803A

vel: (low/med) LOW Date Received: 6/ 3/88

oisture: not dec. 100. dec. 0. Date Extracted: 6/ 6/88

traction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/20/88

anup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

nber TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
6.				
7.				
8.				
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12.				
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CMF 12/20/93

1/87 Rev.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
5550
CC2095
03250
AR 7/14/88

Name: PEI Contract: 68-01-7474

Lab Code: PEI Case No.: SAS No.: SDG No.: CC2086

Matrix: (soil/water) WATER Lab Sample ID: T8-06-028-09A

Sample wt/vol: 1000. (g/mL)ML Lab File ID: PCC2095

Level: (low/med) LOW Date Received: 6/ 3/88

% Moisture: not dec.100. dec. 0. Date Extracted: 6/ 6/88

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/14/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	ALPHA-BHC	.050	U
319-85-7	BETA-BHC	.050	U
319-86-8	DELTA-BHC	.050	U
58-89-9	GAMMA-BHC	.050	U
76-44-8	HEPTACHLOR	.050	U
309-00-2	ALDRIN	.050	U
1024-57-3	HEPTACHLOR EPOXIDE	.050	U
959-98-8	ENDOSULFAN I	.050	U
60-57-1	DIELDRIN	.050	U
72-55-9	4,4'-DDE	.10	U
72-20-8	ENDRIN	.050	U
33213-65-9	ENDOSULFAN II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	ENDOSULFAN SULFATE	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	METHOXYCHLOR	.50	U
53494-70-5	ENDRIN KETONE	.10	U
5103-71-9	ALPHA CHLORDANE	.50	U
5103-74-2	GAMMA CHLORDANE	.50	U
8001-35-2	TOXAPHENE	1.0	U
12674-11-2	AROCLOR-1016	.50	U
11104-28-2	AROCLOR-1221	.50	U
11141-16-5	AROCLOR-1232	.50	U
53469-21-9	AROCLOR-1242	.50	U
12672-29-6	AROCLOR-1248	.50	U
11097-69-1	AROCLOR-1254	1.0	U
11096-82-5	AROCLOR-1260	1.0	U

CPF 12/20/93

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

5559

EPA SAMPLE NO.

CC 2089

Lab Name: PEI Associates Inc Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water Lab Sample ID: T8-06-29-03A

Level (low/med): low Date Received: _____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): ug/l

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U	C	

✓ CMF 12/20/93

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

5559
EPA SAMPLE NO.

CC 2053

Lab Name: PET Associates Inc Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): water Lab Sample ID: T8-06-034-03

Level (low/med): low Date Received: 6-3-88

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): ug/l

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	~0.29	U	CV	UJ
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

CDF 12/20/93

Color Before: Colorless Clarity Before: Clear Texture: _____

Color After: Colorless Clarity After: Clear Artifacts: _____

Comments:

5559

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

CC 2059

Lab Name: PEI ASSOCIATES INC. Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 7B-06-033-03A

Level (low/med): LOW Date Received: 06/03/88

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	M	Q	
7429-90-5	Aluminum	11.4	U	P		
7440-36-0	Antimony	46.7	U	P		
7440-38-2	Arsenic	1.9	U	F		
7440-39-3	Barium	35.9	B	P		
7440-41-7	Beryllium	2.4	U	P		
7440-43-9	Cadmium	0.7	U	P		
7440-70-2	Calcium	75300		P		
7440-47-3	Chromium	1.7	U	P		
7440-48-4	Cobalt	5.2	U	P		
7440-50-8	Copper	6.7	U	P		
7439-89-6	Iron	120		P		
7439-92-1	Lead	2.1	~~U~~	F	~~W~~	UJ
7439-95-4	Magnesium	20200		P		
7439-96-5	Manganese	21.6		P		
7439-97-6	Mercury					
7440-02-0	Nickel	12.3	U	P		
7440-09-7	Potassium	3000	B	P		
7782-49-2	Selenium	1.8	~~U~~	F	~~W~~	UJ
7440-22-4	Silver	4.3	U	P		
7440-23-5	Sodium	12300		P		
7440-28-0	Thallium	4.1	~~U~~	F	~~W~~	UJ
7440-62-2	Vanadium	3.4	B	P		
7440-66-6	Zinc	38.9		P		
	Cyanide					
	MOLYBDENUM	33.3	U	P		

EDF 12/20/93

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

Page 3
Received: 06/02/88

ITRSL Oak Ridge REPORT
Results by Sample

Work Order # RB-06-003

SAMPLE ID 03251 FRACTION 03A TEST CODE GS NAME GAMMA SPEC
Date & Time Collected 06/01/88 Category

UNITS pCi/l
WRTN 07/12/88

VERIFIED BY RMM

GAMMA SPEC	RESULT	2-SIGMA	OTHER	RESULT	2-SIGMA
			Z U-234	511	60
Z CS-137	<20		U-235,236	33.7	6.7
Z RU-106	<150		U-238	2234	262
			TH-228	<1.0	
			TH-230	2.1	0.5
			TH-232	9.8	1.6
			PU-238	<1.0	
			PU-239,240	<1.0	
			TC-99	<30.0	
			NP-237	<1.0	
			RA-226	<1.0	
			RA-228	<3.0	
			SR-90	<5.0	
			Z U-TOTAL*	15330	2403
			*units=ug/l		

SAMPLE ID 03250 FRACTION 04A TEST CODE GS NAME GAMMA SPEC
Date & Time Collected 06/01/88 Category

UNITS pCi/l
WRTN 07/12/88

VERIFIED BY RMM

GAMMA SPEC	RESULT	2-SIGMA	OTHER	RESULT	2-SIGMA
			U-234	1.6	0.3
R CS-137	<20		U-235,236	<1.0	
R RU-106	<150		U-238	4.6	0.7
			TH-228	<1.0	
			TH-230	1.5	0.5
			TH-232	<1.0	
			PU-238	<1.0	
			PU-239,240	<1.0	
			TC-99	<30.0	
			R NP-237	~~1.0~~ <1.0	
			RA-226	<1.0	
			RA-228	<3.0	
			SR-90	7.9	6.5
			U-TOTAL*	7	1
			*units=ug/l		

CDF 12/20/93

000062

4/6/93

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

5559

00051
EPA SAMPLE NO.

03170

Lab Name: ITAS OAK RIDGE Contract: _____

Lab Code: IT-MHL Case No.: ITNT 35143 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: CC 1585

Sample wt/vol: 5 (g/mL) ML Lab File ID: CC 1585

Level: (low/med) ~~NA~~ LOW 12/20/88 Date Received: 5/10/88

% Moisture: not dec. ~~NA~~ 12/20/88 Date Analyzed: 5/20/88

Column: (pack/cap) PACK Dilution Factor: 1

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	5	U	
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	
108-05-4	Vinyl Acetate	10	~~U~~	UJ
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	Trichloroethene	5	U	
124-48-1	Dibromochloromethane	5	U	
79-00-5	1,1,2-Trichloroethane	5	U	
71-43-2	Benzene	5	~~U~~	UJ
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	
108-88-3	Toluene	5	~~U~~	UJ
108-90-7	Chlorobenzene	5	~~U~~	UJ
100-41-4	Ethylbenzene	5	~~U~~	UJ
100-42-5	Styrene	5	~~U~~	UJ
1330-20-7	Xylene (total)	5	~~U~~	UJ

FORM I VOA

EDF 12/20/93

1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

5559

EPA SAMPLE NO.
03170

Lab Name: ITAS OAK RIDGE Contract: _____

Lab Code: IT-MWL Case No.: ITNT 35143 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: CC 1585

Sample wt/vol: 5 (g/mL) ML Lab File ID: CC 1585

Level: (low/med) ~~NA~~ LOW Date Received: 5/10/88

% Moisture: not dec. ~~NA~~ Date Analyzed: 5/20/88

Column: (pack/cap) PACK Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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30.				

FORM I VOA-TIC 1/87 Rev.

000064

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS - OAK RIDGE Contract: 5559 03/70

Lab Code: ITAOR Case No.: ITN3543 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: CC1590

Sample wt/vol: 1000 (g/ml) ML Lab File ID: CC1590R2

Total Lipid: Not Det 12/19/88 Date Received: __/__/__

% Moisture: not dec. NA 12/19/88 dec. _____ Date Extracted: 05/12/88

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 06/17/88

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	~~U~~ UJ
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	~~U~~ UJ
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	~~U~~ UJ
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	~~U~~ UJ
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

5559

Lab Name: ITAS-OAK RIDGE Contract: 03170

Lab Code: IT-MWL Case No.: 35143 (TNT) SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: CC1590

Sample wt/vol: 1000 (g/mL) ML Lab File ID: CC1570R2

Level: (low/med) ~~NA~~ LOW TNL 12/19/88 Date Received: 05/10/88

% Moisture: not dec. NA TNL 12/19/88 dec. _____ Date Extracted: 05/12/88

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 06/17/88

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
99-09-2	3-Nitroaniline	50	~~U~~	UJ
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	50	~~U~~	UJ
100-02-7	4-Nitrophenol	50	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
86-73-7	Fluorene	10	U	
100-01-6	4-Nitroaniline	50	~~U~~	UJ
534-52-1	4,6-Dinitro-2-methylphenol	50	U	
86-30-6	N-Nitrosodiphenylamine (1)	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	50	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
91-94-1	3,3'-Dichlorobenzidine	20	U	
56-55-3	Benzo(a)anthracene	10	U	
218-01-9	Chrysene	10	U	
117-81-7	bis(2-Ethylhexyl)phthalate	10	~~B~~	U
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenz(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

(1) - Cannot be separated from Diphenylamine

000066 CPF 12/22/93

U.S. EPA - CLP

1 5559

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

03170
CC 1625

Lab Name: PEI Associates Inc Contract: _____

Lab Code: _____ Case No.: MNT35143 SAS No.: _____ SDG No.: _____

Matrix (soil/water): Water Lab Sample ID: T8-05-219-04A

Level (low/med): low Date Received: 5-27-88

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): ug/l

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum	13.2	B	P	
7440-36-0	Antimony	46.7	U	P	
7440-38-2	Arsenic	4.2	B	F	
7440-39-3	Barium	52.1	B	P	
7440-41-7	Beryllium	2.4	U	P	
7440-43-9	Cadmium	0.7	U	P	
7440-70-2	Calcium	123,000		P	
7440-47-3	Chromium	1.7	U	P	
7440-48-4	Cobalt	5.2	U	P	
7440-50-8	Copper	15.4	B	P	
7439-89-6	Iron	25.5	B	P	
7439-92-1	Lead	3.4		F	~~W,N~~ UJ
7439-95-4	Magnesium	39,700		P	
7439-96-5	Manganese	6.3	B	P	
7439-97-6	Mercury				
7440-02-0	Nickel	12.3	U	P	
7440-09-7	Potassium	4,940	B	F	
7782-49-2	Selenium	1.8	U	F	~~W,N~~ UJ
7440-22-4	Silver	4.3	U	P	
7440-23-5	Sodium	29,200		P	
7440-28-0	Thallium	4.1	U	F	~~W,N~~ UJ
7440-62-2	Vanadium	3.4	U	P	
7440-66-6	Zinc	42.0		P	
	Cyanide				
	Molybdenum	33.3	U	P	

CPD 12/20/93

Color Before: Colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments:

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
5559
03170

Lab Name: ITAS-OAKRIDGE Contract: _____

Lab Code: IT-NWL Case No.: ITN35543 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: CC1590

Sample wt/vol: 1000 (g/mL) ML Lab File ID: CC1590R

Level: (low/med) ~~NA~~ LOW 12/19/88 Date Received: 05/10/88

% Moisture: not dec. ~~NA~~ 12/19/88 dec. _____ Date Extracted: 05/12/88

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 06/17/88

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

Number TICs found: 14

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN C_7H_8	0.77	8.	J
2.	UNKNOWN	2.13	38.	J
3.	UNKNOWN	13.67	22.	J
4.	UNKNOWN	19.40	32.	J
5.	UNKNOWN $C_{24}H_{38}O_4$	23.92	16.	J
6.	UNKNOWN	24.07	44.	J
7.	UNKNOWN $C_{15}H_{30}O_4$	25.05	23	J
8.	UNKNOWN	25.20	146	J
9.	UNKNOWN $C_{15}H_{30}O_4$	25.65	10	J
10.	UNKNOWN	28.63	10	J
11.	UNKNOWN	30.03	10	J
12.	UNKNOWN	30.53	100	J
13.	UNKNOWN	32.20	42.	J
14.	UNKNOWN	32.32	46.	J
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.			000068	
30.				

ENK 12/20/93

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

03170

Lab Name: ITAS OAK RIDGE Contract: _____

Lab Code: IT-MWL Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: CC1595

Sample wt/vol: _____ (g/mL) 600 Lab File ID: _____

Level: (low/med) _____ Date Received: 5-10-88

% Moisture: not dec. _____ dec. _____ Date Extracted: 5-10-88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 6-21-88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.10		J
319-85-7	beta-BHC	0.05	U	UJ
319-86-8	delta-BHC	0.05	U	UJ
58-89-9	gamma-BHC (Lindane)	0.05	U	UJ
76-44-8	Heptachlor	0.07		J
309-00-2	Aldrin	0.11		J
1024-57-3	Heptachlor epoxide	0.05	U	
959-98-8	Endosulfan I	0.05	U	
60-57-1	Dieldrin	0.10	U	
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.5	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.5	U	UJ
53494-70-5	Endrin ketone	0.5	U	
5103-71-9	alpha-Chlordane	1.0	U	
5103-74-2	gamma-Chlordane	0.5	U	
8001-35-2	Toxaphene	0.5	U	
12674-11-2	Aroclor-1016	0.5	U	
11104-28-2	Aroclor-1221	0.5	U	
11141-16-5	Aroclor-1232	0.5	U	
53469-21-9	Aroclor-1242	0.5	U	
12672-29-6	Aroclor-1248	0.5	U	
11097-69-1	Aroclor-1254	1.0	U	
11096-82-5	Aroclor-1260	1.0	U	

CMT 12/20/93

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

05506

EPA SAMPLE NO.

03170

Lab Name: ITAS OAK RIDGE Contract: _____

Lab Code: IT-MWL Case No.: ITN735143 SAS No.: _____ SDG No.: _____

Matrix (soil/water): water Lab Sample ID: CC1600/1620

Level (low/med): low Date Received: 5/10/88

% Solids: NA

Concentration Units (ug/L or mg/kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U		CV UJ
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide	10	U		~~CV~~ 5/19/89

CDD 12/20/93

Color Before: colorless Clarity Before: clear Texture: NA

Color After: colorless Clarity After: clear Artifacts: NA

Comments: CC1600 Cyanide CC1620 Mercury

000070

FORM I - IN

7/87
Rev. IFB Amendment One

5559

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

1550 Bear Creek Road • P O Box 549 • Oak Ridge Tennessee 37831 • 615-482-9707

CERTIFICATE OF ANALYSIS

TO: ASI-Fernald Office
ATTN: Heather Bond
10845 Hamilton Cleves Road
Ross, OH 45061

DATE REPORTED: January 12, 1989
PROJECT CODE: ITNT 35143*
ORDER NUMBER: 602.03.02.04
PAGE 1 OF 2
464042.08

Sample Description: Five (5) water samples received May 10, 1988.

Concentration units are mg/liter

	Chloride	Fluoride	Sulfate	Nitrate	Phenol	Total Phosphorus
03167	42.4	.35	111	9.2	0.01	<0.050
03168	79.9	0.30	645	<0.1	<0.01	0.575
03169	7.9	0.40	142	<0.1	0.04	0.370
03170	57.9	0.66	123	0.1	0.01	0.130
03171	31.4	0.41	185	0.3	<0.01	0.190
Blank	<0.5	<0.10	<2	<0.1		<0.05

	TON	Ammonia
03167	3.6	<0.1 UJ
03168	<0.1	0.1 J
03169	<0.1	<0.1 UJ
03170	0.4	0.5 J
03171	3.4	0.3 J
Blank		<0.1 UJ

CMF 12/20/93

• THIS IS THE THIRD ISSUANCE OF THIS CERTIFICATE OF ANALYSIS

000571

Snell A. Hill III
Approved by

Laboratory Manager
Title

Received: 05/10/88

ITRSL Oak Ridge REPORT
Results by Sample

Work Order # R8-05-039

SAMPLE ID 03169 FRACTION 03A TEST CODE GS NAME GAMMA SPEC
Date & Time Collected 05/09/88 Category

UNITS pCi/l
WRTN 06/10/88

VERIFIED BY ST

GAMMA SPEC	RESULT	2-SIGMA	OTHER	RESULT	2-SIGMA
			U-234	1.9	0.6
R CS-137	<20		U-235,236	<1.0	
R RU-106	<150		U-238	1.4	0.5
			TH-228	<1.0	
			TH-230	<1.0	
			TH-232	<1.0	
			PU-238	<1.0	
			PU-239,240	<1.0	
			SR-90	<5.0	
			NP-237	<1.0	
			RA-226	<1.0	
			R RA-228	<3.0	
			TC-99	<30.0	
			U-TOTAL*	5	1
			*units=ug/l		

SAMPLE ID 03170 FRACTION 04A TEST CODE GS NAME GAMMA SPEC
Date & Time Collected 05/09/88 Category

UNITS pCi/l
WRTN 06/10/88

VERIFIED BY ST

GAMMA SPEC	RESULT	2-SIGMA	OTHER	RESULT	2-SIGMA
			U-234	2.2	0.6
R CS-137	<20		U-235,236	<1.0	
R RU-106	<150		U-238	2.2	0.6
			TH-228	<1.0	
			TH-230	<1.0	
			TH-232	<1.0	
			PU-238	<1.0	
			PU-239,240	<1.0	
			SR-90	<5.0	
			TC-99	<30.0	
			NP-237	<1.0	
			RA-226	<1.0	
			RA-228	<3.0	
			U-TOTAL*	10	1
			*units=ug/l		

CMF 12/20/93

4/21/93

ASI/Fernald
Date: 4/3/89

5559 IT ANALYTICAL SERVICES
PITTSBURGH, PA

Client Project ID: FMPC RI/FS

Job Number: ITNT 35381

DISSOLVED METALS ANALYSIS

Client Sample ID: 03944
Sample Date: 3/8/89

Preparation Date	Analysis Date	Parameter	Concentration mg/L
[redacted]			
3/27/89	3/28/89	Barium	0.10
3/27/89	3/28/89	Cadmium	0.006
3/27/89	3/28/89	Calcium	300
3/27/89	3/28/89	Chromium	0.04
3/27/89	3/28/89	Copper	ND0.01
3/27/89	3/28/89	Iron	0.87
[redacted]			
3/27/89	3/28/89	Magnesium	86
3/27/89	3/28/89	Manganese	1.1
[redacted]			
3/27/89	3/27/89	Molybdenum	0.02
3/27/89	3/28/89	Nickel	ND0.03
[redacted]			
3/27/89	3/28/89	Silver	0.01
3/27/89	3/28/89	Sodium	170

*Analyzed by flame AA to achieve the required detection limits.

Unable to validate w/o raw data
CMS
12/20/93

000073

682-1-89

ASI/Fernald
Date: 4/3/89

5559

IT ANALYTICAL SERVICES
PITTSBURGH, PA

Client Project ID: FMPC RI/FS

Job Number: ITNT 35381

GENERAL CHEMISTRY ANALYSIS

Client Sample ID: 03943
Sample Date: 3/8/89

Analysis Date	Parameter	Concentration mg/L
3/22/89	Ammonia	3.1
3/20/89	Chloride	50
3/15/89	Fluoride	0.3
3/11/89	Nitrate	22
3/18/89	Phenolics, Total	ND0.005
3/16/89	Phosphorus, Total	0.02
3/24/89	Sulfate	79
3/13/89	Total Organic Halides	ND0.05/ND0.05
3/28/89	Total Kjeldahl Nitrogen	3.4
--	Total Organic Nitrogen	0.3

Client Sample ID: 03944 ←
Sample Date: 3/8/89

Analysis Date	Parameter	Concentration mg/L
3/22/89	Ammonia	0.4 u
3/20/89	Chloride	490
3/15/89	Fluoride	0.5
3/11/89	Nitrate	0.2/0.2
3/18/89	Phenolics, Total	0.008
3/16/89	Phosphorus, Total	0.12
3/24/89	Sulfate	250
3/14/89	Total Organic Halides	ND0.05/0.07
3/23/89	Total Kjeldahl Nitrogen	0.4/0.5 u J
--	Total Organic Nitrogen	0

CTOO
12/20/93

000074

582 1-89

Page 2
Received: 03/09/89

ITRSL Oak Ridge REPORT
Results by Sample

Work Order # R9-03-036

SAMPLE ID 03944 FRACTION 01A TEST CODE GS NAME GAMMA SPEC
Date & Time Collected 03/08/89 Category 43630

UNITS pCi/l
WRTN 05/05/89

VERIFIED BY SDL

	GAMMA SPEC	RESULT	2-SIGMA		OTHER	RESULT	2-SIGMA
					RA-226	<1.0	
R	CS-137	<20			RA-228	<3.0	
R	RU-106	<150		UJ	U-234	67.1	9.2
				UJ	U-235/236	5.9	1.2
				UJ	U-238	276	36
					PU-238	<1.0	
					PU-239/240	<1.0	
				UJ	TH-228	<1.0	
				UJ	TH-230	<1.0	
				UJ	TH-232	<1.0	
					NP-237	<1.0	
					SR-90	<5.0	
					TC-99	1.07E+3	0.12E+3
				UJ	TH-TOTAL *	<5	
					U-TOTAL *	739	122
					*Units-ug/l		

ejm 12/20/93

03943

SAMPLE ID 03943 FRACTION 02A TEST CODE GS NAME GAMMA SPEC
Date & Time Collected 03/08/89 Category 43629

UNITS pCi/l
WRTN 05/05/89

VERIFIED BY SDL

	GAMMA SPEC	RESULT	2-SIGMA		OTHER	RESULT	2-SIGMA
				—	RA-226	<1.0	
R	CS-137	<20		J	RA-228	<3.0	
R	RU-106	<150			U-234	<1.0	
					U-235/236	<1.0	
				J	U-238	<1.0	
				—	PU-238	<1.0	
				—	PU-239/240	<1.0	
				—	TH-228	<1.0	
				—	TH-230	<1.0	
				—	TH-232	<1.0	
				—	NP-237	<1.0	
				—	SR-90	<5.0	
				J	TC-99	<30.0	
				—	TH-TOTAL *	<4	
				K —	U-TOTAL *	<1	
					*Units-ug/l		

JCH 5-28-93

CIS QUALIFIED DATA

(38 Sheets)

Sample Number
PS-04-001

559

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: WESTON

Case No: FMPC

Lab Sample ID No: 8704-236-0050

QC Report No:

Sample Matrix: SOIL

Contract No:

Data Release Authorized By:

Date Sample Received: 04-23-87

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 4-24-87

Date Analyzed: 4-24-87

Conc/Dil Factor: 64 pH 6.8

Percent Moisture. (Not Decanted) 24

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	640 UL	UJ
74-83-9	Bromomethane		UJ
75-01-4	Vinyl Chloride		
75-00-3	Chloroethane		
75-09-2	Methylene Chloride	230 ~~B~~	U
67-64-1	Acetone	350 J	
75-15-0	Carbon Disulfide	320 U	
75-35-4	1, 1-Dichloroethene		
75-34-3	1, 1-Dichloroethane		
156-60-5	Trans-1, 2-Dichloroethene		
67-66-3	Chloroform	85 J	
107-06-2	1, 2-Dichloroethane	320 U	
78-93-3	2-Butanone	640 UL	UJ
71-55-6	1, 1, 1-Trichloroethane	320 U	
56-23-5	Carbon Tetrachloride		
108-05-4	Vinyl Acetate	640 UL	UJ
75-27-4	Bromodichloromethane	320 U	

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1, 2-Dichloropropane	320 U	
10061-02-6	Trans-1, 3-Dichloropropene		
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane		
79-00-5	1, 1, 2-Trichloroethane		
71-43-2	Benzene		
10061-01-5	cis-1, 3-Dichloropropene		
110-75-8	2-Chloroethylvinylether	640 UL	UJ
75-25-2	Bromoform	320 U	
108-10-1	4-Methyl-2-Pentanone	640 UL	UJ
591-78-6	2-Hexanone		
127-18-4	Tetrachloroethene	320 U	
79-34-5	1, 1, 2, 2-Tetrachloroethane		
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene		
100-42-5	Styrene		
	Total Xylenes		

CMF 12/20/93

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

000077

Laboratory Name WESTON

Case No FMPC

Sample Number PS04-001

8704-136-0050

559

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug l or ug kg)
1.	Acrolein UJ	VOA	ND	—
2.	Acrylonitrile UJ			—
3.	Dichlorodifluoromethane			—
4.	Bis(chloromethyl)ether			—
5.	1,2-Dichloropropylene			—
6.	Cis-1,2-Dichloroethene			—
7.				
8.				
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EMS 12/20/93

000078

ORGANICS ANALYSIS DATA SHEET SAMPLE #: FMP-FS-02-001 (04 5559) 15

Incorrectly labelled

LABORATORY: WESTON
LABORATORY ID: 0520Z002
MATRIX: SOIL

CASE #/SAS #: FMPC
QC REPORT #: 5/19/87
CONTRACT #: 236-0050
DATE RECEIVED: 4/23/87

DATA RELEASE AUTHORIZED BY: [signature]

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL: LOW
DATE EXT/PREP: 4/27/87
DATE ANALYZED: 05/20/87
CONC/DIL FACTOR: 47
PH: 6.8
% MOISTURE: 24
% MOISTURE (DECANTED): NA
STANDARD ID: 0520ZS050
SENSITIVITY ID: 0520ZTU

GPC CLEANUP __YES __NO
SEPARATORY EXTRACTION __YES
CONTINUOUS EXTRACTION __YES

CAS #		UG/KG	
108-95-2	PHENOL	470.	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	470.	U
95-57-8	2-CHLOROPHENOL	470.	U
541-73-1	1,3-DICHLOROBENZENE	470.	U
106-46-7	1,4-DICHLOROBENZENE	470.	U
100-51-6	BENZYL ALCOHOL	470.	U
95-50-1	1,2-DICHLOROBENZENE	470.	U
95-48-7	2-METHYLPHENOL	470.	U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	470.	~~U~~ UJ
106-44-5	4-METHYLPHENOL	470.	U
621-64-7	N-NITROSODIPROPLYAMINE	470.	~~U~~ UJ
67-72-1	HEXACHLOROETHANE	470.	U
98-95-3	NITROBENZENE	470.	U
78-59-1	ISOPHORONE	470.	U
88-75-5	2-NITROPHENOL	470.	U
105-67-9	2,4-DIMETHYLPHENOL	470.	U
65-85-0	BENZOIC ACID	2400.	~~U~~ UJ
111-91-1	BIS(2-CHLOROETHOXY)METHANE	470.	U
120-33-2	2,4-DICHLOROPHENOL	470.	U
120-82-1	1,2,4-TRICHLOROBENZENE	470.	U
91-20-3	NAPHTHALENE	110.	J
106-47-8	4-CHLOROANILINE	470.	U
87-68-3	HEXACHLOROBUTADIENE	470.	U
59-50-7	4-CHLORO-3-METHYLPHENOL	470.	U
91-57-6	2-METHYLNAPHTHALENE	470.	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	470.	~~U~~ UJ
88-06-2	2,4,6-TRICHLOROPHENOL	470.	U
95-95-4	2,4,5-TRICHLOROPHENOL	2400.	U
91-58-7	2-CHLORONAPHTHALENE	470.	U
88-74-4	2-NITROANILINE	2400.	U
131-11-3	DIMETHYL PHTHALATE	470.	U
208-96-8	ACENAPHTHYLENE	470.	U
99-09-2	3-NITROANILINE	2400.	U
83-32-9	ACENAPHTHENE	170.	J
51-28-5	2,4-DINITROPHENOL	2400.	U
100-02-7	4-NITROPHENOL	2400.	U
132-64-9	DIBENZOFURAN	160.	J

CMF 12/22/93

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: FMP-PS-02-001

5559

LABORATORY: WESTON
LABORATORY ID: 0520Z002
MATRIX: SOIL

CASE #/SAS #: FMPC
QC REPORT #: 5/19/87
CONTRACT #: 236-0050
DATE RECEIVED: 4/23/87

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW	GPC CLEANUP	__YES __NO
DATE EXT/PREP:	4/27/87	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	05/20/87	CONTINUOUS EXTRACTION	__YES
CONC/DIL FACTOR:	47		
PH:	6.8		
% MOISTURE:	24		
% MOISTURE (DECANTED):	NA		
STANDARD ID:	0520ZS050		
SENSITIVITY ID:	0520ZTU		

CAS #		UG/KG	
121-14-2	2,4-DINITROTOLUENE	470.	U
606-20-2	2,6-DINITROTOLUENE	470.	U
84-66-2	DIETHYL PHTHALATE	470.	U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	470.	U
86-73-7	FLUORENE	310.	J
100-01-6	4-NITROANILINE	2400.	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	2400.	U
86-30-6	N-NITROSODIPHENYLAMINE	470.	U
101-55-3	4-BROMOPHENYL PHENYL ETHER	470.	U
118-74-1	HEXACHLOROBENZENE	470.	U
87-86-5	PENTACHLOROPHENOL	2400.	U
85-01-8	PHENANTHRENE	2100.	
120-12-7	ANTHRACENE	510.	
84-74-2	DI-N-BUTYL PHTHALATE	470.	U
206-44-0	FLUORANTHENE	2200.	
129-00-0	PYRENE	1400.	
85-68-7	BUTYL BENZYL PHTHALATE	470.	U
91-94-1	3,3'-DICHLOROBENZIDINE	940.	U
56-55-3	BENZO(A)ANTHRACENE	750.	
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	270.	J
218-01-9	CHRYSENE	760.	
117-84-0	DI-N-OCTYL PHTHALATE	170.	J
205-99-2	BENZO(B)FLUORANTHENE	510.	
207-08-9	BENZO(K)FLUORANTHENE	560.	
50-32-8	BENZO(A)PYRENE	550.	
193-39-5	INDENO(1,2,3-CD)PYRENE	180.	J J
53-70-3	DIBENZO(A,H)ANTHRACENE	65.	J
191-24-2	BENZO(GHI)PERYLENE	170.	J

RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

FORM I

CMB 12/22/93

ROY F. WESTON, INC.

5559

CLIENT: FMPC
SITE: FMP-PS-02-001
SAMPLE: WESTON 8704-236-0050

TENTATIVELY IDENTIFIED COMPOUNDS

	COMPOUND NAME	FRACTION	CONCENTRATION UG/KG
1	UNKNOWN		
	SCAN # 290	BNA	3300.
2	UNKNOWN C-9 HYDROCARBON		
	SCAN # 298	BNA	1500.
3	PHOSPHORIC ACID, TRIBUTYL ESTER		
	SCAN # 1014	BNA	14000.
4	UNKNOWN		
	SCAN # 1160	BNA	240.
5	UNKNOWN		
	SCAN # 1171	BNA	260.
6	METHYL PYRENE		
	SCAN # 1338	BNA	330.
7	UNKNOWN		
	SCAN # 1401	BNA	340.
8	BENZO(C)PHENANTHRENE		
	SCAN # 1439	BNA	250.
9	UNKNOWN		
	SCAN # 1451	BNA	180.
10	UNKNOWN ALKANE		
	SCAN # 1459	BNA	200.
11	UNKNOWN		
	SCAN # 1497	BNA	330.
12	UNKNOWN		
	SCAN # 1559	BNA	200.
13	BENZO(J)FLUORANTHENE		
	SCAN # 1623	BNA	350.

CMF 12/20/93

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SA#: FMP-PS-04-001

LAB NAME: WESTON CONTRACT: _____
LAB CODE: _____ CASE#: FMPC SAS#: _____ SDG#: _____

MATRIX: (SOIL/WATER) SOIL
SAMPLE WT/VOL: 31 (g/ml) g
LEVEL: (LOW/MED) LOW
%MOISTURE: (NOT DEC) _____ (DEC) 24
EXTRACTION: (SEPF/CONT/SONC) SONC
GPC CLEANUP: (Y/N) Y pH: 6.8

LAB SAMPLE ID: 236-0050
LAB FILE ID: _____
DATE RECEIVED: 4/23/87
DATE EXTRACTED: 4/27/87
DATE ANALYZED: 6/1/87
DIL FACTOR: 0.2

CAS #	COMPOUND	CONCENTRATION UNITS: (ug/L OR ug/Kg) ug/Kg	Q
319-84-6	ALPHA-BHC	51	U
319-85-7	BETA-BHC	51	U
319-86-8	DELTA-BHC	51	U
58-89-9	GAMMA-BHC (LINDANE)	51	~~U~~ UJ
76-44-8	HEPTACHLOR	51	U
309-00-2	ALDRIN	51	~~U~~ UJ
1024-57-3	HEPTACHLOR EPOXIDE	51	U
959-98-8	ENDOSULFAN I	51	U
60-57-1	DIELDRIN	100	U
72-55-9	4,4'-DDE	100	U
72-20-8	ENDRIN	100	U
33213-65-9	ENDOSULFAN II	100	U
72-54-8	4,4'-DDD	100	U
1031-07-8	ENDOSULFAN SULFATE	100	U
50-29-3	4,4'-DDT	100	U
72-43-5	METHOXYCHLOR	510	U
53494-70-5	ENDRIN KETONE	100	U
57-74-9	TECH CHLRORDANE	510	U
5103-71-9	ALPHA CHLORDANE	NOT RUN	-
5103-74-2	GAMMA CHLORDANE	NOT RUN	-
8001-35-2	TOXAPHENE	1000	U
12674-11-2	AROCLOR-1016	510	U
11104-28-2	AROCLOR-1221	510	U
11141-16-5	AROCLOR-1232	510	U
53469-21-9	AROCLOR-1242	510	U
12672-29-6	AROCLOR-1248	854	
11097-69-1	AROCLOR-1254	1008	
11096-82-5	AROCLOR-1260	1000	U

CMF 12/20/03

Form 1

5559 05

EPA Sample No.
FMP-P504-001

Date 6-12-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Roy F. Weston, Inc.

SOW NO. 785

LAB SAMPLE ID. NO. 8704-236-0050

Lab Receipt Date 4-23-87

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	10100 J E ~~P~~	P	13.	Magnesium	11400 J ~~E~~	P
2.	Antimony	0.3u	P	14.	Manganese	3600 J	P
3.	Arsenic	[1.2] J N	P	15.	Mercury	0.4	CVAA
4.	Barium	2060	P	16.	Nickel	21 * E	P
5.	Beryllium	1.2 *	P	17.	Potassium	1320	A
6.	Cadmium	1.9	P	18.	Selenium	2.1u R N	P
7.	Calcium	49300 * E	P	19.	Silver	6.3 J R N	P
8.	Chromium	17 J ~~N~~ * E	P	20.	Sodium	[409]	A
9.	Cobalt	[8.7] J N *	P	21.	Thallium	0.3u UJ N	P
10.	Copper	44 *	P	22.	Vanadium	24 UJ N *	P
11.	Iron	10400 J E	P	23.	Zinc	35 *	P
12.	Lead	45	P		Percent Solids (%)	75.8	
	Cyanide	0.7u		24.	Tin	[87] J N	P
				25.	Osmium	96u	P

CPS 12/22/93

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample Weight : ICP 1.097 grams.
AA 1.108 grams.

Lab Manager [signature]

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 06/15/87

CLIENT: FMPC

WESTON BATCH #: 8704-236

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	DETECTION LIMIT
-0080	LEACH OF 0050	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

dpf
12/20/93

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 06/04/87

CLIENT: FMPC

WESTON BATCH #: 8704-236

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	DETECTION LIMIT
-0010	FMP-PS-02-026	CYANIDE, TOTAL	100	u	MG/KG	100
		SULFIDE	0.38	u	MG/KG	0.38
-0020	FMP-PS-02-038	CYANIDE, TOTAL	100	u	MG/KG	100
		SULFIDE	0.33	u	MG/KG	0.33
-0030	FMP-FB-54-008	CYANIDE, TOTAL	17	u	UG/L	17
-0050	FMP-PS-04-001	CYANIDE, TOTAL	1.3	u	MG/KG	1.3
		FLUORIDE	47800		MG/KG	100
		PHENOL	0.16	u	MG/KG	0.16
		SULFIDE	0.33	u	MG/KG	0.33
BLANK1		CYANIDE, TOTAL	10	u	UG/L	10
BLANK1		CYANIDE, TOTAL	10	u	UG/L	10
BLANK1		SULFIDE	0.1	u	MG/L	0.1
BLANK2		SULFIDE	0.1	u	MG/L	0.1

CMF
12/22/93

WESTON

DATE OF REPORT: 13 July 1987

CLIENT: FMPC

DATA SUMMARY REPORT FOR
SAMPLES RECEIVED: 4-23-87

W.O. NUMBER: 2754-01-01

DATE SAMPLES COLLECTED: 4-22-87

SAMPLES COLLECTED BY: CLIENT

REF NO	DESCRIPTION	CORROSIVITY
8704-236-0010	FMP-PS-02-026	6.20 PHU
-0020	FMP-PS-02-038	6.40 PHU
-0050	FMP-PS-04-001	6.80 PHU

CMF
12/20/93

PREPARED BY: Emily Carfioli
EMILY CARFIOLI
DATA MANAGER
WESTON ANALYTICS

APPROVED BY: Edward H. Hansen
EARL HANSEN, Ph.D.
TECHNICAL DIRECTOR
WESTON ANALYTICS

WESTON ANALYTICS

DATA SUMMARY REPORT 06/04/87

Client: FMPC

RFW Batch: 8704-236

Sample	Site Id	Analyte	Result	Unit
-0010	FMP-PS-02-026	Ignitability	>800	°F
-0020	FMP-PS-02-038	Ignitability	>800	°F
-0050	FMP-PS-04-001	Ignitability	>800	°F

CMB 12/20/93

TMA/EBERLINE ALBUQUERQUE LAB

CUSTOMER	TMA Eberline/Weston	SITE	Fernald
ATTENTION	Fred Haywood	DATE REC.	5/18/87
ADDRESS	P.O. Box 1040	NO. OF SAMPLES	34
CITY	Oak Ridge, TN 37831	CUSTOMER P.O. NO.	0228 & 0229
W.O. NO.	E-7131	TYPE OF SAMPLE	Soil-pCi/g

TYPE OF ANALYSIS	SAMPLE ID FMP-PS-03-074	SAMPLE ID FMP-PS-03-091	SAMPLE ID FMP-PS-03-111	SAMPLE ID FMP-PS-04-003	SAMPLE ID FMP-PS-04-023
Coor-dinate	E1640-S975	E1925-S917	E1800-S1025	E2300-S900	E2350-S925
Depth	0-14'	0-20'	0-12'	0-20'	0-20'
Date Collected	4/10/87	4/10/87	4/13/87	4/22/87	4/22/87
Wt/ Dry	805/593	849/617	806/551	929/724	661/550
U 234	79±2	163±2	167±9	366±5 J	298±5
U 235	5.8±0.4	15±1	14±2	84±2 J	35±2
U 238	215±3	285±3	1380±20	737±7 J	509±6
Th 228	7.2±1.7	14±5	5.9±1.6	22±4 J	18±4
Th 230	4040±40	72±5	5900±50	566±20 J	553±19
Th 232	6.9±1.9	9.5±3.8	9.4±2.0	17±3 J	18±3
Pu 238	<0.1	0.1±0.1	0.1±0.1	0.1±0.1	0.1±0.1
Pu 239 Pu 240	<0.1	0.3±0.1	<0.1	0.1±0.1	0.2±0.1
Tc 99	47±2	52±2	93±3	6.8±1.0	59±2
Sr 90	<0.9	<0.9	<0.6	<0.4	<0.4
Ru 106	<4	<2	<6	<2	<3
Np 237	0.3±0.2	<0.2	<0.2	<0.1	<0.4
Cs 137	<0.6	<0.2	<0.8	<0.2	<0.3
Ra 226	--	--	--	--	--
Ra 228	--	--	--	--	--
Pb 210	--	--	--	--	--

Signature: R. Mildred Date: 11/16/87

DMF 12/20/93

000088

Sample Number
P3-03-024
~~E-3025-5625-Comp~~

5559 21

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: WESTON

Case No: [illegible]

Lab Sample ID No.: 8703-977-010

QC Report No:

Sample Matrix: SOIL

Contract No:

Data Release Authorized By: [illegible]

Date Sample Received: 03-24-87

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 03-27-87

Date Analyzed: 03-27-87

Conc/Dil Factor: 110 pH 8.65

Percent Moisture (Not Decanted) 71

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	1100 U	
74-83-9	Bromomethane		
75-01-4	Vinyl Chloride		
75-00-3	Chloroethane		
75-09-2	Methylene Chloride	420 JB	U
67-64-1	Acetone	22000	UJ
75-15-0	Carbon Disulfide	550	UJ
75-35-4	1, 1-Dichloroethene		
75-34-3	1, 1-Dichloroethane		
156-60-5	Trans-1, 2-Dichloroethene		
67-66-3	Chloroform		
107-06-2	1, 2-Dichloroethane		
78-93-3	2-Butanone	1100	UJ
71-55-6	1, 1, 1-Trichloroethane	550 U	
56-23-5	Carbon Tetrachloride		
108-05-4	Vinyl Acetate	1100 U	
75-27-4	Bromodichloromethane	550 U	

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1, 2-Dichloropropane	550 U	
10061-02-6	Trans-1, 3-Dichloropropene		
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane		
79-00-5	1, 1, 2-Trichloroethane		
71-43-2	Benzene		
10061-01-5	cis-1, 3-Dichloropropene		
110-75-8	2-Chloroethylvinylether	1100	UJ
75-25-2	Bromoform	550 U	
108-10-1	4-Methyl-2-Pentanone	1100 U	
591-78-6	2-Hexanone		
127-18-4	Tetrachloroethene	550 U	
79-34-5	1, 1, 2, 2-Tetrachloroethane		
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene		
100-42-5	Styrene		
	Total Xylenes		

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

emf 12/22/93

Value If the result is a value greater than or equal to the detection limit report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/µl in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name WESTON

Case No FMPC

5550

Sample Number
PS-05-02N
~~62075-5625 Comp~~

Sal. 1K

Organics Analysis Data Sheet
(Page 4)

8703-997-0010

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Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1	Acrolein	VOA		UJ
2	Acrylonitrile			UJ
3	Dichlorodifluoromethane			
4	Bis(chloromethyl)ether			
5	1,2-Dichloropropylene			
6	Cis-1,2-Dichloroethene			
7	Unknown		934	890 J
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

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Laboratory Name WESTON

Case No FMPC

Sample Number FMP-PS-05-024

997-001 5559

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration (Low) Medium (Circle One)

Date Extracted/Prepared 3-28-87

Date Analyzed 4-30-37

Conc/(Dil) Factor 5

Percent Moisture (decanted) 71 %

GPC Cleanup ☒Yes ☐No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)	
319-84-6	Alpha BHC	150	U
319-85-7	Beta-BHC		
319-86-8	Delta-BHC		
58 89 9	Gamma-BHC (Lindane)		
76-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor Epoxide		
959-98-8	Endosulfan I		
60-57-1	Dieldrin	300	U
72-55-9	4 4 -DDE		
72-20-8	Endrin		
33213-65-9	Endosulfan II		
72-54-8	4. 4 -DDD		
1031-07-8	Endosulfan Sulfate		
50-29-3	4. 4 -DDT		
72-43-5	Methoxychlor	1500	U
53494-70-5	Endrin Ketone	300	U
57-74-9	Chlordane	1500	U
8001-35 2	Toxaphene	3000	U
12674-11-2	Aroclor-1016	1500	U
11104-28-2	Aroclor-1221		
11141-16-5	Aroclor-1232		
53469-21-9	Aroclor-1242		
12672-29-6	Aroclor-1248		
11097-69-1	Aroclor-1254	3000	U
11096 82-5	Aroclor-1260	3000	U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s 27.5 V_t 20,000 V_i 3.0

CMB 12/20/93

Form I

EPA Sample No.
FMP-PS-05-024

Date May 25, 1987

INORGANIC ANALYSIS DATA SHEET

LAB NAME Roy F. Weston, Inc.

SOW NO. 785

Lab Receipt Date 3-24-87

LAB SAMPLE ID. NO. 8703-997-0010

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	12,500 J E	P	13.	Magnesium	63,200	P
2.	Antimony	[28] J N	F	14.	Manganese	3,140 J E	P
3.	Arsenic	139 J N	F	15.	Mercury	1.8 J	CVAA
4.	Barium	16,400	P	16.	Nickel	202	P
5.	Beryllium	8.8	P	17.	Potassium	[1,190]	A
6.	Cadmium	4.4	P	18.	Selenium	[2.8] J N	F
7.	Calcium	143,000 J E	P	19.	Silver	9.4	P
8.	Chromium	141 J E	P	20.	Sodium	3950	A
9.	Cobalt	[16]	P	21.	Thallium	[2.8]	F
10.	Copper	2,950 J E	P	22.	Vanadium	1660	P
11.	Iron	17,900 J E	P	23.	Zinc	212	P
12.	Lead	156	F		Percent Solids (%)	30.4	
	Cyanide	1.6u					

CMG 12/20/93

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample Weight : ICP 1.048 grams.
AA 1.052 grams.

Lab Manager [signature]

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 06/05/87

CLIENT: FMPC

WESTON BATCH #: 8703-997

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	DETECTION LIMIT
-0050	PS-05-024	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	3.8		UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

CMF
12/20/93

DATE OF REPORT: 06/09/87

CLIENT: FMPC
DATA SUMMARY REPORT FOR
SAMPLES RECEIVED: 3-24-87
W.O. NUMBER: 2754-01-01

DATE SAMPLE COLLECTED: 3-20 - 3-23-87
SAMPLE COLLECTED BY: CLIENT

RFWSN	DESCRIPTION	CYANIDE TOTAL	CORROSIVITY
8703-997-0010	FMP-PS-05-024	<.010 mg/L	8.7 pH units
8703-997-0030	FMP-FB-54-001	<.010 mg/L	
8703-997-003R	REPLICATE	<.010 mg/L	
8703-997-003S	PRECISION	NC	
8703-997-0040	FMP-FB-54-002	<.010 mg/L	
8703-997-004K	FMP-FB-54-002	.085 mg/L	
8703-997-004K	SPIKE RECOVERY	85.0%	
	METHOD BLANK	<.010 mg/L	
	METHOD SPIKE	.093 mg/L	
	SPIKE RECOVERY	93.0%	

RFWSN	DESCRIPTION	IGNITABILITY
8703-997-0010	FMP-PS-05-024	>800 °F

RFWSN	DESCRIPTION	SULFIDE
8703-997-0010	FMP-PS-05-024	<.82 mg/L

emr
12/20/93

PREPARED BY Emily Carfioli
Emily Carfioli
Data Manager
WESTON Analytics

APPROVED BY Mike Taylor for
Earl M. Hansen, Ph.D.
Technical Director
WESTON Analytics

TMA/EBERLINE ALBUQUERQUE LAB

CUSTOMER	TMA Eberline/Weston	SITE	Fernald
ATTENTION	Fred Haywood	DATE REC.	5/18/87
ADDRESS	P.O. Box 1040	NO. OF SAMPLES	34
CITY	Oak Ridge, TN 37831	CUSTOMER P.O. NO.	0228 & 0229
W.O. NO.	E-7131	TYPE OF SAMPLE	Soil-pCi/g

	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID
TYPE OF ANALYSIS	FMP-PS-04-040	FMP-PS-04-063	FMP-PS-05-078	FMP-PS-07-027	FMP-PS-07-063
Coor-dinate	E2262-S975	E2315-S1025	E2400-S700	E2066-S1000	E1980-S1100
Depth	0-20'	0-20'	0-36"	0-14'	0-16'
Date Collected	4/24/87	5/5/87	3/30/87	4/28/87	5/6/87
Wt/ Dry	856/627	993/783	264/109	742/549	669/500
U 234	149±7	2320±90	430±5	415±6	75±1
U 235	64±5	426±38	26±1	27±6	3.7±0.3
U 238	1530±20	15800±200	387±4	454±6	90±2
Th 228	24±5	0.3±0.1	41±3	9.6±1.4	0.3±0.1
Th 230	369±19	2.2±0.3	3080±30	26±2	0.5±0.1
Th 232	21±5	0.3±0.1	21±2	7.7±1.3	0.1±0.1
Pu 238	0.5±0.1	0.4±0.1	<0.1	0.5±0.1	0.1±0.1
Pu 239 Pu 240	0.4±0.1	0.1±0.1	<0.1	0.1±0.1	0.1±0.1
Tc 99	31±2	225±10	423±20 J	60±3	18±1
Sr 90	<0.6	<1	4.1±1.1	<0.8	<0.8
Ru 106	<4	<2	<13 UJ	<2	<2
Np 237	<0.2	0.4±0.2	2.6±0.5	<0.2	<0.3
Cs 137	<0.5	<0.2	<2 UJ	<0.2	<0.2
Ra 226	--	--	--	--	--
Ra 228	--	--	--	--	--
Pb 210	--	--	--	--	--

12/20/93

 Signature: R. [illegible] Date: 11/16/87

103

~~B550~~
Sample Number
PS-06-001

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: WESTON
Case No: FMPC
Lab Sample ID No: 8704-128-00220
QC Report No:
Sample Matrix: SOIL
Contract No:
Data Release Authorized By: [signature]
Date Sample Received: 04-06-87

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 04-08-87
Date Analyzed: 04-08-87
Conc/Dil Factor: 47 pH 11.7
Percent Moisture: (Not Decanted) 28

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	470 U
74-83-9	Bromomethane	↓
75-01-4	Vinyl Chloride	↓
75-00-3	Chloroethane	↓
75-09-2	Methylene Chloride	280 UJ
67-64-1	Acetone	470 UJ
75-15-0	Carbon Disulfide	230 U
75-35-4	1, 1-Dichloroethene	↓
75-34-3	1, 1-Dichloroethane	↓
156-60-5	Trans-1, 2-Dichloroethene	↓
67-66-3	Chloroform	↓
107-06-2	1, 2-Dichloroethane	↓
78-93-3	2-Butanone	530 UJ
71-55-6	1, 1, 1-Trichloroethane	230 U
56-23-5	Carbon Tetrachloride	↓
108-05-4	Vinyl Acetate	470 U
75-27-4	Bromodichloromethane	230 U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	230 U
10061-02-6	Trans-1, 3-Dichloropropene	↓
79-01-6	Trichloroethene	170 J
124-48-1	Dibromochloromethane	230 U
79-00-5	1, 1, 2-Trichloroethane	↓
71-43-2	Benzene	↓
10061-01-5	cis-1, 3-Dichloropropene	↓
110-75-8	2-Chloroethylvinylether	470 UJ
75-25-2	Bromoform	230 U
108-10-1	4-Methyl-2-Pentanone	470 U
591-78-6	2-Hexanone	↓
127-18-4	Tetrachloroethene	25000 U
79-34-5	1, 1, 2, 2-Tetrachloroethane	230 U
108-88-3	Toluene	↓
108-90-7	Chlorobenzene	↓
100-41-4	Ethylbenzene	↓
100-42-5	Styrene	↓
	Total Xylenes	↓

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

CMF 12/20/93

000096

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the ...

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name _____

Case No FMPC

Sample Number PS-06-0001

5559

8704-108-0050

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	Acrolein	VOA	ND	— UJ
2.	Acrylonitrile		ND	—
3.	Dichlorodifluoromethane		ND	—
4.	Bis(chloromethyl)ether		ND	—
5.	1,2-Dichloropropylene		ND	—
6.	Cis-1,2-Dichloroethene		ND	—
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29.				
30.				

emr 12/20/93

LABORATORY: WESTON
LABORATORY ID: 0506B4687
MATRIX: SOIL

CASE #/SAS #: FMPC
QC REPORT #: 5/6/87
CONTRACT #: 108-0020
DATE RECEIVED: 4/6/87

ATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL: LOW
DATE EXT/PREP: 4/6/87
DATE ANALYZED: 05/06/87
CONC/DIL FACTOR: DF=50
PH: 11.7
% MOISTURE: 28.5
% MOISTURE (DECANTED): NA
STANDARD ID: 0506BS050
SENSITIVITY ID: 0506BTU

GPC CLEANUP ✓ YES __ NO
SEPARATORY EXTRACTION __ YES
CONTINUOUS EXTRACTION __ YES

CAS #		UG/KG	
108-95-2	PHENOL	500.	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	500.	U
95-57-8	2-CHLOROPHENOL	500.	U
541-73-1	1,3-DICHLOROBENZENE	500.	U
106-46-7	1,4-DICHLOROBENZENE	500.	U
100-51-6	BENZYL ALCOHOL	500.	U
95-50-1	1,2-DICHLOROBENZENE	500.	U
95-48-7	2-METHYLPHENOL	500.	U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	500.	U
106-44-5	4-METHYLPHENOL	500.	U
621-64-7	N-NITROSODIPROPLYAMINE	500.	U
67-72-1	HEXACHLOROETHANE	500.	U
98-95-3	NITROBENZENE	500.	U
78-59-1	ISOPHORONE	500.	U
88-75-5	2-NITROPHENOL	500.	U
105-67-9	2,4-DIMETHYLPHENOL	500.	U
65-85-0	BENZOIC ACID	2500.	~~U~~ UJ
111-91-1	BIS(2-CHLOROETHOXY)METHANE	500.	U
120-33-2	2,4-DICHLOROPHENOL	500.	U
120-82-1	1,2,4-TRICHLOROBENZENE	500.	U
91-20-3	NAPHTHALENE	500.	U
106-47-8	4-CHLOROANILINE	500.	U
87-68-3	HEXACHLOROBUTADIENE	500.	U
59-50-7	4-CHLORO-3-METHYLPHENOL	500.	U
91-57-6	2-METHYLNAPHTHALENE	500.	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	500.	U
88-06-2	2,4,6-TRICHLOROPHENOL	500.	U
95-95-4	2,4,5-TRICHLOROPHENOL	2500.	U
91-58-7	2-CHLORONAPHTHALENE	500.	U
88-74-4	2-NITROANILINE	2500.	U
131-11-3	DIMETHYL PHTHALATE	500.	U
208-96-8	ACENAPHTHYLENE	500.	U
99-09-2	3-NITROANILINE	2500.	U
83-32-9	ACENAPHTHENE	500.	U
51-28-5	2,4-DINITROPHENOL	2500.	~~U~~ UJ
100-02-7	4-NITROPHENOL	2500.	U
132-64-9	DIBENZOFURAN	500.	U

FORM I

emr 12/22/93

LABORATORY: WESTON
LABORATORY ID: 0506B4687
MATRIX: SOIL

CASE #/SAS #: FMPC
QC REPORT #: 5/6/87
CONTRACT #: 108-0020
DATE RECEIVED: 4/6/87

5559

ATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW	GPC CLEANUP ✓YES __NO
DATE EXT/PREP:	4/6/87	SEPARATORY EXTRACTION __YES
DATE ANALYZED:	05/06/87	CONTINUOUS EXTRACTION __YES
CONC/DIL FACTOR:	DF=50	
PH:	11.7	
% MOISTURE:	28.5	
% MOISTURE (DECANTED):	NA	
STANDARD ID:	0506BS050	
SENSITIVITY ID:	0506BTU	

CAS #		UG/KG	
121-14-2	2,4-DINITROTOLUENE	500.	U
606-20-2	2,6-DINITROTOLUENE	500.	U
84-66-2	DIETHYL PHTHALATE	500.	U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	500.	U
86-73-7	FLUORENE	500.	U
100-01-6	4-NITROANILINE	2500.	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	2500.	~~U~~ UJ
86-30-6	N-NITROSODIPHENYLAMINE	500.	U
101-55-3	4-BROMOPHENYL PHENYL ETHER	500.	U
118-74-1	HEXACHLOROBENZENE	500.	U
87-86-5	PENTACHLOROPHENOL	2500.	U
85-01-8	PHENANTHRENE	500.	U
120-12-7	ANTHRACENE	500.	U
84-74-2	DI-N-BUTYL PHTHALATE	500.	U
206-44-0	FLUORANTHENE	500.	U
129-00-0	PYRENE	500.	~~U~~ UJ
85-68-7	BUTYL BENZYL PHTHALATE	500.	U
91-94-1	3,3'-DICHLOROBENZIDINE	1000.	U
56-55-3	BENZO(A)ANTHRACENE	500.	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	410.	~~J~~ J
218-01-9	CHRYSENE	500.	U
117-84-0	DI-N-OCTYL PHTHALATE	500.	U
205-99-2	BENZO(B)FLUORANTHENE	500.	U
207-08-9	BENZO(K)FLUORANTHENE	500.	U
50-32-8	BENZO(A)PYRENE	500	U
193-39-5	INDENO(1,2,3-CD)PYRENE	500.	U
53-70-3	DIBENZO(A,H)ANTHRACENE	500.	U
191-24-2	BENZO(GHI)PERYLENE	500.	U

RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

FORM I

emr
12/20/93

Laboratory Name WESTON

Case No FMPC

5559

Sample Number
FMP-PS-
06-001

108-0020

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Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration (Low) Medium (Circle One)

Date Extracted/Prepared 4-6-87

Date Analyzed 5-12-87

Conc/(Dil) Factor 2

Percent Moisture (decanted) 28

GPC Cleanup ☑Yes ☐No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)	
319-84-6	Alpha-BHC	22	U
319-85-7	Beta-BHC		
319-86-8	Delta-BHC		
58-89-9	Gamma-BHC (Lindane)		
76-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor Epoxide		
959-98-8	Endosulfan I		
60-57-1	Dieldrin	44	U
72-55-9	4,4'-DDE		
72-20-8	Endrin		
33213-65-9	Endosulfan II		
72-54-8	4,4'-DDD		
1031-07-8	Endosulfan Sulfate		
50-29-3	4,4'-DDT		
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin Ketone	44	U
57-74-9	Chlordane	220	U
8001-35-2	Toxaphene	440	U
12674-11-2	Aroclor-1016	220	U
11104-28-2	Aroclor-1221		
11141-16-5	Aroclor-1232		
53469-21-9	Aroclor-1242		
12672-29-6	Aroclor-1248		
11097-69-1	Aroclor-1254	81	J
11096-82-5	Aroclor-1260	440	U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s 31.0 V_t 20,000 V_i 3.0

amc 12/20/93

Form 1

EPA Sample No.: 555903
FMP-PS-06-001

Date May 11, 1987

INORGANIC ANALYSIS DATA SHEET

LAB NAME Roy F. Weston, Inc.

SOW NO. 785 Lab Receipt Date 4-6-87

LAB SAMPLE ID. NO. 8704-108-0020

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4730 J ~~N~~ ~~E~~	P	13.	Magnesium	32,100	P
2.	Antimony	[1.9] J ~~N~~	P	14.	Manganese	35 J ~~E~~	P
3.	Arsenic	7.6	P	15.	Mercury	0.1K UJ	CVAA
4.	Barium	95	P	16.	Nickel	51	P
5.	Beryllium	5.7	P	17.	Potassium	913	A
6.	Cadmium	5.7	P	18.	Selenium	0.4K UJ	P
7.	Calcium	22,200	P	19.	Silver	158 J ~~N~~	P
8.	Chromium	30	P	20.	Sodium	[600]	A
9.	Cobalt	26	P	21.	Thallium	[0.7]	P
10.	Copper	222	P	22.	Vanadium	100	P
11.	Iron	2750 J ~~E~~	P	23.	Zinc	48 J	P
12.	Lead	60	P		Percent Solids (%)	72.5	

Cyanide 0.7K UJ

CPF 12/22/93

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample Weight : ICP 1.058 grams.

AA 1.12 grams.

fine black — Sample Description

Lab Manager [signature]

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 06/05/87

CLIENT: FMPC

WESTON BATCH #: 8704-108

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	DETECTION LIMIT
-0050	PS-06-001	SILVER, EP LEACHATE	2070		UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1090		UG/L	1000
		CADMIUM, EP LEACHATE	251		UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	1890		UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

amf 12/22/93

DATE OF REPORT: 05/05/87

5559

CLIENT: FMPC
DATA SUMMARY REPORT FOR
SAMPLES RECEIVED: 4/6/87
W.O.NUMBER: 2754-01-01

TE SAMPLE COLLECTED: 4/1-3/87
AMPLE COLLECTED BY:. CLIENT

RFWSN	DESCRIPTION	CORROSIVITY
704-108-0010	FMP-PS-48-027	9.20 PHU
-0020	FMP-PS-06-001	11.7 PHU

RFWSN	DESCRIPTION	IGNITABILITY	SULFIDE
704-108-0010	FMP-PS-48-027	00 DEG F	<.1 MG/KG
-0020	FMP-PS-06-001	>800 DEG F	<.35 MG/KG
	METHOD SPIKE		1.07 MG/KG

emf 12/20/93

PREPARED BY Emily C Carfioli
EMILY C. CARFIOLI
DATA MANAGER
WESTON ANALYTICS

APPROVED BY Mike Tolor for
EARL M. HANSEN, PH. D.
TECHNICAL DIRECTOR
WESTON ANALYTICS

TMA/EBERLINE ALBUQUERQUE LAB

CUSTOMER	TMA Eberline/Weston	Chain of Custody: 0103	
ATTENTION	Fred Haywood		
ADDRESS	P.O. Box 1040	Type of Sample: Soil	
CITY	Oak Ridge		
STATE	TN 37831		SAMPLES RECEIVED
W.O. NO.	E-6922	pCi/g	4/13/87

TYPE OF ANALYSIS	SAMPLE ID FMP-PS-06-025 F2560-S800	SAMPLE ID FMP-PS-06-028 F2635-S785	SAMPLE ID FMP-PS-47-005 E3050-S2025	SAMPLE ID FMP-PS-47-010 E3100-S2050	SAMPLE ID FMP-PS-47-017 E3150-S2075
U 234	5330±100	3380±80	2.5±0.2	2.5±0.2	2.1±0.2
U 235	1750±60	1490±50	0.1±0.1	0.2±0.1	0.1±0.1
U 238	18700±200	18700±200	7.6±0.4	2.4±0.2	2.7±0.2
Th 228	0.2±0.1	1.2±0.2	0.2±0.2	0.2±0.1	0.1±0.1
Th 230	44±1	41±1	20±1	5.0±0.4	1.7±0.2
Th 232	0.2±0.1	1.2±0.2	0.2±0.2	0.2±0.1	0.1±0.1
Pu 238	0.6±0.2	1.4±0.2	<0.06	<0.09	<0.05
Pu 239	9.5±0.5	15±1	<0.05	<0.05	<0.05
Tc 99	120±5	84±2	<0.3	<0.4	<0.3
Sr 90	1.8±0.4	4.0±0.4 J	2.2±0.9	<0.5	<0.5
Ru 106	<35	<35	<6	<6	<5
Np 237	4.5±0.8	2.5 ~~2.6~~±0.6 J	<0.03	<0.04	<0.03
Cs 137	31±4	15±4	<1	<2	<0.8
Ra 226	—	—	—	—	—
Ra 228	—	—	—	—	—
Pb 210	—	—	—	—	—
DATE COLLECTED	4/7/87	4/7/87	3/12/87	3/12/87	3/12/87
WT/VOL g/l	408/0.47	352/0.47	67/0.47	166/0.47	188/0.47
DEPTH	8-48"	14-54"	22-42"	26-46"	24-44"

Page 3 Of 4 Signature: Date: 8/31/87

7021 PAN AMERICAN HWY. NE, ALBUQUERQUE, NM 87109
505-345-3461

PS-07-048

5559

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: WESTON

Case No: FTPC

Lab Sample ID No: 8705-35-0050

QC Report No:

Sample Matrix: SOIL

Contract No:

Data Release Authorized By: CJ Mc

Date Sample Received: 05-9-87

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 5-14-87

Date Analyzed: 5-14-87

Conc/Dil Factor: 45 pH 7.7

Percent Moisture. (Not Decanted) 27

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane	450 U	
74-83-9	Bromomethane	~~45~~	UJ
75-01-4	Vinyl Chloride		
75-00-3	Chloroethane	—	UJ
75-09-2	Methylene Chloride	100 ~~85~~	U
67-64-1	Acetone	180 ~~85~~	U
75-15-0	Carbon Disulfide	230 U	
75-35-4	1, 1-Dichloroethene		
75-34-3	1, 1-Dichloroethane		
156-60-5	Trans-1, 2-Dichloroethene		
67-66-3	Chloroform		
107-06-2	1, 2-Dichloroethane	—	UJ
78-93-3	2-Butanone	~~70~~ 5	J
71-55-6	1, 1, 1-Trichloroethane	230 U	UJ
56-23-5	Carbon Tetrachloride	—	UJ
108-05-4	Vinyl Acetate	450 U	
75-27-4	Bromodichloromethane	230 U	

CAS Number		ug/l or ug/Kg (Circle One)	
78-87-5	1, 2-Dichloropropane	230 U	
10061-02-6	Trans-1, 3-Dichloropropene		
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane		
79-00-5	1, 1, 2-Trichloroethane		
71-43-2	Benzene		
10061-01-5	cis-1, 3-Dichloropropene	—	
110-75-8	2-Chloroethylvinylether	450 U	
75-25-2	Bromoform	230 U	UJ
108-10-1	4-Methyl-2-Pentanone	450 U	
591-78-6	2-Hexanone	—	
127-18-4	Tetrachloroethene	230 U	
79-34-5	1, 1, 2, 2-Tetrachloroethane		
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene		
100-42-5	Styrene		
	Total Xylenes	—	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

EMF 12/20/93

Value If the result is a value greater than or equal to the detection limit report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Case No FMPC

Sample Number PS-07-048

870535-0050

5559

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	Acrolein	VOA	NP	—
2.	Acrylonitrile			—
3.	Dichlorodifluoromethane			—
4.	Bis(chloromethyl)ether			—
5	1,2-Dichloropropylene			— ✓
6.	Cis-1,2-Dichloroethene			—
7				
8				
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CMS
12/22/93

ORGANICS ANALYSIS DATA SHEET SAMPLE #: FMP-PS-07-048

LABORATORY: WESTON
LABORATORY ID: 0608Z008
MATRIX: ~~WATER~~ SOIL

CASE #/SAS #: FMPC
QC REPORT #: 060887
CONTRACT #: 359-0050
DATE RECEIVED: 5/7/87

5559

DATA RELEASE AUTHORIZED BY:

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL: LOW
DATE EXT/PREP: 5/13/87
DATE ANALYZED: 06/08/87
CONC/DIL FACTOR: DF=50
PH: 7.80
% MOISTURE: 26.5%
% MOISTURE (DECANTED): NA
STANDARD ID: 0608ZS050
SENSITIVITY ID: 0608ZTU

GPC CLEANUP ✓ YES __ NO
SEPARATORY EXTRACTION __ YES
CONTINUOUS EXTRACTION __ YES

CAS #		UG/KG
108-95-2	PHENOL	140. J
111-44-4	BIS(2-CHLOROETHYL)ETHER	500. U
95-57-8	2-CHLOROPHENOL	500. U
541-73-1	1,3-DICHLOROBENZENE	500. U
106-46-7	1,4-DICHLOROBENZENE	500. U
100-51-6	BENZYL ALCOHOL	500. U
95-50-1	1,2-DICHLOROBENZENE	500. U
95-48-7	2-METHYLPHENOL	500. U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	500. U
106-44-5	4-METHYLPHENOL	500. U
621-64-7	N-NITROSODIPROPLYAMINE	500. ~~U~~ UJ
67-72-1	HEXACHLOROETHANE	500. U
98-95-3	NITROBENZENE	500. ~~U~~ UJ
78-59-1	ISOPHORONE	500. ~~U~~ UJ
88-75-5	2-NITROPHENOL	500. U
105-67-9	2,4-DIMETHYLPHENOL	500. U
65-85-0	BENZOIC ACID	2500. ~~U~~ UJ
111-91-1	BIS(2-CHLOROETHOXY)METHANE	500. U
120-33-2	2,4-DICHLOROPHENOL	500. U
120-82-1	1,2,4-TRICHLOROBENZENE	500. U
91-20-3	NAPHTHALENE	500. U
106-47-8	4-CHLOROANILINE	500. U
87-68-3	HEXACHLOROBUTADIENE	500. U
59-50-7	4-CHLORO-3-METHYLPHENOL	500. U
91-57-6	2-METHYLNAPHTHALENE	500. U
77-47-4	HEXACHLOROCYCLOPENTADIENE	500. ~~U~~ UJ
88-06-2	2,4,6-TRICHLOROPHENOL	500. U
95-95-4	2,4,5-TRICHLOROPHENOL	2500. ~~U~~ UJ
91-58-7	2-CHLORONAPHTHALENE	500. U
88-74-4	2-NITROANILINE	2500. U
131-11-3	DIMETHYL PHTHALATE	500. U
208-96-8	ACENAPHTHYLENE	500. U
99-09-2	3-NITROANILINE	2500. U
83-32-9	ACENAPHTHENE	500. U
51-28-5	2,4-DINITROPHENOL	2500. U
100-02-7	4-NITROPHENOL	2500. U
132-64-9	DIBENZOFURAN	500. U

EMC 12/20/93

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: FMP-PS-07-048

LABORATORY: WESTON
LABORATORY ID: 0608Z008
MATRIX: ~~WATER~~ SOIL

CASE #/SAS #: FMPC
QC REPORT #: 060887
CONTRACT #: 359-0050
DATE RECEIVED: 5/7/87

5559

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW	GPC CLEANUP	✓ YES __NO
DATE EXT/PREP:	5/13/87	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	06/08/87	CONTINUOUS EXTRACTION	__YES
CONC/DIL FACTOR:	DF=50		
PH:	7.80		
% MOISTURE:	26.5%		
% MOISTURE (DECANTED):	NA		
STANDARD ID:	0608ZS050		
SENSITIVITY ID:	0608ZTU		

CAS #		UG/KG	
121-14-2	2,4-DINITROTOLUENE	500.	U
606-20-2	2,6-DINITROTOLUENE	500.	U
84-66-2	DIETHYL PHTHALATE	500.	U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	500.	U
86-73-7	FLUORENE	500.	U
100-01-6	4-NITROANILINE	2500.	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	2500.	U
86-30-6	N-NITROSODIPHENYLAMINE	500.	U
101-55-3	4-BROMOPHENYL PHENYL ETHER	500.	U
118-74-1	HEXACHLOROBENZENE	500.	U
87-86-5	PENTACHLOROPHENOL	2500.	U
85-01-8	PHENANTHRENE	110.	~~J~~ U
120-12-7	ANTHRACENE	500.	U
84-74-2	DI-N-BUTYL PHTHALATE	54.	J
206-44-0	FLUORANTHENE	220.	~~J~~ U
129-00-0	PYRENE	120.	J
85-68-7	BUTYL BENZYL PHTHALATE	500.	U
91-94-1	3,3'-DICHLOROBENZIDINE	1000.	U
56-55-3	BENZO(A)ANTHRACENE	71.	J
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	2000.	J
218-01-9	CHRYSENE	83.	J
117-84-0	DI-N-OCTYL PHTHALATE	500.	U
205-99-2	BENZO(B)FLUORANTHENE	83.	J
207-08-9	BENZO(K)FLUORANTHENE	500.	U
50-32-8	BENZO(A)PYRENE	500.	U
193-39-5	INDENO(1,2,3-CD)PYRENE	500.	~~U~~ UJ
53-70-3	DIBENZO(A,H)ANTHRACENE	500.	U
191-24-2	BENZO(GHI)PERYLENE	500.	U

RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

FORM I

emf 12/20/93

Laboratory Name WESTON

Case No FMPC

5559

8705-359;8050

Sample Number
FMP-PS-07048

06087008

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	Unknown	BNA	274	8,000
2.	Unknown Ketone		287	1,900
3	Unknown Hydrocarbon		295	1,100
4	Unknown		346	750
5	Unknown		397	780
6.	Unknown Ketone		421	680
7	Unknown Hydrocarbon		727	350
8.	Unknown Hydrocarbon		814	430
9	Unknown		1012	5,100
10	Unknown		1158	310
11.	Unknown		1296	800
12				
13.				
14				
15.				
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30				

EMC
12/20/93

000109

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SA#: FMP-PS-07-048

LAB NAME: WESTON CONTRACT: _____
LAB CODE: _____ CASE#: FMPC SAS#: _____ SDG#: _____

MATRIX: (SOIL/WATER)	SOIL			LAB SAMPLE ID:	359-0050
SAMPLE WT/VOL:	30.3	(g/ml)	g	LAB FILE ID:	_____
LEVEL: (LOW/MED)	LOW			DATE RECEIVED:	5/9/87
%MOISTURE: (NOT DEC) _____	(DEC)	26		DATE EXTRACTED:	5/13/87
EXTRACTION:(SEPF/CONT/SONC)	SONC			DATE ANALYZED:	6/17/87
GPC CLEANUP: (Y/N)	Y	pH:	7.0	DIL FACTOR:	0.2

CAS #	COMPOUND	CONCENTRATION UNITS: (ug/L OR ug/Kg)	ug/Kg	Q
319-84-6	ALPHA-BHC		54	U
319-85-7	BETA-BHC		54	U
319-86-8	DELTA-BHC		54	U
58-89-9	GAMMA-BHC (LINDANE)		54	~~U~~ UJ
76-44-8	HEPTACHLOR		54	U
309-00-2	ALDRIN		54	U
1024-57-3	HEPTACHLOR EPOXIDE		54	U
959-98-8	ENDOSULFAN I		54	U
60-57-1	DIELDRIN		110	~~U~~ UJ
72-55-9	4,4'-DDE		110	U
72-20-8	ENDRIN		110	U
33213-65-9	ENDOSULFAN II		110	U
72-54-8	4,4'-DDD		110	U
1031-07-8	ENDOSULFAN SULFATE		110	U
50-29-3	4,4'-DDT		110	U
72-43-5	METHOXYCHLOR		540	U
53494-70-5	ENDRIN KETONE		110	U
57-74-9	TECH CHLRORDANE		540	U
5103-71-9	ALPHA CHLORDANE	NOT RUN		-
5103-74-2	GAMMA CHLORDANE	NOT RUN		-
8001-35-2	TOXAPHENE		1100	U
12674-11-2	AROCLOR-1016		540	U
11104-28-2	AROCLOR-1221		540	U
11141-16-5	AROCLOR-1232		540	U
53469-21-9	AROCLOR-1242		540	U
12672-29-6	AROCLOR-1248		540	U
11097-69-1	AROCLOR-1254		1957	
11096-82-5	AROCLOR-1260		1100	U

emr 12/20/93

5559 | FMP-PS-07-048 | 05

Date 6-17-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Roy F. Weston, Inc.

SOW NO. 785 Lab Receipt Date 5-9-87

LAB SAMPLE ID. NO. 8705-359-0050

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4380 J ~~E~~	P	13.	Magnesium	3860 J ~~AE~~	P
2.	Antimony	1.4u UJ ~~N~~	P	14.	Manganese	121 J ~~N~~	P
3.	Arsenic	7.7 J ~~N~~	P	15.	Mercury	0.1u	CVAA
4.	Barium	211 J ~~NA~~	P	16.	Nickel	12	P
5.	Beryllium	[0.6]	P	17.	Potassium	602	A
6.	Cadmium	[0.8]	P	18.	Selenium	0.4u ~~UJ~~ ~~N~~	P R
7.	Calcium	14600 J ~~A~~	P	19.	Silver	1.4u UJ ~~N~~	P
8.	Chromium	8.3 ~~A~~	P	20.	Sodium	[540]	A
9.	Cobalt	[7.3]	P	21.	Thallium	[0.5]	P
10.	Copper	30 J ~~NA~~	P	22.	Vanadium	17	P
11.	Iron	3750 J ~~AE~~	P	23.	Zinc	15	P
12.	Lead	14 R ~~J~~ ~~N~~	P		Percent Solids (2)	91.5	

Cyanide 0.7 u

dm 12/22/93

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample Weight : ICP 1.052 grams.

AA 1.046 grams.

sample description: fine, black

Lab Manager _____

WESTON ANALYTICS

5559

INORGANICS DATA SUMMARY REPORT 06/10/87

CLIENT: FMPC

WESTON BATCH #: 8705-359

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	DETECTION LIMIT
-0010	FMP-SW-08-001	CHLORIDE	196		MG/L	50
		CYANIDE, TOTAL	87		UG/L	11
		FLUORIDE	4.9		MG/L	0.1
		NITRATE NITRITE	220		MG/L	10
		PHOSPHATE	0.23		MG/L	0.05
		SULFATE	134		MG/L	50
		TOTAL DISSOLVED SOLIDS	1710		MG/L	1.0
		TOTAL SUSPENDED SOLIDS	30		MG/L	1.0
-0020	FMP-SW-08-002	CHLORIDE	164		MG/L	50
		CYANIDE, TOTAL	11	u	UG/L	11
		FLUORIDE	6.2		MG/L	0.1
		NITRATE NITRITE	266		MG/L	10
		PHOSPHATE	0.35		MG/L	0.05
		SULFATE	125		MG/L	50
		TOTAL DISSOLVED SOLIDS	2260		MG/L	1.0
		TOTAL SUSPENDED SOLIDS	29		MG/L	1.0
-0030	FMP-FB-54-012	CYANIDE, TOTAL	10	u	UG/L	10
-0050	FMP-PS-07-048	CYANIDE, TOTAL	100	u	MG/KG	100
		SULFIDE	0.37	u	MG/KG	0.37
-0060	FMP-PS-07-051	CYANIDE, TOTAL	100	u	MG/KG	100
		SULFIDE	0.32	u	MG/KG	0.32
-0070	FMP-PS-07-051	CYANIDE, TOTAL	100	u	MG/KG	100
		SULFIDE	0.33	u	MG/KG	0.33
-0080	FMP-PS-24-001	CYANIDE, TOTAL	1.1	u	MG/KG	1.1
BLANK1		CHLORIDE	5.0	u	MG/L	5.0

CMS 12/20/93

WESTON ANALYTICS

5559

INORGANICS DATA SUMMARY REPORT 06/10/87

CLIENT: FMPC

WESTON BATCH #: 8705-359

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS
-0050	FMS-PS-07-048	IGNITABILITY	>800	DEG F
-0060	FMP-PS-07-051	IGNITABILITY	>800	DEG F
-0070	FMP-PS-07-051	IGNITABILITY	>800	DEG F

CMF
12/20/93

WESTON

DATE OF REPORT: 13 July 1987

CLIENT: FMPC

DATA SUMMARY REPORT FOR
SAMPLES RECEIVED: 5-9-87

W.O. NUMBER: 2754-01-01

DATE SAMPLES COLLECTED: 5-6,7-87

SAMPLES COLLECTED BY: CLIENT

REW NO	DESCRIPTION	BICARBONATE	CARBONATE	CORROSIVITY
8705-359-0010	FMP-SW-08-001	70 mg/L	40 mg/L	
-0020	FMP-SW-08-002	94 mg/L	28 mg/L	
-002R	Replicate	90 mg/L	32 mg/L	
-002S	Precision	4.35 %	13.3 %	
-0050	FMP-PS-07-048			7.70 PHU
-0060	FMP-PS-07-049			7.80 PHU
-0070	FMP-PS-07-051			7.80 PHU
	METHOD BLANK	<2 mg/L	<2 mg/L	

CMF
12/20/93

PREPARED BY: Emily Carfioli
EMILY CARFIOLI
DATA MANAGER
WESTON ANALYTICS

APPROVED BY: [signature]
EARL HANSEN, Ph.D.
TECHNICAL DIRECTOR
WESTON ANALYTICS

TMA/EBERLINE ALBUQUERQUE LAB

CUSTOMER	TMA Eberline/Weston	SITE	Fernald
ATTENTION	Fred Haywood	DATE REC.	5/18/87
ADDRESS	P.O. Box 1040	NO. OF SAMPLES	34
CITY	Oak Ridge, TN 37831	CUSTOMER P.O. NO.	0228 & 0229
W.O. NO.	E-7131	TYPE OF SAMPLE	Soil-pCi/g

	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID
TYPE OF ANALYSIS	FMP-PS-07-005	FMP-PS-07-015	FMP-PS-07-035	FMP-PS-07-073	FMP-PS-08-001
Coor-dinate	E2085-S850	E2100-S900	E2025-S1000	E2000-S1075	E1535-S1440
Depth	0-10'	0-12'	0-16'	0-12'	N/A
Date Collected	4/22/87	4/27/87	5/5/87	5/6/87	4/22/87
Wt/Dry	883/619	788/658	811/600	636/455	574/187
U 234	9.9±0.4	108±2	78±2	125±2	242±5
U 235	0.5±0.1	6.3±0.4	6.0±0.5	6.7±0.5	28±2
U 238	22±1	139±2	209±3	138±2	634±8
Th 228	<0.2	<0.1	0.2±0.1	0.2±0.1	<0.2
Th 230	3.2±0.6	0.1±0.1	1.6±0.2	2.9±0.2	0.3±0.1
Th 232	<0.2	<0.1	0.1±0.1	0.3±0.1	<0.1
Pu 238	<0.1	<0.1	0.1±0.1	0.1±0.1	<0.1
Pu 239 Pu 240	<0.1	<0.1	0.1±0.1	0.4±0.1	<0.1
Tc 99	<0.4	<0.4	32±1	64±3	278±13
Sr 90	<0.5	<0.5	<0.9	<0.9	2.8±0.5
Ru 106	<2	<2	<2	<2	<12
Np 237	<0.2	<0.1	0.7±0.3	0.7±0.3	1.4±0.5
Cs 137	<0.2	<0.6	<0.3	<0.3	140±10
Ra 226	--	--	--	--	--
Ra 228	--	--	--	--	--
Pb 210	--	--	--	--	--

CDF 12/20/93

Date: 11/16/87

WEMCO QUALIFIED DATA

(71 Sheets)

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results

Appendix B by SW-846 Method 8240 (Modified)

Client:	Ebasco	Client Sample No.:	100210
Lab Sample ID:	236404DL	Client Project:	Task Order # 10
Matrix:	Soil	Date Collected:	April 28, 1992
Dilution Factor:	5	Date Analyzed:	May 15, 1992

CAS Number	Compound Name	Result ug/kg	PQL ug/kg	Note
74873	Chloromethane	BQL UJ	310	
74839	Bromomethane	BQL	310	
75014	Vinyl Chloride	BQL	310	
75003	Chloroethane	BQL	310	
75092	Methylene Chloride	28 J	160	*
67641	Acetone	6900 J	3100	
75150	Carbon Disulfide	BQL UJ	160	
75354	1,1-Dichloroethene	BQL	160	
75343	1,1-Dichloroethane	BQL	160	
156605	1,2-Dichloroethene (total)	BQL	160	
67663	Chloroform	BQL	160	
107062	1,2-Dichloroethane	BQL	160	
78933	2-Butanone	630 J	3100	*
71556	1,1,1-Trichloroethane	BQL UJ	160	
56235	Carbon Tetrachloride	BQL	160	
108054	Vinyl Acetate	BQL	1600	
75274	Bromodichloromethane	BQL	160	
78875	1,2-Dichloropropane	BQL	160	
10061015	cis-1,3-Dichloropropene	BQL	160	
79016	Trichloroethene	BQL	160	
124481	Dibromochloromethane	BQL	160	
79005	1,1,2-Trichloroethane	BQL	160	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

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Lab Sample ID: 236404DL Client Sample No.: 100210

CAS Number	Compound Name	Result ug/kg	PQL ug/kg	Note
71432	Benzene	BQL UJ	160	
10061026	Trans-1,3-Dichloropropene	BQL	160	
75252	Bromoform	BQL	160	
108101	4-Methyl-2-pentanone	BQL	1600	
591786	2-Hexanone	120 J	1600	*
127184	Tetrachloroethene	BQL UJ	160	
79345	1,1,2,2-Tetrachloroethane	26 J	160	*
108883	Toluene	BQL UJ	160	
108907	Chlorobenzene	BQL	160	
100414	Ethylbenzene	BQL	160	
100425	Styrene	BQL	160	
1330207	Xylene (total)	BQL	160	
110758	2-Chloroethyl vinyl ether	BQL	310	
75694	Trichlorofluoromethane	BQL	160	
74884	Iodomethane	BQL	160	
750508	Acetonitrile	BQL	3100	
107028	Acrolein	BQL	1600	
107131	Acrylonitrile	BQL	1600	
126998	Allyl chloride	BQL	3100	
78831	Isobutyl alcohol	BQL	1600	
126987	Methacrylonitrile	BQL	160	
123911	1,4-Dioxane	BQL	4700	
107051	Chloroprene	BQL	160	
107120	Propionitrile	BQL	160	
106934	1,2-Dibromoethane	BQL	160	

Qnf 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404DL *Client Sample No.:* 100210

CAS Number	Compound Name	Result ug/kg	PQL ug/kg	Note
74953	Dibromomethane	BQL UJ	160	
110576	trans-1,4-Dichloro-2-butene	BQL	160	
97632	Ethyl methacrylate	BQL	160	
630206	1,1,1,2-Tetrachloroethane	BQL	160	
96184	1,2,3-Trichloropropane	BQL	160	
76017	Pentachloroethane	BQL	160	
96128	1,2-Dibromo-3-chloropropane	BQL	310	
80626	Methyl methacrylate	BQL	160	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

* = *Indicates an estimated value when the mass spectral data indicate the presence of a compound that meets the identification criteria in which the result is less than the practical quantitation limit but greater than zero.*

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable contamination and warns the data user to take appropriate action.

 # = See Case Narrative

CMF 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Ebasco	Client Sample No.:	100210
Lab Sample ID:	236404	lient Reference No.:	Task #10
Matrix:	ZHE	Date Received:	May 5, 1992
Dilution Factor:	1	Date Analyzed:	May 19, 1992

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
74873	Chloromethane	BQL	10	
74839	Bromomethane	BQL	10	
75014	Vinyl Chloride	BQL	10	
75003	Chloroethane	BQL	10	
75092	Methylene Chloride	61 UJ	5	B
67641	Acetone	87 U	100	B*
75150	Carbon Disulfide	BQL	5	
75354	1,1-Dichloroethene	BQL	5	
75343	1,1-Dichloroethane	BQL	5	
156605	1,2-Dichloroethene (total)	BQL	5	
67663	Chloroform	BQL	5	
107062	1,2-Dichloroethane	BQL	5	
78933	2-Butanone	BQL UJ	100	
71556	1,1,1-Trichloroethane	BQL	5	
56235	Carbon Tetrachloride	BQL	5	
108054	Vinyl Acetate	BQL	50	
75274	Bromodichloromethane	BQL	5	
78875	1,2-Dichloropropane	BQL	5	
10061015	cis-1,3-Dichloropropene	BQL	5	
79016	Trichloroethene	BQL	5	
124481	Dibromochloromethane	BQL	5	
79005	1,1,2-Trichloroethane	BQL	5	

ejm 12/22/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404		Client Sample No.: 100210		
CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
71432	Benzene	BQL	5	
10061026	Trans-1,3-Dichloropropene	BQL	5	
75252	Bromoform	BQL	5	
108101	4-Methyl-2-pentanone	BQL	50	
591786	2-Hexanone	BQL	50	
127184	Tetrachloroethene	BQL	5	
79345	1,1,2,2-Tetrachloroethane	BQL	5	
108883	Toluene	BQL	5	
108907	Chlorobenzene	BQL	5	
100414	Ethylbenzene	BQL	5	
100425	Styrene	BQL	5	
1330207	Xylene (total)	BQL	5	

CMF 12/20/93

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

- *= Indicates an estimated value when the mass spectral data indicate the presence of a compound that meets the identification criteria in which the result is less than the practical quantitation limit but greater than zero.*

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable contamination and warns the data user to take appropriate action.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Appendix B Organic Analytical Results
SW-846 Method 8270 (modified)

Client: Ebasco
Lab Sample ID: 236404
Matrix: Sludge
Dilution Factor: 1

Client Sample No.: 100210
Client Reference No.: Task Order #10
Date Received: May 5, 1992
Date Extracted: May 11, 1992

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
108952	NOL	Phenol	BQL	1000	
62759	HSL/ApIX	N-Nitrosodimethylamine	BQL	1000	
111444	HSL/ApIX	bis(2-Chloroethyl)ether	BQL	1000	
95578	HSL/ApIX	2-Chlorophenol	BQL	1000	
541731	HSL/ApIX	1,3-Dichlorobenzene	BQL	1000	
106467	HSL/ApIX	1,4-Dichlorobenzene	BQL	1000	
100516	HSL/ApIX	Benzyl alcohol	BQL	2100	
95501	HSL/ApIX	1,2-Dichlorobenzene	BQL	1000	
95487	HSL/ApIX	2-Methylphenol	BQL	1000	
108601	HSL/ApIX	bis(2-Chloroisopropyl)ether	BQL	1000	
106445	HSL/ApIX	4-Methylphenol	BQL	1000	
621647	HSL/ApIX	N-Nitroso-di-n-propylamine	BQL	1000	
67721	HSL/ApIX	Hexachloroethane	BQL	1000	
98953	HSL/ApIX	Nitrobenzene	BQL	1000	
78591	HSL/ApIX	Isophorone	BQL	1000	
88755	HSL/ApIX	2-Nitrophenol	BQL	1000	
105679	HSL/ApIX	2,4-Dimethylphenol	BQL	1000	
65850	NOL	Benzoic acid	BQL	5200	
111911	HSL/ApIX	bis(2-Chloroethoxy)methane	BQL	1000	
120832	HSL/ApIX	2,4-Dichlorophenol	BQL	1000	
120821	HSL/ApIX	1,2,4-Trichlorobenzene	BQL	1000	
91203	HSL/ApIX	Naphthalene	BQL	1000	
106478	HSL/ApIX	4-Chloroaniline	BQL	2100	
87683	HSL/ApIX	Hexachlorobutadiene	BQL	1000	

HSL = Hazardous Substance List Compounds
ApIX = Appendix IX Compounds
NOL = Not on Appendix B List

EMF 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404 Client Sample No.: 100210

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
59507	HSL/ApIX	4-Chloro-3-methylphenol	BQL	2100	
91576	HSL/ApIX	2-Methylnaphthalene	BQL	1000	
77474	HSL/ApIX	Hexachlorocyclopentadiene	BQL	1000	
88062	HSL/ApIX	2,4,6-Trichlorophenol	BQL	1000	
95954	HSL/ApIX	2,4,5-Trichlorophenol	BQL	5200	
91587	HSL/ApIX	2-Chloronaphthalene	BQL	1000	
88744	HSL/ApIX	2-Nitroaniline	BQL	5200	
131113	HSL/ApIX	Dimethylphthalate	BQL	1000	
208968	HSL/ApIX	Acenaphthylene	BQL	1000	
606202	HSL/ApIX	2,6-Dinitrotoluene	BQL	1000	
99092	HSL/ApIX	3-Nitroaniline	BQL	5200	
83329	HSL/ApIX	Acenaphthene	BQL	1000	
51285	HSL/ApIX	2,4-Dinitrophenol	BQL	5200	
100027	HSL/ApIX	4-Nitrophenol	BQL	5200	
132649	HSL/ApIX	Dibenzofuran	BQL	1000	
121142	HSL/ApIX	2,4-Dinitrotoluene	BQL	1000	
84662	HSL/ApIX	Diethylphthalate	BQL	1000	
7005723	HSL/ApIX	4-Chlorophenyl-phenylether	BQL	1000	
86737	HSL/ApIX	Fluorene	BQL	1000	
100016	HSL/ApIX	4-Nitroaniline	BQL	5200	
534521	HSL/ApIX	4,6-Dinitro-2-methylphenol	BQL	5200	
86306	HSL/ApIX	N-Nitrosodiphenylamine	BQL	1000	
101553	HSL/ApIX	4-Bromophenyl-phenylether	BQL	1000	
118741	HSL/ApIX	Hexachlorobenzene	BQL	1000	
87865	HSL/ApIX	Pentachlorophenol	BQL	5200	
120127	HSL/ApIX	Anthracene	BQL	1000	
129000	HSL/ApIX	Pyrene	BQL	1000	
218019	HSL/ApIX	Chrysene	BQL	1000	
85018	HSL/ApIX	Phenanthrene	BQL	1000	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404 Client Sample No.: 100210

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
84742	HSL/ApIX	Di-n-butylphthalate	BQL	1000	
206440	HSL/ApIX	Fluoranthene	BQL	1000	
85687	HSL/ApIX	Butylbenzylphthalate	BQL	1000	
91941	HSL/ApIX	3,3'-Dichlorobenzidine	BQL	2100	
56553	HSL/ApIX	Benzo(a)anthracene	BQL	1000	
117817	HSL/ApIX	bis(2-Ethylhexyl)phthalate	BQL	1000	
117840	HSL/ApIX	Di-n-octylphthalate	BQL	1000	
205992	HSL/ApIX	Benzo(b)fluoranthene	BQL	1000	
207089	HSL/ApIX	Benzo(k)fluoranthene	BQL	1000	
50328	HSL/ApIX	Benzo(a)pyrene	BQL	1000	
193395	HSL/ApIX	Indeno(1,2,3-cd)pyrene	BQL	1000	
53703	HSL/ApIX	Dibenzo(a,h)anthracene	BQL	1000	
191242	HSL/ApIX	Benzo(g,h,i)perylene	BQL	1000	
86748	HSL	Carbazole	BQL	1000	
98862	ApIX	Acetophenone	BQL	1000	
53963	ApIX	2-Acetylaminofluorene	BQL	2100	
92671	ApIX	4-Aminobiphenyl	BQL	1000	
62533	ApIX	Aniline	BQL	1000	
510156	ApIX	Chlorobenzilate	BQL	5200	
108394	ApIX	3-Methylphenol	BQL	1000	
2303164	ApIX	Diallate	BQL	5200	
87650	ApIX	2,6-Dichlorophenol	BQL	1000	
297972	ApIX	O,O-Diethyl-0,2-pyrazinylphosphorothioate	BQL	1000	
60515	ApIX	Dimethoate	BQL	1000	
60117	ApIX	p-(Dimethylamino)azobenzene	BQL	1000	
57976	ApIX	7,12-Dimethylbenz[a]anthracene	BQL	5200	
119937	ApIX	3,3'-Dimethylbenzidine	BQL	1000	
112098	ApIX	a,a-Dimethylphenethylamine	BQL	1000	

CTF 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404 Client Sample No.: 100210

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
99650	ApIX	1,3-Dinitrobenzene	BQL	1000	
88857	ApIX	Dinoseb	BQL	5200	
122394	ApIX	Diphenylamine	BQL	5200	
298044	ApIX	Disulfoton	BQL	1000	
62500	ApIX	Ethyl methanesulfonate	BQL	1000	
52857	ApIX	Famphur	BQL	1000	
70304	ApIX	Hexachlorophene	BQL	10000	
1888717	ApIX	Hexachloropropene	BQL	2100	
465736	ApIX	Isodrin	BQL	1000	
120581	ApIX	Isosafrole	BQL	1000	
143500	ApIX	Kepone	BQL	10000	
91805	ApIX	Methapyrilene-HCL	BQL	5200	
56495	ApIX	3-Methylcholanthrene	BQL	5200	
66273	ApIX	Methyl methanesulfonate	BQL	1000	
298000	ApIX	Methyl parathion	BQL	1000	
130154	ApIX	1,4-Naphthoquinone	BQL	1000	
134327	ApIX	1-Naphthylamine	BQL	5200	
91598	ApIX	2-Naphthylamine	BQL	1000	
56575	ApIX	4-Nitroquinoline 1-oxide	BQL	1000	
55185	ApIX	N-Nitrosodiethylamine	BQL	1000	
924163	ApIX	N-Nitrosodi-n-butylamine	BQL	1000	
10595956	ApIX	N-Nitrosomethylethylamine	BQL	2100	
59892	ApIX	N-Nitrosomorpholine	BQL	1000	
100754	ApIX	N-Nitrosopiperidine	BQL	1000	
930552	ApIX	N-Nitrosopyrrolidine	BQL	1000	
99558	ApIX	5-Nitro-o-toluidine	BQL	5200	
56382	ApIX	Parathion	BQL	1000	
608935	ApIX	Pentachlorobenzene	BQL	5200	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404 Client Sample No.: 100210

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
82688	ApIX	Pentachloronitrobenzene	BQL	1000	
62442	ApIX	Phenacetin	BQL	1000	
298022	ApIX	Phorate	BQL	5200	
109068	ApIX	2-Picoline	BQL	5200	
23950585	ApIX	Pronamide	BQL	1000	
110861	ApIX	Pyridine	BQL	1000	
94597	ApIX	Safrole	BQL	5200	
95943	ApIX	1,2,4,5-Tetrachlorobenzene	BQL	5200	
58902	ApIX	2,3,4,6-Tetrachlorophenol	BQL	1000	
95534	ApIX	o-Toluidine	BQL	1000	
126681	ApIX	O,O,O-Triethylphosphorothioate	BQL	1000	
99354	ApIX	1,3,5-Trinitrobenzene	BQL	1000	

EMC 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

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Semivolatile HSL Organic Analytical Results
SW-846 Method 8270 (modified)

Client: Ebasco
Lab Sample ID: 236404
Matrix: Leachate
Dilution Factor: 1

Client Sample No.: 100210
Client Reference No.: Task Order #10
Date Received: May 5, 1992
Date Extracted: May 19, 1992

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
111444	bis(2-Chloroethyl)ether	BQL	10	
95578	2-Chlorophenol	BQL	10	
541731	1,3-Dichlorobenzene	BQL	10	
106467	1,4-Dichlorobenzene	BQL	10	
100516	Benzyl alcohol	BQL UJ	20	
95501	1,2-Dichlorobenzene	BQL	10	
95487	2-Methylphenol	BQL	10	
108601	bis(2-Chloroisopropyl)ether	BQL	10	
106445	4-Methylphenol	BQL	10	
621647	N-Nitroso-di-n-propylamine	BQL	10	
67721	Hexachloroethane	BQL	10	
98953	Nitrobenzene	BQL	10	
78591	Isophorone	BQL	10	
88755	2-Nitrophenol	BQL	10	
105679	2,4-Dimethylphenol	BQL	10	
111911	bis(2-Chloroethoxy)methane	BQL	10	
120832	2,4-Dichlorophenol	BQL	10	
120821	1,2,4-Trichlorobenzene	BQL	10	
91203	Naphthalene	BQL	10	
106478	4-Chloroaniline	BQL	20	
87683	Hexachlorobutadiene	BQL	10	

EMF 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404 Client Sample No.: 100210

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
59507	4-Chloro-3-methylphenol	BQL	20	
91576	2-Methylnaphthalene	BQL	10	
77474	Hexachlorocyclopentadiene	BQL	10	
88062	2,4,6-Trichlorophenol	BQL	10	
95954	2,4,5-Trichlorophenol	BQL	50	
91587	2-Chloronaphthalene	BQL	10	
88744	2-Nitroaniline	BQL	50	
131113	Dimethylphthalate	BQL	10	
208968	Acenaphthylene	BQL	10	
606202	2,6-Dinitrotoluene	BQL	10	
99092	3-Nitroaniline	BQL	50	
83329	Acenaphthene	BQL	10	
51285	2,4-Dinitrophenol	BQL	50	
100027	4-Nitrophenol	BQL R	50	
132649	Dibenzofuran	BQL	10	
121142	2,4-Dinitrotoluene	BQL	10	
84662	Diethylphthalate	BQL	10	
7005723	4-Chlorophenyl-phenylether	BQL	10	
86737	Fluorene	BQL	10	
100016	4-Nitroaniline	BQL UJ	50	
534521	4,6-Dinitro-2-methylphenol	BQL	50	
86306	N-Nitrosodiphenylamine	BQL	10	
101553	4-Bromophenyl-phenylether	BQL	10	
118741	Hexachlorobenzene	BQL	10	
87865	Pentachlorophenol	BQL	50	
120127	Anthracene	BQL	10	
129000	Pyrene	BQL	10	
218019	Chrysene	BQL	10	
85018	Phenanthrene	BQL	10	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 236404 Client Sample No.: 100210

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
84742	Di-n-butylphthalate	BQL	10	
206440	Fluoranthene	BQL	10	
85687	Butylbenzylphthalate	BQL	10	
91941	3,3'-Dichlorobenzidine	BQL	20	
56553	Benzo(a)anthracene	BQL	10	
117817	bis(2-Ethylhexyl)phthalate	BQL	10	
117840	Di-n-octylphthalate	BQL	10	
205992	Benzo(b)fluoranthene	BQL	10	
207089	Benzo(k)fluoranthene	BQL	10	
50328	Benzo(a)pyrene	BQL	10	
193395	Indeno(1,2,3-cd)pyrene	BQL	10	
53703	Dibenzo(a,h)anthracene	BQL	10	
191242	Benzo(g,h,i)perylene	BQL	10	
86748	Carbazole	BQL	10	

CDF 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Pesticide Analytical Results
SW-846, Method 8080

Client: Ebasco
Lab Sample ID: 236404
Matrix: Sludge
Dilution: 1

Client Sample ID: 100210
Client Reference No.: Task #10
Date of Extraction: May 11,1992
Date of Analysis: May 16,1992

CAS Number	Compound Name	Result ug/kg	PQL ug/kg	Note
319846	Alpha-BHC	BQL	10	A H
319857	Beta-BHC	BQL	10	A H
319868	Delta-BHC	BQL	10	A H
58899	Gamma-BHC	BQL	10	A H
76448	Heptachlor	BQL	10	A H
309002	Aldrin	BQL	10	A H
1024573	Heptachlor Epoxide	BQL	10	A H
959988	Endosulfan I	BQL	10	A H
60571	Dieldrin	BQL	21	A H
72559	4,4' - DDE	BQL	21	A H
72208	Endrin	BQL	21	A H
33213659	Endosulfan II	BQL	21	A H
72548	4,4'-DDD	BQL	21	A H
1031078	Endosulfan Sulfate	BQL	21	A H
50293	4,4' - DDT	BQL	21	A H
72435	Methoxychlor	BQL	100	A H
7421363	Endrin Aldehyde	BQL	21	A H
53494705	Endrin Ketone	BQL	21	H
5103719	alpha-Chlordane	BQL	10	H
5103742	gamma-Chlordane	BQL	10	H
57749	Chlordane	BQL	210	A
8001352	Toxaphene	BQL	1000	A H

BQL = Below Quantitation Limit
PQL = Practical Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

PCB Analytical Results
SW-846, Method 8080

Client: Ebasco
Client Sample ID: 100210
Lab Sample ID: 236404
Client Reference No.: Task #10
Matrix: Sludge
Date of Extraction: May 11,1992
Dilution: 1
Date of Analysis: May 16,1992

CAS Number	Compound Name	Result ug/kg	PQL ug/kg	Note
12674112	Arochlor-1016	BQL	260	A H
11104282	Arochlor-1221	BQL	260	A H
11141165	Arochlor-1232	BQL	260	A H
53469219	Arochlor-1242	BQL	260	A H
12672296	Arochlor-1248	BQL	260	A H
11097691	Arochlor-1254	BQL	260	A H
11096825	Arochlor-1260	BQL	260	A H

BQL = Below Quantitation Limit
PQL = Practical Quantitation Limit

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EcoTek LSI
EcoTek Laboratory Services Incorporated

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Pesticide Analytical Results
SW-846, Method 8080

Client: Ebasco
Lab Sample ID: 236404Y
Matrix: Leachate
Dilution: 1

Client Sample ID: 100210
Client Reference No.: Task #10
Date of Extraction: May 19,1992
Date of Analysis: May 27,1992

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
319846	Alpha-BHC	BQL UJ	0.044	
319857	Beta-BHC	BQL	0.044	
319868	Delta-BHC	BQL	0.044	
58899	Gamma-BHC	BQL	0.044	
76448	Heptachlor	BQL	0.044	
309002	Aldrin	BQL	0.044	
1024573	Heptachlor Epoxide	BQL	0.044	
959988	Endosulfan I	BQL	0.044	
60571	Dieldrin	BQL	0.088	
72559	4,4' - DDE	BQL	0.088	
72208	Endrin	BQL	0.088	
33213659	Endosulfan II	BQL	0.088	
72548	4,4'-DDD	BQL	0.088	
1031078	Endosulfan Sulfate	BQL	0.088	
50293	4,4' - DDT	BQL	0.088	
72435	Methoxychlor	BQL	0.44	
7421363	Endrin Aldehyde	BQL	0.088	
53494705	Endrin Ketone	BQL	0.088	
5103719	alpha-Chlordane	BQL	0.044	
5103742	gamma-Chlordane	BQL	0.044	
8001352	Toxaphene	BQL	4.4	

BQL = Below Quantitation Limit
QL = Practical Quantitation Limit

emf 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

PCB Analytical Results
SW-846, Method 8080

Client: Ebasco
Client Sample ID: 100210
Lab Sample ID: 236404Y
Client Reference No.: Task #10
Matrix: Leachate
Date of Extraction: May 19,1992
Dilution: 1
Date of Analysis: May 27,1992

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
12674112	Arochlor-1016	BQL	1.1	
11104282	Arochlor-1221	BQL	1.1	
11141165	Arochlor-1232	BQL	1.1	
53469219	Arochlor-1242	BQL	1.1	
12672296	Arochlor-1248	BQL	1.1	
11097691	Arochlor-1254	BQL	1.1	
11096825	Arochlor-1260	BQL	1.1	

BQL = Below Quantitation Limit
PQL = Practical Quantitation Limit

CMF 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Herbicide Organic Analytical Results
SW-846 Method 8150

Client: Ebasco
Lab Sample ID: 236404
Matrix: Soil
Dilution Factor: 1

Client Sample No.: 100210
Client Reference No.: Task #10
Date Received: May 1, 1992
Date Extracted: May 12, 1992

CAS Number	Compound Name	Result Col. 1 µg/kg	Result Col. 2 µg/kg	% RPD	PQL µg/kg	Note
94757	2,4-D	BQL	BQL	NA	68.0	App IX
93721	2,4,5-TP (Silvex)	12.3	14.0	12.3	13.67	App IX
93765	2,4,5-T	24.3 UJ	27.0 UJ	10.0	13.67	App IX

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit
NA = Not Applicable

ejm 12/20/93

U.S. EPA = CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

100210

Lab Name: ECOTEK_LSI_____ Contract: NA_____
Lab Code: ECOTEK Case No.: 2364_ SAS No.: NA____ SDG No.: WPT51_
Matrix (soil/water): SOIL_ Lab Sample ID: 236404____
Level (low/med): LOW__ Date Received: 05/05/92
% Solids: _16.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	6330			P
7440-36-0	Antimony_	88.1			P
7440-38-2	Arsenic__	715		J	P
7440-39-3	Barium___	12400			P
7440-41-7	Beryllium	22.4			P
7440-43-9	Cadmium__	1.3			P
7440-70-2	Calcium__	152000			P
7440-47-3	Chromium_	58.3		J	P
7440-48-4	Cobalt___	10.1			P
7440-50-8	Copper___	3060			P
7439-89-6	Iron_____	11600		J	P
7439-92-1	Lead_____	101			P
7439-95-4	Magnesium	43000		J	P
7439-96-5	Manganese	418		J	P
7439-97-6	Mercury__	0.91		J	CV
7439-98-7	Molybdenu	1350			P
7440-02-0	Nickel___	28.7		J	P
7440-09-7	Potassium	2160			P
7782-49-2	Selenium_	12.4	U		P
7440-22-4	Silver___	16.9	U		P
7440-23-5	Sodium___	16300			P
7440-28-0	Thallium_	52.0		J	P
7440-31-5	Tin_____	16.0			P
7440-62-2	Vanadium_	4530		J	P
7440-66-6_	Zinc_____	102		J	P

EMF 12/20/93

Color Before: RED_____ Clarity Before: NA____ Texture: FINE__
Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

100210

b Name: ECOTEK_LSI Contract: NA

ab Code: ECOTEK Case No.: 2364 SAS No.: NA SDG No.: WPT510

trix (soil/water): WATER Lab Sample ID: 236404

evel (low/med): LOW Date Received: 05/05/92

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2090		J	P
7440-36-0	Antimony	267			P
7440-38-2	Arsenic	60.0	U		P
7440-39-3	Barium	306			P
7440-41-7	Beryllium	11.7			P
7440-43-9	Cadmium	7.8			P
7440-70-2	Calcium	1640000			P
7440-47-3	Chromium	18.0		J	P
7440-48-4	Cobalt	75.0			P
7440-50-8	Copper	2470			P
7439-89-6	Iron	18.2		J	P
7439-92-1	Lead	70.0	U	UJ	P
7439-95-4	Magnesium	379000			P
7439-96-5	Manganese	1700		J	P
7439-97-6	Mercury	7.3			CV
7440-02-0	Nickel	185		J	P
7440-09-7	Potassium	23300			P
7782-49-2	Selenium	110	U		P
7440-22-4	Silver	15.0	U	UJ	P
7440-23-5	Sodium	180000			P
7440-28-0	Thallium	205	U	UJ	P
7440-62-2	Vanadium	1660			P
7440-66-6	Zinc	610			P

CNF 12/20/93

olor Before: COLORLESS Clarity Before: CLEAR Texture: NA

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments:
TCLP EXTRACT

FORM I - IN

ILMO2.1

EcoTek LSI
EcoTek Laboratory Services Incorporated

5559

General Chemistry
Cyanide

Client: Ebasco
LSDG: 2364
Method: SW 846 9010

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit*	Note (Flag)
236401	100213	Sludge	mg/kg	2.72	0.25	U
236402	100212	Sludge	mg/kg	<1.38	0.25	UJ
236403	100214	Sludge	mg/kg	2.87	0.25	U
236404	100210	Sludge	mg/kg	<1.82	0.25	~~UJ~~ UJ
236405	100211	Sludge	mg/kg	<1.72	0.25	UJ
236406	100219	Sludge	mg/kg	<1.38	0.25	UJ
236407	100217	Sludge	mg/kg	2.95	0.25	U
236408	100216	Sludge	mg/kg	2.85	0.25	U
236409	100215	Sludge	mg/kg	<0.96	0.25	UJ
236410	100218	Sludge	mg/kg	2.21	0.25	U

*Detection limit based on a 5.0 gram sample aliquot and 100 % solids.

CMB 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Client: *Ebasco*

Sample Receipt Date: *May 1, 1992*

LSDG: *2364*

Method: *MCAWW 413.2*

Client Reference No.: *Task Order #10*

ANALYTICAL RESULTS
OIL AND GREASE

Lab Sample ID	Client Sample ID	TPH 413.2 (mg/kg)	PQL (mg/kg)
236401	100213	1160	45
236402	100212	1440	44
236403	100214	528	37
236404	100210	100 J	75
236405	100211	272	69
236406	100219	1240	45
236407	100217	369	35
236408	100216	303	33
236409	100215	61	41
236410	100218	463	35

PQL = Practical Quantitation Limits

BQL = Below Quantitaiton Limits

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General Chemistry
pH

Client: Ebasco
LSDG: 2364
Method: SW 846 9045/9041

Client Reference No.: Ebasco 2364 (T. O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/2992

Lab Sample ID	Client ID	Matrix	Units	Result	Note
236401	100213	Sludge	pH of Soil in Water	8	
236402	100212	Sludge	pH of Soil in Water	8	
236403	100214	Sludge	pH of Soil in Water	9	
236404	100210	Sludge	pH of Soil in Water	10	
236405	100211	Sludge	pH of Soil in Water	9	
236406	100219	Sludge	pH of Soil in Water	9	
236407	100217	Sludge	pH of Soil in Water	9	
236408	100216	Sludge	pH of Soil in Water	9	
236409	100215	Sludge	pH of Soil in Water	9	
236410	100218	Sludge	pH of Soil in Water	9	

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General Chemistry
Specific Gravity

Client: Ebasco
LSDG: 2364
Method: Std Method 2710F

Client Reference No.: Ebasco 2364 (T. O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Note
236401	100213	Sludge	SG T/4 Degrees C	1.785	
236402	100212	Sludge	SG T/4 Degrees C	1.377	
236403	100214	Sludge	SG T/4 Degrees C	1.228	
236404	100210	Sludge	SG T/4 Degrees C	1.705	
236405	100211	Sludge	SG T/4 Degrees C	1.023	
236406	100219	Sludge	SG T/4 Degrees C	1.840	
236407	100217	Sludge	SG T/4 Degrees C	1.328	
236408	100216	Sludge	SG T/4 Degrees C	1.285	
236409	100215	Sludge	SG T/4 Degrees C	1.539	
236410	100218	Sludge	SG T/4 Degrees C	1.449	

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General Chemistry
Bromide

Client: Ebasco
LSDG: 2364
Method: EPA 300.0

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit*	Note
236401	100213	Sludge	mg/kg	<1780	500	Dil. = 10
236402	100212	Sludge	mg/kg	<1730	500	Dil. = 10
236403	100214	Sludge	mg/kg	<1330	500	Dil. = 10
236404	100210	Sludge	mg/kg	<2980	500	Dil. = 10
236405	100211	Sludge	mg/kg	<2740	500	Dil. = 10
236406	100219	Sludge	mg/kg	<1440	500	Dil. = 10
236407	100217	Sludge	mg/kg	<1330	500	Dil. = 10
236408	100216	Sludge	mg/kg	<1100	500	Dil. = 10
236409	100215	Sludge	mg/kg	<1470	500	Dil. = 10
236410	100218	Sludge	mg/kg	<1270	500	Dil. = 10

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

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5559

General Chemistry
Chloride

Client: Ebasco
LSDG: 2364
Method: EPA 325.2

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit*	Note
236401	100213	Sludge	mg/kg	<712	200	
236402	100212	Sludge	mg/kg	<691	200	
236403	100214	Sludge	mg/kg	703	200	
236404	100210	Sludge	mg/kg	<1190	200	
236405	100211	Sludge	mg/kg	1380	200	
236406	100219	Sludge	mg/kg	608	200	
236407	100217	Sludge	mg/kg	645	200	
236408	100216	Sludge	mg/kg	568	200	
236409	100215	Sludge	mg/kg	723	200	
236410	100218	Sludge	mg/kg	617	200	

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

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General Chemistry
Total Phosphate

Client: Ebasco
LSDG: 2364
Method: EPA 365.3

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit*	Note
236401	100213	Sludge	mg/kg	791	100	Dil. = 10
236402	100212	Sludge	mg/kg	659	100	Dil. = 10
236403	100214	Sludge	mg/kg	608	100	Dil. = 10
236404	100210	Sludge	mg/kg	1160	100	Dil. = 10
236405	100211	Sludge	mg/kg	1110	100	Dil. = 10
236406	100219	Sludge	mg/kg	536	100	Dil. = 10
236407	100217	Sludge	mg/kg	716	100	Dil. = 10
236408	100216	Sludge	mg/kg	585	100	Dil. = 10
236409	100215	Sludge	mg/kg	672	100	Dil. = 10
236410	100218	Sludge	mg/kg	428	100	Dil. = 10

*Detection limit based on a 0.5 gram sample aliquot in 100 mls final volume and 100 % solids.

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General Chemistry
Total Organic Carbon

Client: Ebasco
LSDG: 2364
Method: Corp of Engineers/1981

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit	Note
236401	100213	Sludge	mg/kg	34900	50	
236402	100212	Sludge	mg/kg	6170	50	
236403	100214	Sludge	mg/kg	13500	50	
236404	100210	Sludge	mg/kg	3870	50	
236405	100211	Sludge	mg/kg	2610	50	
236406	100219	Sludge	mg/kg	17000	50	
236407	100217	Sludge	mg/kg	20600	50	
236408	100216	Sludge	mg/kg	>35000	50	
236409	100215	Sludge	mg/kg	15600	50	
236410	100218	Sludge	mg/kg	33500	50	

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General Chemistry
Total Kjeldahl Nitrogen

Client: Ebasco
LSDG: 2364
Method: EPA 351.2

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit*	Note
236401	100213	Sludge	mg/kg	1450	160	Dil. = 10
236402	100212	Sludge	mg/kg	1940	160	Dil. = 10
236403	100214	Sludge	mg/kg	823	160	Dil. = 10
236404	100210	Sludge	mg/kg	1750	160	Dil. = 10
236405	100211	Sludge	mg/kg	1580	160	Dil. = 10
236406	100219	Sludge	mg/kg	1340	160	Dil. = 10
236407	100217	Sludge	mg/kg	797	160	Dil. = 10
236408	100216	Sludge	mg/kg	520	160	Dil. = 10
236409	100215	Sludge	mg/kg	378	32	Dil. = 2
236410	100218	Sludge	mg/kg	679	160	Dil. = 10

*Detection limit is based on a 0.5 gram sample aliquot and 100 % solids.

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EcoTek LSI
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General Chemistry
Sulfate

Client: Ebasco
LSDG: 2364
Method: EPA 375.4

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit	Note
236401	100213	Sludge	mg/kg	534	100	
236402	100212	Sludge	mg/kg	5230	100	
236403	100214	Sludge	mg/kg	4630	100	
236404	100210	Sludge	mg/kg	11400	100	
236405	100211	Sludge	mg/kg	10200	100	
236406	100219	Sludge	mg/kg	1570	100	
236407	100217	Sludge	mg/kg	4100	100	
236408	100216	Sludge	mg/kg	366	100	
236409	100215	Sludge	mg/kg	6790	100	
236410	100218	Sludge	mg/kg	3500	100	

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General Chemistry
Nitrate / Nitrite

Client: Ebasco
LSDG: 2364
Method: EPA 353.1

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit*	Note
236401	100213	Sludge	mg/kg	13400	125	Dil. = 25
236402	100212	Sludge	mg/kg	23000	500	Dil. = 100
236403	100214	Sludge	mg/kg	11600	125	Dil. = 25
236404	100210	Sludge	mg/kg	53800	500	Dil. = 100
236405	100211	Sludge	mg/kg	49500	500	Dil. = 100
236406	100219	Sludge	mg/kg	18200	500	Dil. = 100
236407	100217	Sludge	mg/kg	8190	125	Dil. = 25
236408	100216	Sludge	mg/kg	7470	125	Dil. = 25
236409	100215	Sludge	mg/kg	17000	125	Dil. = 25
236410	100218	Sludge	mg/kg	7560	125	Dil. = 25

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

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EcoTek LSI
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General Chemistry
Ammonia

Client: Ebasco
LSDG: 2364
Method: EPA 350.1

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit	Note
236401	100213	Sludge	mg/kg	1260	12.0	Dil. = 4
236402	100212	Sludge	mg/kg	1510	12.0	Dil. = 4
236403	100214	Sludge	mg/kg	393	3.0	
236404	100210	Sludge	mg/kg	2410	12.0	Dil. = 4
236405	100211	Sludge	mg/kg	1580	3.0	
236406	100219	Sludge	mg/kg	1210	12.0	Dil. = 4
236407	100217	Sludge	mg/kg	171	3.0	
236408	100216	Sludge	mg/kg	160	3.0	
236409	100215	Sludge	mg/kg	457	3.0	
236410	100218	Sludge	mg/kg	185	3.0	

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General Chemistry
Total Organic Nitrogen

Client: Ebasco
LSDG: 2364
Method: EPA 351.2

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	TKN Result	Ammonia Result	TON* Result
236401	100213	Sludge	mg/kg	1450	1260	190
236402	100212	Sludge	mg/kg	1940	1510	430
236403	100214	Sludge	mg/kg	823	393	430
236404	100210	Sludge	mg/kg	1750	2410	0
236405	100211	Sludge	mg/kg	1580	1580	0
236406	100219	Sludge	mg/kg	1340	1210	130
236407	100217	Sludge	mg/kg	797	171	626
236408	100216	Sludge	mg/kg	520	160	360
236409	100215	Sludge	mg/kg	378	457	0
236410	100218	Sludge	mg/kg	679	185	494

TON* = TKN value minus ammonia value.

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General Chemistry
Cyanide

Client: Ebasco
LSDG: 2364
Method: SW 846 9010

Client Reference No.: Ebasco 2364 (T.O. #10)
Date Received: 5/5/92
Date Sampled: 4/28/92 - 4/29/92

Lab Sample ID	Client ID	Matrix	Units	Result	Detection Limit*	Note
236401	100213	Leachate	mg/l	0.009	0.003	
236402	100212	Leachate	mg/l	0.008	0.003	
236403	100214	Leachate	mg/l	0.011	0.003	
236404	100210	Leachate	mg/l	<0.003	0.003	UJ
236405	100211	Leachate	mg/l	0.004	0.003	
236406	100219	Leachate	mg/l	<0.003	0.003	
236407	100217	Leachate	mg/l	0.011	0.003	
236408	100216	Leachate	mg/l	0.013	0.003	
236409	100215	Leachate	mg/l	0.007	0.003	
236410	100218	Leachate	mg/l	0.006	0.003	

*Detection limit based on a 500 ml sample aliquot.

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ANALYTICAL RESULTS
LSDG: 2364

WEMCO ID	LAB SAMPLE ID	PARAMATER	REL. #	DATE COLL.	DATE REC.	DATE ANALYZED	METHOD	MATRIX	ACTIVITY	ONE-SIGMA COUNTING ERROR	MDA	UNITS	VOL. or SIZE	COUNTER EFFICIENCY	COUNT TIME	BKG COUNTS	BKG SIGMA	TPU at OSL	REQUIRED DETECTION LIMITS	ANLST INITIALS	CHEM. REC.	% MOIST.
100210	236404	CERIUM 144	10	4/29/92	5/5/92	6/29/92	RL-2151	SLUDGE	ND	NA	2.1	PCI/G	90.76 G	5.9	1000 M	573008	757	NA		LBA/HMW/WBS	NA	NA
100210	236404	CESIUM 134	10	4/29/92	5/5/92	6/29/92	RL-2151	SLUDGE	1.2	0.1	NA	PCI/G	90.76 G	1.6	1000 M	91275	302	12		LBA/HMW/WBS	NA	NA
100210	236404	CESIUM 137	10	4/29/92	5/5/92	6/29/92	RL-2151	SLUDGE	22	1.4	NA	PCI/G	90.76 G	1.5	1000 M	83068	288	6		LBA/HMW/WBS	NA	NA
100210	236404	GROSS ALPHA	10	4/28/92	5/5/92	7/10/92	RL-2302	SLUDGE	1460	35	3.8	PCI/G	0.43 G	29	60M	10	3	2		WBS	NA	NA
100210	236404	GROSS BETA	10	4/28/92	5/5/92	7/10/92	RL-2302	SLUDGE	496	12	2.8	PCI/G	0.43 G	30	60M	78	9	2		WBS	NA	NA
100210	236404	MOLYBDENUM 99	10	4/29/92	5/5/92	6/29/92	RL-2151	SLUDGE	ND	NA	0.4	PCI/G	90.76 G	5.8	1000 M	611719	782	NA		LBA/HMW/WBS	NA	NA
100210	236404	NEPTUNIUM 237	10	4/28/92	5/5/92	7/1/92	RL-2307	SLUDGE	20 R	1.2	0.11	PCI/G	1.0 G	14	1000 M	3	2	6	1.0 PCI/L	WBS	50	NA
100210	236404	PLUTONIUM 238	10	4/28/92	5/5/92	7/12/92	RL-2325	SLUDGE	ND	NA	0.07	PCI/G	1.0 G	14	1000 M	4	2	NA		WBS	56	NA
100210	236404	PLUTONIUM 239/240	10	4/28/92	5/5/92	7/12/92	RL-2325	SLUDGE	ND	NA	0.05	PCI/G	1.0 G	14	1000 M	1	1	NA		WBS	56	NA
100210	236404	PLUTONIUM 242	10	4/28/92	5/5/92	7/12/92	RL-2325	SLUDGE	ND	NA	0.05	PCI/G	1.0 G	14	1000 M	1	1	NA		WBS	56	NA
100210	236404	POTASSIUM 40	10	4/29/92	5/5/92	6/29/92	RL-2151	SLUDGE	ND	NA	3.8	PCI/G	90.76 G	0.7	1000 M	43486	209	NA		LBA/HMW/WBS	NA	NA
100210	236404	RADIUM 226	10	4/28/92	5/5/92	7/5/92	RL-2313	SLUDGE	27	6	0.5	PCI/G	1.0 G	20	100 M	22	5	24	1.0 PCI/G	HMW	91	NA
100210	236404	RADIUM 228	10	4/28/92	5/5/92	7/2/92	RL-2313	SLUDGE	ND	ND	2.9	PCI/G	1.0 G	45.7	100 M	196	14	NA	NA	HMW	47	NA
100210	236404	RUTHENIUM 106	10	4/29/92	5/5/92	6/29/92	RL-2151	SLUDGE	ND	NA	2.6	PCI/G	90.76 G	1.9	1000 M	82250	287	NA		LBA/HMW/WBS	NA	NA
100210	236404	THORIUM 228	10	4/28/92	5/5/92	8/20/92	RL-2318	SLUDGE	0.5 J	0.2	0.5	PCI/G	0.1 G	15	1000 M	2	1	31	0.05 PCI/G	LBA	63	NA
100210	236404	THORIUM 230	10	4/28/92	5/5/92	8/20/92	RL-2318	SLUDGE	188 J	15	0.1	PCI/G	0.1 G	15	1000 M	0	0	8	0.05 PCI/G	LBA	63	NA
100210	236404	THORIUM 232	10	4/28/92	5/5/92	8/20/92	RL-2318	SLUDGE	0.3 J	0.1	0.1	PCI/G	0.1 G	15	1000 M	0	0	32	0.05 PCI/G	LBA	63	NA
100210	236404	TOTAL URANIUM	10	4/28/92	5/5/92	7/1/92	RL-2323	SLUDGE	667	20	7	UG/G	1.42 G	NA	NA	NA	NA	3	1.0 UG/G	NV	NA	NA
100210	236404	URANIUM 234	10	4/28/92	5/5/92	7/11/92	RL-2322	SLUDGE	172	28	2	PCI/G	0.01 G	15	1000 M	1	1	16		WBS	78	NA
100210	236404	URANIUM 235	10	4/28/92	5/5/92	7/11/92	RL-2322	SLUDGE	ND	NA	2	PCI/G	0.01 G	15	1000 M	1	1	NA		WBS	78	NA
100210	236404	URANIUM 238	10	4/28/92	5/5/92	7/11/92	RL-2322	SLUDGE	224	35	2	PCI/G	0.01 G	15	1000 M	1	1	16		WBS	78	NA

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Volatile Organic Analytical Results

Appendix B by SW-846 Method 8240 (Modified)

Client: Ebasco
Lab Sample ID: 238401RE
Matrix: Soil
Dilution Factor: 1

Client Sample No.: 100225
Client Project: Task Order # 10
Date Collected: May 4, 1992
Date Analyzed: May 15, 1992

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
74873	HSL	Chloromethane	BQL	71	
74839	HSL	Bromomethane	BQL	71	
75014	HSL	Vinyl Chloride	BQL	71	
75003	HSL	Chloroethane	BQL	71	
75092	HSL	Methylene Chloride	BQL	36	
67641	HSL	Acetone	380	710	*
75150	HSL	Carbon Disulfide	BQL	36	
75354	HSL	1,1-Dichloroethene	BQL	36	
75343	HSL	1,1-Dichloroethane	BQL	36	
156605	HSL	1,2-Dichloroethene (total)	BQL	36	
67663	HSL	Chloroform	BQL	36	
107062	HSL	1,2-Dichloroethane	BQL	36	
78933	HSL	2-Butanone	100	710	*
71556	HSL	1,1,1-Trichloroethane	BQL	36	
56235	HSL	Carbon Tetrachloride	BQL	36	
108054	HSL	Vinyl Acetate	BQL	360	
75274	HSL	Bromodichloromethane	BQL	36	
78875	HSL	1,2-Dichloropropane	BQL	36	
10061015	HSL	cis-1,3-Dichloropropene	BQL	36	
79016	HSL	Trichloroethene	15	36	•
124481	HSL	Dibromochloromethane	BQL	36	
79005	HSL	1,1,2-Trichloroethane	BQL	36	

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Lab Sample ID: 238401RE Client Sample No.: 100225

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
71432	HSL	Benzene	BQL	36	
10061026	HSL	Trans-1,3-Dichloropropene	BQL	36	
75252	HSL	Bromoform	BQL	36	
108101	HSL	4-Methyl-2-pentanone	BQL	360	
591786	HSL	2-Hexanone	BQL	360	
127184	HSL	Tetrachloroethene	250	36	
79345	HSL	1,1,2,2-Tetrachloroethane	BQL	36	
108883	HSL	Toluene	41	36	
108907	HSL	Chlorobenzene	BQL	36	
100414	HSL	Ethylbenzene	BQL	36	
100425	HSL	Styrene	BQL	36	
1330207	HSL	Xylene (total)	BQL	36	
110758	HSL	2-Chloroethyl vinyl ether	BQL	71	
75694	ApIX	Trichlorofluoromethane	BQL	36	
74884	ApIX	Iodomethane	BQL	36	
750508	ApIX	Acetonitrile	BQL	710	
107028	ApIX	Acrolein	BQL	360	
107131	ApIX	Acrylonitrile	BQL	360	
126998	ApIX	Allyl chloride	BQL	710	
78831	ApIX	Isobutyl alcohol	BQL	360	
126987	ApIX	Methacrylonitrile	BQL	36	
123911	ApIX	1,4-Dioxane	BQL	1100	
107051	ApIX	Chloroprene	BQL	36	
107120	ApIX	Propionitrile	BQL	36	
106934	ApIX	1,2-Dibromoethane	BQL	36	

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Lab Sample ID:	238401RE		Client Sample No.: 100225		
CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
74953	ApIX	Dibromomethane	BQL	36	
110576	ApIX	trans-1,4-Dichloro-2-butene	BQL	36	
97632	ApIX	Ethyl methacrylate	BQL	36	
630206	ApIX	1,1,1,2-Tetrachloroethane	BQL	36	
96184	ApIX	1,2,3-Trichloropropane	BQL	36	
76017	ApIX	Pentachloroethane	BQL	36	
96128	ApIX	1,2-Dibromo-3-chloropropane	BQL	71	
80626	ApIX	Methyl methacrylate	BQL	36	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

* = *Indicates an estimated value when the mass spectral data indicate the presence of a compound that meets the identification criteria in which the result is less than the practical quantitation limit but greater than zero.*

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable contamination and warns the data user to take appropriate action.

 # = See Case Narrative

12/22/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	EBASCO	Client Sample No.:	100225
Lab Sample ID:	238401	Client Reference No.:	Task #10
Matrix:	Water	Date Received:	May 7, 1992
Dilution Factor:	1	Date Analyzed:	July 2, 1992

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
74873	Chloromethane	BQL UJ	10	
74839	Bromomethane	BQL	10	
75014	Vinyl Chloride	BQL	10	
75003	Chloroethane	BQL	10	
75092	Methylene Chloride	27 J	5	B
67641	Acetone	19 UJ	100	~~B~~
75150	Carbon Disulfide	BQL	5	
75354	1,1-Dichloroethene	BQL	5	
75343	1,1-Dichloroethane	BQL	5	
156605	1,2-Dichloroethene (total)	BQL	5	
67663	Chloroform	BQL	5	
107062	1,2-Dichloroethane	BQL	5	
78933	2-Butanone	BQL	100	
71556	1,1,1-Trichloroethane	BQL	5	
56235	Carbon Tetrachloride	BQL	5	
108054	Vinyl Acetate	BQL	50	
75274	Bromodichloromethane	BQL	5	
78875	1,2-Dichloropropane	BQL	5	
10061015	cis-1,3-Dichloropropene	BQL	5	
79016	Trichloroethene	BQL	5	
124481	Dibromochloromethane	BQL	5	
79005	1,1,2-Trichloroethane	BQL	5	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 238401		Client Sample No.: 100225		
CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
71432	Benzene	BQL UJ	5	
10061026	Trans-1,3-Dichloropropene	BQL	5	
75252	Bromoform	BQL	5	
108101	4-Methyl-2-pentanone	BQL	50	
591786	2-Hexanone	BQL	50	
127184	Tetrachloroethene	3 J	5	*
79345	1,1,2,2-Tetrachloroethane	BQL UJ	5	
108883	Toluene	BQL	5	
108907	Chlorobenzene	BQL	5	
100414	Ethylbenzene	BQL	5	
100425	Styrene	BQL	5	
1330207	Xylene (total)	BQL	5	
110758	2-Chloroethyl vinyl ether	BQL	10	

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PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

* = *Indicates an estimated value when the mass spectral data indicate the presence of a compound that meets the identification criteria in which the result is less than the practical quantitation limit but greater than zero.*

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable contamination and warns the data user to take appropriate action.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Tentatively Identified Compounds

Lab Sample ID: 238401 Client Sample No.: 100225

Compound	RT or Scan	Result ug/l
No TICs found		N/A

N/A = Not Applicable

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Attachment B

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Appendix B Organic Analytical Results
SW-846 Method 8270 (modified)

Client: Ebasco
Lab Sample ID: 238401
Matrix: Sludge
Dilution Factor: 1

Client Sample No.: 100225
Client Reference No.: Task Order #10
Date Received: May 7,1992
Date Extracted: May 15,1992

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
108952	NOL	Phenol	BQL	1200	
62759	HSL/ApIX	N-Nitrosodimethylamine	BQL	1200	
111444	HSL/ApIX	bis(2-Chloroethyl)ether	BQL	1200	
95578	HSL/ApIX	2-Chlorophenol	BQL	1200	
541731	HSL/ApIX	1,3-Dichlorobenzene	BQL	1200	
106467	HSL/ApIX	1,4-Dichlorobenzene	BQL	1200	
100516	HSL/ApIX	Benzyl alcohol	BQL	2300	
95501	HSL/ApIX	1,2-Dichlorobenzene	BQL	1200	
95487	HSL/ApIX	2-Methylphenol	BQL	1200	
108601	HSL/ApIX	bis(2-Chloroisopropyl)ether	BQL	1200	
106445	HSL/ApIX	4-Methylphenol	BQL	1200	
621647	HSL/ApIX	N-Nitroso-di-n-propylamine	BQL	1200	
67721	HSL/ApIX	Hexachloroethane	BQL	1200	
98953	HSL/ApIX	Nitrobenzene	BQL	1200	
78591	HSL/ApIX	Isophorone	BQL	1200	
88755	HSL/ApIX	2-Nitrophenol	BQL	1200	
105679	HSL/ApIX	2,4-Dimethylphenol	BQL	1200	
65850	NOL	Benzoic acid	BQL	5800	
111911	HSL/ApIX	bis(2-Chloroethoxy)methane	BQL	1200	
120832	HSL/ApIX	2,4-Dichlorophenol	BQL	1200	
120821	HSL/ApIX	1,2,4-Trichlorobenzene	BQL	1200	
91203	HSL/ApIX	Naphthalene	BQL	1200	
106478	HSL/ApIX	4-Chloroaniline	BQL	2300	
87683	HSL/ApIX	Hexachlorobutadiene	BQL	1200	

12/2/03

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EcoTek Laboratory Services Incorporated

Lab Sample ID: 238401 Client Sample No.: 100225

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
59507	HSL/ApIX	4-Chloro-3-methylphenol	BQL	2300	
91576	HSL/ApIX	2-Methylnaphthalene	BQL	1200	
77474	HSL/ApIX	Hexachlorocyclopentadiene	BQL	1200	
88062	HSL/ApIX	2,4,6-Trichlorophenol	BQL	1200	
95954	HSL/ApIX	2,4,5-Trichlorophenol	BQL	5800	
91587	HSL/ApIX	2-Chloronaphthalene	BQL	1200	
88744	HSL/ApIX	2-Nitroaniline	BQL	5800	
131113	HSL/ApIX	Dimethylphthalate	BQL	1200	
208968	HSL/ApIX	Acenaphthylene	BQL	1200	
606202	HSL/ApIX	2,6-Dinitrotoluene	BQL	1200	
99092	HSL/ApIX	3-Nitroaniline	BQL	5800	
83329	HSL/ApIX	Acenaphthene	BQL	1200	
51285	HSL/ApIX	2,4-Dinitrophenol	BQL	5800	
100027	HSL/ApIX	4-Nitrophenol	BQL	5800	
132649	HSL/ApIX	Dibenzofuran	BQL	1200	
121142	HSL/ApIX	2,4-Dinitrotoluene	BQL	1200	
84662	HSL/ApIX	Diethylphthalate	BQL	1200	
7005723	HSL/ApIX	4-Chlorophenyl-phenylether	BQL	1200	
86737	HSL/ApIX	Fluorene	BQL	1200	
100016	HSL/ApIX	4-Nitroaniline	BQL	5800	
534521	HSL/ApIX	4,6-Dinitro-2-methylphenol	BQL	5800	
86306	HSL/ApIX	N-Nitrosodiphenylamine	BQL	1200	
101553	HSL/ApIX	4-Bromophenyl-phenylether	BQL	1200	
118741	HSL/ApIX	Hexachlorobenzene	BQL	1200	
87865	HSL/ApIX	Pentachlorophenol	BQL	5800	
120127	HSL/ApIX	Anthracene	BQL	1200	
129000	HSL/ApIX	Pyrene	BQL	1200	
218019	HSL/ApIX	Chrysene	BQL	1200	
85018	HSL/ApIX	Phenanthrene	BQL	1200	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 238401 Client Sample No.: 100225

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
84742	HSL/ApIX	Di-n-butylphthalate	BQL	1200	
206440	HSL/ApIX	Fluoranthene	BQL	1200	
85687	HSL/ApIX	Butylbenzylphthalate	BQL	1200	
91941	HSL/ApIX	3,3'-Dichlorobenzidine	BQL	2300	
56553	HSL/ApIX	Benzo(a)anthracene	BQL	1200	
117817	HSL/ApIX	bis(2-Ethylhexyl)phthalate	BQL	1200	
117840	HSL/ApIX	Di-n-octylphthalate	BQL	1200	
205992	HSL/ApIX	Benzo(b)fluoranthene	BQL	1200	
207089	HSL/ApIX	Benzo(k)fluoranthene	BQL	1200	
50328	HSL/ApIX	Benzo(a)pyrene	BQL	1200	
193395	HSL/ApIX	Indeno(1,2,3-cd)pyrene	BQL	1200	
53703	HSL/ApIX	Dibenzo(a,h)anthracene	BQL	1200	
191242	HSL/ApIX	Benzo(g,h,i)perylene	BQL	1200	
86748	HSL	Carbazole	BQL	1200	
98862	ApIX	Acetophenone	BQL	1200	
53963	ApIX	2-Acetylaminofluorene	BQL	2300	
92671	ApIX	4-Aminobiphenyl	BQL	1200	
62533	ApIX	Aniline	BQL	1200	
510156	ApIX	Chlorobenzilate	BQL	5800	
108394	ApIX	3-Methylphenol	BQL	1200	
2303164	ApIX	Diallate	BQL	5800	
87650	ApIX	2,6-Dichlorophenol	BQL	1200	
297972	ApIX	O,O-Diethyl-0,2-pyrazinylphosphorothioate	BQL	1200	
60515	ApIX	Dimethoate	BQL	1200	
60117	ApIX	p-(Dimethylamino)azobenzene	BQL	1200	
57976	ApIX	7,12-Dimethylbenz[a]anthracene	BQL	5800	
119937	ApIX	3,3'-Dimethylbenzidine	BQL	1200	
112098	ApIX	a,a-Dimethylphenethylamine	BQL	1200	

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EcoTek LSI
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Lab Sample ID: 238401 Client Sample No.: 100225

CAS Number	Type	Compound Name	Results ug/kg	PQL ug/kg	Note
99650	ApIX	1,3-Dinitrobenzene	BQL	1200	
88857	ApIX	Dinoseb	BQL	5800	
122394	ApIX	Diphenylamine	BQL	5800	
298044	ApIX	Disulfoton	BQL	1200	
62500	ApIX	Ethyl methanesulfonate	BQL	1200	
52857	ApIX	Famphur	BQL	1200	
70304	ApIX	Hexachlorophene	BQL	12000	
1888717	ApIX	Hexachloropropene	BQL	2300	
465736	ApIX	Isodrin	BQL	1200	
120581	ApIX	Isosafrole	BQL	1200	
143500	ApIX	Kepone	BQL	12000	
91805	ApIX	Methapyrilene-HCL	BQL	5800	
56495	ApIX	3-Methylcholanthrene	BQL	5800	
66273	ApIX	Methyl methanesulfonate	BQL	1200	
298000	ApIX	Methyl parathion	BQL	1200	
130154	ApIX	1,4-Naphthoquinone	BQL	1200	
134327	ApIX	1-Naphthylamine	BQL	5800	
91598	ApIX	2-Naphthylamine	BQL	1200	
56575	ApIX	4-Nitroquinoline 1-oxide	BQL	1200	
55185	ApIX	N-Nitrosodiethylamine	BQL	1200	
924163	ApIX	N-Nitrosodi-n-butylamine	BQL	1200	
10595956	ApIX	N-Nitrosomethylethylamine	BQL	2300	
59892	ApIX	N-Nitrosomorpholine	BQL	1200	
100754	ApIX	N-Nitrosopiperidine	BQL	1200	
930552	ApIX	N-Nitrosopyrrolidine	BQL	1200	
99558	ApIX	5-Nitro-o-toluidine	BQL	5800	
56382	ApIX	Parathion	BQL	1200	
608935	ApIX	Pentachlorobenzene	BQL	5800	

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Lab Sample ID: 238401 Client Sample No.: 100225

CAS Number	Type	Compound Name	Result ug/kg	PQL ug/kg	Note
82688	ApIX	Pentachloronitrobenzene	BQL	1200	
62442	ApIX	Phenacetin	BQL	1200	
298022	ApIX	Phorate	BQL	5800	
109068	ApIX	2-Picoline	BQL	5800	
23950585	ApIX	Pronamide	BQL	1200	
110861	ApIX	Pyridine	BQL	1200	
94597	ApIX	Safrole	BQL	5800	
95943	ApIX	1,2,4,5-Tetrachlorobenzene	BQL	5800	
58902	ApIX	2,3,4,6-Tetrachlorophenol	BQL	1200	
95534	ApIX	o-Toluidine	BQL	1200	
126681	ApIX	O,O,O-Triethylphosphorothioate	BQL	1200	
99354	ApIX	1,3,5-Trinitrobenzene	BQL	1200	

HSL = Hazardous Substance List Compounds

ApIX = Appendix IX Compounds

NOL = Not on Appendix B List

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

* = Indicates an estimated value when the mass spectral data indicate the presence of a compound that meets the identification criteria in which the result is less than the practical quantitation limit but greater than zero.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable contamination and warns the data user to take appropriate action.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile HSL Organic Analytical Results
SW-846 Method 8270 (modified)

Client: Ebasco
Lab Sample ID: 238401
Matrix: Leachate
Dilution Factor: 1

Client Sample No.: 100225
Client Reference No.: Task Order #10
Date Received: May 7, 1992
Date Extracted: May 22, 1992

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
111444	bis(2-Chloroethyl)ether	BQL	10	
95578	2-Chlorophenol	BQL	10	
541731	1,3-Dichlorobenzene	BQL	10	
106467	1,4-Dichlorobenzene	BQL	10	
100516	Benzyl alcohol	BQL	19	
95501	1,2-Dichlorobenzene	BQL	10	
95487	2-Methylphenol	BQL	10	
108601	bis(2-Chloroisopropyl)ether	BQL	10	
106445	4-Methylphenol	BQL	10	
621647	N-Nitroso-di-n-propylamine	BQL	10	
67721	Hexachloroethane	BQL	10	
98953	Nitrobenzene	BQL	10	
78591	Isophorone	BQL	10	
88755	2-Nitrophenol	BQL	10	
105679	2,4-Dimethylphenol	BQL	10	
111911	bis(2-Chloroethoxy)methane	BQL	10	
120832	2,4-Dichlorophenol	BQL	10	
120821	1,2,4-Trichlorobenzene	BQL	10	
91203	Naphthalene	BQL	10	
106478	4-Chloroaniline	BQL	19	
87683	Hexachlorobutadiene	BQL	10	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 238401 Client Sample No.: 100225

CAS Number	Compound Name	Result ug/l	PQL ug/l	Note
59507	4-Chloro-3-methylphenol	BQL	19	
91576	2-Methylnaphthalene	BQL	10	
77474	Hexachlorocyclopentadiene	BQL	10	
88062	2,4,6-Trichlorophenol	BQL	10	
95954	2,4,5-Trichlorophenol	BQL	47	
91587	2-Chloronaphthalene	BQL	10	
88744	2-Nitroaniline	BQL	47	
131113	Dimethylphthalate	BQL	10	
208968	Acenaphthylene	BQL	10	
606202	2,6-Dinitrotoluene	BQL	10	
99092	3-Nitroaniline	BQL	47	
83329	Acenaphthene	BQL	10	
51285	2,4-Dinitrophenol	BQL	47	
100027	4-Nitrophenol	BQL	47	
132649	Dibenzofuran	BQL	10	
121142	2,4-Dinitrotoluene	BQL	10	
84662	Diethylphthalate	BQL	10	
7005723	4-Chlorophenyl-phenylether	BQL	10	
86737	Fluorene	BQL	10	
100016	4-Nitroaniline	BQL	47	
534521	4,6-Dinitro-2-methylphenol	BQL	47	
86306	N-Nitrosodiphenylamine	BQL	10	
101553	4-Bromophenyl-phenylether	BQL	10	
118741	Hexachlorobenzene	BQL	10	
87865	Pentachlorophenol	BQL	47	
120127	Anthracene	BQL	10	
129000	Pyrene	BQL	10	
218019	Chrysene	BQL	10	
85018	Phenanthrene	BQL	10	

12/22/92

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID:	238401	Client Sample No.:	100225	
CAS Number	**Compound Name**	**Result ug/l**	**PQL ug/l**	**Note**
84742	Di-n-butylphthalate	BQL	10	
206440	Fluoranthene	BQL	10	
85687	Butylbenzylphthalate	BQL	10	
91941	3,3'-Dichlorobenzidine	BQL	19	
56553	Benzo(a)anthracene	BQL	10	
117817	bis(2-Ethylhexyl)phthalate	BQL	10	
117840	Di-n-octylphthalate	BQL	10	
205992	Benzo(b)fluoranthene	BQL	10	
207089	Benzo(k)fluoranthene	BQL	10	
50328	Benzo(a)pyrene	BQL	10	
193395	Indeno(1,2,3-cd)pyrene	BQL	10	
53703	Dibenzo(a,h)anthracene	BQL	10	
191242	Benzo(g,h,i)perylene	BQL	10	
86748	Carbazole	BQL	10	

CMD 12/2/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

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Pesticide Analytical Results
SW-846, Method 8080

Client: Ebasco
Lab Sample ID: 238401
Matrix: Soil
Dilution: 1

Client Sample ID: 100225
Client Reference No.: Task Order #10
Date of Extraction: May 15,1992
Date of Analysis: May 20,1992

CAS Number	Compound Name	Result µg/kg	PQL µg/kg	Note
319846	Alpha-BHC	BQL	12	A H
319857	Beta-BHC	BQL	12	A H
319868	Delta-BHC	BQL	12	A H
58899	Gamma-BHC	BQL	12	A H
76448	Heptachlor	BQL	12	A H
309002	Aldrin	BQL	12	A H
1024573	Heptachlor Epoxide	BQL	12	A H
959988	Endosulfan I	BQL	12	A H
60571	Dieldrin	BQL	23	A H
72559	4,4' - DDE	BQL	23	A H
72208	Endrin	BQL	23	A H
33213659	Endosulfan II	BQL	23	A H
72548	4,4'-DDD	BQL	23	A H
1031078	Endosulfan Sulfate	BQL	23	A H
50293	4,4' - DDT	BQL	23	A H
72435	Methoxychlor	BQL	120	A H
7421363	Endrin Aldehyde	BQL	23	A H
53494705	Endrin Ketone	BQL	23	H
5103719	alpha-Chlordane	BQL	12	H
5103742	gamma-Chlordane	BQL	12	H
57749	Chlordane	BQL	230	A
8001352	Toxaphene	BQL	1160	A H

BQL = Below Quantitation Limit
PQL = Practical Quantitation Limit

12/2/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

PCB Analytical Results
SW-846, Method 8080

Client: Ebasco
Lab Sample ID: 238401
Matrix: Soil
Dilution: 1

Client Sample ID: 100225
Client Reference No.: Task Order #10
Date of Extraction: May 15,1992
Date of Analysis: May 20,1992

CAS Number	Compound Name	Result µg/kg	PQL µg/kg	Note
12674112	Arochlor-1016	BQL	290	A H
11104282	Arochlor-1221	BQL	290	A H
11141165	Arochlor-1232	BQL	290	A H
53469219	Arochlor-1242	BQL	290	A H
12672296	Arochlor-1248	BQL	290	A H
11097691	Arochlor-1254	BQL	290	A H
11096825	Arochlor-1260	BQL	290	A H

BQL = Below Quantitation Limit
PQL = Practical Quantitation Limit

CMF
12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Pesticide Analytical Results
SW-846, Method 8080

Client: Ebasco
Lab Sample ID: 238401T
Matrix: Leachate
Dilution: 1

Client Sample ID: 100225
Client Reference No.: Task #10
Date of Extraction: May 22,1992
Date of Analysis: June 4,1992

CAS Number	Compound Name	Result µg/l	PQL µg/l	Note
319846	Alpha-BHC	BQL	0.045	
319857	Beta-BHC	BQL	0.045	
319868	Delta-BHC	BQL	0.045	
58899	Gamma-BHC	BQL	0.045	
76448	Heptachlor	BQL	0.045	
309002	Aldrin	BQL	0.045	
1024573	Heptachlor Epoxide	BQL	0.045	
959988	Endosulfan I	BQL	0.045	
60571	Dieldrin	BQL	0.091	
72559	4,4' - DDE	BQL	0.091	
72208	Endrin	BQL	0.091	
33213659	Endosulfan II	BQL	0.091	
72548	4,4'-DDD	BQL	0.091	
1031078	Endosulfan Sulfate	BQL	0.091	
50293	4,4' - DDT	BQL	0.091	
72435	Methoxychlor	BQL	0.45	
7421363	Endrin Aldehyde	BQL	0.091	
53494705	Endrin Ketone	BQL	0.091	
5103719	alpha-Chlordane	BQL	0.045	
5103742	gamma-Chlordane	BQL	0.045	
8001352	Toxaphene	BQL	4.5	

BQL = Below Quantitation Limit
PQL = Practical Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

PCB Analytical Results
SW-846, Method 8080

Client: Ebasco
Lab Sample ID: 238401T
Matrix: Leachate
Dilution: 1

Client Sample ID: 100225
Client Reference No.: Task #10
Date of Extraction: May 22,1992
Date of Analysis: June 4,1992

CAS Number	Compound Name	Result µg/l	PQL µg/l	Note
12674112	Arochlor-1016	BQL	1.1	
11104282	Arochlor-1221	BQL	1.1	
11141165	Arochlor-1232	BQL	1.1	
53469219	Arochlor-1242	BQL	1.1	
12672296	Arochlor-1248	BQL	1.1	
11097691	Arochlor-1254	BQL	1.1	
11096825	Arochlor-1260	BQL	1.1	

BQL = Below Quantitation Limit
PQL = Practical Quantitation Limit

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12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Herbicide Organic Analytical Results
SW-846 Method 8150

Client:	Ebasco	Client Sample No.:	100225
Lab Sample ID:	238401	Client Reference No.:	Task Order #10
Matrix:	Soil	Date Received:	May 7, 1992
Dilution Factor:	1	Date Extracted:	May 18, 1992

CAS Number	Compound Name	Result Col. 1 µg/kg	Result Col. 2 µg/kg	%RPD	PQL µg/kg	Note
94757	2,4-D	BQL	BQL	NA	56.0	App IX
93721	2,4,5-TP (Silvex)	BQL	BQL	NA	11.18	App IX
93765	2,4,5-T	BQL	BQL	NA	11.18	App IX

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit
NA = Not Applicable

EMS 12/22/93

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

100225

ab Name: ECOTEK_LSI Contract: NA
ab Code: ECOTEK Case No.: 2384 SAS No.: NA SDG No.: WPT61
atrix (soil/water): SOIL Lab Sample ID: 238401
evel (low/med): LOW Date Received: 05/07/92
Solids: 14.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17000			P
7440-36-0	Antimony	6.9	~~U~~	UJ	P ~~UJ~~
7440-38-2	Arsenic	36.6			P
7440-39-3	Barium	58.2			P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.63	U		P
7440-70-2	Calcium	138000		J	P
7440-47-3	Chromium	5.2			P
7440-48-4	Cobalt	4.0			P
7440-50-8	Copper	5.8			P
7439-89-6	Iron	14800			P
7439-92-1	Lead	51.4			P
7439-95-4	Magnesium	18700			P
7439-96-5	Manganese	312			P
7439-97-6	Mercury	0.00	U		CV
7439-98-7	Molybdenu	2.5	U		P
7440-02-0	Nickel	22.7			P
7440-09-7	Potassium	3760			P
7782-49-2	Selenium	139	U		P
7440-22-4	Silver	2.7			P
7440-23-5	Sodium	315			P
7440-28-0	Thallium	25.9	U		P
7440-31-5	Tin	9.9			P
7440-62-2	Vanadium	15.8	U		P
7440-66-6	Zinc	61.0			P

ctm 12/22/93

lor Before: GREEN Clarity Before: NA Texture: FINE
lor After: YELLOW Clarity After: CLEAR Artifacts:

ents:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

100225

Name: ECOTEK_LSI Contract: NA

Lab Code: ECOTEK Case No.: 2384 SAS No.: NA SDG No.: WPT61

Matrix (soil/water): WATER Lab Sample ID: 238401

Level (low/med): LOW Date Received: 05/07/92

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18100			P
7440-36-0	Antimony	110	U		P
7440-38-2	Arsenic	400			P
7440-39-3	Barium	754			P
7440-41-7	Beryllium	6.5			P
7440-43-9	Cadmium	10.0	U		P
7440-70-2	Calcium	1350000			P
7440-47-3	Chromium	200	~~U~~	UJ	P
7440-48-4	Cobalt	20.0	U		P
7440-50-8	Copper	200	~~U~~	UJ	P
7439-89-6	Iron	558			P
7439-92-1	Lead	461			P
7439-95-4	Magnesium	114000			P
7439-96-5	Manganese	1750			P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	77.5			P
7440-09-7	Potassium	4410			P
7782-49-2	Selenium	2200	~~U~~	R	P
7440-22-4	Silver	40.9			P
7440-23-5	Sodium	80900			P
7440-28-0	Thallium	567			P
7440-62-2	Vanadium	300	~~U~~	R	P
7440-66-6	Zinc	514			P

EMS 12/20/93

Color Before: YELLOW Clarity Before: CLEAR Texture: NA

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:
TCLP_EXTRACT

FORM I - IN

ILMO2.1

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Cyanide

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: SW 846 9010

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/kg	<1.74	0.25	
238402	100233	mg/kg	<2.02	0.25	
238403	100229	mg/kg	<2.12	0.25	
238404	100226	mg/kg	<1.38	0.25	
238405	100227	mg/kg	<3.22	0.25	
238406	100228	mg/kg	<0.42	0.25	
238407	100231	mg/kg	<2.5	0.25	
238408	100230	mg/kg	<2.06	0.25	
238409	100232	mg/kg	<2.08	0.25	

*Detection limit based on a 5.0 gram sample aliquot and 100 % solids.

CMF 12/22/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

Client: *Ebasco*

Sample Receipt Date: *May 7, 1992*

LSDG: *2384*

Method: *MCAWW 413.2*

Client Reference No.: *Task Order #10*

ANALYTICAL RESULTS
OIL AND GREASE

Lab Sample ID	Client Sample ID	TPH 413.2 (mg/kg)	PQL (mg/kg)
238401	100225	BQL UJ	83
238402	100233	BQL	104
238403	100229	29	18
238404	100226	BQL	71
238405	100227	BQL	72
238406	100228	BQL	22
238407	100231	BQL	34
238408	100230	46	27
238409	100232	BQL	43

PQL = Practical Quantitation Limits

BQL = Below Quantitaiton Limits

EMS 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Total Organic Nitrogen

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 351.2

Lab Sample ID	Client ID	Units	TKN Result	Ammonia Result	TON Result*
238401	100225	mg/kg	653	40.9	612
238402	100233	mg/kg	1030	48.2	982
238403	100229	mg/kg	471	57.9	413
238404	100226	mg/kg	653	141	512
238405	100227	mg/kg	429	44.1	385
238406	100228	mg/kg	348	11.5	337
238407	100231	mg/kg	793	63.2	730
238408	100230	mg/kg	859	58.2	801
238409	100232	mg/kg	774	55.2	719

* TON = TKN value minus ammonia value.

EMT 12/2/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Specific Gravity

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: Std Method 2710F

Lab Sample ID	Client ID	Units	Result	Note
238401	100225	SG T/4 Degrees C	1.037	
238402	100233	SG T/4 Degrees C	1.280	
238403	100229	SG T/4 Degrees C	2.198	
238404	100226	SG T/4 Degrees C	1.228	
238405	100227	SG T/4 Degrees C	1.485	
238406	100228	SG T/4 Degrees C	1.950	
238407	100231	SG T/4 Degrees C	3.017	
238408	100230	SG T/4 Degrees C	1.023	
238409	100232	SG T/4 Degrees C	1.084	

ENF 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
pH

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: SW 846 9045/9041

Lab Sample ID	Client ID	Units	Result	Note
238401	100225	pH of soil in water	13	
238402	100233	pH of soil in water	13	
238403	100229	pH of soil in water	9	
238404	100226	pH of soil in water	13	
238405	100227	pH of soil in water	13	
238406	100228	pH of soil in water	9	
238407	100231	pH of soil in water	7	
238408	100230	pH of soil in water	7	
238409	100232	pH of soil in water	7	

CMK
12/22/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

5559

General Chemistry
Bromide

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 300.0

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/kg	<382	50.0	
238402	100233	mg/kg	<328	50.0	
238403	100229	mg/kg	<36.8	50.0	
238404	100226	mg/kg	<249	50.0	
238405	100227	mg/kg	366	50.0	
238406	100228	mg/kg	<73.8	50.0	
238407	100231	mg/kg	<126	50.0	
238408	100230	mg/kg	<94.7	50.0	
238409	100232	mg/kg	<153	50.0	

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

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12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Ammonia

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 350.1

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/kg	40.9	3.0	
238402	100233	mg/kg	48.2	3.0	
238403	100229	mg/kg	57.9	3.0	
238404	100226	mg/kg	141	3.0	
238405	100227	mg/kg	44.1	3.0	
238406	100228	mg/kg	11.5	3.0	
238407	100231	mg/kg	63.2	3.0	
238408	100230	mg/kg	58.2	3.0	
238409	100232	mg/kg	55.2	3.0	

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

CMF
12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Chloride

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 325.2

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/kg	1990	200	
238402	100233	mg/kg	2080	200	
238403	100229	mg/kg	266	200	
238404	100226	mg/kg	2250	200	
238405	100227	mg/kg	2170	200	
238406	100228	mg/kg	<295	200	
238407	100231	mg/kg	<506	200	
238408	100230	mg/kg	<379	200	
238409	100232	mg/kg	<613	200	

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

CM
12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Nitrate/Nitrite

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 353.1

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/kg	52.4	5.0	
238402	100233	mg/kg	55.4	5.0	
238403	100229	mg/kg	<3.68	5.0	
238404	100226	mg/kg	25.2	5.0	
238405	100227	mg/kg	36.6	5.0	
238406	100228	mg/kg	<7.38	5.0	
238407	100231	mg/kg	<12.6	5.0	
238408	100230	mg/kg	<9.47	5.0	
238409	100232	mg/kg	<15.3	5.0	

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

EMR
12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Total Organic Carbon

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: Corp of Engineers/1981

Lab Sample ID	Client ID	Units	Result	Detection Limit	Note
238401	100225	mg/kg	25400	50	
238402	100233	mg/kg	19900	50	
238403	100229	mg/kg	2510	50	
238404	100226	mg/kg	13100	50	
238405	100227	mg/kg	4180	50	
238406	100228	mg/kg	3070	50	
238407	100231	mg/kg	10800	50	
238408	100230	mg/kg	>35000	50	
238409	100232	mg/kg	18800	50	

emr
12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Total Phosphorus

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 365.3

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/kg	3850 ~~(U)~~ J	20.0	Dil. = 2
238402	100233	mg/kg	3840 (U)	20.0	Dil. = 2
238403	100229	mg/kg	572	100	Dil. = 10
238404	100226	mg/kg	2320 (U)	20.0	Dil. = 2
238405	100227	mg/kg	2580	20.0	Dil. = 2
238406	100228	mg/kg	1420	20.0	Dil. = 2
238407	100231	mg/kg	1460 (U)	100	Dil. = 10
238408	100230	mg/kg	1800	40.0	Dil. = 4
238409	100232	mg/kg	1880	100	Dil. = 10

* Detection limit based on a 0.5 gram sample aliquot and 100 % solids.

(U) = Flag - See case narrative.

emr 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Total Kjeldahl Nitrogen

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 351.2

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/kg	653 (U)	32.0	Dil. = 2
238402	100233	mg/kg	1030 (U)	64.0	Dil. = 4
238403	100229	mg/kg	471	160	Dil. = 10
238404	100226	mg/kg	653 (U)	64.0	Dil. = 4
238405	100227	mg/kg	429	16.0	
238406	100228	mg/kg	348	160	Dil. = 10
238407	100231	mg/kg	793 (U)	160	Dil. = 10
238408	100230	mg/kg	859	160	Dil. = 10
238409	100232	mg/kg	774	160	Dil. = 10

*Detection limit based on a 0.5 gram sample aliquot and 100 % solids.

(U) = Flag - See Case Narrative.

emf 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Sulfate

Client: Ebasco
LSDG: 2384
Matrix: Sludge

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: EPA 375.4

Lab Sample ID	Client ID	Units	Result	Detection Limit	Note
238401	100225	mg/kg	<765	100	
238402	100233	mg/kg	<656	100	
238403	100229	mg/kg	<73.6	100	
238404	100226	mg/kg	<499	100	
238405	100227	mg/kg	<487	100	
238406	100228	mg/kg	1610	100	
238407	100231	mg/kg	<253	100	
238408	100230	mg/kg	1230	100	
238409	100232	mg/kg	1420	100	

*Detection limit based on a 5.0 gram sample aliquot in 500 mls DI water and 100 % solids.

cmf 12/20/93

EcoTek LSI
EcoTek Laboratory Services Incorporated

General Chemistry
Cyanide

Client: Ebasco
LSDG: 2384
Matrix: Leachate

Client Reference No.: T. O. #10
Date Received: 5/7/92
Method: SW 846 9010

Lab Sample ID	Client ID	Units	Result	Detection Limit*	Note
238401	100225	mg/l	0.029	0.003	
238402	100233	mg/l	0.029	0.003	
238403	100229	mg/l	<0.003	0.003	
238404	100226	mg/l	0.018	0.003	
238405	100227	mg/l	0.006	0.003	
238406	100228	mg/l	0.008	0.003	
238407	100231	mg/l	<0.003	0.003	
238408	100230	mg/l	0.003	0.003	
238409	100232	mg/l	0.013	0.003	

*Detection limit based on a 500 ml sample aliquot.

emf 12/20/93

FEMP ID #	LSDG Number	Lab ID #	Sample Matrix	Sampling Date	Sample Units	Gross Alpha		Gross Beta		Cs-137		Ru-106		Ra-226		Ra-228		U-Total		Sr-90	
100225	2384	2384-01	Sludge	05/04/92	PCI/G	~~6380±11~~		7200±80		0.9±0.2		3.3 UJ	UJ	3.2±6.3		13±2.6		18620±672		0.89 UJ	UJ
100233	2384	2384-02	Sludge	05/04/92	PCI/G	4200±120		7500±80		0.9±0.1		1.7	UJ	3.3±6.4		4.9±2.1		1331±54		0.90	UJ
100229	2384	2384-03	Sludge	05/05/92	PCI/G	13000±160		19000±130		14.0±1.2		1.8	UJ	4.1±7.3		79±6.1		8792±316		4.6±1.4	
100226	2384	2384-04	Sludge	05/04/92	PCI/G	11000±160		19000±130		0.9±0.2		3.2	UJ	2.9±6.9		83±6.0		4692±164		3.9±1.2	
100227	2384	2384-05	Sludge	05/05/92	PCI/G	4800±130		9700±90		1.6±0.2		3.6	UJ	4.6±7.4		6.0±2.6		2808±100		0.95	UJ
100228	2384	2384-06	Sludge	05/05/92	PCI/G	6100±100		9000±85		7.6±0.6		1.6	UJ	3.4±6.4		191±8.8		3690±129		3.2±1.6	
100231	2384	2384-07	Sludge	05/04/92	PCI/G	14000±210		16000±130		12.3±0.7		5.6	UJ	4.9±7.6		15±2.9		24746±866		4.3±1.6	
100230	2384	2384-08	Sludge	05/05/92	PCI/G	13000±180		23000±140		10.0±0.8		2.0	UJ	4.4±6.7		26±3.9		11008±396		2.2±1.0	
100232	2384	2384-09	Sludge	05/05/92	PCI/G	5700±130		10000±95		10.5±0.7		4.0	UJ	3.7±6.2		19±3.7		27733±996		1.4±1.2	
100236	2384	2384-11	Water	05/05/92	PCI/L	1.6±1.1		2.1±1.6		6.6	UJ	67	UJ	1.0	UJ	7.6	UJ	0.83	U	5.0	U
100238	2384	2384-12	Water	05/05/92	PCI/L	4.3±0.7		ND		7.1	UJ	56	UJ	0.74	U	3.9	UJ	1.65	UJ	5.0	U
100239	2384	2384-13	Water	05/05/92	PCI/L	4.6±0.8		3.2±1.6		6.2	UJ	42	UJ	0.67	UJ	6.1	UJ	21.9	UJ	5	U
100235	2384	2384-14	Water	05/05/92	PCI/L	21±0.9		11±0.4		3.1	UJ	31	UJ	1.1	UJ	6.2	UJ	22.5	UJ	0.89	UJ

Lab ID #	Tc-99		U-234		U-235/236		U-238		Pu-238		Pu-239/240		Th-228		Th-230		Th-232		Th-Total		Np-237	
2384-01	3.7 UJ	UJ	1030±150		110±23		6663±908		0.06	UJ	0.6±0.1		0.7±0.1	J	4.9±0.4	J	0.4±0.1	J	NA		NA	
2384-02	3.7	UJ	1031±131		88±20		6186±778		0.1	UJ	0.6±0.1		0.7±0.1		7.9±0.6		0.7±0.1		NA		NA	
2384-03	44±11.0		4064±664		377±75		28746±4560		0.9±0.1		11±0.9		1.4±0.1		39±2.6		0.4±0.04		NA		NA	
2384-04	3.8	UJ	2338±412		169±40		13095±2338		0.7±0.1		10±0.7		1.2±0.1		36±2.2		0.4±0.04		NA		NA	
2384-05	4.1	UJ	1796±274		132±30		10400±1607		0.1±0.03		0.7±0.1		1.3±0.1		4.6±0.4		0.6±0.1		NA		NA	
2384-06	13±3.2		1780±267		168±33		9001±1286		0.6±0.1		8.1±0.6		0.9±0.1		35±2.3		0.2±0.03		NA		NA	
2384-07	32±8.1		3326±509		293±57		19563±3032		1.0±0.1		14±1.9		1.6±0.1		52±3.4		0.6±0.1		NA		NA	
2384-08	46±11.2		3409±618		312±67		24360±3606		0.7±0.1		13±0.9		1.7±0.1		62±4.0		1.0±0.1		NA		NA	
2384-09	7.1±1.8		1465±214		137±29		8886±1269		.53	UJ	4.7±0.9		1.1±0.1		26±2.2		0.6±0.1		NA		NA	
2384-11	10	U	0.8±0.2		0.20	UJ	0.8±0.2		0.30	UJ	0.11	UJ	0.27	UJ	0.6±0.1		0.19	UJ	NA		0.24	UJ
2384-12	10	UJ	1.4±0.2		0.65	UJ	2.1±0.1		0.45	UJ	0.22	UJ	0.23	UJ	0.7±0.1		0.08	UJ	NA		1.0±0.2	
2384-13	9	UJ	2.9±0.3		1.0	U	4.6±0.6		0.46	UJ	0.36	UJ	0.33	UJ	1.2±0.2		0.09	UJ	NA		0.4±0.1	
2384-14	9	UJ	4.5±0.5		1.0	U	10.1±0.9		0.34	UJ	0.29	UJ	0.26	UJ	0.38	UJ	0.21	UJ	NA		0.46	UJ

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12/20/93

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