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FINAL

GROUNDWATER SPLIT SAMPLING REPORT

SEPTEMBER 1997 SAMPLING EVENT

Waste Disposal, Inc. Superfund Site

Santa Fe Springs, California

CDM FEDERAL PROGRAMS CORPORATION
a subsidiary of Camp Dresser & McKee Inc.

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Waste Disposal, Inc. Superfund Site

Santa Fe Springs, California

Prepared under Contract DACW05-D-0009 for:

U.S. Army Corps of Engineers
Sacramento District
Sacramento, California

for the

U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, California

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Walnut Creek, California

December 2000

WDIGWSS.RPT

GROUNDWATER SPLIT SAMPLING REPORT
SEPTEMBER 1997 SAMPLING EVENT

Waste Disposal, Inc. Superfund Site

Santa Fe Springs, California

CERTIFICATION

THIS DOCUMENT WAS PREPARED UNDER THE
DIRECTION AND SUPERVISION OF A QUALIFIED
REGISTERED GEOLOGIST

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EXECUTIVE SUMMARY

Results of the analysis of groundwater split samples collected by the U.S. Environmental Protection Agency (USEPA) during September 1997 at Waste Disposal, Inc. (WDI), Santa Fe Springs, California are presented in this report. The rationale and procedures for collection and analysis of these samples by the USEPA during this event are detailed in the *Field Sampling Plan for Groundwater Split Sampling, Waste Disposal, Inc., Santa Fe Springs, California*, (FSP for Groundwater Split Sampling) prepared for the USEPA by CDM Federal Programs Corporation (CDM Federal). Twenty-six groundwater monitoring wells were sampled by the Waste Disposal, Inc. Group (WDIG) for total and dissolved metals, pesticides and polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).

Oversight of the WDIG sampling activities and sample preparation, documentation, and shipment of the USEPA split samples was performed by representatives of the U.S. Army Corps of Engineers (USACE), Sacramento District.

1.0 INTRODUCTION

Analytical results of samples collected during the September 1997 WDIG groundwater split sampling event at the WDI site, Santa Fe Springs, California are reported in this Groundwater Split Sampling Report. This report has been prepared for the USEPA by CDM Federal under USACE contract DACW05-D-0009.

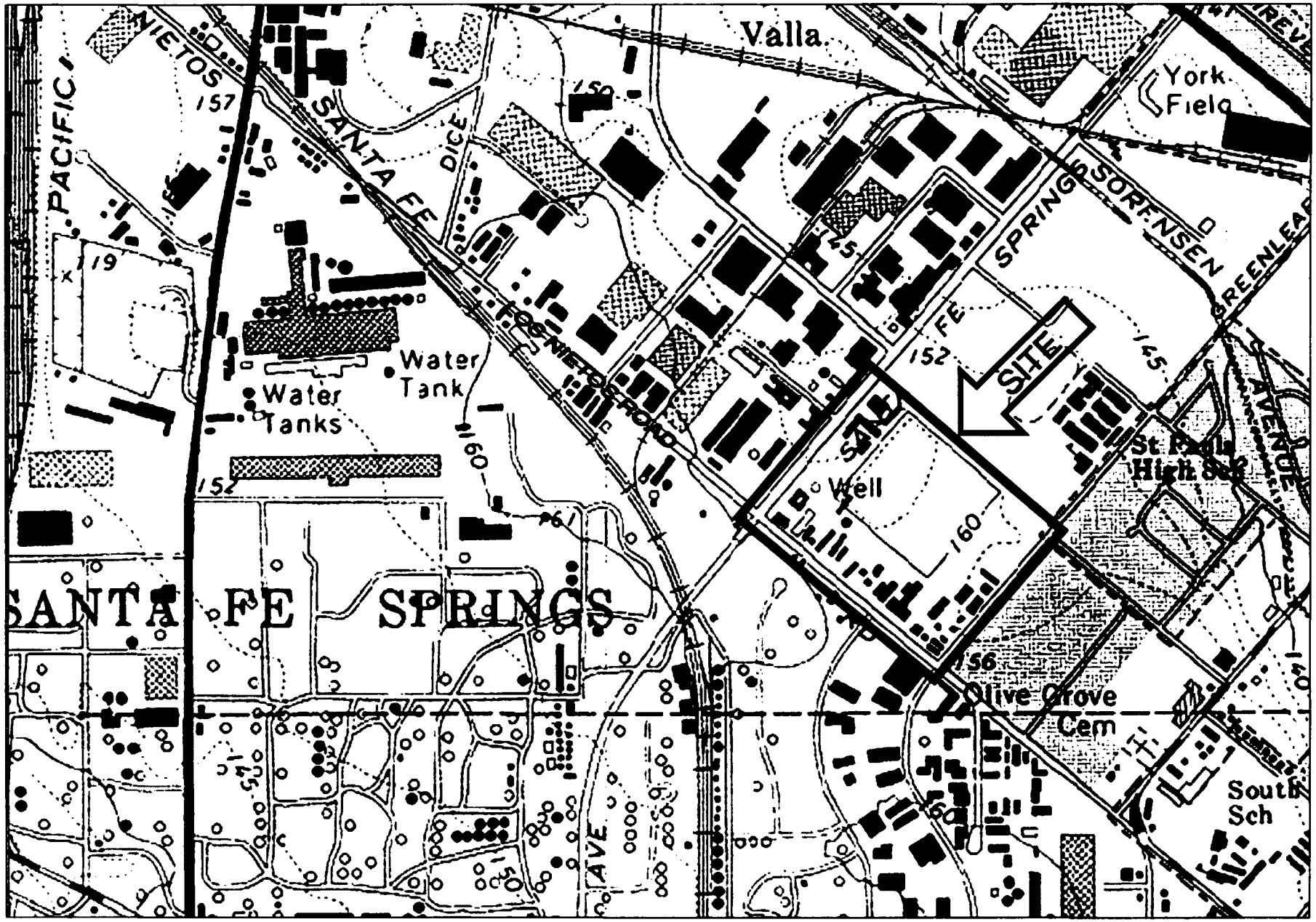
1.1 BACKGROUND

The WDI Superfund site is located in the city of Santa Fe Springs, Los Angeles County, California, on an approximate 40-acre parcel of land (Figure 1-1), and contains a buried 42 million-gallon capacity concrete reservoir originally constructed at grade for crude petroleum storage. The reservoir was decommissioned in the late 1920s but was used until the early 1960s for the disposal of a variety of industrial liquid and solid wastes. Based on remedial investigations (RIs) conducted at the site, wastes disposed in the concrete reservoir and adjacent areas include petroleum products/wastes, solvents, sludges, construction debris, and oil well drilling muds. There are 27 groundwater monitoring wells (MWs) located on the WDI site.

USEPA is providing oversight of remedial design activities conducted at WDI. As a coordinated effort, subsurface investigation and sampling studies were conducted at the WDI site during 1997 by the USEPA and the WDIG. The WDIG comprises some of the potentially responsible parties implementing the site cleanup. As outlined in their workplan for remedial design activities, the WDIG and their contractor TRC Environmental Solutions, Inc. (TRC) sampled 26 of the 27 existing groundwater MWs at the WDI site during September 1997. Representatives of the USACE, on behalf of the USEPA, collected split samples from all of the monitoring wells sampled during the event. The primary objective of the split sampling is to provide independent USEPA groundwater analytical data to verify the groundwater quality data collected by TRC for site characterization and remedial design. The split sampling effort also provided an opportunity for oversight of the WDIG/TRC sampling activities.

1.2 SAMPLING PLANS FOR GROUNDWATER MONITORING

The rationale and procedures for collection and analysis of the split samples by the USEPA during the September 1997 groundwater sampling event are detailed in the FSP for Groundwater Split Sampling (CDM Federal, 1997). The purpose of this FSP was to document the objectives, rationale, and procedures for collecting and analyzing split samples during the WDIG/TRC groundwater sampling round. The FSP for Groundwater Split Sampling was prepared following the format provided by the USEPA Quality Assurance Program (QAP) and guidance from the document *Preparation of a U.S. EPA Region 9 Field Sampling Plan for EPA-Lead Superfund Projects* (USEPA, 1993c).



SOURCE: TOPO!©1996 Wildflower Products, and USGS, Whittier Quadrangle, 7.5' Series Topographic

Scale: 1 In. = 1,000 Ft.

Site Vicinity Map

Figure 1-1

CDM Federal Programs Corporation
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Waste Disposal, Inc., Santa Fe Springs, California

1.3 PREVIOUS GROUNDWATER INVESTIGATIONS

Groundwater monitoring rounds have been performed at the WDI site intermittently since 1988. These prior groundwater sampling rounds were conducted by USEPA and WDIG as summarized below:

- During 1988-89, a total of 27 groundwater MWs were installed and sampled during the initial RI (EBASCO, 1989a).

- In 1992, USEPA staff performed three quarterly groundwater monitoring rounds in which 11 site groundwater MWs were sampled (USEPA, 1993b).

- In 1995, WDIG/TRC performed two groundwater monitoring rounds during which 11 wells sampled. During the June 1995 sampling round, split samples were collected by the USACE from selected groundwater MWs and submitted for USEPA laboratory analysis.

1.4 OBJECTIVE OF SEPTEMBER 1997 SPLIT SAMPLING EVENT, SAMPLE LOCATIONS, NUMBERS OF SAMPLES, AND ANALYTICAL PARAMETERS

The objective of the split sampling event is to provide independent USEPA analytical data to confirm the groundwater quality data collected by WDIG/TRC. These data will be used for site characterization and remedial design at the WDI Superfund site. To meet this objective, groundwater split samples were collected from all of the MWs sampled during WDIG/TRC's September 1997 groundwater sampling event.

Split sampling of all wells was necessary and warranted due to the limited scope of prior sampling rounds and groundwater results available for the WDI site (the 1988-89 sampling event is the only prior monitoring round during which all site groundwater MWs were sampled). The rationale and sampling/analysis procedures for WDIG's sampling activities are described in the *Draft RD Investigative Activities Workplan* (TRC, 1997a), that includes as appendices, the Revised Field Sampling and Analysis Plan (FSAP) and Quality Assurance Project Plan (QAPP). Additional discussion of WDIG's groundwater monitoring approach is included in the *Draft Comprehensive Ground Water Quarterly Monitoring Plan*, revision 1.0 (TRC, 1997b).

1.4.1 Sample Locations

During the initial RI performed for USEPA during 1988-89, 27 groundwater MWs were installed by EBASCO Services, Inc. The locations of these groundwater MWs, site areas, buildings, and features at the WDI site are shown on Figure 1-2. All 27 MWs were scheduled to be sampled during the September 1997 groundwater sampling event in order to refine site characterization data as required to complete the remedial design for the WDI site.

1.4.2 Analytical Parameters

During the 1988-89 RI an extensive soil sampling investigation was completed to characterize soil contamination at the WDI site (EBASCO, 1989b). Based on the analytical results of these soil samples, the primary chemicals of concern at the site were determined to be VOCs, SVOCs, and metals (USEPA, 1993a). To ensure that a comprehensive data set would be generated, the split groundwater samples collected during September 1997 from each well sampled by TRC were analyzed for VOCs and metals (both total and dissolved).

Prior SVOC samples were collected from all WDI MWs during the initial RI (1988-89) and from 11 selected wells sampled by USEPA in 1992 (three rounds). SVOCs detected in a limited number of wells during these sampling rounds were primarily phthalates (common laboratory contaminants). However, many of the shallow MWs located near the former reservoir and other waste containment areas were not sampled for SVOCs during the 1992 sampling rounds. During the 1988-89 RI, a variety of SVOCs were detected at high concentrations in subsurface soil samples collected from locations within the waste containment areas (EBASCO, 1989b), and pesticides and polychlorinated biphenyls (PCBs) were also detected in local areas of the site. For these reasons, all split samples collected during September 1997 were also analyzed for SVOCs in addition to pesticides and PCBs.

2.0 SUMMARY OF SEPTEMBER 1997 GROUNDWATER SPLIT SAMPLING EVENT

During the period September 18, 1997 through September 30, 1997, USEPA and the WDIG conducted a groundwater split sampling effort at WDI during which 26 wells were sampled. The wells proposed for sampling are presented in Table 2-1 and their locations are included on Figure 2-1 of this report. The wells to be sampled were purged by TRC field staff, and the USEPA split sampling was supervised by field staff from the USACE.

2.1 PROPOSED AND ACTUAL WELLS SAMPLED

As presented in Table 3-1 of the FSP for Groundwater Split Sampling, 27 MWs were proposed for sampling by WDIG/TRC, for groundwater characterization. Well GW-09 could not be located and therefore was not sampled. There may be a discrepancy on the WDIG site maps as to the correct location of GW-09. On the WDIG maps, GW-9 is shown south of the E&L Electric building, however, this may be the well that was installed in the center of the Mersits Equipment yard. A total of 26 WDI wells were sampled. Duplicate groundwater samples were collected from GW-03, GW-10, and GW-30, for a total of 29 groundwater samples to be analyzed for VOCs, SVOCs, total and dissolved metals, and pesticides and PCBs.

2.2 SPLIT SAMPLE COLLECTION PROCEDURES

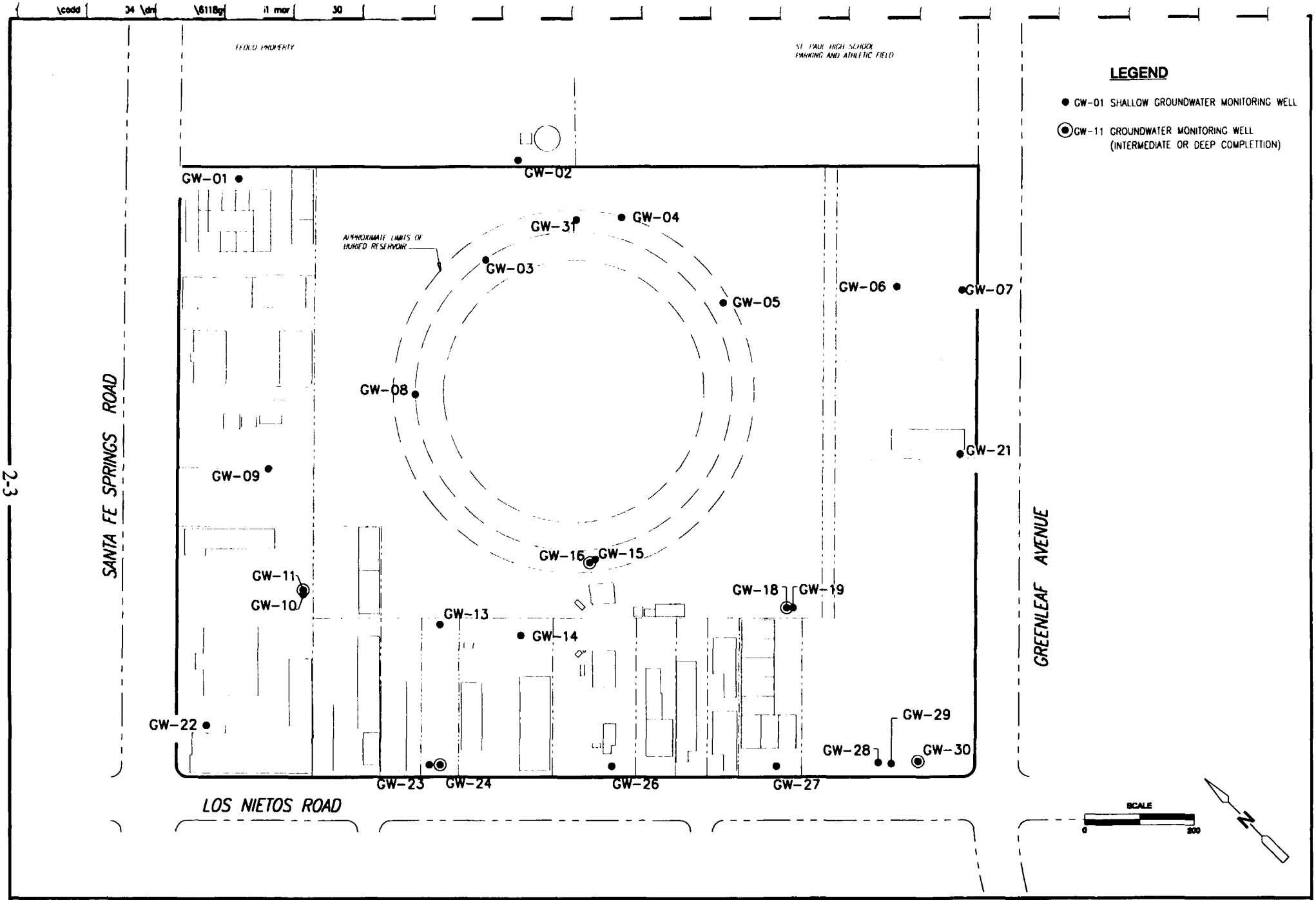
Water level measurements, well purging, and sampling of the WDI groundwater MWs were performed by TRC field staff in accordance with their Revised Draft *Field Sampling and Analysis Plan* (FSAP) (TRC, 1997c). In accordance with this FSAP, all wells were purged using temporary submersible pumps or bailers, and groundwater samples were collected using Teflon™ or stainless steel bailers. The pumps and bailers were decontaminated in accordance with the procedures outlined in their FSAP, by TRC prior to purging of each MW.

The USACE field staff monitored adherence to the procedures and protocols outlined in the FSP for Groundwater Split Sampling. The groundwater split samples were collected by TRC's field team concurrently with collection of their samples using the same sampling methods and procedures to ensure that the split samples are comparable to the samples collected by TRC. Samples were collected by alternating bottles for primary and split samples, e.g., a VOC bottle (TRCs sample) was filled first, followed by a second VOC split sample bottle for the USEPA. The SVOC samples were collected after the VOC split samples were collected. Sample preservation for the split samples, when required by the analytical methods, was performed by USACE field staff.

TABLE 2-1
GROUNDWATER SPLIT SAMPLING EVENT
SEPTEMBER 1997
WDI SUPERFUND SITE
SANTA FE SPRINGS, CALIFORNIA

Well No.	Well Type	Sample Date	Remarks	Volatile Organic Compounds	Semivolatile Organic Compounds	Pesticides and PCBs	Total Metals	Dissolved Metals
GW - 01	UG - shallow	22-Sep-97		X	X	X	X	X
GW - 02	R - shallow	22-Sep-97		X	X	X	X	X
GW - 03	R - shallow	23-Sep-97	dupl. sample	X	X	X	X	X
GW - 04	R - shallow	22-Sep-97		X	X	X	X	X
GW - 05	R - shallow	30-Sep-97		X	X	X	X	X
GW - 06	CG - shallow	23-Sep-97		X	X	X	X	X
GW - 07	CG - shallow	22-Sep-97		X	X	X	X	X
GW - 08	CG - shallow	22-Sep-97		X	X	X	X	X
GW - 09	CG - shallow		not sampled					
GW - 10	DG - shallow	23-Sep-97		X	X	X	X	X
GW - 11	DG - deep	23-Sep-97		X	X	X	X	X
GW - 13	DG - shallow	30-Sep-97		X	X	X	X	X
GW - 14	DG - shallow	22-Sep-97		X	X	X	X	X
GW - 15	DG - shallow	30-Sep-97		X	X	X	X	X
GW - 16	DG - intermed.	30-Sep-97	dupl. sample	X	X	X	X	X
GW - 18	DG - intermed.	18-Sep-97		X	X	X	X	X
GW - 19	DG - shallow	18-Sep-97		X	X	X	X	X
GW - 21	CG - shallow	23-Sep-97		X	X	X	X	X
GW - 22	DG - shallow	23-Sep-97		X	X	X	X	X
GW - 23	DG - shallow	22-Sep-97		X	X	X	X	X
GW - 24	DG - deep	19-Sep-97		X	X	X	X	X
GW - 26	DG - shallow	19-Sep-97		X	X	X	X	X
GW - 27	DG - shallow	19-Sep-97		X	X	X	X	X
GW - 28	DG - shallow	18-Sep-97		X	X	X	X	X
GW - 29	DG - shallow	18-Sep-97		X	X	X	X	X
GW - 30	DG - deep	18-Sep-97	dupl. sample	X	X	X	X	X
GW - 31	R - shallow	30-Sep-97		X	X	X	X	X

EXPLANATION
1. Well types: UG = upgradient, R = edge of reservoir, CG = cross-gradient to reservoir, DG = downgradient of reservoir & containment areas



Groundwater Monitoring Well Locations

Waste Disposal, Inc., Santa Fe Springs, California

Figure 2-1

CDM Federal Programs Corporation
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2.3 FIELD MEASUREMENTS

As specified in WDIG/TRC's FSAP, groundwater parameters including temperature, pH, and specific conductivity were measured at each well by TRC's sampling team during well purging. USACE field staff observed the field parameter measurements made by TRC. Duplicate (i.e., confirmation) measurements of field parameter readings and depth-to-groundwater measurements were not collected by USACE field staff as part of the split sampling activities. A groundwater elevation map based on the measurements made by TRC during September 1997 is included as Figure 2-2.

2.4 ANALYSIS OF GROUNDWATER SAMPLES

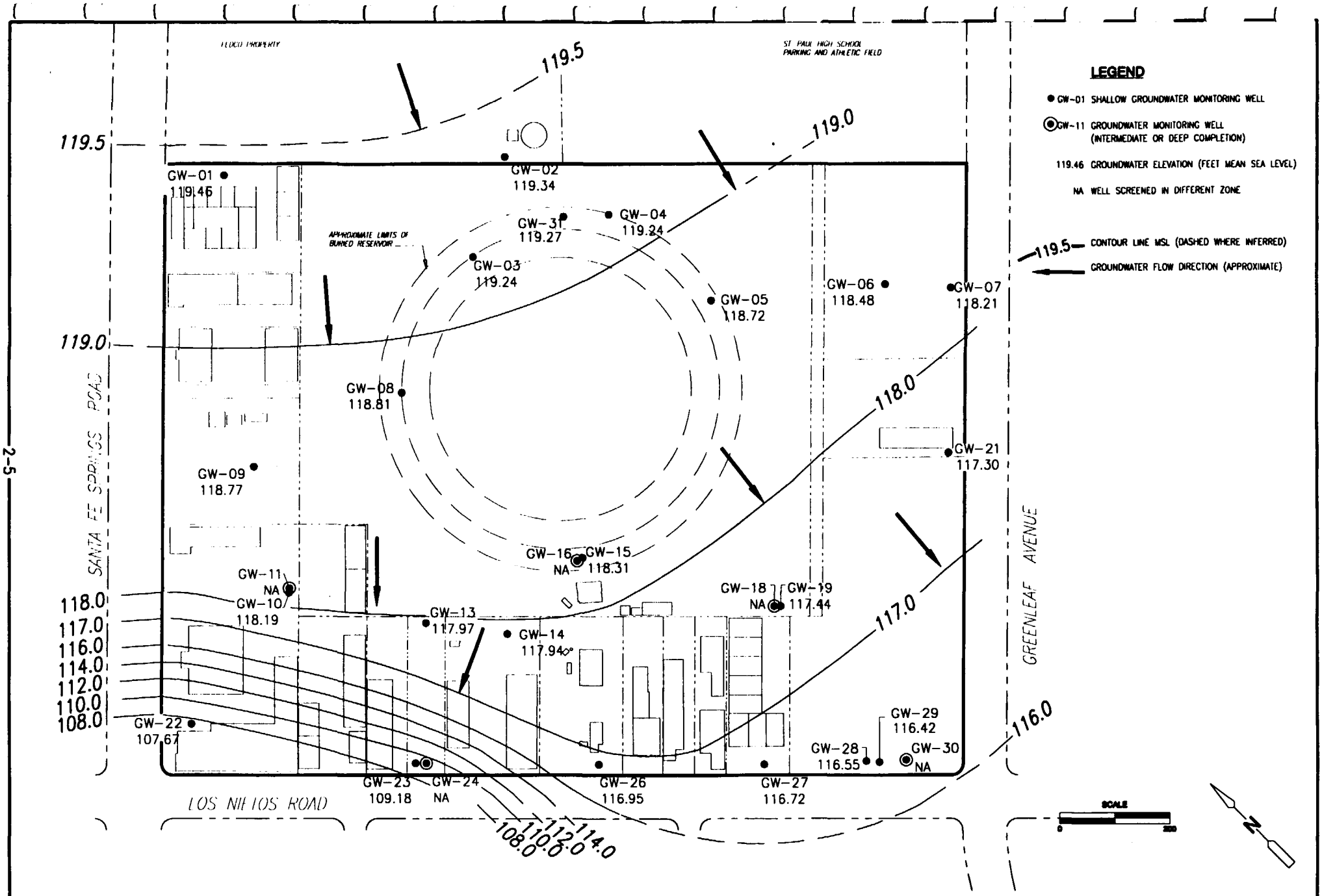
The 26 wells sampled and the analyses performed for each sample collected during the split sampling event are summarized in Table 2-1.

The VOC analyses were performed by PDP Analytical Services, an USEPA Regional Analytical Program (RAP) laboratory. The VOC split samples were analyzed using USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, low concentration water (OLC02.1). The metals, SVOC, and pesticides/PCBs analyses were performed by Southwest Laboratories of Oklahoma, a CLP Analytical Services laboratory. The SVOC and pesticides/PCBs split samples submitted for analysis were analyzed using USEPA CLP SOW for Organic Analysis, low concentration water (OLM03.2), and the total and dissolved metals split samples were analyzed using USEPA CLP SOW for Inorganic Analysis, low concentration water (ILM04.0).

2.5 DATA VALIDATION

The groundwater analytical data generated by PDP Analytical Services and Southwest Labs of Oklahoma, Inc. followed the data package deliverable format specified in the CLP Statement of Work. For this split sampling event, 100% of the groundwater data submitted for USEPA analyses were validated by Lockheed Martin Environmental Services, San Francisco, CA. The validation reports are included as Appendix A and copies of the chain of custodies that accompanied the samples to the laboratories are included as Appendix B of this report.

All VOC, SVOC and pesticide/PCB data were validated in accordance with *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA, 1994a) and all metals data were validated in accordance with *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (USEPA, 1994b).



Groundwater Elevation Map, September 1997

Waste Disposal, Inc., Santa Fe Springs, California

Figure 2-2

CDM Federal Programs Corporation
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3.0 RESULTS OF VOLATILE ORGANIC COMPOUND ANALYSES

During the September 1997 split sampling event, groundwater samples were collected from 26 wells at WDI and analyzed for VOCs as discussed in Section 2.0 of this report. Complete validated results of VOC analyses for 29 groundwater samples collected from the 26 wells are included in Table 3-1. Results for VOCs of concern are presented on Figure 3-1. Results of VOC analyses for the quality assurance/quality control (QA/QC) samples are included in Section 7.0.

Several VOC analytes were detected in the groundwater split samples collected at the WDI site during September 1997. Trichloroethene (TCE) was detected in samples collected from four wells at a maximum concentration of 4 micrograms per liter ([μg/L] GW-11) and total-1,2-dichloroethene (1,2-DCE) was detected in samples collected from three wells at a maximum concentration of 1 μg/L (GW-01). Chloroform was detected in the samples collected from two wells at a maximum of 3 μg/L (GW-07). Toluene was detected in each of the 29 groundwater samples collected at concentrations ranging between 1 μg/L (GW-11 and GW-13) and 64 μg/L (GW-04 and GW-29). Xylene, 4-methyl-2-pentanone and 2-hexanone were each detected one time at concentrations estimated below the detection limit of 1 μg/L.

The maximum contaminant levels (MCLs) for tetrachloroethene (PCE) and 1,2-dichloroethane (1,2-DCA) were exceeded in several samples. PCE was detected in samples collected from six wells at a maximum concentration of 30 μg/L (GW-11). Its Federal and State MCL of 5 μg/L was exceeded in the samples collected from GW-01 (6 μg/L), GW-11, and GW-24 (9 μg/L). 1,2-DCA was detected in the sample collected from GW-02 at 1 μg/L, exceeding its State MCL of 0.5 μg/L.

Table 3-1: Groundwater Sampling Results- Volatiles
Concentrations in µg/L

Station Location	GW-01			GW-02			GW-03			GW-03 Dup			GW-04			GW-05		
Sample I.D.	YY528			YY540			YY532			YY533			YY542			YY545		
Date of Collection	9/22/97			9/23/97			9/23/97			9/23/97			9/24/97			9/30/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethene (total)	1			1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Trichloroethene	2			1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U			4 L	J	A
2-Hexanone	5 U			5 U			5 U			5 U			5 U			4 L	J	A
Tetrachloroethene	6			1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U			1 U		
Toluene	3			1			2			2			64			2		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		

Table 3-1. Groundwater Sampling Results- Volatiles
Concentrations in µg/L

Station Location	GW-06			GW-07			GW-08			GW-10			GW-11			GW-13		
Sample I.D.	YY538			YY543			YY529			YY534			YY535			YY551		
Date of Collection	9/23/97			9/24/97			9/22/97			9/23/97			9/23/97			9/30/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethene (total)	1 U			1 U			1 U			1 U			0.6 L	J	A	1 U		
Chloroform	0.9 L	J	A	3			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			4			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1			0.6 L	J	A	30			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U			1 U		
Toluene	3			7			2			3			1			1		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		

Table 3-1: Groundwater Sampling Results- Volatiles
Concentrations in µg/L

Station Location	GW-14			GW-15			GW-16			GW-16 Dup			GW-18			GW-19		
Sample I.D.	YY526			YY550			YY547			YY548			YY520			YY518		
Date of Collection	9/22/97			9/30/97			930/97			9/30/97			9/18/97			9/18/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	C	5 U	J	C
Carbon disulfide	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethene (total)	1 U			1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	C	5 U	J	C
Bromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U			1 U		
Toluene	3			2			20			16			23			18		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		

ble 3- ndwat pling I Volat
Concentrations in µg/L

Station Location	GW-21			GW-22			GW-23			GW-24			GW-26			GW-27		
Sample I.D.	YY539			YY536			YY527			YY525			YY523			YY522		
Date of Collection	9/23/97			9/23/97			9/22/07			9/19/97			9/19/97			9/19/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	C	5 U	J	C	5 U	J	C
Carbon disulfide	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethene (total)	1 U			0.6 L	J	A	1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	C	5 U	J	C	5 U	J	C
Bromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			2			1 U			1			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			3			1 U			9			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U			1 U		
Toluene	4			2			2			2			2			13		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			0.6 L	J	A	1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U	J	B	1 U	J	B

Table 3-1: Groundwater Sampling Results- Volatiles
Concentrations in µg/L

Station Location	GW-28			GW-29			GW-30			GW-30 DUP			GW-31		
Sample I.D.	YY517			YY516			YY514			YY515			YY544		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/30/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroeth ne	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethene (total)	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	8			64			46			52			2		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val = Validation Qualifier Com = Comment Qualifier Dup= Duplicate

Data Qualifier Definitions

J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
L	Indicates results which fall below the contract required quantitation limit. Results are estimated and considered qualitatively acceptable but quantitatively unreliable due to the uncertainties in the analytical precision near the limit of detection.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
For A-C:	Due to inconsistent use of comment codes, refer to validation reports included in the appendix for comment significance.

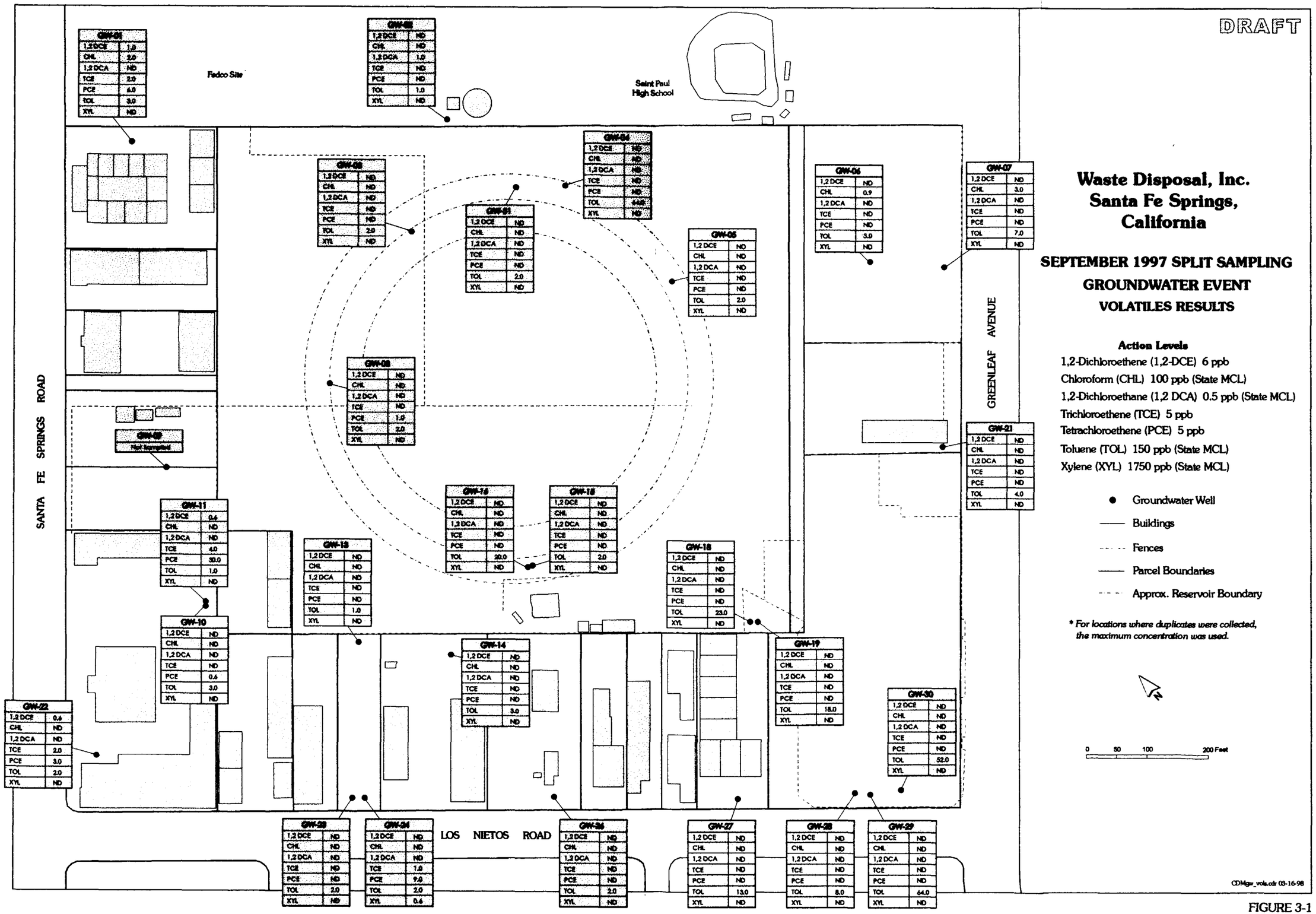

DRAFT
Waste Disposal, Inc.
Santa Fe Springs,
California
SEPTEMBER 1997 SPLIT SAMPLING
GROUNDWATER EVENT
VOLATILES RESULTS
Action Levels
1,2-Dichloroethene (1,2-DCE) 6 ppb
Chloroform (CHL) 100 ppb (State MCL)
1,2-Dichloroethane (1,2 DCA) 0.5 ppb (State MCL)
Trichloroethene (TCE) 5 ppb
Tetrachloroethene (PCE) 5 ppb
Toluene (TOL) 150 ppb (State MCL)
Xylene (XYL) 1750 ppb (State MCL)
Groundwater Well
Buildings
Fences
Parcel Boundaries
Approx. Reservoir Boundary
* For locations where duplicates were collected, the maximum concentration was used.
0 50 100 200 Feet
Fedco Site
Saint Paul High School
SANTA FE SPRINGS ROAD
GREENLEAF AVENUE
LOS NIETOS ROAD
GW-01 1,2 DCE 1.0 CHL 2.0 1,2 DCA ND TCE 2.0 PCE 6.0 TOL 3.0 XYL ND
GW-02 1,2 DCE ND CHL ND 1,2 DCA 1.0 TCE ND PCE ND TOL 1.0 XYL ND
GW-03 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 2.0 XYL ND
GW-04 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 44.0 XYL ND
GW-05 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 2.0 XYL ND
GW-06 1,2 DCE ND CHL 0.9 1,2 DCA ND TCE ND PCE ND TOL 3.0 XYL ND
GW-07 1,2 DCE ND CHL 3.0 1,2 DCA ND TCE ND PCE ND TOL 7.0 XYL ND
GW-08 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE 1.0 TOL 2.0 XYL ND
GW-09 Not Sampled
GW-10 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE 0.6 TOL 3.0 XYL ND
GW-11 1,2 DCE 0.4 CHL ND 1,2 DCA ND TCE 4.0 PCE 30.0 TOL 1.0 XYL ND
GW-12 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 1.0 XYL ND
GW-14 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 3.0 XYL ND
GW-15 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 20.0 XYL ND
GW-16 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 2.0 XYL ND
GW-18 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 23.0 XYL ND
GW-19 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 18.0 XYL ND
GW-21 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 4.0 XYL ND
GW-22 1,2 DCE 0.6 CHL ND 1,2 DCA ND TCE 2.0 PCE 3.0 TOL 2.0 XYL ND
GW-23 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 2.0 XYL ND
GW-24 1,2 DCE ND CHL ND 1,2 DCA ND TCE 1.0 PCE 9.0 TOL 2.0 XYL 0.6
GW-26 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 2.0 XYL ND
GW-27 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 13.0 XYL ND
GW-28 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 8.0 XYL ND
GW-29 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 64.0 XYL ND
GW-30 1,2 DCE ND CHL ND 1,2 DCA ND TCE ND PCE ND TOL 52.0 XYL ND
CDMgw_vols.cdr 03-16-98

FIGURE 3-1

4.0 RESULTS OF SEMIVOLATILE ORGANIC COMPOUND ANALYSES

During the September 1997 split sampling event, groundwater samples were collected from 26 wells at WDI and analyzed for SVOCs as discussed in Section 2.0 of this report. Complete validated results of SVOC analyses for 29 groundwater samples collected from the 26 wells are included in Table 4-1. Results of SVOC analyses for the QA/QC samples are included in Section 7.0.

Naphthalene was detected at a concentration of 0.7LJ μg/L in the sample collected from GW-03 and pyrene was detected at a concentration of 0.5 LJ μg/L in the sample collected from GW-01. Both of these concentrations were estimated below the detection limit of 1 μg/L. Bis(2-Ethylhexyl)phthalate was detected in the sample collected from GW-27 at a concentration of 16 μg/L, and di-n-butylphthalate was detected in the samples collected from GW-02 and GW-31 at concentrations estimated at, or below, the detection limit (2LJ μg/L and 10LJ μg/L, respectively). Both of these analytes are common laboratory contaminants.

Table 4-1 Groundwater Sampling Results- Semivolatiles
Concentrations in µg/L

Station Location	GW-1			GW-02			GW-03			GW-03 Dup			GW-04		
Sample I.D.	YY564			YY579			YY571			YY572			YY582		
Date of Collection	09/22/97			9/24/97			09/23/97			09/23/97			9/25/97		
Semivolatile Compound	*Result*	*Val*	*Com*	*Result*	*Val*	*Com*	*Result*	*Val*	*Com*	*Result*	*Val*	*Com*	*Result*	*Val*	*Com*
Phenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			0.7 L	J	A	10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	D	10 U	J	C	10 U	J	D	10 U	J	D	10 U	J	C
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			26 U			25 U			25 U			26 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			26 U			25 U			25 U			26 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			26 U			25 U			25 U			26 U		
Acenaphthene	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	CD	26 U	J	C	25 U	J	D	25 U	J	D	26 U	J	C
4-Nitrophenol	25 U			26 U			25 U			25 U			26 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			26 U			25 U			25 U			26 U		
4,6-Dinitro-2-methylphenol	25 U	J	D	26 U	J	C	25 U	J	D	25 U	J	D	26 U	J	C
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U	J	D	26 U	J	C	25 U	J	D	25 U	J	D	26 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			2 L	J	AD	10 U			10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U		
Pyrene	0.5 L	J	A	10 U			10 U			10 U			10 U		
Butylbenzylphthalate	10 U	J	D	10 U	J	C	10 U	J	D	10 U	J	D	10 U	J	C
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	BD	10 U	J	B	10 U	J	B	10 U	J	B	10 U	J	C
Di-n-octylphthalate	10 U	J	D	10 U	J	C	10 U	J	D	10 U	J	D	10 U	J	C
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U		

Table 4-1 Groundwater Sampling Results- Semivolatiles
Concentrations in µg/L

Station Location	GW-05			GW-06			GW-07			GW-8			GW-10		
Sample I.D.	YY583			YY577			YY581			YY569			YY573		
Date of Collection	9/30/97			9/24/97			9/25/97			09/22/97			09/23/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U			10 U	J	C	10 U	J	C	10 U	J	D	10 U	J	D
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			26 U			26 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			26 U			26 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			26 U			26 U			25 U			25 U		
Acenaphthene	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U			26 U	J	C	26 U	J	C	25 U	J	CD	25 U	J	D
4-Nitrophenol	25 U			26 U			26 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			26 U			26 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U			26 U	J	C	26 U	J	C	25 U	J	D	25 U	J	D
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U			26 U			26 U			25 U	J	D	25 U	J	D
Phenanthrene	10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U	J	B	10 U			10 U			10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U	J	C	10 U			10 U			10 U			10 U		
Butylbenzylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	D	10 U	J	D
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	BD	10 U	J	B
Di-n-octylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	D	10 U	J	D
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U		

Table 4-1 Groundwater Sampling Results- Semivolatiles
Concentrations in µg/L

Station Location	GW-11			GW-13			GW-14			GW-15			GW-16		
Sample I.D.	YY574			YY588			YY565			YY587			YY584		
Date of Collection	09/23/97			9/30/97			09/22/97			9/30/97			9/30/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	D	10 U			10 U	J	D	10 U			10 U		
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	26 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	26 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	26 U			25 U			25 U			25 U			25 U		
Acenaphthene	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	26 U	J	D	25 U			25 U	J	CD	25 U			25 U		
4-Nitrophenol	26 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U	J	D	10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	26 U			25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	26 U	J	D	25 U			25 U	J	D	25 U			25 U		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	26 U	J	D	25 U			25 U	J	D	25 U			25 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U	J	B	10 U			10 U			10 U	J	B
Fluoranthene	10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U	J	C	10 U			10 U	J	C	10 U	J	C
Butylbenzylphthalate	10 U	J	D	10 U	J	C	10 U	J	D	10 U	J	C	10 U	J	C
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	B	10 U	J	BC	10 U	J	BD	10 U	J	C	10 U	J	BC
Di-n-octylphthalate	10 U	J	D	10 U	J	C	10 U	J	D	10 U	J	C	10 U	J	C
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U		

Table 4-1 Groundwater Sampling Results- Semivolatiles
Concentrations in µg/L

Station Location	GW-16 Dup			GW-18			GW-19			GW-21			GW-22		
Sample I.D.	YY585			YY559			YY557			YY578			YY575		
Date of Collection	9/30/97			09/18/97			09/18/97			9/24/97			9/23/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U			10 U	J	D	10 U	J	D	10 U	J	C	10 U	J	C
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			26 U			26 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			26 U			26 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			26 U			26 U		
Acenaphthene	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U			25 U	J	D	25 U	J	D	26 U	J	C	26 U	J	C
4-Nitrophenol	25 U			25 U			25 U			26 U			26 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U			25 U			26 U			26 U		
4,6-Dinitro-2-methylphenol	25 U			25 U	J	D	25 U			26 U	J	C	26 U	J	C
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U			25 U			25 U			26 U			26 U	J	C
Phenanthrene	10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U			10 U			10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U	J	C	10 U			10 U			10 U			10 U		
Butylbenzylphthalate	10 U	J	C	10 U	J	D	10 U			10 U	J	C	10 U	J	C
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	BC	10 U	J	BD	10 U			10 U	J	BC	10 U	J	B
Di-n-octylphthalate	10 U	J	C	10 U	J	D	10 U			10 U	J	C	10 U	J	C
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U		

Table 4-1 Groundwater Sampling Results- Semivolatiles
Concentrations in µg/L

Station Location	GW-23			GW-24			GW-26			GW-27			GW-28		
Sample I.D.	YY567			YY563			YY561			YY560			YY556		
Date of Collection	09/22/97			09/19/97			35692			09/19/97			09/18/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U		
Acenaphthene	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	CD	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U	J	D	25 U			25 U			25 U			25 U		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U	J	D	25 U			25 U			25 U			25 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U			10 U			10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U			10 U		
Butylbenzylphthalate	10 U	J	D	10 U			10 U			10 U			10 U		
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	BD	10 U			10 U			16		E	10 U	J	B
Di-n-octylphthalate	10 U	J	D	10 U			10 U			10 U			10 U		
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U		

Table 4-1 Groundwater Sampling Results- Semivolatiles
Concentrations in µg/L

Station Location	GW-29			GW-30			GW-30 Dup			GW-31		
Sample I.D.	YY555			YY553			YY554			YY586		
Date of Collection	9/18/97			35691			09/30/97			9/30/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	D	10 U	J	D	10 U	J	D	10 U		
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U		
Acenaphthene	10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	D	25 U	J	D	25 U	J	D	25 U		
4-Nitrophenol	25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U			25 U		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U			25 U			25 U			25 U		
Phenanthrene	10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U			10 U			10 L	J	B
Fluoranthene	10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U	J	C
Butylbenzylphthalate	10 U			10 U			10 U			10 U	J	C
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	B	10 U	J	B	10 U			10 U	J	BC
Di-n-octylphthalate	10 U			10 U			10 U			10 U	J	C
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U		

Table 4-1 Groundwater Sampling Results- Semivolatiles
Concentrations in µg/L

Val = Validation Qualifier Com = Comment Qualifier Dup= Duplicate

Data Qualifier Definitions

J	The analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample
L	Indicates results which fall below the contract required quantitation limit. Results are estimated and considered qualitatively acceptable but quantitatively unreliable due to the uncertainties in the analytical precision near the limit of detection
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit
UJ	*The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate* and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample
For A-E	Due to inconsistent use of comment codes, refer to validation reports included in the appendix for comment significance

5.0 RESULTS OF PESTICIDE AND PCB ANALYSES

During the September 1997 split sampling event, groundwater samples were collected from 26 wells at WDI and analyzed for pesticides and PCBs as discussed in Section 2.0 of this report. Complete validated results of pesticide and PCB analyses for 29 groundwater samples collected from the 26 wells are included in Table 5-1. Results of pesticide/PCB analyses for the QA/QC samples are included in Section 7.0.

No pesticide or PCB analytes were detected in the samples collected from the 26 wells at WDI during the September 1997 split sampling event..

Table 5-1: Groundwater Sampling Results- Pesticides/PCBs
Concentrations in µg/L

Station Location	GW-1				GW-2				GW-03				GW-03 Dup				GW-4				GW-5			
Sample I.D.	YY564				YY579				YY571				YY572				YY582				YY583			
Date of Collection	9/22/97				9/24/97				9/23/97				9/23/97				9/25/97				9/30/97			
Pesticide/PCB Compound	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
alpha-BHC	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
beta-BHC	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
delta-BHC	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
gamma-BHC (Lindane)	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
Heptachlor	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
Aldrin	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
Heptachlor epoxide	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
Endosulfan I	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
Dieldrin		U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDE	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endrin	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endosulfan II	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDD	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endosulfan sulfate	[illegible]	[illegible]			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDT	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Methoxychlor	0.50	U			0.53	U			0.50	U			0.53	U			0.53	U			0.50	U		
Endrin ketone	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endrin aldehyde	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
alpha-Chlordane	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
gamma-Chlordane	0.050	U			0.053	U			0.050	U			0.050	U			0.053	U			0.050	U		
Toxaphene	5.0	U			5.3	U			5.0	U			5.0	U			5.3	U			5.0	U		
Aroclor-1016	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1221	2.0	U			2.1	U			2.0	U			2.0	U			2.1	U			2.0	U		
Aroclor-1232	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1242	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1248	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1254	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1260	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		

Table 5-1: Groundwater Sampling Results- Pesticides/PCBs
Concentrations in µg/L

Station Location	GW-6				GW-7				GW-8				GW-10				GW-11				GW-13			
Sample I.D.	YY577				YY581				YY569				YY573				YY574				YY588			
Date of Collection	9/24/97				9/25/97				9/22/97				9/23/97				9/23/97				9/30/97			
Pesticide/PCB Compound	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
alpha-BHC	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
beta-BHC	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
delta-BHC	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
gamma-BHC (Lindane)	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
Heptachlor	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
Aldrin	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
Heptachlor epoxide	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
Endosulfan I	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
Dieldrin	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDE	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endrin	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endosulfan II	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDD	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endosulfan sulfate	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDT	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Methoxychlor	0.53	U			0.53	U			0.50	U			0.50	U			0.50	U			0.50	U		
Endrin ketone	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endrin aldehyde	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
alpha-Chlordane	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
gamma-Chlordane	0.053	U			0.053	U			0.050	U			0.050	U			0.050	U			0.050	U		
Toxaphene	5.3	U			5.3	U			5.0	U			5.0	U			5.0	U			5.0	U		
Aroclor-1016	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1221	2.1	U			2.1	U			2.0	U			2.0	U			2.0	U			2.0	U		
Aroclor-1232	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1242	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1248	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1254	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1260	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		

Table 5-1: Groundwater Sampling Results- Pesticides/PCBs
Concentrations in µg/L

Station Location	GW-14				GW-15				GW-16				GW-16 Dup				GW-18				GW-19			
Sample I.D.	YY565				YY587				YY584				YY585				YY559				YY557			
Date of Collection	9/22/97				9/30/97				9/30/97				9/30/97				35691				35691			
Pesticide/PCB Compound	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
alpha-BHC	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
beta-BHC	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
delta-BHC	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
gamma-BHC (Lindane)	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
Heptachlor	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
Aldrin	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
Heptachlor epoxide	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
Endosulfan I	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
Dieldrin	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDE	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endrin	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endosulfan II	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDD	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endosulfan sulfate	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
4,4'-DDT	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Methoxychlor	0.50	U			0.50	U			0.50	U			0.50	U			0.50	U			0.50	U		
Endrin ketone	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
Endrin aldehyde	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U			0.10	U		
alpha-Chlordane	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
gamma-Chlordane	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U			0.050	U		
Toxaphene	5.0	U			5.0	U			5.0	U			5.0	U			5.0	U			5.0	U		
Aroclor-1016	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1221	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U			2.0	U		
Aroclor-1232	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1242	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1248	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1254	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Aroclor-1260	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		

Table 5-1: Groundwater Sampling Results- Pesticides/PCBs
Concentrations in µg/L

Station Location	GW-21			GW-22			GW-23			GW-24			GW-26			GW-27		
Sample I.D.	YY578			YY575			YY567			YY563			YY561			YY560		
Date of Collection	09/24/97			9/23/97			9/22/97			9/19/97			9/19/97			9/19/97		
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
beta-BHC	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
delta-BHC	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-BHC (Lindane)	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
Aldrin	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor epoxide	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
Endosulfan I	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Methoxychlor	0.53 U			0.53 U			0.50 U			0.50 U			0.50 U			0.50 U		
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
alpha-Chlordane	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-Chlordane	0.053 U			0.053 U			0.050 U			0.050 U			0.050 U			0.050 U		
Toxaphene	5.3 U			5.3 U			5.0 U			5.0 U			5.0 U			5.0 U		
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1221	2.1 U			2.1 U			2.0 U			2.0 U			2.0 U			2.0 U		
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		

Table 5-1: Groundwater Sampling Results- Pesticides/PCBs
Concentrations in µg/L

Station Location	GW-28				GW-29				GW-30				GW-30 Dup				GW-31						
Sample I.D.	YY556				YY555				YY553				YY554				YY586						
Date of Collection	9/18/97				9/18/97				9/18/97				9/18/97				9/30/97						
Pesticide/PCB Compound	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com			
alpha-BHC	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
beta-BHC	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
delta-BHC	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
gamma-BHC (Lindane)	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
Heptachlor	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
Aldrin	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
Heptachlor epoxide	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
Endosulfan I	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
Dieldrin	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
4,4'-DDE	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
Endrin	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
Endosulfan II	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
4,4'-DDD	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
Endosulfan sulfate	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
4,4'-DDT	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
Methoxychlor	0.50	U			0.50	U			0.50	U			0.50	U			0.50	U					
Endrin ketone	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
Endrin aldehyde	0.10	U			0.10	U			0.10	U			0.10	U			0.10	U					
alpha-Chlordane	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
gamma-Chlordane	0.050	U			0.050	U			0.050	U			0.050	U			0.050	U					
Toxaphene	5.0	U			5.0	U			5.0	U			5.0	U			5.0	U					
Aroclor-1016	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U					
Aroclor-1221	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U					
Aroclor-1232	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U					
Aroclor-1242	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U					
Aroclor-1248	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U					
Aroclor-1254	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U					
Aroclor-1260	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U					

Val = Validation Qualifier Com = Comment Qualifier Dup= Duplicate

Data Qualifier Definitions

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

6.0 RESULTS OF TOTAL AND DISSOLVED METALS ANALYSES

During the September 1997 split sampling event, groundwater samples were collected from 26 wells at WDI and analyzed for total and dissolved metals as discussed in Section 2.0 of this report. Complete validated results of total and dissolved metals analyses for 29 groundwater samples collected from the 26 wells are included in Tables 6-1 and 6-2, respectively. Results of total metals analyses for the QA/QC samples are included in Section 7.0. None of the QA/QC samples were analyzed for dissolved metals.

Common groundwater metals such as calcium, magnesium, potassium, and sodium were detected in most of the 29 groundwater samples. Results of the total and dissolved metals analyses for the split samples collected during September 1997 indicate that the maximum contaminant levels (MCLs) and secondary drinking water standards (SDWSs) for several metals in groundwater beneath the site have been exceeded. Because concentrations of these metals exceed their MCLs and/or SDWSs in groundwater, they may be a potential concern. In the following discussions of the metals results, the data qualifiers assigned to some of the results have not been included. They are, however, included with the results presented in Tables 6-1 and 6-2. The regulatory limits for metals (State and Federal MCLs and SDWSs) are presented in Table 6-3. Concentrations of those metals (total and dissolved) that exceed the regulatory limits for each well are presented on Figure 6-1.

6.1 TOTAL METALS RESULTS

Beryllium, cadmium, silver, and thallium were not detected in any of the groundwater samples submitted for total metals analysis. Antimony, barium, chromium, and nickel were detected in some or all of the groundwater samples analyzed for total metals at concentrations below their MCLs (6 μg/L, 1,000 μg/L, 50 μg/L, and 100 μg/L, respectively). Copper was detected in 24 of the total metals samples, and zinc was detected in all of the total metals samples at concentrations below their SDWSs (1,300 μg/L and 5,000 μg/L, respectively), and lead was detected in 14 of the samples below its action level of 15 μg/L.

The arsenic concentration in one total metals sample (GW-08 at 61.3 μg/L) and the selenium concentrations in two total metals samples (both samples collected from GW-16 at 54.5 μg/L and 51.5 μg/L) exceeded their MCLs (both 50 μg/L). Mercury was detected in two total metals samples at its MCL of 2 μg/L (GW-22 and GW-30).

The SDWS for aluminum (200 μg/L) was exceeded in 26 of the samples analyzed for total metals (ranging between 235 μg/L [GW-30 DUP] and 14,400 μg/L [GW-11]). Concentrations in 21 of these 26 samples also exceeded the State MCL for aluminum (1,000 μg/L). The SDWS for iron (300 μg/L) was exceeded in 26 of the samples analyzed for total

Table 6-1: Groundwater Sampling Results- Total Metals
Concentrations in µg/L

Station Location	GW-1			GW-02			GW-03			GW-03 Dup			GW-04			GW-05		
Sample I.D.	MYY117			MYY130			MYY122			MYY123			MYY133			MYY135		
Date of Collection	9/22/97			9/24/97			9/23/97			9/23/97			9/25/97			9/30/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	8820	J	BC	18.5 L	J	A	2140	J	C	5050	J	C	12900	J	CD	611	J	CD
Antimony	5.4 L	J	AB	2.0 U			2.0 U			2.0 U			2.0 U			3.0 U		
Arsenic	7.4 L	J	AB	4.0 U			4.0 U			6.4 L	J	A	7.4 L	J	A	11.1		
Barium	188 L	J	AB	29.2 L	J	A	68.0 L	J	A	146 L	J	A	235	J	D	44.5 L	J	AD
Beryllium	1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	271000	J	B	303000			268000			274000			288000	J	D	336000	J	D
Chromium	19.7	J	B	5.8 L	J	A	8.8 L	J	A	16.5			27.3			2.8 L	J	A
Cobalt	8.3 L	J	AB	1.0 U			2.8 L	J	A	4.9 L	J	A	9.5 L	J	A	2.6 L	J	A
Copper	20.9 L	J	AB	2.0 U			7.6 L	J	A	12.2 L	J	A	28.3			2.3 L	J	A
Iron	13900	J	BD	18.7 L	J	A	2900	J	D	7470	J	D	19400	J	D	1380	J	D
Lead	5.3	J	B	2.0 U			2.0 U			2.8 L	J	A	8.0			1.2 L	J	A
Magnesium	74300	J	B	81000			71800			74100			83900	J	D	90500 U	J	DE
Manganese	325	J	B	1.0 U			421			698			526	J	D	4270	J	D
Mercury	0.10 U	J	BC	0.10 U			0.10 U	J	C	0.10 U	J	C	0.36	J	BC	0.20 U	J	BC
Nickel	15.7 L	J	AB	1.0 U			4.5 L	J	A	8.9 L	J	A	19.5 L	J	A	3.9 L	J	A
Potassium	7150	J	B	5070			4780 L	J	A	5610			7280	J	D	3760 L	J	AD
Selenium	24.3	J	BC	32.2			31.3	J	C	31.9	J	C	28.3	J	B	20.5	J	B
Silver	1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	148000	J	B	156000			129000			133000			123000			135000 U		E
Thallium	3.0 U	J	B	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	29.9 L	J	AB	3.3 L	J	A	8.9 L	J	A	17.3 L	J	A	38.4 L	J	A	3.8 L	J	A
Zinc	36.3	J	B	3.2 L	J	A	13.6 L	J	A	23.1			83.8			10.4 L	J	A

Table 6-1: Groundwater Sampling Results- Total Metals
Concentrations in µg/L

Station Location	GW-06				GW-07				GW-8				GW-10				GW-11				GW-13			
Sample I.D.	MYY128				MYY133				MYY118				MYY124				MYY125				MYY139			
Date of Collection	9/24/97				9/25/97				9/22/97				9/23/97				9/23/97				9/30/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	2560.0		J	D	4030		J	CD	4440		J	C	3280.0				14400				17.0	U	J	CD
Antimony	2.0	U			2.0	U			3.3	L	J	A	2.0	U			2.0	U			3.0	U		
Arsenic	4.0	U			4.0	U			61.3				4.4	L	J	A	9.8	L	J	A	3.0	U		
Barium	74.9	L	J	AD	156.0	L	J	AD	160	L	J	A	113.0	L	J	A	197.0	L	J	A	25.1	L	J	AD
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Calcium	204000		J	D	235000		J	D	256000				192000				289000				290000		J	D
Chromium	9.1	L	J	A	10.2				11.9				9.0	L	J	A	26.6				1.0	L	J	A
Cobalt	5.9	L	J	A	4.4	L	J	A	3.8	L	J	A	4.8	L	J	A	8.9	L	J	A	5.5	L	J	A
Copper	12.9	L	J	A	13.7	L	J	A	14.7	L	J	A	9.1	L	J	A	26.4				2.0	U		
Iron	4160.0		J	D	6500		J	D	12000		J	D	4870				19300				48.8	L	J	AD
Lead	2.6	L	J	A	2.2	L	J	A	2.5	L	J	A	2.0	U			5.7				1.0	U		
Magnesium	60200		J	D	69500		J	D	69900				58100				81700				72200	U	J	DE
Manganese	616		J	D	847		J	D	4600				2930				1550				8280		J	D
Mercury	0.10	U	J	C	0.10	U	J	BC	0.10	U	J	C	0.63				0.28				0.20	U	J	BC
Nickel	5.3	L	J	A	8.2	L	J	A	8.9	L	J	A	8.9	L	J	A	20.6	L	J	A	2.3	L	J	A
Potassium	4730	L	J	AD	5580		J	D	4610	L	J	A	4940	L	J	A	8860				4460	L	J	AD
Selenium	23.0				33.7		J	B	18.1		J	C	10.1				35.8				16.0		J	B
Silver	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Sodium	149000				170000				145000				150000				146000				191000	U		E
Thallium	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	11.0	L	J	A	15.0	L	J	A	13.7	L	J	A	13.0	L	J	A	40.6	L	J	A	2.1	L	J	A
Zinc	19.2	L	J	A	44.4				28.7				22.9				62.8				3.3	L	J	A

Table 6-1: Groundwater Sampling Results- Total Metals
Concentrations in µg/L

Station Location	GW-14				GW-15				GW-16				GW-16 Dup				GW-18				GW-19			
Sample I.D.	MYY116				MYY138				MYY136				MYY137				MYY111				MYY109			
Date of Collection	9/22/97				9/30/97				9/30/97				9/30/97				9/18/97				9/18/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	2280		J	BC	1500		J	CD	11900		J	CD	11800		J	CD	667		J	C	2000		J	C
Antimony	2.0	U	J	B	3.0	U			3.8	L	J	A	3.7	L	J	A	2.0	U			2.7	L	J	A
Arsenic	4.0	U	J	B	3	U			8.6	L	J	A	8.0	L	J	A	4.0	U			4.0	U		
Barium	52.4	L	J	AB	46.9	L	J	AD	206	L	J	D	207		J	D	30.0	L	J	A	48.3	L	J	A
Beryllium	1.0	U	J	B	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U	J	B	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Calcium	279000		J	B	285000		J	D	286000		J	D	276000		J	D	260000				256000			
Chromium	8.2	L	J	AB	3.5	L	J	A	27.3				25.2				8.6	L	J	A	9.5	L	J	A
Cobalt	3.6	L	J	AB	3.4	L	J	A	9.8	L	J	A	9.1	L	J	A	1.0	U			2.0	L	J	A
Copper	7.8	L	J	AB	11.1	L	J	A	28.7				28.3				2.6	L	J	A	6.9	L	J	A
Iron	3610		J	BD	2370		J	D	17500		J	D	16400		J	D	875		J	D	3140		J	D
Lead	2.0	U	J	B	2.2	L	J	A	6.0				6.1				2.0	U			2.0	U		
Magnesium	75000		J	B	76400	U	J	DE	86700	U	J	DE	83500	U	J	DE	77400				73400			
Manganese	5210		J	B	3460		J	D	488		J	D	465		J	D	38.0				1810			
Mercury	0.10	U	J	BC	0.20	U	J	BC	0.20	U	J	BC	0.20	U	J	BC	0.10	U	J	C	0.10	U	J	C
Nickel	6.8	L	J	AB	3.2	L	J	A	19.0	L	J	A	17.6	L	J	A	2.8	L	J	A	7.5	L	J	A
Potassium	4580	L	J	AB	4060	L	J	AD	7230		J	D	6990		J	D	5500				4730	L	J	A
Selenium	9.0		J	BC	46.4		J	B	54.5		J	B	51.5		J	B	44.9		J	C	37.8		J	C
Silver	1.0	U	J	B	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Sodium	142000		J	B	126000	U		E	133000	U		E	131000	U		E	151000				135000			
Thallium	3.0	U	J	B	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	9.7	L	J	AB	6.9	L	J	A	41.1	L	J	A	39.1	L	J	A	6.0	L	J	A	8.9	L	J	A
Zinc	17.6	L	J	AB	38.0				53.9			F	130			F	7.0	L	J	A	16.8	L	J	A

Table 6-1: Groundwater Sampling Results- Total Metals
Concentrations in µg/L

Station Location	GW-21				GW-22				GW-23				GW-24				GW-26				GW-27			
Sample I.D.	MYY129				MYY126				MYY121				MYY115				MYY113				MYY112			
Date of Collection	9/24/97				9/23/97				9/22/97				9/19/97				9/19/97				9/19/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	18.0	U	J	CD	3900				1910		J	C	1770		J	C	4830		J	C	5140		J	C
Antimony	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U			3.1	L	J	A
Arsenic	4.0	U			5.4	L	J	A	4.0	U			4.0	U			4.3	L	J	A	4.0	U		
Barium	25.1	L	J	AD	113	L	J	A	56.3	L	J	A	43.1	L	J	A	121	L	J	A	86.9	L	J	A
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Calcium	222000		J	D	222000				275000				284000				272000				234000			
Chromium	1.0	U			8.1	L	J	A	5.1	L	J	A	7.9	L	J	A	11.7				12.1			
Cobalt	3.0	L	J	A	3.8	L	J	A	2.0	L	J	A	1.7	L	J	A	5.4	L	J	A	5.0	L	J	A
Copper	2.0	U			8.3	L	J	A	6.3	L	J	A	5.5	L	J	A	12.8	L	J	A	13.2	L	J	A
Iron	27.9	L	J	AD	5800				2600		J	D	2570		J	D	7940		J	D	7150		J	D
Lead	2.0	U			2.1	L	J	A	2.0	U			2.0	U			3.1				3.5			
Magnesium	63400		J	D	56000				73800				76800				78600				67400			
Manganese	3310		J	D	215				2890				195				495				1030			
Mercury	0.10	U	J	BC	2.00				0.10	U	J	C	0.10	U	J	C	0.71		J	C	0.11	L	J	AC
Nickel	1.9	L	J	A	8.8	L	J	A	4.2	L	J	A	4.8	L	J	A	9.5	L	J	A	11.7	L	J	A
Potassium	2760	L	J	AD	5070				5200				5710				6220				5500			
Selenium	17.5		J	B	4.0	L	J	A	25.5		J	C	44.4		J	C	38.5		J	C	26.8		J	C
Silver	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Sodium	196000				142000				169000				129000				165000				179000			
Thallium	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	2.4	L	J	A	15.0	L	J	A	7.8	L	J	A	9.0	L	J	A	17.6	L	J	A	18.6	L	J	A
Zinc	4.1	L	J	A	21.3				18.2	L	J	A	12.7	L	J	A	30.7				26.7			

Table 6-1: Groundwater Sampling Results- Total Metals
Concentrations in µg/L

Station Location	GW-28			GW-29			GW-30			GW-30 DUP			GW-31		
Sample I.D.	MYY108			MYY107			MYY105			MYY106			MYY134		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/30/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	1700	J	C	911	J	C	352	J	C	235	J	C	1190	J	C
Antimony	2.5 L	J	A	2.0 U			2.0 U			2.0 U			3.0 U		
Arsenic	4.0 U			4.0 U			4.0 U			4.0 U			3.0 U		
Barium	48.2 L	J	A	30.7 L	J	A	38.9 L	J	A	38.5 L	J	A	66.3 L	J	A
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	242000			239000			92500			93300			290000		
Chromium	6.8 L	J	A	9.5 L	J	A	3.0 L	J	A	2.8 L	J	A	11.4		
Cobalt	2.0 L	J	A	1.0 U			1.0 U			1.0 U			1.6 L	J	A
Copper	6.1 L	J	A	2.2 L	J	A	2.0 U			2.0 U			2.8 L	J	A
Iron	2240	J	D	1100	J	D	533	J	DE	364	J	DE	1650		
Lead	2.0 U			2.0 U			2.0 U			2.0 U			1.0 U		
Magnesium	70100			70500			25300			25400			76400 U		E
Manganese	107			59.7			11.6 L	J	A	10.2 L	J	A	211		
Mercury	0.10 U	J	C	0.10 U	J	C	2.0	J	C	0.10 U	J	C	0.47	J	BCG
Nickel	5.6 L	J	A	4.2 L	J	A	1.2 L	J	A	1.0 U			4.9 L	J	A
Potassium	4890 L	J	A	5330			3440 L	J	A	3270 L	J	A	4540 L	J	A
Selenium	35.4	J	C	37.7	J	C	25.3	J	C	25.8	J	C	36.4	J	B
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	144000			154000			59000			59200			127000 U		E
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	6.9 L	J	A	6.7 L	J	A	4.9 L	J	A	4.8 L	J	A	5.6 L	J	A
Zinc	19.2 L	J	A	15.3 L	J	A	4.3 L	J	A	4.1 L	J	A	12.2 L	J	A

Val = Validation Qualifier Com = Comment Qualifier Dup= Duplicate

Data Qualifier Definitions

J	Estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.
L	Indicates results which fall between the sample detection limit and the contract required quantitation limit. Results are estimated and considered qualitatively acceptable but quantitatively unreliable due to the uncertainties in the analytical precision near the limit of detection.
U	The analyte was analyzed for, but was not detected above the reported value. The reported value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was analyzed for, but was not detected. The reported value is an estimate and may be inaccurate or imprecise.
For A-G.	Due to inconsistent use of comment codes, refer to validation reports included in the appendix for comment significance.

Table 6-2: Groundwater Sampling Results- Dissolved Metals
Concentrations in µg/L

Station Location	GW-01				GW-02				GW-03				GW-03 Dup				GW-4				GW-5			
Sample I.D.	MYY154				MYY162				MYY157				MYY158				MYY164				MYY168			
Date of Collection	9/22/97				9/24/97				9/23/97				9/23/97				9/25/97				9/30/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	18.0	U			18.0	U			18.0	U			18.0	U			18.0	U			17.0	U		
Antimony	4.6	L	J	A	2.0	U			2.1	L	J	A	3.1	L	J	A	3.5	L	J	A	3.3	L	J	A
Arsenic	4.0	U			4.0	U			4.0	U			4.0	U			4.0	U			10.4			
Barium	27.2	L	J	A	28.9	L	J	A	30.3	L	J	A	30.2	L	J	A	26.7	L	J	A	34.0	L	J	A
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U			1.0	U			1.0	U			1.0	U			1.2	L	J	A	1.0	U		
Calcium	278000				300000				305000				304000				292000				323000			
Chromium	2.1	L	J	A	5.8	L	J	A	3.3	L	J	A	3.3	L	J	A	4.1	L	J	A	1.9	L	J	A
Cobalt	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			2.1	L	J	A
Copper	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U			2.0	U		
Iron	10.00	U			27.7	L	J	A	12.3	L	J	A	10.0	U			19.8	L	J	A	431			
Lead	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U			1.2	L	J	A
Magnesium	72900				80300				80400				80200				80900				87500			
Manganese	4.7	L	J	A	1.0	U			12.0	L	J	A	13.4	L	J	A	16.6				3450			
Mercury	0.10	U	J	B	0.10	U			0.10	U	J	B	0.10	U	J	B	0.20	U			0.20	U		
Nickel	2.7	L	J	A	1.0	U			2.4	L	J	A	2.3	L	J	A	2.2	L	J	A	2.5	L	J	A
Potassium	5060				4700	L	J	AC	4680	L	J	A	4620	L	J	A	4390	L	J	AC	3630	L	J	AC
Selenium	26.1				32.7		J	B	35.2				35.5				30.7				19.3			
Silver	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Sodium	157000				152000				136000				133000				126000		J	C	130000		J	C
Thallium	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	3.2	L	J	A	2.9	L	J	A	2.7	L	J	A	2.5	L	J	A	2.7	L	J	A	2.1	L	J	A
Zinc	5.2	L	J	A	6.6	L	J	A	13.0	L	J	A	3.4	L	J	A	18.1	L	J	A	16.8	L	J	A

Table 6-2: Groundwater Sampling Results- Dissolved Metals
Concentrations in µg/L

Station Location	GW-6				GW-7				GW-08				GW-10				GW-11				GW-13			
Sample I.D.	MYY165				MYY163				MYY155				MYY159				MYY160				MYY172			
Date of Collection	9/24/97				9/25/97				9/22/97				9/23/97				9/23/97				9/30/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	3160				833				18.0	U			18.0	U			18.0	U			17.0	U		
Antimony	2.4	L	J	A	2.0	U			3.9	L	J	A	2.0	U			5.6	L	J	A	3.5	L	J	A
Arsenic	4.5	L	J	A	4.0	U			31.1				4.0	U			4.0	U			3.0	U		
Barium	75.2	L	J	A	43.8	L	J	A	38.8	L	J	A	51.5	L	J	A	40.3	L	J	A	24.8	L	J	A
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U			1.8	L	J	A	1.0	U			1.0	U			1.0	U			1.0	U		
Calcium	204000				225000				273000				199000				298000				286000			
Chromium	14.1				4.6	L	J	A	1.2	L	J	A	1.2	L	J	A	3.0	L	J	A	1.3	L	J	A
Cobalt	6.8	L	J	A	1.4	L	J	A	1.4	L	J	A	3.0	L	J	A	1.1	L	J	A	5.0	L	J	A
Copper	9.1	L		A	8.7	L	J	A	2.0	U			2.0	U			2.0	U			2.0	U		
Iron	1820				1350				2010				23.7	L	J	A	15.7	L	J	A	11.0	U		
Lead	2.4	L	J	A	4.5				2.0	U			2.0	U			2.0	U			2.1	L	J	A
Magnesium	60300				66000				72900				60000				78400				71900			
Manganese	606				142				4880				3250				1110				8120			
Mercury	0.20	U			0.15	U		D	0.10	U	J	B	0.10	U	J	B	0.10	U	J	B	0.18	L	J	ABE
Nickel	8.3	L	J	A	3.9	L	J	A	3.1	L	J	A	4.0	L	J	A	1.8	L	J	A	2.5	L	J	A
Potassium	4740	L	J	AC	4470	L	J	AC	3380	L	J	A	3930	L	J	A	5300				4610	L	J	AC
Selenium	22.2				32.4				18.5				9.9				37.2				14.8			
Silver	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Sodium	148000		J	C	158000		J	C	144000				142000				140000				191000		J	C
Thallium	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	12.6	L	J	A	5.1	L	J	A	1.0	U			3.4	L	J	A	3.6	L	J	A	2.1	L	J	A
Zinc	32.1				39.1				6.3	L	J	A	6.0	L	J	A	5.2	L	J	A	7.8	L	J	A

Table 6-2: Groundwater Sampling Results- Dissolved Metals
Concentrations in µg/L

Station Location	GW-14				GW-15				GW-16				GW-16 DUP				GW-18				GW-19			
Sample I.D.	MYY153				MYY171				MYY169				MYY163				MYY149				MYY148			
Date of Collection	9/22/97				9/30/97				9/30/97				9/30/97				9/18/97				9/18/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com					Result		Val	Com	Result		Val	Com
Aluminum	18.0	U			17.0	U			17.0	U			17.0	U			18.0	U			18.0	U		
Antimony	4.7	L	J	A	3.0	U			3.0	U			3.1	L	J	A	4.4	L	J	A	4.5	L	J	A
Arsenic	4.0	U			12.0				3.0	U			3.0	U			4.0	U			4.0	U		
Barium	26.4	L	J	A	22.7	L	J	A	23.2	L	J	A	22.6	L	J	A	19.3	L	J	A	15.8	L	J	A
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Calcium	292000				287000				291000				284000				231000				248000			
Chromium	1.3	L	J	A	1.0	L	J	A	5.1	L	J	A	4.9	L	J	A	4.6	L	J	A	1.3	L	J	A
Cobalt	1.8	L	J	A	1.8	L	J	A	1.0	U			1.0	U			1.0	U			1.0	U		
Copper	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U			2.0	U		
Iron	49.1	L	J	A	12.7	L	J	A	11.0	U			11.0	U			34.3	L	J	A	45.3	L	J	A
Lead	2.7	L	J	A	1.0	U			1.0	U			1.0	U			2.0	U			2.0	U		
Magnesium	77000				76400				85000				82700				68400				69100			
Manganese	5440				3060				1.1	L	J	A	1.1	L	J	A	3.6	L	J	A	1670			
Mercury	0.10	U	J	B	0.12	L	J	ABE	0.20	U			0.20	U			0.10	U	J	B	0.10	U	J	B
Nickel	2.2	L	J	A	1.2	L	J	A	1.0	U			1.0	U			1.5	L	J	A	2.2	L	J	A
Potassium	3910	L	J	A	3740	L	J	AC	4870	L	J	AC	4840	L	J	AC	4620	L	J	A	3980	L	J	A
Selenium	8.9				40.8				54.0				50.7				40.0				32.4			
Silver	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Sodium	154000				134000		J	C	135000		J	C	135000		J	C	141000				132000			
Thallium	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	2.8	L	J	A	2.3	L	J	A	3.9	L	J	A	3.9	L	J	A	3.5	L	J	A	2.5	L	J	A
Zinc	5.4	L	J	A	19.9	L	J	A	12.7	L	J	A	10.0	L	J	A	11.0	L	J	A	6.6	L	J	A

Table 6-2: Groundwater Sampling Results- Dissolved Metals
Concentrations in µg/L

Station Location	GW-21				GW-22				GW-23				GW-24				GW-26				GW-27			
Sample I.D.	MYY166				MYY161				MYY156				MYY151				MYY151				MYY150			
Date of Collection	9/30/97				9/23/97				9/22/97				9/19/97				9/19/97				9/19/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	18.0	U			18.0	U			18.0	U			18.0	U			18.0	U			18.0	U		
Antimony	2.0	U			3.9	L	J	A	2.8	L	J	A	4.2	L	J	A	4.5	L	J	A	7.6	L	J	A
Arsenic	4.0	U			4.0	U			4.0	U			4.0	U			4.0	U			4.5	L	J	A
Barium	25.2	L	J	A	45.8	L	J	A	20.7	L	J	A	22.1	L	J	A	24.8	L	J	A	19.7	L	J	A
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Calcium	222000				239000				291000				275000				237000				213000.0			
Chromium	1.0	U			1.0	U			1.8	L	J	A	2.8	L	J	A	2.6	L	J	A	1.3	L	J	A
Cobalt	2.8	L	J	A	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Copper	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U			2.0	U		
Iron	24.8	L	J	A	21.7	L	J	A	25.3	L	J	A	30.2	L	J	A	24.8	L	J	A	10.0	U		
Lead	2.0	U			2.1	L	J	A	2.0	U			2.0	U			2.0	U			2.0	U		
Magnesium	63400				58500				77600				73200				67900				59900.0			
Manganese	3270				10.6	L	J	A	2500				141				91.4				373			
Mercury	0.10	U			1.3		J	B	0.10	U	J	B	0.10	u	J	B	0.97		J	B	0.10	U	J	B
Nickel	3.2	L	J	A	1.4	L	J	A	1.6	L	J	A	1.4	L	J	A	2.0	L	J	A	3.0	L	J	A
Potassium	2700	L	J	AC	4310	L	J	A	4720.0	L	J	A	5280				4580	L	J	A	4190	L	J	A
Selenium	16.9				4.8	L	J	A	30.9				44.2				30.0				25.8			
Silver	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Sodium	186000		J	C	138000				161000				134000				157000				169000			
Thallium	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	2.5	L	J	A	3.5	L	J	A	2.2	L	J	A	3.7	L	J	A	3.7	L	J	A	2.0	L	J	A
Zinc	9.2	L	J	A	5.2	L	J	A	5.1	L	J	A	3.6	L	J	A	5.5	L	J	A	8.4	L	J	A

Table 6-2: Groundwater Sampling Results- Dissolved Metals
Concentrations in µg/L

Station Location	GW-28				GW-29				GW-30				GW-30 DUP				GW-31			
Sample I.D.	MYY147				MYY146				MYY144				MYY145				MYY167			
Date of Collection	9/18/97				9/18/97				9/18/97				9/18/97				09/30/97			
Parameter			Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	18.0	U			18.0	U			18.0	U			18.0	U			17.0	U		
Antimony	4.3	L	J	A	2.4	L	J	A	3.4	L	J	A	4.5	L	J	A	3.0	U		
Arsenic	4.0	U			4.0	U			4.0	U			4.0	U			3.0	U		
Barium	27.4	L	J	A	22.4	L	J	A	36.6	L	J	A	36.4	L	J	A	32.8	L	J	A
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Cadmium	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Calcium	243000				227000				91100				91100				288000			
Chromium	1.3	L	J	A	4.4	L	J	A	2.1	L	J	A	1.8	L	J	A	5.5	L	J	A
Cobalt	1.0	U			1.0	U			1.0	U			1.0	U			1.0	U		
Copper	2.0	U			2.0	U			2.0	U			2.0	U			2.0	U		
Iron	19.7	L	J	A	36.7	L	J	A	14.3	L	J	A	29.0	L	J	A	16.5	L	J	A
Lead	2.0	U			2.0	U			2.0	U			2.0	U			1.1	L	J	A
Magnesium	68900				66100				24500				24500				76500			
Manganese	7.6	L	J	A	1.8	L	J	A	2.3	L	J	A	3.4	L	J	A	2.7	L	J	A
Mercury	0.10	U	J	B	0.1	U	J	B	0.1	U	J	B	0.1	U	J	B	0.20	U		
Nickel	1.0	L	J	A	1.1	L	J	A	1.0	U			1.0	U			1.0	U		
Potassium	4620	L	J	A	4690	L	J	A	3240	L	J	A	3270	L	J	A	4290	L	J	AC
Selenium	34.4				36.9				25.1				24.7				34.6			
Silver	1.0	U			1.0	U			1.0	L	J	A	1.0	U			1.0	U		
Sodium	155000				143000				59100				57900				124000		J	C
Thallium	3.0	U			3.0	U			3.0	U			3.0	U			3.0	U		
Vanadium	2.0	L	J	A	3.3	L	J	A	4.1	L	J	A	3.4	L	J	A	2.5	L	J	A
Zinc	5.6	L	J	A	8.4	L	J	A	5.8	L	J	A	6.1	L	J	A	11.1	L	J	A

Val = Validation Qualifier Com = Comment Qualifier Dup= Duplicate

Data Qualifier Definitions

J	Estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.
L	Indicates results which fall between the sample detection limit and the contract required quantitation limit. Results are estimated and considered qualitatively acceptable but quantitatively unreliable due to the uncertainties in the analytical precision near the limit of detection.
U	The analyte was analyzed for, but was not detected above the reported value. The reported value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was analyzed for, but was not detected. The reported value is an estimate and may be inaccurate or imprecise.
For A-E:	Due to inconsistent use of comment codes, refer to validation reports included in the appendix for comment significance.

TABLE 6-3

MAXIMUM CONTAMINANT LIMITS AND
SECONDARY DRINKING WATER STANDARDS
FOR METALS

METAL	FEDERAL MCL (μg/L)	STATE MCL (μg/L)	SECONDARY DRINKING WATER STANDARD (μg/L)
Aluminum	None	1,000	200
Antimony	6	6	None
Arsenic	50	50	None
Barium	2,000	1,000	None
Beryllium	4	4	None
Cadmium	5	5	None
Chromium	100	50	None
Copper	1,300 *	None	1,300 *
Iron	None	None	300
Lead	15 *	15 *	None
Manganese	None	None	50
Mercury	2	2	None
Nickel	100	100	None
Selenium	50	50	None
Silver	None	None	100
Thallium	2	2	None
Zinc	None	None	5,000

* Federal Action Levels

DRAFT

Waste Disposal, Inc. Santa Fe Springs, California

SEPTEMBER 1997 SPLIT SAMPLING GROUNDWATER EVENT

DISSOLVED AND TOTAL METALS RESULTS

Only data that exceeded the MCLs were mapped. All results in micrograms per liter (µg/l).

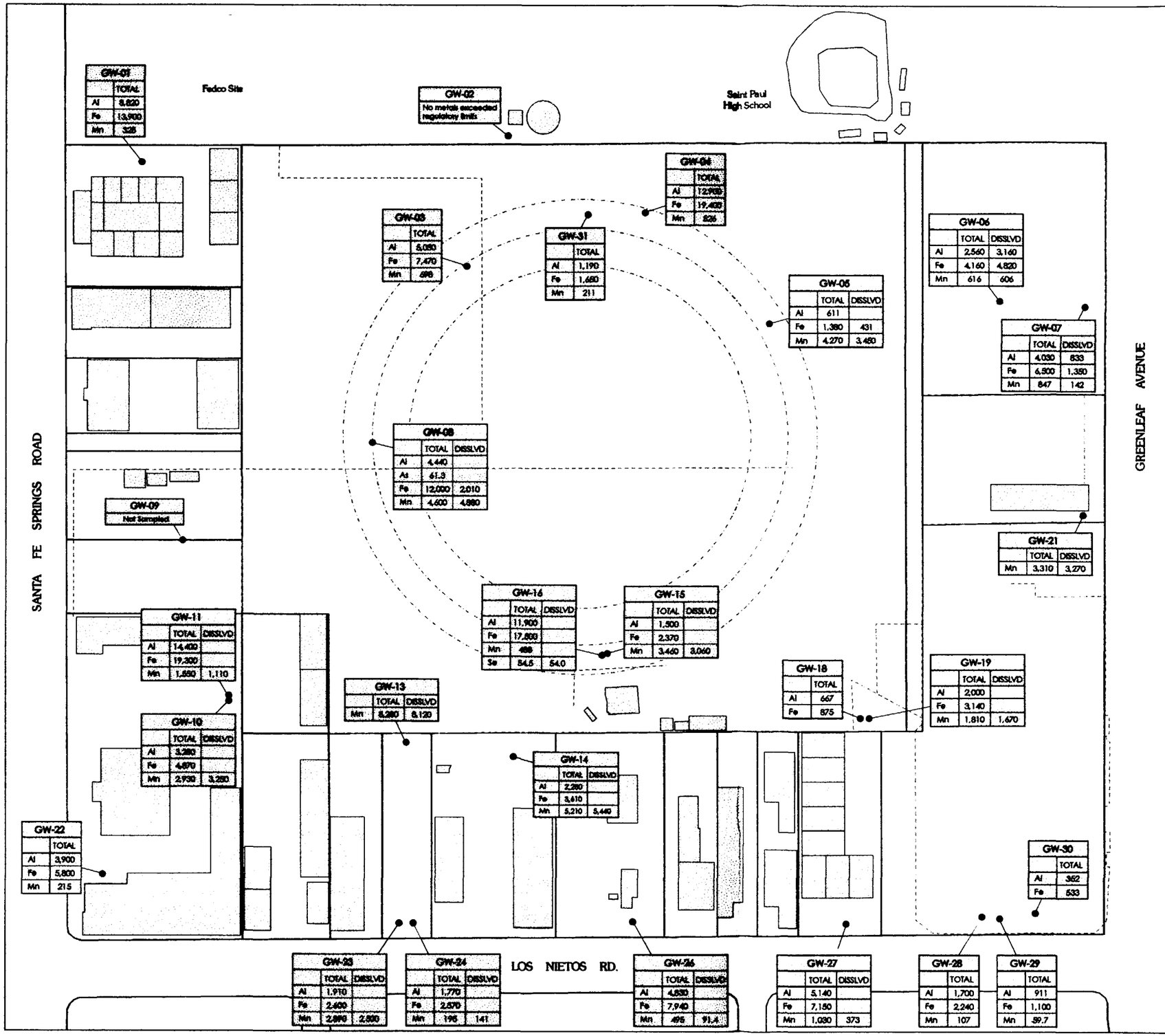
MCLs

Aluminum (Al) 200*
Arsenic (As) 50†
Iron (Fe) 300*
Manganese (Mn) 50*
Selenium (Se) 50†

* *Secondary Drinking Water Standards*
† *Federal MCL*

● Groundwater Well
□ Buildings
Fences
Parcel Boundaries
Approx. Reservoir Boundary

0 50 100 200 Feet



CDMgw_metals.cdr 03-16-98

FIGURE 6-1

metals (ranging between 364 μg/L [GW-30 DUP] and 19,400 μg/L [GW-04]), and the SDWS for manganese (50 μg/L) was exceeded in 25 of the total metals samples (ranging between 59.7 μg/L [GW-29] and 8,280 μg/L [GW-13]).

Calcium, potassium, and vanadium were each detected in all; and cobalt, magnesium, and sodium were detected in several of the groundwater samples, however, there are no federal or state regulatory limits with which to compare their concentrations.

6.2 DISSOLVED METALS RESULTS

Beryllium and thallium were not detected in any of the groundwater samples submitted for dissolved metals analysis. Barium was detected in all, and arsenic, cadmium, chromium, mercury, and nickel were detected in some of the groundwater samples analyzed for dissolved metals at concentrations below their MCLs (1,000 μg/L, 50 μg/L, 5 μg/L, 50 μg/L, 2 μg/L, and 100 μg/L, respectively). Zinc was detected in all of the dissolved metals samples; and copper, lead, and silver, were detected in one or more of the samples, at concentrations below their SDWSs of 5,000 μg/L; 1,300 μg/L, 15 μg/L, and 100 μg/L, respectively.

The antimony concentration in one dissolved metals sample (GW-27 at 7.6 μg/L) and the selenium concentrations in two dissolved metals samples (both samples collected from GW-16 at 54.0 μg/L and 50.7 μg/L) exceeded their MCLs (6 μg/L and 50 μg/L, respectively).

The SDWS for aluminum (200 μg/L) was exceeded in 2 of the samples analyzed for dissolved metals (833 μg/L [GW-07] and 3,160 μg/L [GW-06]). The concentration in GW-06 also exceeds the State MCL for aluminum (1,000 μg/L). The SDWS for iron (300 μg/L) was exceeded in 4 of the dissolved metals samples (ranging between 431 μg/L [GW-05] and 4,820 μg/L [GW-06), and the SDWS for manganese (50 μg/L) was exceeded in 15 of the dissolved metals samples (ranging between 91.4 μg/L [GW-26] and 8,120 μg/L [GW-13]).

Calcium, magnesium, potassium, and sodium were detected in all 29 samples; and cobalt and vanadium were detected in several of the groundwater samples, however, there are no federal or state regulatory limits with which to compare their concentrations.

7.0 QUALITY ASSURANCE/QUALITY CONTROL

Equipment rinsate blanks, trip blanks, and field duplicate samples were collected and analyzed as quality control checks on the integrity of sample collection and handling procedures, sample analyses, and equipment decontamination procedures. All equipment rinsate blank samples were prepared according to methods detailed in the FSP for Groundwater Split Sampling and TRC's FSAP.

7.1 FIELD DUPLICATE SAMPLES

Field duplicate samples were collected at a frequency of 10% of the number of primary samples for all split sample parameters. Three field duplicate samples were collected by both USEPA and TRC, at the same time and in the same manner as the split samples. The field duplicate samples were collected from wells GW-03, GW-16 and GW-30. Each field duplicate was assigned a unique sample number and submitted "blind" to the laboratory. The results of analyses of each duplicate sample for VOCs, SVOCs, pesticides/PCBs, total metals and dissolved metals are included in Tables 3-1, 4-1, 5-1, 6-1, and 6-2, respectively.

The data quality objective (DQO) for duplicate samples is +/-30 relative percent difference (RPD). The RPDs for VOCs, SVOCs, and pesticides/PCBs were not addressed in the data validation reports. The RPDs for the field duplicate pair collected from GW-03 was not discussed for total metals, but the RPDs for iron (in the field duplicate pair from GW-30) and zinc (in the field duplicate pair from GW-16) were calculated to be 38 and 83, respectively. The field duplicate samples analyzed for dissolved metals were noted in the data validation reports as "acceptable".

7.2 EQUIPMENT RINSATE BLANKS

One equipment rinsate sample was collected on each day of split sample collection, except for September 25, 1997. The six equipment blanks were preserved and analyzed using the same containers, methods, and procedures as those used for the groundwater split samples. The results of analyses of each field rinsate sample for VOCs, SVOCs, pesticides/PCBs, and total metals are presented in Tables 7-1 through 7-4. No field rinsate samples were analyzed for dissolved metals.

7.3 FIELD BLANKS

No field blanks were collected during the September 1997 split sampling event.

Table 7-1: Quality Control Sample Results- Volatiles
Concentrations in µg/L

Station Location	Field Rinsate 1			Trip Blank			Field Rinsate 2			Field Eqt. Rinse			Trip Blank			Field Rinsate 4		
Sample I.D.	YY519			YY521			YY524			YY530			YY531			YY537		
Date of Collection	9/18/97			9/18/97			9/19/97			9/22/97			9/22/97			9/23/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethene (total)	1 U			1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U			6		
2-Hexanone	5 U			5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U			1 U		
Toluene	0.6 L	J	A	1 U			1 U			1 U			1 U			1 U		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U	J	B	1 U			1 U			1 U		

Table 7-1: Quality Control Sample Results- Volatiles
Concentrations in µg/L

Station Location	Field Rinse # 5			Trip Blank			Trip Blank			Field Eqt. Rinsate # 6			Pump Decon Water		
Sample I.D.	YY541			YY546			YY549			YY552			YY553		
Date of Collection	9/24/97			9/24/97			9/30/97			9/30/97			9/30/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethene (total)	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			0.9 L	J	A
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			0.7 L	J	A
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			0.7 L	J	A
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	1 U			1 U			1 U			1 U			1 U		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Table 7-1: Quality Control Sample Results- Volatiles
Concentrations in µg/L

Val - Validation Qualifier Com - Comment Qualifier

Data Qualifier Definitions

J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
L	Indicates results which fall below the contract required quantitation limit. Results are estimated and considered qualitatively acceptable but quantitatively unreliable due to the uncertainties in the analytical precision near the limit of detection.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
For A-C:	Due to inconsistent use of comment codes, refer to validation reports included in the appendix for comment significance.

Table 7-2. Quality Control Sample Results- Semivolatiles
Concentrations in µg/L

Station Location	Field Rinsate 1				Field Rinsate 2				Field Eqt. Rinsate				Field Eqt. Rinsate				Field Rinse # 5			
Sample I.D.	YY558				YY562				YY570				YY576				YY580			
Date of Collection	9/18/97				9/19/97				9/22/97				9/23/97				9/24/97			
Semivolatile Compound	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Phenol	10	U			10	U			10	U			10	U			10	U		
bis(2-Chloroethyl)ether	10	U			10	U			10	U			10	U			10	U		
2-Chlorophenol	10	U			10	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
2-Methylphenol	10	U			10	U			10	U			10	U			10	U		
2,2'-oxybis(1-Chloropropane)	10	U			10	U			10	U			10	U			10	U		
4-Methylphenol	10	U			10	U			10	U			10	U			10	U		
N-Nitroso-di-n-propylamine	10	U			10	U			10	U			10	U			10	U		
Hexachloroethane	10	U			10	U			10	U			10	U			10	U		
Nitrobenzene	10	U			10	U			10	U			10	U			10	U		
Isophorone	10	U			10	U			10	U			10	U			10	U		
2-Nitrophenol	10	U			10	U			10	U			10	U			10	U		
2,4-Dimethylphenol	10	U			10	U			10	U			10	U			10	U		
bis(2-Chloroethoxy)methane	10	U			10	U			10	U			10	U			10	U		
2,4-Dichlorophenol	10	U			10	U			10	U			10	U			10	U		
1,2,4-Trichlorobenzene	10	U			10	U			10	U			10	U			10	U		
Naphthalene	10	U			10	U			10	U			10	U			10	U		
4-Chloroaniline	10	U			10	U			10	U			10	U			10	U		
Hexachlorobutadiene	10	U			10	U			10	U			10	U			10	U		
4-Chloro-3-methylphenol	10	U			10	U			10	U			10	U			10	U		
2-Methylnaphthalene	10	U			10	U			10	U			10	U			10	U		
Hexachlorocyclopentadiene	10	U	J	D	10	U	J	D	10	U	J	D	10	U	J	C	10	U	J	C
2,4,6-Trichlorophenol	10	U			10	U			10	U			10	U			10	U		
2,4,5-Trichlorophenol	25	U			25	U			25	U			26	U			26	U		
2-Chloronaphthalene	10	U			10	U			10	U			10	U			10	U		
2-Nitroaniline	25	U			25	U			25	U			26	U			26	U		
Dimethylphthalate	10	U			10	U			10	U			10	U			10	U		
Acenaphthylene	10	U			10	U			10	U			10	U			10	U		
2,6-Dinitrotoluene	10	U			10	U			10	U			10	U			10	U		
3-Nitroaniline	25	U			25	U			25	U			26	U			26	U		
Acenaphthene	10	U			10	U			10	U			10	U			10	U		
2,4-Dinitrophenol	25	U	J	D	25	U	J	D	25	U	J	CD	26	U	J	C	26	U	J	C
4-Nitrophenol	25	U			25	U			25	U			26	U			26	U		
Dibenzofuran	10	U			10	U			10	U			10	U			10	U		
2,4-Dinitrotoluene	10	U			10	U			10	U			10	U			10	U		
Diethylphthalate	10	U			10	U			10	U			10	U			10	U		
4-Chlorophenyl phenyl ether	10	U			10	U			10	U			10	U			10	U		
Fluorene	10	U			10	U			10	U			10	U			10	U		
4-Nitroaniline	25	U			25	U			25	U			26	U			26	U		
4,6-Dinitro-2-methylphenol	25	U			25	U			25	U	J	D	26	U	J	C	26	U	J	C
N-Nitrosodiphenylamine	10	U			10	U			10	U			10	U			10	U		
4-Bromophenyl phenyl ether	10	U			10	U			10	U			10	U			10	U		
Hexachlorobenzene	10	U			10	U			10	U			10	U			10	U		
Pentachlorophenol	25	U			25	U			25	U	J	D	26	U	J	C	26	U		
Phenanthrene	10	U			10	U			10	U			10	U			10	U		
Anthracene	10	U			10	U			10	U			10	U			10	U		
Carbazole	10	U			10	U			10	U			10	U			10	U		
Di-n-butylphthalate	10	U			10	U			10	U			10	U			10	U		
Fluoranthene	10	U			10	U			10	U			10	U			10	U		
Pyrene	10	U			10	U			10	U			10	U			10	U		
Butylbenzylphthalate	10	U			10	U			10	U	J	D	10	U	J	C	10	U	J	C
3,3'-Dichlorobenzidine	10	U			10	U			10	U			10	U			10	U		
Benzo(a)anthracene	10	U			10	U			10	U			10	U			10	U		
Chrysene	10	U			10	U			10	U			10	U			10	U		
bis(2-Ethylhexyl)phthalate	10	U			0.5	L	J	A	2	L	J	ABD	10	U	J	B	10	U	J	C
Di-n-octylphthalate	10	U			10	U			10	U	J	D	10	U	J	C	10	U	J	C
Benzo(b)fluoranthene	10	U			10	U			10	U			10	U			10	U		
Benzo(k)fluoranthene	10	U			10	U			10	U			10	U			10	U		
Benzo(a)pyrene	10	U			10	U			10	U			10	U			10	U		
Indeno(1,2,3-cd)pyrene	10	U			10	U			10	U			10	U			10	U		
Dibenz(a,h)anthracene	10	U			10	U			10	U			10	U			10	U		
Benzo(g,h,i)perylene	10	U			10	U			10	U			10	U			10	U		

Table 7-2 Quality Control Sample Results- Semivolatiles
Concentrations in µg/L

Station Location	Field Eqt. Rinsate # 6			Pump Decon Water		
Sample I.D.	YY589			YY590		
Date of Collection	9/30/97			9/30/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U		
2-Chlorophenol	10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U		
2-Methylphenol	10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U		
4-Methylphenol	10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U		
Hexachloroethane	10 U			10 U		
Nitrobenzene	10 U			10 U		
Isophorone	10 U			10 U		
2-Nitrophenol	10 U			10 U		
2,4-Dimethylphenol	10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U		
2,4-Dichlorophenol	10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U		
Naphthalene	10 U			10 U		
4-Chloroaniline	10 U			10 U		
Hexachlorobutadiene	10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U		
2-Methylnaphthalene	10 U			10 U		
Hexachlorocyclopentadiene	10 U			10 U		
2,4,6-Trichlorophenol	10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U		
2-Chloronaphthalene	10 U			10 U		
2-Nitroaniline	25 U			25 U		
Dimethylphthalate	10 U			10 U		
Acenaphthylene	10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U		
3-Nitroaniline	25 U			25 U		
Acenaphthene	10 U			10 U		
2,4-Dinitrophenol	25 U			25 U		
4-Nitrophenol	25 U			25 U		
Dibenzofuran	10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U		
Diethylphthalate	10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U		
Fluorene	10 U			10 U		
4-Nitroaniline	25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U			25 U		
N-Nitrosodiphenylamine	10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U		
Hexachlorobenzene	10 U			10 U		
Pentachlorophenol	25 U			25 U		
Phenanthrene	10 U			10 U		
Anthracene	10 U			10 U		
Carbazole	10 U			10 U		
Di-n-butylphthalate	10 U			0.7 L	J	AB
Fluoranthene	10 U			10 U		
Pyrene	10 U	J	C	10 U	J	C
Butylbenzylphthalate	10 U	J	C	10 U	J	C
3,3'-Dichlorobenzidine	10 U			10 U		
Benzo(a)anthracene	10 U			10 U		
Chrysene	10 U			10 U		
bis(2-Ethylhexyl)phthalate	0.6 L	J	ABC	0.6 L	J	ABC
Di-n-octylphthalate	10 U	J	C	10 U	J	C
Benzo(b)fluoranthene	10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U		
Benzo(a)pyrene	10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U		

Val = Validation Qualifier Com = Comment Qualifier

Data Qualifier Definitions

J The analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample

L Indicates results which fall below the contract required quantitation limit Results are estimated and considered qualitatively acceptable but quantitatively unreliable due to the uncertainties in the analytical precision near the limit of detection

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit

UJ The analyte was not detected above the reported sample quantitation limit However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample

For A-E Due to inconsistent use of comment codes, refer to validation reports included in the appendix for comment significance

Waste Disposal Inc.
September 1997 Split Sampling

Table 7-3: Quality Control Sample Results- Pesticides/PCBs
Concentrations in µg/L

Station Location	Field Eqt. Rinsate			Field Eqt. Rinsate			Field Rinse #5			Field Eqt. Rinsate #6			Pump Decon Water		
Sample I.D.	YY570			YY576			YY580			YY589			YY590		
Date of Collection	09/22/97			9/23/97			9/24/97			9/30/97			9/30/97		
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
beta-BHC	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
delta-BHC	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
gamma-BHC (Lindane)	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
Heptachlor	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
Aldrin	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
Heptachlor epoxide	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
Endosulfan I	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Methoxychlor	0.50 U			0.53 U			0.53 U			0.50 U			0.50 U		
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
alpha-Chlordane	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
gamma-Chlordane	0.050 U			0.053 U			0.053 U			0.050 U			0.050 U		
Toxaphene	5.0 U			5.3 U			5.3 U			5.0 U			5.0 U		
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1221	2.0 U			2.1 U			2.1 U			2.0 U			2.0 U		
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		

Val = Validation Qualifier Com = Comment Qualifier

Data Qualifier Definitions

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Waste Disposal Inc.
September 1997 Split Sampling

Table 7-4: Quality Control Sample Results- Total Metals
Concentrations in µg/L

Station Location	Field Rinsate 1				Field Rinsate 2				Filtration Rinsate				Field Equipment Rinse				Field Eqt. Rinse				Field Rinse # 5			
Sample I.D.	MYY110				MYY114				MYY119				MYY120				MYY127 EB				MYY131 FB			
Date of Collection	9/18/97				9/19/97				9/22/97				9/22/97				9/30/97				9/24/97			
Parameter	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com	Result		Val	Com
Aluminum	18.0	U			18.0	U			18.0	U			18.0	U	J	B	34.6	L	J	A	57.2	L	J	A
Antimony	2.0	U			2.2	L	J	A	13.8	L	J	A	2.0	U	J	B	2.0	U			2.0	U		
Arsenic	4.0	U			4.0	U			4.0	U			4.0	U	J	B	4.0	U			4.0	U		
Barium	1.2	L	J	A	1.0	U			1.0	U			1.5	L	J	AB	1.0	U			1.0	U		
Beryllium	1.0	U			1.0	U			1.0	U			1.0	U	J	B	1.0	U			1.0	U		
Cadmium	1.0	U			1.0	U			1.0	U			1.0	U	J	B	1.0	U			1.0	U		
Calcium	185	L	J	A	229	L	J	A	134	L	J	A	147	L	J	AB	337	L	J	A	211	L	J	A
Chromium	1.0	U			1.0	U			1.0	U			1.0	U	J	B	1.0	U			1.0	U		
Cobalt	1.0	U			1.0	U			1.0	U			1.0	U	J	B	1.0	U			1.0	U		
Copper	2.0	U			2.0	U			2.0	U			2.0	U	J	B	2.0	U			2.0	U		
Iron	34.4	L	J	A	46.5	L	J	A	10.0	U			61.1	L	J	AB	28.6	L	J	A	10.0	U		
Lead	2.0	U			2.0	U			2.0	U			2.0	U	J	B	2.0	U			2.0	U		
Magnesium	51.6	L	J	A	59.9	L	J	A	23.0	U			51.7	L	J	AB	80.7	L	J	A	33.4	L	J	A
Manganese	2.0	L	J	A	1.0	L	J	A	2.6	L	J	A	4.3	L	J	AB	1.0	U			2.8	L	J	A
Mercury	0.10	U			0.10	U			0.10	U			0.10	U	J	B	0.10	U			0.10	U		
Nickel	1.0	U			1	U			1.0	U			1.0	U	J	B	1.0	U			1.0	U		
Potassium	63.6	L	J	A	64.2	L	J	A	39.0	U			48.1	L	J	AB	39.0	U			39.0	U		
Selenium	3.0	U			3.0	U			3.0	U			3.0	U	J	B	3.0	U			3.0	U		
Silver	1.0	U			1.0	U			1.0	U			1.0	U	J	B	1.0	U			1.0	U		
Sodium	373	L	J	A	395	L	J	A	280	L	J	A	310	L	J	AB	301	L	J	A	234	L	J	A
Thallium	3.0	U			3.0	U			3.0	U			3.0	U	J	B	3.0	U			3.0	U		
Vanadium	1.0	U			1.0	U			1.0	U			1.0	U	J	B	1.0	U			1.0	U		
Zinc	13.0	L	J	A	10.2	L	J	A	13.9	L	J	A	4.9	L	J	AB	4.9	L	J	A	6.3	L	J	A

Table 7-4: Quality Control Sample Results- Total Metals
Concentrations in µg/L

Station Location	Field Eqt. Rinsate # 6			Pump Decon. Water		
Sample I.D.	MYY140 EB			MYY141 EB		
Date of Collection	9/30/97			9/30/97		
Parameter	Result	Val	Com	Result	Val	Com
Aluminum	17.0 U			21.4 L	J	A
Antimony	3.0 U			3.0 U		
Arsenic	3.0 U			3.0 U		
Barium	1.0 U			86.4 L	J	A
Beryllium	1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U		
Calcium	238 L	J	A	46700		E
Chromium	1.0 U			1.0 U		
Cobalt	1.0 U			1.0 U		
Copper	2.0 U			8.5 L	J	A
Iron	34.0 L	J	A	79.1 L	J	A
Lead	1.0 L	J	A	1.0 L	J	A
Magnesium	35.3 L	J	A	23200		E
Manganese	5.8 L	J	A	3.1 L	J	A
Mercury	0.20 U			0.20 U		
Nickel	1.0 U			1.0 U		
Potassium	44.0 U			3650 L	J	A
Selenium	3.0 U			3.0 U		
Silver	1.0 U			1.0 U		
Sodium	258 L	J	A	77100		E
Thallium	3.0 U			3.0 U		
Vanadium	1.0 U			1.9 L	J	A
Zinc	14.7 L	J	A	15.4 L	J	A

Val = Validation Qualifier Com = Comment Qualifier

Data Qualifier Definitions

J	Estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.
L	Indicates results which fall between the sample detection limit and the contract required quantitation limit. Results are estimated and considered qualitatively acceptable but quantitatively unreliable due to the uncertainties in the analytical precision near the limit of detection.
U	The analyte was analyzed for, but was not detected above the reported value. The reported value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was analyzed for, but was not detected. The reported value is an estimate and may be inaccurate or imprecise.
For A-G:	Due to inconsistent use of comment codes, refer to validation reports included in the appendix for comment significance.

7.4 TRIP BLANKS

Trip blanks consist of analyte-free water provided by the laboratory and shipped to the sampling site. One trip blank sample is shipped back to the same laboratory in each cooler that contains VOC samples collected at the site. The trip blanks are analyzed for VOCs only in the same manner as any other VOC sample. Three trip blanks were submitted for analysis to the laboratory during the September 1997 split sampling event; no VOCs were detected in any of these trip blanks. The VOC analytical results for each trip blank sample are presented in Table 7-1.

7.5 LABORATORY QUALITY CONTROL SAMPLES

Laboratory QC samples, also known as matrix spike/matrix spike duplicate (MS/MSD) samples, are used to assess laboratory analytical accuracy and precision. Laboratory QC samples are collected by doubling the volume of groundwater normally collected to provide sufficient sample volume for MS/MSD analysis. The frequency for collection of laboratory QC samples should be 5% (one in twenty samples) of all samples (including all blank samples) submitted to the laboratory. According to the data validation reports no samples were identified for use as laboratory MS/MSD samples in SVOC/pesticides-PCBs sample delivery group (SDG) YY553, total metals SDG MYY128, and dissolved metals SDG MYY144.

Additional discussion regarding laboratory QC samples are included in the data validation reports (Appendix A).

7.6 DATA QUALITY ASSESSMENT

Groundwater split samples were collected during September 1997 as outlined in the FSP for Groundwater Split Sampling. QC procedures governing sampling and analytical activities were performed as described in TRC's FSAP.

All analytical data have been validated in accordance with EPA Level III validation criteria. No data have been rejected as a result of the data review, but some data have been qualified with a "J" as estimated due, but not limited to, deficiencies related to continuing calibration and blank contamination.

A review of the analytical results indicates that the precision goal of $\pm$ 30% for duplicate sample results was met for some of the field duplicate pairs, except as noted above under Section 7.1. Accuracy goals cannot be evaluated based on the MS/MSD recoveries, as they were not discussed in all of the data validation reports, and some samples for MS/MSD analyses were not identified as noted above under Section 7.5. No quality related problems were encountered during sample collection. Although minor analytical QC deficiencies were identified, the majority of the sample results were not impacted. It can be concluded that results generated from this sampling event probably are representative of

the in-situ groundwater conditions beneath the site. Of the 27 wells scheduled to be sampled, only GW-09 was not sampled as it could not be located. Twenty-six of the 27 wells were sampled, and all samples collected were analyzed. No analytical results were rejected, therefore, the completeness goal of 90% established for the site was met. A comparison of the September 1997 results with previous sampling events (EBASCO, 1989a & USEPA, 1993b) indicates that the results are comparable with results from previous sampling events.

8.0 REFERENCES

CDM Federal Programs Corporation (CDM Federal), 1997; *Field Sampling Plan for Groundwater Split Sampling, Waste Disposal, Inc. Superfund Site, Santa Fe Springs, California*; Contract DACW05-D-0009. August.

EBASCO Services Inc. (EBASCO), 1989a; *Final Ground Water Characterization Report, Waste Disposal, Inc., Santa Fe Springs, California*; EPA Contract 68-01-7250. May.

EBASCO, 1989b; *Final Remedial Investigation Report, Waste Disposal, Inc., Santa Fe Springs, California*; EPA Contract 68-01-7250. November.

TRC Environmental Solutions, Inc., 1997a; *Draft RD Investigative Activities Workplan (Rev. 1.0), Waste Disposal, Inc. Superfund Site, Santa Fe Springs, California.* May.

TRC Environmental Solutions, Inc., 1997b; *Comprehensive Ground Water Quarterly Monitoring Plan (Rev.1.0), Waste Disposal, Inc. Superfund Site, Santa Fe Springs, California.* July.

U.S. Environmental Protection Agency (USEPA), 1993a; *Record of Decision (ROD) - Soils and Subsurface Gas, Waste Disposal, Inc Superfund Site.* December 22.

USEPA, 1993b; *1992 Groundwater Monitoring Report, Waste Disposal, Inc., Santa Fe Springs, California*; Laboratory Support Section. January.

USEPA, 1993c; *Preparation of a U.S. EPA Region 9 Field Sampling Plan for EPA-Lead Superfund Projects*; Quality Assurance Management Section, August 1993, revised October 1994.

USEPA, 1994a; *Contract Laboratory Program National Functional Guidelines for Organic Data Review.* February.

USEPA, 1994b; *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* February.

APPENDIX A

LABORATORY ANALYSIS
DATA VALIDATION REPORTS
GROUNDWATER SPLIT SAMPLING EVENT
SEPTEMBER 1997
WASTE DISPOSAL, INC.

Appendix A

Index of Data Validation Reports

Date	Case Number	Analyses	Sample Delivery Group
11/18/97	25700/Memo #1	Volatiles	YY522
12/17/97	25700/Memo #3	Low Level Volatiles	YY544
12/18/97	25700/Memo #4	Low Level Volatiles	YY526
11/20/97	25700/Memo #2	Semivolatiles and Pesticides/PCBs	YY553
12/19/97	25700/Memo #5	Semivolatiles and Pesticides/PCBs	YY575
11/18/97	25700/Memo #6	Total Metals	MYY105
11/19/97	25700/Memo #7	Total and Dissolved Metals	MYY124
1/28/98	25700/Memo #9	Total Metals	MYY128
11/19/97	25700/Memo #8	Dissolved Metals	MYY144
1/8/98	25700/Memo # 10	Dissolved Metals	MYY163

Sample Number Cross Reference List
September 1997
Groundwater Split Sampling Event
WDI Superfund Site

		Table 3-1	Table 4-1	Table 5-1	Table 6-1	Table 6-2
Sample Date	**Well/Sample #**	**VOCs**	**SVOCs**	**Pesticides/PCB**	**Total Metals**	**Dissolved Metals**
9/18/97	GW-30	YY514	YY553	YY553	MYY105	MYY144
	GW-30 Duplicate	YY515	YY554	YY554	MYY106	MYY145
	GW-29	YY516	YY555	YY555	MYY107	MYY146
	GW-28	YY517	YY556	YY556	MYY108	MYY147
	GW-19	YY518	YY557	YY557	MYY109	MYY148
	Field Rinsate 1	YY519	YY558	YY558	MYY110	
	GW-18	YY520	YY559	YY559	MYY111	MYY149
	Trip Blank	YY521				
9/19/97	GW-27	YY522	YY560	YY560	MYY112	MYY150
	GW-26	YY523	YY561	YY561	MYY113	MYY151
	Field Rinsate 2	YY524	YY562	YY562	MYY114	
	GW-24	YY525	YY563	YY563	MYY115	MYY152
9/22/97	GW-14	YY526	YY565	YY565	MYY116	MYY153
	GW-23	YY527	YY567	YY567	MYY121	MYY156
	GW-01	YY528	YY564	YY564	MYY117	MYY154
	GW-08	YY529	YY569	YY569	MYY118	MYY155
	Filtration Rinsate				MYY119	
	Field Eqt. Rinsate	YY530	YY570	YY570	MYY120	
	Trip Blank	YY531				
9/23/97	GW-03	YY532	YY571	YY571	MYY122	MYY157
	GW-3 Duplicate	YY533	YY572	YY572	MYY123	MYY158
	GW-10	YY534	YY573	YY573	MYY124	MYY159
	GW-11	YY535	YY574	YY574	MYY125	MYY160
	GW-22	YY536	YY575	YY575	MYY126	MYY161
	Field Eqt. Rinsate	YY537	YY576	YY576	MYY127	
9/24/97	GW-06	YY538	YY577	YY577	MYY128	MYY165
	GW-21	YY539	YY578	YY578	MYY129	MYY166
	GW-02	YY540	YY579	YY579	MYY130	MYY162
	Field Rinsate # 5	YY541	YY580	YY580	MYY131	
	Trip Blank	YY546				
9/25/97	GW-07	YY543	YY581	YY581	MYY132	MYY163
	GW-04	YY542	YY582	YY582	MYY133	MYY164
9/30/97	GW-31	YY544	YY586	YY586	MYY134	MYY167
	GW-05	YY545	YY583	YY583	MYY135	MYY168
	GW-16	YY547	YY584	YY584	MYY136	MYY169
	GW-16 Duplicate	YY548	YY585	YY585	MYY137	MYY170
	GW-15	YY550	YY587	YY587	MYY138	MYY171
	GW-13	YY551	YY588	YY588	MYY139	MYY172
	Fld Eqt Rins #6	YY552	YY589	YY589	MYY140	
	Pump Decon Wtr 1630	YY553	YY590	YY590	MYY141	
Note: Well GW-09 could not be located and was not sampled.						

DATA VALIDATION REPORTS

VOLATILE ORGANIC COMPOUNDS

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong Rose
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-97-1-4
Technical Direction No.: 9714095

DATE: November 18, 1997

SUBJECT: Review of Analytical Data

There is an unresolved telephone record log (TRL) in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS ID NO.:	CAD980884357
CASE NO.:	25700 Memo #01
SDG NO.:	YY522
LABORATORY:	PDP Analytical Services (PDP)
ANALYSIS:	Volatiles
SAMPLES:	12 Water Samples (YY514 through YY525)
COLLECTION DATE:	September 18 and 19, 1997
REVIEWERS:	Terry Fan and Margaret L. May, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #01
Site: Waste Disposal, Inc.
Laboratory: PDP Analytical Services (PDP)
Reviewers: Terry Fan and Margaret L. May, ESAT/Lockheed
Date: November 18, 1997

I. Case Summary

SAMPLE INFORMATION:

VOA Samples:	YY514 through YY525
Concentration and Matrix:	Low Concentration Groundwater
Analysis:	Volatiles
SOW:	OLC02.1
Collection Date:	September 18 and 19, 1997
Sample Receipt Date:	September 20 and 23, 1997
Analysis Date:	September 26 and 29; and October 1, 1997

FIELD QC:

Trip Blanks (TB):	YY521
Field Blanks (FB):	YY519 and YY524
Equipment Blanks (EB):	None
Background Samples (BG):	None
Field Duplicates (D1):	YY514 and YY515

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK15:	YY522, YY523, YY524, and VLCS15
VBLK16:	YY514, YY514DL, YY515, YY516, YY520, YY521, YY525, and VLCS16
VBLK17:	YY515DL, YY516DL, YY517, YY518, YY519, VHBLK01, and VLCS17

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Initial and Continuing Calibrations

TPO ACTION:

None.

TPO ATTENTION:

The quantitation limits for acetone, 2-butanone, and 1,2,4-trichlorobenzene are qualified as estimated for some samples because of calibration problems.

SAMPLING ISSUES:

The field quality control (QC) samples were not sent blind to the laboratory.

DL - Dilution; LCS - Laboratory Control Sample; VHBLK - Storage Blank

ADDITIONAL COMMENTS:

No tentatively identified compounds (TICs) were detected in the volatile samples.

This report was prepared according to the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organics Analysis, Low Concentration Water (OLC02.1), February 1996, and the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	VOA Acceptable	Comment
HOLDING TIMES	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]
CALIBRATIONS	[NO]	[B,C]
FIELD QC	[YES]	[ ]
LABORATORY BLANKS	[YES]	[ ]
SURROGATES	[YES]	[ ]
LABORATORY CONTROL SAMPLE	[YES]	[ ]
INTERNAL STANDARDS	[YES]	[ ]
COMPOUND IDENTIFICATION	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[A]
SYSTEM PERFORMANCE	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The quantitation limits for the following analyte are estimated due to a large percent difference (%D) in the continuing calibration. The results are flagged "J" in Table 1A.

- 1,2,4-Trichlorobenzene in samples YY522, YY523, and YY524 and method blank VBLK15.

A percent difference of +37.7 was observed for 1,2,4-trichlorobenzene in the continuing calibration performed September 26, 1997. This value exceeds the ±30.0% QC advisory validation criterion.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

C. The quantitation limits for the following analytes are estimated due to low RRFs in the initial and continuing calibrations. The results are flagged "J" in Table 1A.

- Acetone and 2-butanone in all of the samples and blanks

Average RRFs below the 0.05 QC advisory validation criterion were observed for acetone and 2-butanone in the initial calibration performed September 16, 1997. RRFs below the 0.05 QC advisory validation criterion were also observed for acetone and 2-butanone in the continuing calibrations performed September 26 and 29; and October 1, 1997 (see Table 2).

A RRF of 0.009 was observed for acetone in the continuing calibration performed September 29, 1997. Although this value is well below the 0.05 QC advisory validation criterion specified in the Functional Guidelines, area counts were evaluated by the reviewer and were determined to be acceptable in the standard.

Since the results for acetone and 2-butanone are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of the target analytes.

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25700 Memo #01

Site: Waste Disposal, Inc.

Lab.: PDP Analytical Serivces (PDP)

Reviewers: Terry Fan and Margaret L. May, ESAT/Lockheed

Date: November 18, 1997

Analysis Type: Low Concentration Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-30			GW-30 DUP			GW-29			GW-28			GW-19		
Sample I.D.	YY514 D1			YY515 D1			YY516			YY517			YY518		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/18/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	46			52			64			8			18		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #01
Site: Waste Disposal, Inc.
Lab.: PDP Analytical Serivces (PDP)
Reviewers: Terry Fan and Margaret L. May, ESAT/Lockheed
Date: November 18, 1997

Analysis Type: Low Concentration Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	Field Rinsate 1			GW-18			Trip Blank			GW-27			GW-26		
Sample I.D.	YY519 FB			YY520			YY521 TB			YY522			YY523		
Date of Collection	9/18/97			9/18/97			None			9/19/97			9/19/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	0.6 L	J	A	23			1 U			13			2		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U	J	B	1 U	J	B

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25700 Memo #01

Site: Waste Disposal, Inc.

Lab.: PDP Analytical Serivces (PDP)

Reviewers: Terry Fan and Margaret L. May, ESAT/Lockheed

Date: November 18, 1997

Analysis Type: Low Concentration Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	Field Rinsate 2			GW-24			Method Blank			Method Blank			Method Blank		
Sample I.D.	YY524 FB			YY525			VBLK15			VBLK16			VBLK17		
Date of Collection	9/19/97			9/19/97											
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C	5 U	J	C
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			9			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	1 U			2			1 U			1 U			1 U		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			0.6 L	J	A	1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U	J	B	1 U			1 U	J	B	1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #01
Site: Waste Disposal, Inc.
Lab.: PDP Analytical Serivces (PDP)
Reviewers: Terry Fan and Margaret L. May, ESAT/Lockheed
Date: November 18, 1997

Analysis Type: Low Concentration Groundwater Samples for Volatiles

Concentration in µg/L

Sample I.D.	Storage Blank VHBLK01			CRQL											
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1											
Bromomethane	1 U			1											
Vinyl chloride	1 U			1											
Chloroethane	1 U			1											
Methylene chloride	2 U			2											
Acetone	5 U	J	C	5											
Carbon disulfide	1 U			1											
1,1-Dichloroethene	1 U			1											
1,1-Dichloroethane	1 U			1											
trans-1,2-Dichloroethene	1 U			1											
cis-1,2-Dichloroethene	1 U			1											
Chloroform	1 U			1											
1,2-Dichloroethane	1 U			1											
2-Butanone	5 U	J	C	5											
Bromochloromethane	1 U			1											
1,1,1-Trichloroethane	1 U			1											
Carbon tetrachloride	1 U			1											
Bromodichloromethane	1 U			1											
1,2-Dichloropropane	1 U			1											
cis-1,3-Dichloropropene	1 U			1											
Trichloroethene	1 U			1											
Dibromochloromethane	1 U			1											
1,1,2-Trichloroethane	1 U			1											
Benzene	1 U			1											
trans-1,3-Dichloropropene	1 U			1											
Bromoform	1 U			1											
4-Methyl-2-pentanone	5 U			5											
2-Hexanone	5 U			5											
Tetrachloroethene	1 U			1											
1,1,2,2-Tetrachloroethane	1 U			1											
1,2-Dibromoethane	1 U			1											
Toluene	1 U			1											
Chlorobenzene	1 U			1											
Ethylbenzene	1 U			1											
Styrene	1 U			1											
Xylene (total)	1 U			1											
1,3-Dichlorobenzene	1 U			1											
1,4-Dichlorobenzene	1 U			1											
1,2-Dichlorobenzene	1 U			1											
1,2-Dibromo-3-chloropropane	1 U			1											
1,2,4-Trichlorobenzene	1 U			1											

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
L	Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Initial and Continuing Calibrations

Case No.: 25700 Memo #01
Site: Waste Disposal, Inc.
Laboratory: PDP Analytical Services (PDP)
Reviewers: Terry Fan and Margaret L. May, ESAT/Lockheed
Date: November 18, 1997

RELATIVE RESPONSE FACTORS

Analysis date:	$\overline{RRF}$ 9/16/97	RRF 9/26/97	RRF 9/29/97	RRF 10/01/97
Analyte	Init.	Cont.	Cont.	Cont.
Acetone	0.012	0.010	0.009	0.010
2-Butanone	0.022	0.019	0.018	0.021

PERCENT DIFFERENCES

Analysis date:	%D 9/26/97
Analyte	Cont.
1,2,4-Trichlorobenzene	+37.7

ASSOCIATED SAMPLES AND BLANKS

Init. 9/16/97: YY514 through YY525, VBLK15, VBLK16, VBLK17, VHBLK01

Cont. 9/26/97: YY522, YY523, YY524, VBLK15
Cont. 9/29/97: YY514, YY515, YY516, YY520, YY521, YY525, VBLK16
Cont. 10/01/97: YY517, YY518, YY519, VBLK17, VHBLK01

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #01 LABORATORY PDP

SDG NO. YY522 SITE NAME Waste Disposal, Inc.

SOW OLC02.1 REVIEW COMPLETION DATE November 18, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWERS' NAMES T. Fan & M. L. May

NO. OF SAMPLES 12 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION	O			
2. GC-MS TUNE/GC PERFORMANCE	O			
3. INITIAL CALIBRATIONS	X			
4. CONTINUING CALIBRATIONS	X			
5. FIELD QC	O			
6. LABORATORY BLANKS	O			
7. SURROGATES	O			
8. MATRIX SPIKE/DUPLICATES	O			
9. REGIONAL QC	N/A			
10. INTERNAL STANDARDS	O			
11. COMPOUND IDENTIFICATION	O			
12. COMPOUND QUANTITATION	O			
13. SYSTEM PERFORMANCE	O			
14. OVERALL ASSESSMENT	X			

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: None.

TPO ATTENTION: The quantitation limits for acetone, 2-butanone, and 1,2,4-trichlorobenzene are qualified as estimated for some samples because of calibration problems.

AREAS OF CONCERN: None.

In Reference to Case No(s).:
25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: PDP Analytical Services (PDP)

Lab Contact: Reddy Pakanati

Region: 9

Regional Contact: Steve Remaley

ESAT Reviewer: Terry Fan & M.L.May, 11/4/97

Call Initiated By: _____ Laboratory X Region

In reference to data for the following sample(s):
SDG YY522

Summary of Questions/Issues Discussed:

The following items were noted during the review of this sample delivery group. Please respond within seven days as specified in Section 2.2 of Exhibit B of the OLC02.1 Statement of Work.

1. The extracted ion current profiles from the manual integrations of target compounds #2 through #16 were omitted for the continuing calibration analyzed 10/1/97, 13:27 on instrument B-HP5971A. Please submit.

2. The mass listing for scan number 367 was omitted for the BFB tune analyzed 10/1/97, 13:06 on instrument B-HP5971A (Lab File ID B5214). Please submit the missing mass listing as page 212A.

3. EPA Sample YY522 was erroneously reported as YY552 on Form II (page 6). Please correct and resubmit this form.

4. Please clarify why the airbill number recorded by the sampler in the traffic report does not match the number on the airbill sticker received at the laboratory for samples YY514 through YY521. Refer to pages 5 and 311.

Summary of Resolution:

_____ Regional Contact Signature

_____ Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong Rose
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-97-1-4
Technical Direction No.: 9714100

DATE: December 17, 1997

SUBJECT: Review of Analytical Data

There is an unresolved telephone record log (TRL) form in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS ID NO.:	CAD980884357
CASE NO.:	25700 Memo #03
SDG NO.:	YY544
LABORATORY:	PDP Analytical Services (PDP)
ANALYSIS:	Low Level Volatiles
SAMPLES:	9 Groundwater Samples (see Case Summary)
COLLECTION DATE:	September 30, 1997
REVIEWER:	Frank Arceneaux, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

ESTW-9A-412/25700M03.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #03
Site: Waste Disposal, Inc.
Laboratory: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 17, 1997

I. Case Summary

SAMPLE INFORMATION:

Volatiles Samples:	YY544, YY545, and YY547 through YY553
Concentration and Matrix:	Low Level Groundwater
Analysis:	Volatiles
SOW:	OLC02.1
Collection Date:	September 30, 1997
Sample Receipt Date:	October 2, 1997
Analysis Date:	October 2 and 3, 1997

FIELD QC:

Trip Blanks (TB):	YY549
Field Blanks (FB):	None
Equipment Blanks (EB):	YY552 and YY553
Background Samples (BG):	None
Field Duplicates (D1):	YY547 and YY548

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK19:	YY544, YY545, YY547, and VLCS19
VBLK20:	YY548 through YY553, VLCS20, and VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Initial and Continuing Calibrations

TPO ACTION:

None.

TPO ATTENTION:

Results for acetone and 2-butanone in all samples and blanks are estimated due to low relative response factors in the initial and continuing calibrations.

SAMPLING ISSUES:

The field quality control (QC) samples were not sent blind to the laboratory.

ADDITIONAL COMMENTS:

No tentatively identified compounds (TICs) were detected in the samples.

All method requirements specified in the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organics Analysis, Low Concentration Water (OLC02.1), February 1996, have been met. This report was prepared according to the SOW and the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

VLCS-Laboratory Control Sample; VHBLK-Storage Blank

ADDITIONAL COMMENTS: (continued)

Chloroform, bromodichloromethane, and dibromochloromethane were found in equipment blank YY553 at concentrations of 0.9 µg/L, 0.7 µg/L, and 0.7 µg/L, respectively. No data are qualified because these analytes were not detected in any of the samples.

II. Validation Summary

	VOA Acceptable/Comment	
HOLDING TIMES	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]
CALIBRATIONS	[NO]	[B]
FIELD QC	[YES]	[ ]
LABORATORY BLANKS	[YES]	[ ]
SURROGATES	[YES]	[ ]
LABORATORY CONTROL SAMPLES	[YES]	[ ]
INTERNAL STANDARDS	[YES]	[ ]
COMPOUND IDENTIFICATION	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[A]
SYSTEM PERFORMANCE	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The detected results and quantitation limits for the following analytes are estimated due to low relative response factors (RRFs) in the initial and continuing calibrations. The results are flagged "J" in Table 1A.

- Acetone and 2-butanone in all samples, all method blanks, and storage blank VHBLK01

Average RRFs below the 0.05 QC advisory validation criterion were observed for the analytes listed above in the initial calibration performed September 16, 1997. RRFs below the 0.05 QC advisory validation criterion were observed for the analytes listed above in the continuing calibrations performed October 2 and 3, 1997 (see Table 2).

The detected results for the analytes listed above should be considered as the minimum values at which these analytes are present in the samples. Since the results for these analytes are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of the target analytes.

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25700 Memo #03

Site: Waste Disposal, Inc.

Lab.: PDP Analytical Services (PDP)

Reviewer: Frank Arceneaux, ESAT/Lockheed

Date: December 17, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-31			GW-5			GW-16			GW-16 Dup			Trip Blank		
Sample I.D.	YY544			YY545			YY547 D1			YY548 D1			YY549 TB		
Date of Collection	9/30/97			9/30/97			9/30/97			9/30/97			9/30/97		
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			4 L	J	A	5 U			5 U			5 U		
2-Hexanone	5 U			4 L	J	A	5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	2			2			20			16			1 U		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #03
Site: Waste Disposal, Inc.
Lab.: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 17, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-15			GW-13			Field Eqt. Rinsate #6			Pump Decon Water			Method Blank		
Sample I.D.	YY550			YY551			YY552 EB			YY553 EB			VBLK19		
Date of Collection	9/30/97			9/30/97			9/30/97			9/30/97					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			0.9 L	J	A	1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			0.7 L	J	A	1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			0.7 L	J	A	1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	2			1			1 U			1 U			1 U		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #03
Site: Waste Disposal, Inc.
Lab.: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 17, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Sample I.D.	Method Blank VBLK20			Storage Blank VHBLK01			CRQL								
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1								
Bromomethane	1 U			1 U			1								
Vinyl chloride	1 U			1 U			1								
Chloroethane	1 U			1 U			1								
Methylene chloride	2 U			2 U			2								
Acetone	5 U	J	B	5 U	J	B	5								
Carbon disulfide	1 U			1 U			1								
1,1-Dichloroethene	1 U			1 U			1								
1,1-Dichloroethane	1 U			1 U			1								
cis-1,2-Dichloroethene	1 U			1 U			1								
trans-1,2-Dichloroethene	1 U			1 U			1								
Chloroform	1 U			1 U			1								
1,2-Dichloroethane	1 U			1 U			1								
2-Butanone	5 U	J	B	5 U	J	B	5								
Bromochloromethane	1 U			1 U			1								
1,1,1-Trichloroethane	1 U			1 U			1								
Carbon tetrachloride	1 U			1 U			1								
Bromodichloromethane	1 U			1 U			1								
1,2-Dichloropropane	1 U			1 U			1								
cis-1,3-Dichloropropene	1 U			1 U			1								
Trichloroethene	1 U			1 U			1								
Dibromochloromethane	1 U			1 U			1								
1,1,2-Trichloroethane	1 U			1 U			1								
Benzene	1 U			1 U			1								
trans-1,3-Dichloropropene	1 U			1 U			1								
Bromoform	1 U			1 U			1								
4-Methyl-2-pentanone	5 U			5 U			5								
2-Hexanone	5 U			5 U			5								
Tetrachloroethene	1 U			1 U			1								
1,1,2,2-Tetrachloroethane	1 U			1 U			1								
1,2-Dibromoethane	1 U			1 U			1								
Toluene	1 U			1 U			1								
Chlorobenzene	1 U			1 U			1								
Ethylbenzene	1 U			1 U			1								
Styrene	1 U			1 U			1								
Xylene (total)	1 U			1 U			1								
1,3-Dichlorobenzene	1 U			1 U			1								
1,4-Dichlorobenzene	1 U			1 U			1								
1,2-Dichlorobenzene	1 U			1 U			1								
1,2-Dibromo-3-chloropropane	1 U			1 U			1								
1,2,4-Trichlorobenzene	1 U			1 U			1								

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Initial and Continuing Calibrations

Case No.: 25700 Memo #03
Site: Waste Disposal, Inc.
Laboratory: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 17, 1997

RELATIVE RESPONSE FACTORS

Analysis date:	RRF 9/16/97	RRF 10/2/97	RRF 10/3/97
Analyte	Init.	Cont.	Cont.
Acetone	0.01	0.01	0.01
2-Butanone	0.02	0.02	0.02

ASSOCIATED SAMPLES AND BLANKS

Init. 9/16/97: All samples, VBLK19, VBLK20, and VHBLK01

Cont. 10/2/97: YY544, YY545, YY547, and VBLK19
Cont. 10/3/97: YY548 through YY553, VBLK20, and VHBLK01

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #03 LABORATORY PDP Analytical Services (PDP)

SDG NO. YY544 SITE NAME Waste Disposal, Inc.

SOW OLC02.1 REVIEW COMPLETION DATE December 17, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Frank Arceneaux

NO. OF SAMPLES 9 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION	O			
2. GC-MS TUNE/GC PERFORMANCE	O			
3. INITIAL CALIBRATIONS	X			
4. CONTINUING CALIBRATIONS	X			
5. FIELD QC	O			
6. LABORATORY BLANKS	O			
7. SURROGATES	O			
8. LABORATORY CONTROL SAMPLE	O			
9. REGIONAL QC	N/A			
10. INTERNAL STANDARDS	O			
11. COMPOUND IDENTIFICATION	O			
12. COMPOUND QUANTITATION	O			
13. SYSTEM PERFORMANCE	O			
14. OVERALL ASSESSMENT	X			

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: None.

TPO ATTENTION: Results for acetone and 2-butanone in all of the samples and blanks are estimated due to low relative response factors in the initial and continuing calibrations.

AREAS OF CONCERN: None.

In Reference to Case No(s).:
25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: PDP Analytical Services (PDP)

Lab Contact: Sachin Kudchadkar; FAX (281) 298-5784

Region: 6

Regional Contact: Steve Remaley

ESAT Reviewer: Frank Arceneaux, 12/16/97

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample(s):
Sample Delivery Group (SDG): YY544
Samples: YY544, YY545, and YY547 through YY553

Summary of Questions/Issues Discussed:

The following items were noted during the review of this SDG. Please respond within 7 days as specified in Section 2.2 of Exhibit B of the OLM03.2 Statement of Work (SOW).

Section 3.8.2.4 of Exhibit B of USEPA Contract Laboratory Program Statement of Work (SOW) for Organics Analysis Low Concentration Water (OLC02.1) states: "Calculate the percent recovery of each compound in the sample to the nearest whole percent..." Percent recoveries greater than 100% reported for the spiked analytes in VLCS19 and VLCS20 on pages 6 and 7 appear to have been reported to two significant figures rather than to the nearest whole percent. Also, each form was identified on the last line as "FORM III LSV" instead of "FORM III LCV" as on the example form in Exhibit B of the SOW. Please correct and resubmit the two forms 3LCA. Also, please clarify the spiking level of the spiked analytes in the LCS since the concentration of the LCS spiking solution and the microliters spiked were not found in the data package.

_____ _____
Regional Contact Signature Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-97-1-4
Technical Direction No.: 9714100

DATE: December 18, 1997

SUBJECT: Review of Analytical Data

There is an unresolved telephone record log (TRL) form in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS ID NO.:	CAD980884357
CASE NO.:	25700 Memo #04
SDG NO.:	YY526
LABORATORY:	PDP Analytical Services (PDP)
ANALYSIS:	Low Level Volatiles
SAMPLES:	19 Groundwater Samples (see Case Summary)
COLLECTION DATE:	September 22 through 25, 1997
REVIEWER:	Frank Arceneaux, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

ESTW-9A-413/25700M04.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #04
Site: Waste Disposal, Inc.
Laboratory: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 18, 1997

I. Case Summary

SAMPLE INFORMATION:

Volatiles Samples:	YY526 through YY543 and YY546
Concentration and Matrix:	Low Level Groundwater
Analysis:	Volatiles
SOW:	OLC02.1
Collection Date:	September 22 through 25, 1997
Sample Receipt Date:	September 24 and 26, 1997
Analysis Date:	October 1, 2, and 3, 1997

FIELD QC:

Trip Blanks (TB):	YY531 and YY546
Field Blanks (FB):	YY541
Equipment Blanks (EB):	YY530 and YY537
Background Samples (BG):	None
Field Duplicates (D1):	None

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK17:	YY526 through YY532 and VLCS17
VBLK18:	YY533 through YY535, YY535DL, YY536 through YY542, YY546, and VLCS18
VBLK20:	YY542DL, YY543, VLCS20, and VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Initial and Continuing Calibrations

TPO ACTION:

None.

TPO ATTENTION:

Results for acetone and 2-butanone in all of the samples and blanks are estimated due to low relative response factors in the initial and continuing calibrations.

SAMPLING ISSUES:

The field quality control (QC) samples were not sent blind to the laboratory.

ADDITIONAL COMMENTS:

No tentatively identified compounds (TICs) were detected in samples YY526 through YY533, YY535 through YY543 and YY546.

All method requirements specified in the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organics Analysis, Low Concentration Water (OLC02.1), February 1996, have been met. This report was prepared according to the SOW and the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

VLCS-Laboratory Control Sample; VHBLK-Storage Blank

ADDITIONAL COMMENTS: (continued)

4-Methyl-2-pentanone was found in equipment blank YY537 at a concentration of 6 µg/L. No data are qualified because 4-methyl-2-pentanone was not found in any of the samples.

II. Validation Summary

	VOA Acceptable	Comment
HOLDING TIMES	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]
CALIBRATIONS	[NO]	[B]
FIELD QC	[YES]	[ ]
LABORATORY BLANKS	[YES]	[ ]
SURROGATES	[YES]	[ ]
LABORATORY CONTROL SAMPLES	[YES]	[ ]
INTERNAL STANDARDS	[YES]	[ ]
COMPOUND IDENTIFICATION	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[A]
SYSTEM PERFORMANCE	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The detected results and quantitation limits for the following analytes are estimated due to low relative response factors (RRFs) in the initial and continuing calibrations. The results are flagged "J" in Table 1A.

- Acetone and 2-butanone in all samples, all method blanks, and storage blank VHBLK01

Average RRFs below the 0.05 QC advisory validation criterion were observed for the analytes listed above in the initial calibration performed September 16, 1997. RRFs below the 0.05 QC advisory validation criterion were observed for the analytes listed above in the continuing calibrations performed October 1, 2, and 3, 1997 (see Table 2).

The detected results for the analytes listed above should be considered as the minimum values at which these analytes are present in the samples. Since the results for these analytes are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of the target analytes.

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #04
Site: Waste Disposal, Inc.
Lab.: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 18, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-14			GW-23			GW-1			GW-8			Field Equipmet Rinse		
Sample I.D.	YY526			YY527			YY528			YY529			YY530 EB		
Date of Collection	9/22/97			9/22/97			9/22/97			9/22/97			9/22/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			2			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			6			1			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	3			2			3			2			1 U		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25700 Memo #04

Site: Waste Disposal, Inc.

Lab.: PDP Analytical Services (PDP)

Reviewer: Frank Arceneaux, ESAT/Lockheed

Date: December 18, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	Trip Blank 1			GW-3			GW-3 DUP			GW-10			GW-11		
Sample I.D.	YY531 TB			YY532			YY533			YY534			YY535		
Date of Collection	9/22/97			9/23/97			9/23/97			9/23/97			9/23/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			0.6 L	J	A
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			4		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			0.6 L	J	A	30		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	1 U			2			2			3			1		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25700 Memo #04

Site: Waste Disposal, Inc.

Lab.: PDP Analytical Services (PDP)

Reviewer: Frank Arceneaux, ESAT/Lockheed

Date: December 18, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-22			Field Rinsate 4			GW-6			GW-21			GW-2		
Sample I.D.	YY536			YY537 EB			YY538			YY539			YY540		
Date of Collection	9/23/97			9/23/97			9/24/97			9/24/97			9/24/97		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	0.6 L	J	A	1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			0.9 L	J	A	1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	2			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			6			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	3			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	2			1 U			3			4			1		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #04
Site: Waste Disposal, Inc.
Lab.: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 18, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	Field Rinse #5			GW-4			GW-7			Trip Blank			Method Blank		
Sample I.D.	YY541 FB			YY542			YY543			YY546 TB			VBLK17		
Date of Collection	9/24/97			9/24/97			9/24/97			9/24/97					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	2 U			2 U			2 U			2 U			2 U		
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Carbon disulfide	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			3			1 U			1 U		
1,2-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B	5 U	J	B
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Carbon tetrachloride	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
trans-1,3-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U			1 U			1 U			1 U			1 U		
4-Methyl-2-pentanone	5 U			5 U			5 U			5 U			5 U		
2-Hexanone	5 U			5 U			5 U			5 U			5 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane	1 U			1 U			1 U			1 U			1 U		
Toluene	1 U			64			7			1 U			1 U		
Chlorobenzene	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Xylene (total)	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25700 Memo #04

Site: Waste Disposal, Inc.

Lab.: PDP Analytical Services (PDP)

Reviewer: Frank Arceneaux, ESAT/Lockheed

Date: December 18, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Sample I.D.	Method Blank VBLK18			Method Blank VBLK20			Storage Blank VHBLK01			CRQL					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	1 U			1 U			1 U			1					
Bromomethane	1 U			1 U			1 U			1					
Vinyl chloride	1 U			1 U			1 U			1					
Chloroethane	1 U			1 U			1 U			1					
Methylene chloride	2 U			2 U			2 U			2					
Acetone	5 U	J	B	5 U	J	B	5 U	J	B	5					
Carbon disulfide	1 U			1 U			1 U			1					
1,1-Dichloroethene	1 U			1 U			1 U			1					
1,1-Dichloroethane	1 U			1 U			1 U			1					
cis-1,2-Dichloroethene	1 U			1 U			1 U			1					
trans-1,2-Dichloroethene	1 U			1 U			1 U			1					
Chloroform	1 U			1 U			1 U			1					
1,2-Dichloroethane	1 U			1 U			1 U			1					
2-Butanone	5 U	J	B	5 U	J	B	5 U	J	B	5					
Bromochloromethane	1 U			1 U			1 U			1					
1,1,1-Trichloroethane	1 U			1 U			1 U			1					
Carbon tetrachloride	1 U			1 U			1 U			1					
Bromodichloromethane	1 U			1 U			1 U			1					
1,2-Dichloropropane	1 U			1 U			1 U			1					
cis-1,3-Dichloropropene	1 U			1 U			1 U			1					
Trichloroethene	1 U			1 U			1 U			1					
Dibromochloromethane	1 U			1 U			1 U			1					
1,1,2-Trichloroethane	1 U			1 U			1 U			1					
Benzene	1 U			1 U			1 U			1					
trans-1,3-Dichloropropene	1 U			1 U			1 U			1					
Bromoform	1 U			1 U			1 U			1					
4-Methyl-2-pentanone	5 U			5 U			5 U			5					
2-Hexanone	5 U			5 U			5 U			5					
Tetrachloroethene	1 U			1 U			1 U			1					
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1					
1,2-Dibromoethane	1 U			1 U			1 U			1					
Toluene	1 U			1 U			1 U			1					
Chlorobenzene	1 U			1 U			1 U			1					
Ethylbenzene	1 U			1 U			1 U			1					
Styrene	1 U			1 U			1 U			1					
Xylene (total)	1 U			1 U			1 U			1					
1,3-Dichlorobenzene	1 U			1 U			1 U			1					
1,4-Dichlorobenzene	1 U			1 U			1 U			1					
1,2-Dichlorobenzene	1 U			1 U			1 U			1					
1,2-Dibromo-3-chloropropane	1 U			1 U			1 U			1					
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1					

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Initial and Continuing Calibrations

Case No.: 25700 Memo #04
Site: Waste Disposal, Inc.
Laboratory: PDP Analytical Services (PDP)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 18, 1997

RELATIVE RESPONSE FACTORS

Analysis date: Analyte	$\overline{RRF}$ 9/16/97 Init.	RRF 10/1/97 Cont.	RRF 10/2/97 Cont.	RRF 10/3/97 Cont.
Acetone	0.01	0.01	0.01	0.01
2-Butanone	0.02	0.02	0.02	0.02

ASSOCIATED SAMPLES AND BLANKS

Init. 9/16/97: All samples and blanks

Cont. 10/1/97: YY526 through YY532 and VBLK17
Cont. 10/2/97: YY533 through YY542, YY546, and VBLK18
Cont. 10/3/97: YY543, VHBLK01, and VBLK20

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY534

Lab Name: PDP ANALYTICAL SERVICES Contract: 68-D7-0004

Lab Code: PDP Case No.: 25700 SAS No.: SDG No.: YY526

Lab Sample ID: 4234.010 Date Received: 09/24/97

Lab File ID: B5237 Date Analyzed: 10/02/97

Purge Volume: 20 (mL) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.53 (mm) Length: 60 (m)

Number TICs found: ~~2~~ 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
1.	UNKNOWN	19.83	4	NJ
~~2.~~	~~UNKNOWN~~	~~25.11~~	~~3~~	~~NJ~~
3.				
4.				
5.				
6.				
7.	#2. Column bleed (a siloxane), therefore not a TIC			
8.				
9.				
10.				
11.				
12.	JLL 12-16-97			
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #04 LABORATORY PDP Analytical Services (PDP)

SDG NO. YY526 SITE NAME Waste Disposal, Inc.

SOW OLC02.1 REVIEW COMPLETION DATE December 18, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Frank Arceneaux

NO. OF SAMPLES 19 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION	O			
2. GC-MS TUNE/GC PERFORMANCE	O			
3. INITIAL CALIBRATIONS	X			
4. CONTINUING CALIBRATIONS	X			
5. FIELD QC	O			
6. LABORATORY BLANKS	O			
7. SURROGATES	O			
8. LABORATORY CONTROL SAMPLE	O			
9. REGIONAL QC	N/A			
10. INTERNAL STANDARDS	O			
11. COMPOUND IDENTIFICATION	O			
12. COMPOUND QUANTITATION	O			
13. SYSTEM PERFORMANCE	O			
14. OVERALL ASSESSMENT	X			

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: None.

TPO ATTENTION: Results for acetone and 2-butanone in all of the samples and blanks are estimated due to low relative response factors in the initial and continuing calibrations.

AREAS OF CONCERN: None.

In Reference to Case No(s).:
25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: PDP Analytical Services (PDP)

Lab Contact: Sachin Kudchadkar; FAX (281) 298-5784

Region: 6

Regional Contact: Steve Remaley

ESAT Reviewer: Frank Arceneaux, 12/16/97

Call Initiated By: _____ Laboratory X Region

In reference to data for the following sample(s):
Sample Delivery Group (SDG): YY526
Samples: YY526 through YY543 and YY546

Summary of Questions/Issues Discussed:

The following items were noted during the review of this SDG. Please respond within 7 days as specified in Section 2.2 of Exhibit B of the OLM03.2 Statement of Work (SOW).

Section 3.8.2.4 of Exhibit B of USEPA Contract Laboratory Program Statement of Work (SOW) for Organics Analysis Low Concentration Water (OLC02.1) states: "Calculate the percent recovery of each compound in the sample to the nearest whole percent..." Percent recoveries greater than 100% reported for the spiked analytes in VLCS17, VLCS18 and VLCS20 on pages 8, 9 and 10 appear to have been reported to two significant figures rather than to the nearest whole percent. Also, each form was identified on the last line as "FORM III LSV" instead of "FORM III LCV" as on the example form in Exhibit B of the SOW. Please correct and resubmit the three forms 3LCA. Also, please clarify the spiking level of the spiked analytes in the LCS since the concentration of the LCS spiking solution and the microliters spiked were not found in the data package.

_____ _____
Regional Contact Signature Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

TECHNICAL DIRECTION NO. 9714100 ESW92 112

SITE ACCOUNT NO: C1 SITE NAME: Waste Disposal Inc

WA NUMBER 9-97-1-4 DATE: 10-14-97 (REC'D @ 10/10/97)

WA TITLE: Superfund Data Validation

EPA WAM: Rose Fong CONTRACTOR WAM: De O'Leary

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package Information
Case# 25700 Data type V
SDG# ~~YY526 & 544~~ YY526 MLM 11-6-97
Laboratory PDP

Project Information:
EPA RPM Andria Benner
Mail Code SFD-7-1
[ ] EPA-Lead Non-CLP [] BPA

Deliverable
[] Forms Review
[X] Unvalidated Table 1A email RPM+WAM
[X] Review/Validation Report

Due date
7 days from TDF date
To be determined

WAM Signature Rose Fong Date 10-14-97 Rec'd _____ Transmit _____

ESAT USE

Memo # 04 Analyses CLPAS-OR Matrix W Number 19

Sample Numbers:
YY526 → YY543,
YY546

Analyses:
LOW LEVEL GROUND WATER SAMPLES
FOR VOLATILES

Blanks: YY541 (FB)
YY530 (EB) and YY537 (EB)
YY531 (TB) and YY546 (TB)

Background: None

Duplicates: None

CERCLIS NO.
CAD980884357

Date(s) Sampled:
9/22, 23, 24, 25/97

Date Table 1A/Validation Assigned:	10/14/97	10/14/97
Date Table 1A/Validation Completed:	10/21/97	12/18/97
Date Table 1A/Validation Sent to EPA:	10/22/97	12/18/97

Reviewer/Staff Frank Arceneaux/Lockheed Martin ESAT

Comment
Preliminary CCR sent to EPA on 11-6-97. MLM/ESAT

DATA VALIDATION REPORTS

SEMIVOLATILE ORGANIC COMPOUNDS

AND

PESTICIDES/PCBs

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong Rose
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges DOL for
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-97-1-4
Technical Direction No.: 9714097

DATE: November 20, 1997

SUBJECT: Review of Analytical Data

There is an unresolved telephone communications summary (TCS) form in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS ID NO.:	CAD980884357
CASE NO.:	25700 Memo #02
SDG NO.:	YY553
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Semivolatiles and Pesticides/PCBs
SAMPLES:	20 Water Samples (see Case Summary)
COLLECTION DATE:	September 18, 19, 22, and 23, 1997
REVIEWER:	Margaret L. May, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

ESTW-9A-388/25700M02.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #02
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: November 20, 1997

I. Case Summary

SAMPLE INFORMATION:

BNA Samples:	YY553 through YY565, YY567, and YY569 through YY574
PEST Samples:	YY553 through YY557, YY559, YY560, YY561, YY563, YY564, YY565, YY567, and YY569 through YY574
Concentration and Matrix:	Low Level Groundwater
Analysis:	Semivolatiles and Pesticides/PCBs
SOW:	OLM03.2
Collection Date:	September 18, 19, 22, and 23, 1997
Sample Receipt Date:	September 19, 20, 24, and 25, 1997
BNA Extraction Date:	September 22, 25, and 26, 1997
PEST Extraction Date:	September 23, 25, and 26, 1997
BNA Analysis Date:	September 25, 26; and October 1 and 2, 1997
PEST Analysis Date:	September 30; and October 1 and 2, 1997

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	YY558 and YY562
Equipment Blanks (EB):	YY570
Background Samples (BG):	None
Field Duplicates (D1):	YY553 and YY554

METHOD BLANKS AND ASSOCIATED SAMPLES:

SBLK1:	YY553, YY554, YY555, YY555MS, YY555MSD, and YY556 through YY563
SBLK2:	YY564, YY565, YY567, YY569, and YY570
SBLK3:	YY571 through YY574
PBLKWA:	YY553, YY554, YY555, YY555MS, YY555MSD, and YY556, YY557, YY559, YY560, YY561, and YY563
PBLKWE:	YY564, YY565, YY567, YY569, and YY570
PBLKWG:	YY571 through YY574

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Semivolatiles: Continuing Calibrations

TPO ACTION:

None.

TPO ATTENTION:

(1) The detected results for bis(2-ethylhexyl)phthalate are qualified as nondetected and estimated (U,J) due to contamination in method blanks.
(2) The results for several semivolatile target analytes are estimated (J) due to calibration problems.

MS - Matrix Spike; MSD - Matrix Spike Duplicate

SAMPLING ISSUES:

(1) The field quality control (QC) samples were not sent blind to the laboratory. (2) The chain of custody (CoC) did not specify a sample to be used for laboratory QC.

ADDITIONAL COMMENTS:

The tentatively identified compounds (TICs) found in the samples are reported on the Form 1Fs and in attachments to the case narrative included in this report. The user should note that the attachments to the case narrative summarize TICs which are alkanes. No TICs were detected in sample YY558.

All method requirements specified in the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, OLM03.2, have been met. This report was prepared according to the SOW and the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	BNA		PEST	
	Acceptable	Comment	Acceptable	Comment
HOLDING TIMES	[YES]	[ ]	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]	[YES]	[ ]
CALIBRATIONS	[NO]	[C,D]	[YES]	[ ]
FIELD QC	[NO]	[B]	[YES]	[ ]
LABORATORY BLANKS	[NO]	[B]	[YES]	[ ]
SURROGATES	[YES]	[ ]	[YES]	[ ]
MATRIX SPIKE/DUPLICATES	[YES]	[ ]	[YES]	[ ]
INTERNAL STANDARDS	[YES]	[ ]	[N/A]	[ ]
COMPOUND IDENTIFICATION	[YES]	[E]	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[A]	[YES]	[ ]
SYSTEM PERFORMANCE	[YES]	[ ]	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The detected results for the following semivolatile target analytes are qualified as nondetected and estimated due to laboratory and field blank contamination. The results are flagged "U,J" in Table 1A.

- bis(2-Ethylhexyl)phthalate in samples YY553, YY555, YY556, YY559, YY564, YY565, YY567, YY569, and YY571 through YY574

bis(2-Ethylhexyl)phthalate was found in all of the laboratory method blanks, field blank YY562, and equipment blank YY570. (See Table 1A for concentrations.) The results for the samples listed above are

considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A laboratory method blank is laboratory reagent water, or baked sand for solid matrices, analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

A field blank is clean water prepared as a sample in the field by the sampler and shipped to the laboratory with the samples. A field blank is intended to detect contaminants that may have been introduced in the field, although any laboratory introduced contamination will also be present. Contaminants that are found in the field blank which are absent in the laboratory method blank could be indicative of a field QC problem, a deficiency in the bottle preparation procedure, a difference in preparation of the laboratory and field blanks, or other indeterminate error.

C. The quantitation limits for the following semivolatile target analytes are estimated due to low relative response factors (RRFs) in the continuing calibrations. The results are flagged "J" in Table 1A.

- Hexachlorocyclopentadiene in method blank SBLK1
- 2,4-Dinitrophenol in samples YY564, YY565, YY567, YY569, YY570, and method blank SBLK2

A RRF of 0.03 was observed for hexachlorocyclopentadiene in the continuing calibration performed September 25, 1997. A RRF of 0.04 was observed for 2,4-dinitrophenol in the continuing calibration performed October 2, 1997. These RRFs are below the 0.05 QC advisory validation criterion.

Since the results for these analytes are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of the target analytes.

D. The detected results and quantitation limits for the following semivolatile target analytes are estimated due to large percent differences (%Ds) in the continuing calibrations. The results are flagged "J" in Table 1A.

- Hexachloroethane in method blank SBLK1

- Hexachlorocyclopentadiene and 2,4-dinitrophenol in all of the samples and method blanks
- 4,6-Dinitro-2-methylphenol, butylbenzylphthalate, and di-n-octylphthalate in samples YY559, YY564, YY565, YY567, YY569 through YY574, and all of the method blanks
- Pentachlorophenol in samples YY564, YY565, YY567, YY569 through YY574, and method blanks SBLK2 and SBLK3
- bis(2-Ethylhexyl)phthalate in samples YY559, YY564, YY565, YY567, YY569, YY570, and method blanks SBLK1 and SBLK2

Percent differences exceeding the ±25.0% QC advisory validation criterion were observed for the analytes listed above in the continuing calibrations performed September 25, 26 and October 1 and 2, 1997 (see Table 2).

The continuing calibration checks the instrument performance daily and produces the RRFs for target analytes that are used for quantitation.

E. bis(2-Ethylhexyl)phthalate has been commonly found as a contaminant in the field and in many laboratories. The user should note that the result in the sample listed below may be an artifact.

- bis(2-Ethylhexyl)phthalate in sample YY560

ANALYTICAL RESULTS

Case No.: 25700 Memo #02

TABLE 1A

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Reviewer: Margaret L. May, ESAT/Lockheed

Date: November 20, 1997

Concentration in µg/L

Station Location	GW-30			GW-30 Dup			GW-29			GW-28			GW-19			Field Rinsate 1			GW-18		
Sample I.D.	YY553 D1			YY554 D1			YY555			YY556			YY557			YY558 FB			YY559		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		

Station Location	GW-30			GW-30 Dup			GW-29			GW-28			GW-19			Field Rinsate 1			GW-18		
Sample I.D.	YY553 D1			YY554 D1			YY555			YY556			YY557			YY558 FB			YY559		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U	J	D
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Butylbenzylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U	J	D
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	B	10 U			10 U	J	B	10 U	J	B	10 U			10 U			10 U	J	BD
Di-n-octylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U	J	D
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

Case No.: 25700 Memo #02

TABLE 1A

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Reviewer: Margaret L. May, ESAT/Lockheed

Date: November 20, 1997

Concentration in µg/L

Station Location	GW-27			GW-26			Field Rinsate 2			GW-24			GW-1			GW-14			GW-23		
Sample I.D.	YY560			YY561			YY562 FB			YY563			YY564			YY565			YY567		
Date of Collection	9/19/97			9/19/97			9/19/97			9/19/97			9/22/97			9/22/97			9/22/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		

Station Location	GW-27			GW-26			Field Rinsate 2			GW-24			GW-1			GW-14			GW-23		
Sample I.D.	YY560			YY561			YY562 FB			YY563			YY564			YY565			YY567		
Date of Collection	9/19/97			9/19/97			9/19/97			9/19/97			9/22/97			9/22/97			9/22/97		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	CD	25 U	J	CD	25 U	J	CD
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U			25 U			25 U	J	D	25 U	J	D	25 U	J	D
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U			25 U			25 U			25 U			25 U	J	D	25 U	J	D	25 U	J	D
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U			0.5 L	J	A	10 U			10 U		
Butylbenzylphthalate	10 U			10 U			10 U			10 U			10 U	J	D	10 U	J	D	10 U	J	D
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	16		E	10 U			0.5 L	J	A	10 U			10 U	J	BD	10 U	J	BD	10 U	J	BD
Di-n-octylphthalate	10 U			10 U			10 U			10 U			10 U	J	D	10 U	J	D	10 U	J	D
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #02
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: November 20, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-8			Field Eqt. Rinsate			GW-3			GW-3 DUP			GW-10			GW-11			Method Blank		
Sample I.D.	YY569			YY570 EB			YY571			YY572			YY573			YY574			SBLK1		
Date of Collection	9/22/97			9/22/97			9/23/97			9/23/97			9/23/97			9/23/97					
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U	J	D
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			0.7 L	J	A	10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	CD
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			26 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			26 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			26 U			25 U		

Station Location	GW-8			Field Eqt. Rinsate			GW-3			GW-3DUP			GW-10			GW-11			Method Blank		
Sample I.D.	YY569			YY570 EB			YY571			YY572			YY573			YY574			SBLK1		
Date of Collection	9/22/97			9/22/97			9/23/97			9/23/97			9/23/97			9/23/97					
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	CD	25 U	J	CD	25 U	J	D	25 U	J	D	25 U	J	D	26 U	J	D	25 U	J	D
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			26 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U			25 U			25 U			25 U			26 U			25 U		
4,6-Dinitro-2-methylphenol	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	26 U	J	D	25 U	J	D
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	25 U	J	D	26 U	J	D	25 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Butylbenzylphthalate	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	BD	2 L	J	ABD	10 U	J	B	10 U	J	B	10 U	J	B	10 U	J	B	0.6 L	J	ABD
Di-n-octylphthalate	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D	10 U	J	D
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Available

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

Case No.: 25700 Memo #02

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Reviewer: Margaret L. May, ESAT/Lockheed

Date: November 20, 1997

TABLE 1A

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Sample I.D.	Method Blank SBLK2			Method Blank SBLK3			CRQL														
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10														
bis(2-Chloroethyl)ether	10 U			10 U			10														
2-Chlorophenol	10 U			10 U			10														
1,3-Dichlorobenzene	10 U			10 U			10														
1,4-Dichlorobenzene	10 U			10 U			10														
1,2-Dichlorobenzene	10 U			10 U			10														
2-Methylphenol	10 U			10 U			10														
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10														
4-Methylphenol	10 U			10 U			10														
N-Nitroso-di-n-propylamine	10 U			10 U			10														
Hexachloroethane	10 U			10 U			10														
Nitrobenzene	10 U			10 U			10														
Isophorone	10 U			10 U			10														
2-Nitrophenol	10 U			10 U			10														
2,4-Dimethylphenol	10 U			10 U			10														
bis(2-Chloroethoxy)methane	10 U			10 U			10														
2,4-Dichlorophenol	10 U			10 U			10														
1,2,4-Trichlorobenzene	10 U			10 U			10														
Naphthalene	10 U			10 U			10														
4-Chloroaniline	10 U			10 U			10														
Hexachlorobutadiene	10 U			10 U			10														
4-Chloro-3-methylphenol	10 U			10 U			10														
2-Methylnaphthalene	10 U			10 U			10														
Hexachlorocyclopentadiene	10 U	J	D	10 U	J	D	10														
2,4,6-Trichlorophenol	10 U			10 U			10														
2,4,5-Trichlorophenol	25 U			25 U			25														
2-Chloronaphthalene	10 U			10 U			10														
2-Nitroaniline	25 U			25 U			25														
Dimethylphthalate	10 U			10 U			10														
Acenaphthylene	10 U			10 U			10														
2,6-Dinitrotoluene	10 U			10 U			10														
3-Nitroaniline	25 U			25 U			25														

Sample I.D.	Method Blank SBLK2			Method Blank SBLK3			CRQL														
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Acenaphthene	10 U			10 U			10														
2,4-Dinitrophenol	25 U	J	CD	25 U	J	D	25														
4-Nitrophenol	25 U			25 U			25														
Dibenzofuran	10 U			10 U			10														
2,4-Dinitrotoluene	10 U			10 U			10														
Diethylphthalate	10 U			10 U			10														
4-Chlorophenyl phenyl ether	10 U			10 U			10														
Fluorene	10 U			10 U			10														
4-Nitroaniline	25 U			25 U			25														
4,6-Dinitro-2-methylphenol	25 U	J	D	25 U	J	D	25														
N-Nitrosodiphenylamine	10 U			10 U			10														
4-Bromophenyl phenyl ether	10 U			10 U			10														
Hexachlorobenzene	10 U			10 U			10														
Pentachlorophenol	25 U	J	D	25 U	J	D	25														
Phenanthrene	10 U			10 U			10														
Anthracene	10 U			10 U			10														
Carbazole	10 U			10 U			10														
Di-n-butylphthalate	0.7 L	J	A	10 U			10														
Fluoranthene	10 U			10 U			10														
Pyrene	10 U			10 U			10														
Butylbenzylphthalate	10 U	J	D	10 U	J	D	10														
3,3'-Dichlorobenzidine	10 U			10 U			10														
Benzo(a)anthracene	10 U			10 U			10														
Chrysene	10 U			10 U			10														
bis(2-Ethylhexyl)phthalate	0.8 L	J	ABD	3 L	J	AB	10														
Di-n-octylphthalate	10 U	J	D	10 U	J	D	10														
Benzo(b)fluoranthene	10 U			10 U			10														
Benzo(k)fluoranthene	10 U			10 U			10														
Benzo(a)pyrene	10 U			10 U			10														
Indeno(1,2,3-cd)pyrene	10 U			10 U			10														
Dibenz(a,h)anthracene	10 U			10 U			10														
Benzo(g,h,i)perylene	0.7 L	J	A	10 U			10														

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

Case No.: 25700 Memo #02

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Reviewer: Margaret L. May, ESAT/Lockheed

Date: November 20, 1997

TABLE 1A

Analysis Type: Low Level Groundwater Samples for Pesticides/PCBs

Concentration in µg/L

Station Location	GW-30			GW-30 Dup			GW-29			GW-28			GW-19			GW-18			GW-27		
Sample I.D.	YY553 D1			YY554 D1			YY555			YY556			YY557			YY559			YY560		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/19/97		
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
beta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
delta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-BHC (Lindane)	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Aldrin	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor epoxide	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Endosulfan I	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Methoxychlor	0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U		
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
alpha-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Toxaphene	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1221	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #02
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: November 20, 1997

Analysis Type: Low Level Groundwater Samples for Pesticides/PCBs

Concentration in µg/L

Station Location	GW-26			GW-24			GW-1			GW-14			GW-23			GW-8			Field Eqt. Rinsate		
Sample I.D.	YY561			YY563			YY564			YY565			YY567			YY569			YY570 EB		
Date of Collection	9/19/97			9/19/97			9/22/97			9/22/97			9/22/97			9/22/97			9/22/97		
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
beta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
delta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-BHC (Lindane)	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Aldrin	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor epoxide	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Endosulfan I	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Methoxychlor	0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U		
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
alpha-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Toxaphene	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1221	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank
BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #02
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, RSAT/Lockheed
Date: November 20, 1997

Analysis Type: Low Level Groundwater Samples for Pesticides/PCBs

Concentration in µg/L

Station Location	GW-3			GW-3 DUP			GW-10			GW-11			Method Blank			Method Blank			Method Blank		
Sample I.D.	YY571			YY572			YY573			YY574			PBLKWA			PBLKWE			PBLKWG		
Date of Collection	9/23/97			9/23/97			9/23/97			9/23/97											
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
beta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
delta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-BHC (Lindane)	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Aldrin	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor epoxide	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Endosulfan I	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Methoxychlor	0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U		
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
alpha-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Toxaphene	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1221	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Available

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank
BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #02
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: November 20, 1997

Analysis Type: Low Level Groundwater Samples for Pesticides/PCBs

Concentration in µg/L

Sample I.D.	CRQL																				
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.050																				
beta-BHC	0.050																				
delta-BHC	0.050																				
gamma-BHC (Lindane)	0.050																				
Heptachlor	0.050																				
Aldrin	0.050																				
Heptachlor epoxide	0.050																				
Endosulfan I	0.050																				
Dieldrin	0.10																				
4,4'-DDE	0.10																				
Endrin	0.10																				
Endosulfan II	0.10																				
4,4'-DDD	0.10																				
Endosulfan sulfate	0.10																				
4,4'-DDT	0.10																				
Methoxychlor	0.50																				
Endrin ketone	0.10																				
Endrin aldehyde	0.10																				
alpha-Chlordane	0.050																				
gamma-Chlordane	0.050																				
Toxaphene	5.0																				
Aroclor-1016	1.0																				
Aroclor-1221	2.0																				
Aroclor-1232	1.0																				
Aroclor-1242	1.0																				
Aroclor-1248	1.0																				
Aroclor-1254	1.0																				
Aroclor-1260	1.0																				

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank
BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Semivolatiles: Continuing Calibrations

Case No.: 25700 Memo #02
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: November 20, 1997

PERCENT DIFFERENCES

	%D	%D	%D	%D	%D
Analysis date:	9/25/97	9/26/97	9/26/97	10/1/97	10/2/97
Analysis time:	08:34	09:08	21:48	16:02	19:17
Analyte	Cont.	Cont.	Cont.	Cont.	Cont.
Hexachloroethane	-28.6	-----	-----	-----	-----
Hexachlorocyclopentadiene	-92.4	-67.0	-60.1	-78.5	-78.7
2,4-Dinitrophenol	-52.8	-39.0	-55.6	-65.8	-76.6
4,6-Dinitro-2-methylphenol	-40.3	-----	-38.2	-51.1	-64.5
Pentachlorophenol	-----	-----	-----	-26.2	-25.7
Butylbenzylphthalate	+25.4	-----	+33.2	+25.3	+32.4
bis(2-Ethylhexyl)phthalate	+26.6	-----	+29.0	-----	+31.9
Di-n-octylphthalate	+25.6	-----	+34.9	+34.8	+34.0

ASSOCIATED SAMPLES AND METHOD BLANKS

Cont. 9/25/97, 08:34: SBLK1
Cont. 9/26/97, 09:08: YY553 through YY558, YY560 through YY563
Cont. 9/26/97, 21:48: YY559
Cont. 10/1/97, 16:02: YY571 through YY574, SBLK3
Cont. 10/2/97, 19:17: YY564, YY565, YY567, YY569, YY570, SBLK2

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY553

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31106.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19417.D

Level: (low/med) LOW Date Received: 09/19/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104-76-7	1-Hexanol, 2-ethyl-	3.999	2	NJ
2.		Unknown	11.101	2	J
3.		UNKNOWN	22.797	3	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MLM/ESAT 11-5-97

Alkane Report for Sample : YY553 Page: 1

Data file : v19417.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
1) 25136-55-4	1,4-Dioxane, dimethyl-	3.783	5.27

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY554

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31106.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19418.D

Level: (low/med) LOW Date Received: 09/19/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.8

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	1-Hexanol, 2-ethyl-	4.002	7	NJ
2. 80-05-7	Phenol, 4,4'-(1-methylethyli	13.213	2	NJ
3.	UNKNOWN	23.285	2	J
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2 - 4,4'-(1-Methylethylidene)bis-phenol

MLM/ESAT 11-5-97

Alkane Report for Sample : YY554 Page: 1

Data file : v19418.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
1) 25136-55-4	1,4-Dioxane, dimethyl-	3.776/	5.74

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY555

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31106.03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19419.D

Level: (low/med) LOW Date Received: 09/19/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.776	3	J
2. 104-76-7	1-Hexanol, 2-ethyl-	4.002	8	NJ
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MLM/ESAT 11-5-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY556

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31108.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19422.D

Level: (low/med) LOW Date Received: 09/20/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: ~~7~~ 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~UNKNOWN ALCOHOL~~	~~3.173~~	~~2~~	~~J~~
2. 104-76-7	1-Hexanol, 2-ethyl-	4.001	9	NJ
3. 98-86-2	Acetophenone	4.302	4	NJ
4.	Benzenemethanol, -dimethyl	4.399	4	J
5.	UNKNOWN ALKENE	4.625	10	J
6. 87-41-2	1(3H)-Isobenzofuranone	6.401	4	NJ
7. 80-05-7	Phenol, 4,4'-(1-methylethylidene)bis-	13.212	3	NJ
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MLM/ESAT 11-5-97

Alkane Report for Sample : YY556 Page: 1

Data file : v19422.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	542-85-8	Ethane, isothiocyanato-	3.785	15.71

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY557

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31108.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19423.D

Level: (low/med) LOW Date Received: 09/20/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.7

Number TICs found: ~~6~~ 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~UNKNOWN ALCOHOL~~	~~2.764~~	~~2~~	~~JB~~
2. 104-76-7	1-Hexanol, 2-ethyl-	4.001	11	NJ
3. 98-86-2	Acetophenone	4.302	2	NJ
4.	Benzene, (-methoxyethyl)-	4.399	3	J
5. 87-41-2	1(3H)-Isobenzofuranone	6.401	3	NJ
6.	UNKNOWN	19.970	2	J
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1 elutes >30 seconds before phenol.

MLM/ESAT 11-5-97

Alkane Report for Sample : YY557 Page: 1

Data file : v19423.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	0-00-0	1-Methyl-1-phenylsilacyclohexane	3.398	2.39
2)	542-85-8	Ethane, isothiocyanato-	3.775	40.21

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY559

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31108.04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19443.D

Level: (low/med) LOW Date Received: 09/20/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.786	3	J
2. 104-76-7	1-Hexanol, 2-ethyl-	4.001	5	NJ
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MLM/ESAT 11-5-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY560

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31108.05

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19426.D

Level: (low/med) LOW Date Received: 09/20/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.248	2	J
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MLM/ESAT 11-5-97

Data file : v19426.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
1) 25136-55-4	1,4-Dioxane, dimethyl-	3.782	57.49

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY561

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31108.06

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19427.D

Level: (low/med) LOW Date Received: 09/20/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

Number TICs found: ~~2~~ 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN~~	~~3.181~~	~~2~~	~~J~~
2.	104-76-7	1-Hexanol, 2-ethyl-	3.999	11	NJ
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MLW/ESAT 11-5-97

Alkane Report for Sample : YY561 Page: 1

Data file : v19427.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
1) 25136-55-4	1,4-Dioxane, dimethyl-	3.783	32.41

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY562

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31108.07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19428.D

Level: (low/med) LOW Date Received: 09/20/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 99-93-4	Acetophenone, 4'-hydroxy-	7.035	4	NJ
2. 80-05-7	Phenol, 4,4'-(1-methylethylidene) bis-	13.211	5	NJ
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MLM/ESAT 11-5-97

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY563

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31108.08

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19429.D

Level: (low/med) LOW Date Received: 09/20/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/22/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/26/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.7

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	1-Hexanol, 2-ethyl-	3.998	22	NJ
2. 87-41-2	1(3H)-Isobenzofuranone	6.398	2	NJ
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MLM/ESAT 11-5-97

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY564

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31156.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19615.D

Level: (low/med) LOW Date Received: 09/24/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/25/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.9

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 98-83-9	.alpha.-Methylstyrene	3.751	4	NJ
2. 104-76-7	1-Hexanol, 2-ethyl-	3.977	34	NJ
3. 98-86-2	Acetophenone	4.279	3	NJ
4. 87-41-2	1(3H)-Isobenzofuranone	6.366	4	NJ
5. 80-05-7	Phenol, 4,4'-(1-methylethylidene)bis-	13.177	2	NJ
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MLM/ESAT 11-5-97

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY565

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31156.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19616.D

Level: (low/med) LOW Date Received: 09/24/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/25/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8

Number TICs found: ~~4~~ 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~-Benzenediol, -ethyl-~~	~~3.367~~	~~3~~	~~J~~
2. 104-76-7	1-Hexanol, 2-ethyl-	3.980	19	NJ
3. 87-41-2	1(3H)-Isobenzofuranone	6.369	2	NJ
~~4. 110-27-0~~	~~Isopropyl Myristate~~	~~10.210~~	~~2~~	~~NJB~~
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MLN/ESAT 11-5-97

Alkane Report for Sample : YY565 Page: 1

Data file : v19616.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
~~1)~~	~~111-84-2~~	~~Nonane~~	~~3.216~~	~~2.60~~
2)	542-85-8	Ethane, isothiocyanato-	3.764	5.28

Concentration Units: Water: UG/L Soil: UG/KG

1 was found in method blank 9BLK2

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY567

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31156.04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19617.D

Level: (low/med) LOW Date Received: 09/24/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/25/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: ~~5~~ 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~-Heptadien--one, -dimethyl-~~	~~3.364~~	~~3~~	~~J~~
2. 104-76-7	1-Hexanol, 2-ethyl-	3.978	11	NJ
3.	UNKNOWN	4.720	3	J
4. 1526-17-6	2-Fluoro-6-nitrophenol	4.838	2	NJ
5. 0-00-0	Phenol, 2-fluoro-4-nitro-	6.119	3	NJ
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MLM/ESAT 11-5-97

Alkane Report for Sample : YY567 Page: 1

Data file : v19617.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	542-85-8	Ethane, isothiocyanato-	3.762	39.29

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY569

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31156.06

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19618.D

Level: (low/med) LOW Date Received: 09/24/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/25/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.9

Number TICs found: ~~7~~ 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	1-Hexanol, 2-ethyl-	3.976	30	NJ
2. 98-86-2	Acetophenone	4.278	3	NJ
3. ~~617-94-7~~	Benzenemethanol, ~~.alpha.,.al~~	4.385	2	NJ
4.	Heptanoic acid, -ethyl-	4.471	3	J
5. 87-41-2	1(3H)-Isobenzofuranone	6.365	3	NJ
6. 80-05-7	Phenol, 4,4'-(1-methylethyli	13.166	4	NJ
~~7.~~	~~-Tridecatrienenitrile, -trim~~	~~17.233~~ my/	~~2~~	~~J~~
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6 – 4,4'-(1-Methylethylidene)bis-phenol

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY570

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31156.07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19619.D

Level: (low/med) LOW Date Received: 09/24/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/25/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.9

Number TICs found: ~~5~~ ~~4~~ 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~UNKNOWN~~	~~3.044~~	~~10~~	~~J~~
2.	UNKNOWN	3.227	2	J
~~3.~~	~~UNKNOWN~~	~~3.367~~	~~4~~	~~J~~
4. 99-93-4	Acetophenone, 4'-hydroxy-	6.993	3	NJ
5. 80-05-7	Phenol, 4,4'-(1-methylethylidene)bis-	13.169	6	NJ
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29.				
30.				

1 elutes > 30 seconds before phenol

3 was found in method blank SBLK2

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY571

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31167.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19572.D

Level: (low/med) LOW Date Received: 09/25/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/26/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/01/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.1

Number TICs found: ~~9~~ 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~UNKNOWN ALCOHOL~~	~~2.696~~	~~9~~	~~JB~~
~~2.~~	~~UNKNOWN~~	~~2.728~~	~~4~~	~~J~~
~~3.~~	~~UNKNOWN ALCOHOL~~	~~3.148~~	~~2~~	~~J~~
~~4.~~	~~UNKNOWN~~	~~3.223~~	~~7~~	~~J~~
~~5.~~	~~-Benzenediol, -ethyl-~~	~~3.363~~	~~19~~	~~JB~~
6. 104-76-7	1-Hexanol, 2-ethyl-	3.977	8	NJ
7.	Hexanoic acid, -ethyl-	4.472	2	J
8.	UNKNOWN	4.988	3	J
9.	UNKNOWN	5.569	2	J
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30.				

1, 4, & 5 were found in method blank SBLK3.

1, 2, & 3 elute > 30 seconds before phenol.

MLM/ESAT 11-5-97

Alkane Report for Sample : YY571 Page: 1

Data file : v19572.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
~~1)~~	~~4360-76-3~~	~~1,3-Dioxolane, 2-butyl~~	~~2.943~~	~~5.96~~
~~2)~~	~~126-39-6~~	~~1,3-Dioxolane, 2-ethyl-2-methyl-~~	~~3.040~~	~~14.75~~
3)	1556-18-9	Cyclopentane, iodo-	3.503	5.02
~~4)~~	~~4291-79-6~~	~~Cyclohexane, 1-methyl-2-propyl~~	~~3.535~~	~~3.39~~
5)	54751-80-3	1,3-Dioxolane, 2-(3-methoxypropyl)-2-met	3.761	5.42

Concentration Units: Water: UG/L Soil: UG/KG

4 was found in method blank SBLK3.

1 & 2 elute > 30 seconds before phenol.

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY572

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31167.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19573.D

Level: (low/med) LOW Date Received: 09/25/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/26/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/01/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.2

Number TICs found: ~~1~~ /

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~UNKNOWN ALCOHOL~~	~~2.700~~	~~8~~	~~JB~~
~~2.~~	~~UNKNOWN ALCOHOL~~	~~2.732~~	~~2~~	~~JB~~
~~3.~~	~~UNKNOWN ALCOHOL~~	~~3.152~~	~~2~~	~~J~~
~~4.~~	~~-Heptadien--one,-dimethyl-~~	~~3.227~~	~~6~~	~~J~~
~~5.~~	~~UNKNOWN~~	~~3.356~~	~~14~~	~~J~~
~~6.~~	~~UNKNOWN~~	~~3.539~~	~~5~~	~~JB~~
7. 104-76-7	1-Hexanol, 2-ethyl-	3.980	12	NJ
8.				
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1, 4, 5, & 6 were found in method blank SBLK3

1, 2, & 3 elute >30 seconds before phenol

MLM/ESAT 11-5-97

Alkane Report for Sample : YY572 Page: 1

Data file : v19573.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	16747-31-2	Hexane, 3,3,4-trimethyl-	3.506	3.91
2)	542-85-8	Ethane, isothiocyanato-	3.754	4.94

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY573

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31167.03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19574.D

Level: (low/med) LOW Date Received: 09/25/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/26/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/01/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.9

Number TICs found: ~~1~~ 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~UNKNOWN ALCOHOL~~	~~2.697~~	~~6~~	~~JB~~
~~2.~~	~~UNKNOWN ALCOHOL~~	~~2.729~~	~~3~~	~~JB~~
~~3.~~	~~UNKNOWN~~	~~2.815~~	~~2~~	~~J~~
~~4.~~	~~UNKNOWN~~	~~3.224~~	~~4~~	~~J~~
~~5.~~	~~-Heptadien--one, -dimethyl-~~	~~3.364~~	~~12~~	~~J~~
6.	UNKNOWN	3.504	3	JB
7. 104-76-7	1-Hexanol, 2-ethyl-	3.978	10	NJ
8.				
9.				
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30.				

1, 4, & 5 were found in method blank SBLK3

1, 2, & 3 elute > 30 seconds before phenol.

MLM/ESAT 11-5-97

Alkane Report for Sample : YY573 Page: 1

Data file : v19574.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
~~1)~~	~~4291-79-6~~	~~Cyclohexane, 1-methyl-2-propyl-~~	~~3.536~~	~~4.10~~
2)	542-85-8	Ethane, isothiocyanato-	3.762	15.55

Concentration Units: Water: UG/L Soil: UG/KG

1 was found in method blank SBLK3

MLM/ESAT 11-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY574

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY553

Matrix: (soil/water) WATER Lab Sample ID: 31167.04

Sample wt/vol: 970 (g/mL) ML Lab File ID: V19575.D

Level: (low/med) LOW Date Received: 09/25/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/26/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/01/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.2

Number TICs found: ~~8~~ 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~UNKNOWN~~	~~2.674~~	~~2~~	~~J~~
~~2.~~	~~Furan, -(-dimethylethyl)- me~~	~~3.223~~	~~6~~	~~J~~
~~3.~~	~~-Heptadien--one, -dimethyl-~~	~~3.363~~	~~16~~	~~J~~
4.	UNKNOWN	3.514	3	JB
~~5.~~	~~UNKNOWN~~	~~3.535~~	~~2~~	~~JB~~
6.	UNKNOWN	3.557	2	JB
7. 104-76-7	1-Hexanol, 2-ethyl-	3.976	9	NJ
8.	UNKNOWN	4.719	2	J
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
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30.				

2, 3, & 5 were found in method blank SBLK3

1 elutes >30 seconds before phenol.

MLM/ESAT 11-5-97

Alkane Report for Sample : YY574 Page: 1

Data file : v19575.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	542-85-8	Ethane, isothiocyanato-	3.761	7.69

Concentration Units: Water: UG/L Soil: UG/KG

MLM/ESAT 11-5-97

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #02 LABORATORY SWOK

SDG NO. YY553 SITE NAME Waste Disposal, Inc.

SOW OLM03.2 REVIEW COMPLETION DATE November 20, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Margaret L. May

NO. OF SAMPLES 20 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION		O	O	
2. GC-MS TUNE/GC PERFORMANCE		O	O	
3. INITIAL CALIBRATIONS		O	O	
4. CONTINUING CALIBRATIONS		X	O	
5. FIELD QC		X	O	
6. LABORATORY BLANKS		X	O	
7. SURROGATES		O	O	
8. MATRIX SPIKE/DUPLICATES		O	O	
9. REGIONAL QC		N/A	N/A	
10. INTERNAL STANDARDS		O	N/A	
11. COMPOUND IDENTIFICATION		O	O	
12. COMPOUND QUANTITATION		O	O	
13. SYSTEM PERFORMANCE		O	O	
14. OVERALL ASSESSMENT		X	O	

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: None.

TPO ATTENTION: (1) The detected results for bis(2-ethylhexyl)phthalate are qualified as nondetected and estimated (U,J) due to contamination in method blanks. (2) The results for several semivolatile target analytes are estimated (J) due to calibration problems.

AREAS OF CONCERN: None.

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

DATE OF CALL: _____ REGIONAL CONTACT: Steve Remaley, TPO

AUDIT NO.: 1/98/9 LAB CONTACT: Harry Borg

CASE NO.: 25700 LAB CODE: SWOK

SDG NO.: YY553 LAB NAME: Southwest Labs of Oklahoma

ESAT REVIEWER: M.L.May, 11/4/97 LAB LOCATION: Broken Arrow, OK

Summary of Questions/Issues Discussed:

The following items were noted in the audit of the data packages for this sample delivery group (SDG). Please respond within seven days per Section 2.2 of Exhibit B of the OLM03.2 Statement of Work.

(1) Please clarify why FedEx airbill number 326 5024 696 recorded on the traffic report for samples YY553 and YY554 was not submitted in the package and is not recorded in Form DC-1. Refer to pages 23 and 708.

(2) Please clarify why FedEx airbill number 326 4915 146 recorded on the traffic report for samples YY562 and YY563 is not recorded in Form DC-1. Refer to pages 25, 686, and 709.

(3) Please clarify why FedEx airbill number 326 4915 172 recorded on the traffic report for samples YY558 and YY559 is not recorded in Form DC-1. Refer to pages 27, 688, and 709.

(4) Please clarify why FedEx airbill number 326 5024 685 recorded on the traffic report for samples YY556 and YY557 is not recorded in Form DC-1. Refer to pages 28, 687, and 709.

(5) Please clarify why airbill number 326 4915 124 is recorded in Form DC-1 for the samples received on 9/24/97, but is not recorded in the corresponding traffic report. Refer to pages 29, 689, and 710.

(6) Please clarify whether the date received recorded in FedEx airbills 326 4915 345 and 326 4915 124 should be 9/24/97 instead of 9/25/97. Refer to pages 689 and 690.

One additional item was noted in the audit. This item is for your information only. Please address it in future data package submittals.

(7) The first six pages of the package are not paginated as required by Section 30.20.2.1 of Exhibit B.

Summary of Resolution:

_____ _____
Regional Contact Signature Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-97-1-4
Technical Direction No.: 9714102

DATE: December 19, 1997

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS ID NO.:	CAD980884357
CASE NO.:	25700 Memo #05
SDG NO.:	YY575
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Semivolatiles and Pesticides/PCBs
SAMPLES:	16 Water Samples (see Case Summary)
COLLECTION DATE:	September 23, 24, 25, and 30, 1997
REVIEWER:	Frank Arceneaux, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

ESTW-9A-414/25700M05.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #05
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 19, 1997

I. Case Summary

SAMPLE INFORMATION:

BNA and PEST Samples:	YY575 through YY590
Concentration and Matrix:	Low Level Groundwater
Analysis:	Semivolatiles and Pesticides/PCBs
SOW:	OLM03.2
Collection Date:	September 23, 24, 25, and 30, 1997
Sample Receipt Date:	September 25 and 26; and October 1 and 2, 1997
BNA and PEST Extraction Date:	September 26 and 27; and October 2, 1997
BNA Analysis Date:	October 1, 2, and 9, 1997
PEST Analysis Date:	October 2, 3, 4, and 7, 1997

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	YY580
Equipment Blanks (EB):	YY553, YY576, YY589, and YY590
Background Samples (BG):	None
Field Duplicates (D1):	YY584 and YY585

METHOD BLANKS AND ASSOCIATED SAMPLES:

SBLK1:	YY575, YY576, YY579, YY579MS, and YY579MSD
SBLK2:	YY577, YY578, YY580, YY581, and YY582
SBLK3:	YY583 through YY590
PBLKWA:	YY577, YY578, YY580, YY581, YY581MS, YY581MSD, and YY582
PBLKWB:	YY583 through YY590
PBLKWF:	YY575, YY576, YY579, YY579MS, and YY579MSD

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Semivolatiles: Continuing Calibrations

TPO ACTION:

None.

TPO ATTENTION:

(1) The detected results for bis(2-ethylhexyl)phthalate are qualified as nondetected and estimated (U,J) due to contamination in method blanks. (2) Several results in the semivolatiles fraction are estimated (J) due to calibration problems.

SAMPLING ISSUES:

(1) The field quality control samples were not sent blind to the laboratory. (2) Some sample containers for samples YY582, YY589, and YY590 were received broken at the laboratory.

MS-Matrix Spike; MSD-Matrix Spike Duplicate

ADDITIONAL COMMENTS:

The tentatively identified compounds (TICs) found in the samples for the semivolatile fraction are reported on the Form 1Fs and in attachments to the case narrative included in this report. The user should note that the attachments to the case narrative summarize TICs which are alkanes.

All method requirements specified in the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, OLM03.2, have been met. This report was prepared according to the SOW and the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	BNA Acceptable	BNA Comment	PEST Acceptable	PEST Comment
HOLDING TIMES	[YES]	[ ]	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]	[YES]	[ ]
CALIBRATIONS	[NO]	[C]	[YES]	[ ]
FIELD QC	[NO]	[B]	[YES]	[ ]
LABORATORY BLANKS	[NO]	[B]	[YES]	[ ]
SURROGATES	[YES]	[ ]	[YES]	[ ]
MATRIX SPIKE/DUPLICATES	[YES]	[ ]	[YES]	[ ]
INTERNAL STANDARDS	[YES]	[ ]	[N/A]	[ ]
COMPOUND IDENTIFICATION	[YES]	[D]	[YES]	[ ]
COMPOUND QUANTITATION	[YES]	[A]	[YES]	[ ]
SYSTEM PERFORMANCE	[YES]	[ ]	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The detected results for the following semivolatile target analytes are qualified as nondetected and estimated due to laboratory and field blank contamination. The results are flagged "U,J" in Table 1A.

- Di-n-butylphthalate in samples YY583, YY584, YY586, and YY588
- bis(2-Ethylhexyl)phthalate in samples YY575, YY578, YY579, YY584, YY585, YY586, and YY588

bis(2-Ethylhexyl)phthalate was found in all of the laboratory method blanks and equipment blanks YY589 and YY590. Di-n-butylphthalate was found in equipment blank YY590. (See Table 1A for concentrations.) The results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A laboratory method blank is laboratory reagent water, or baked sand for solid matrices, analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

C. The detected results and quantitation limits for the following semivolatile target analytes are estimated due to large percent differences (%Ds) in the continuing calibrations. The results are flagged "J" in Table 1A.

- Hexachlorocyclopentadiene, 2,4-dinitrophenol, and 4,6-dinitro-2-methylphenol in samples YY575 through YY582 and method blanks SBLK1 and SBLK2
- Pentachlorophenol in samples YY575, YY576, YY579, and method blank SBLK1
- Pyrene in samples YY583 through YY590 and method blank SBLK3
- Butylbenzylphthalate and di-n-octylphthalate in all of the samples and method blanks SBLK1, SBLK2, and SBLK3
- bis(2-Ethylhexyl)phthalate in samples YY577, YY578, YY580 through YY590, and method blanks SBLK2 and SBLK3

Percent differences exceeding the ±25.0% QC advisory validation criterion were observed for the analytes listed above in the continuing calibrations performed October 1, 2, and 9, 1997 (see Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors for target analytes that are used for quantitation.

D. Di-n-butylphthalate has been commonly found as a contaminant in the field and in many laboratories. The user should note that the result in the sample listed below may be an artifact.

- Di-n-butylphthalate in sample YY579

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #05
Site: Waste Disposal, Inc.
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 19, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-22			Field Eqt. Rinsate			GW-6			GW-21			GW-2			Field Rinse #5			GW-7		
Sample I.D.	YY575			YY576 EB			YY577			YY578			YY579			YY580 FB			YY581		
Date of Collection	9/23/97			9/23/97			9/24/97			9/24/97			9/24/97			9/24/97			9/25/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	26 U			26 U			26 U			26 U			26 U			26 U			26 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	26 U			26 U			26 U			26 U			26 U			26 U			26 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	26 U			26 U			26 U			26 U			26 U			26 U			26 U		

Station Location	GW-22			Field Eqt. Rinsate			GW-6			GW-21			GW-2			Field Rinse #5			GW-7		
Sample I.D.	YY575			YY576 EB			YY577			YY578			YY579			YY580 FB			YY581		
Date of Collection	9/23/97			9/23/97			9/24/97			9/24/97			9/24/97			9/24/97			9/25/97		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C
4-Nitrophenol	26 U			26 U			26 U			26 U			26 U			26 U			26 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	26 U			26 U			26 U			26 U			26 U			26 U			26 U		
4,6-Dinitro-2-methylphenol	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C	26 U	J	C
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	26 U	J	C	26 U	J	C	26 U			26 U			26 U	J	C	26 U			26 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U			10 U			10 U			2 L	J	AD	10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Butylbenzylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	B	10 U			10 U	J	C	10 U	J	BC	10 U	J	B	10 U	J	C	10 U	J	C
Di-n-octylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #05
Site: Waste Disposal, Inc.
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 19, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-4			GW-5			GW-16			GW-16 DUP			GW-31			GW-15			GW-13		
Sample I.D.	YY582			YY583			YY584 D1			YY585 D1			YY586			YY587			YY588		
Date of Collection	9/25/97			9/30/97			9/30/97			9/30/97			9/30/97			9/30/97			9/30/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U	J	C	10 U			10 U			10 U			10 U			10 U			10 U		
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	26 U			25 U			25 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	26 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	26 U			25 U			25 U			25 U			25 U			25 U			25 U		

Station Location	GW-4			GW-5			GW-16			GW-16DUP			GW-31			GW-15			GW-13		
Sample I.D.	YY582			YY583			YY584 D1			YY585 D1			YY586			YY587			YY588		
Date of Collection	9/25/97			9/30/97			9/30/97			9/30/97			9/30/97			9/30/97			9/30/97		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	26 U	J	C	25 U			25 U			25 U			25 U			25 U			25 U		
4-Nitrophenol	26 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	26 U			25 U			25 U			25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	26 U	J	C	25 U			25 U			25 U			25 U			25 U			25 U		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	26 U			25 U			25 U			25 U			25 U			25 U			25 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	10 U			10 U	J	B	10 U	J	B	10 U			10 U	J	B	10 U			10 U	J	B
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C
Butylbenzylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	C	10 U	J	C	10 U	J	BC	10 U	J	BC	10 U	J	BC	10 U	J	C	10 U	J	BC
Di-n-octylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #05
Site: Waste Disposal, Inc.
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 19, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	Field Eqt. Rinsate #6			Pump Decon Water			Method Blank			Method Blank			Method Blank			CRQL					
Sample I.D.	YY589 EB			YY590 EB			SBLK1			SBLK2			SBLK3								
Date of Collection	9/30/97			9/30/97																	
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	10 U			10 U			10 U			10 U			10 U			10					
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10					
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10					
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10					
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10					
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10					
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10					
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10					
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10					
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10					
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10					
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10					
Isophorone	10 U			10 U			10 U			10 U			10 U			10					
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10					
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10					
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10					
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10					
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10					
Naphthalene	10 U			10 U			10 U			10 U			10 U			10					
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10					
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10					
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10					
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10					
Hexachlorocyclopentadiene	10 U			10 U			10 U	J	C	10 U	J	C	10 U			10					
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10					
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25					
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10					
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25					
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10					
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10					
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10					
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25					

Station Location	Field Eqt. Rinsate #6			Pump Decon Water			Method Blank			Method Blank			Method Blank			CRQL					
Sample I.D.	YY589 EB			YY590 EB			SBLK1			SBLK2			SBLK3								
Date of Collection	9/30/97			9/30/97																	
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10					
2,4-Dinitrophenol	25 U			25 U			25 U	J	C	25 U	J	C	25 U			25					
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			25					
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10					
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10					
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10					
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10					
Fluorene	10 U			10 U			10 U			10 U			10 U			10					
4-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25					
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U	J	C	25 U	J	C	25 U			25					
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10					
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10					
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10					
Pentachlorophenol	25 U			25 U			25 U	J	C	25 U			25 U			25					
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10					
Anthracene	10 U			10 U			10 U			10 U			10 U			10					
Carbazole	10 U			10 U			10 U			10 U			10 U			10					
Di-n-butylphthalate	10 U			0.7 L	J	AB	10 U			10 U			10 U			10					
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10					
Pyrene	10 U	J	C	10 U	J	C	10 U			10 U			10 U	J	C	10					
Butylbenzylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10					
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10					
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10					
Chrysene	10 U			10 U			10 U			10 U			10 U			10					
bis(2-Ethylhexyl)phthalate	0.6 L	J	ABC	0.6 L	J	ABC	3 L	J	AB	0.8 L	J	ABC	0.6 L	J	ABC	10					
Di-n-octylphthalate	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10 U	J	C	10					
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10					
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10					
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10					
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10					
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10					
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10					

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #05
Site: Waste Disposal, Inc.
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 19, 1997

Analysis Type: Low Level Groundwater Samples for Pesticides/PCBs

Concentration in µg/L

Station Location	GW-22			Field Eqt. Rinsate			GW-6			GW-21			GW-2			Field Rinse #5			GW-7		
Sample I.D.	YY575			YY576 EB			YY577			YY578			YY579			YY580 FB			YY581		
Date of Collection	9/23/97			9/23/97			9/24/97			9/24/97			9/24/97			9/24/97			9/25/97		
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
beta-BHC	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
delta-BHC	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
gamma-BHC (Lindane)	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
Heptachlor	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
Aldrin	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
Heptachlor epoxide	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
Endosulfan I	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Methoxychlor	0.53 U			0.53 U			0.53 U			0.53 U			0.53 U			0.53 U			0.53 U		
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
alpha-Chlordane	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
gamma-Chlordane	0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U			0.053 U		
Toxaphene	5.3 U			5.3 U			5.3 U			5.3 U			5.3 U			5.3 U			5.3 U		
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1221	2.1 U			2.1 U			2.1 U			2.1 U			2.1 U			2.1 U			2.1 U		
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank
BG-Background Sample

Case No.: 25700 Memo #05

Site: Waste Disposal, Inc.

Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)

Reviewer: Frank Arceneaux, ESAT/Lockheed

Date: December 19, 1997

TABLE 1A

Analysis Type: Low Level Groundwater Samples for Pesticides/PCBs

Concentration in µg/L

Station Location	GW-4			GW-5			GW-16			GW-16 DUP			GW-31			GW-15			GW-13		
Sample I.D.	YY582			YY583			YY584 D1			YY585 D1			YY586			YY587			YY588		
Date of Collection	9/25/97			9/30/97			9/30/97			9/30/97			9/30/97			9/30/97			9/30/97		
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
beta-BHC	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
delta-BHC	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-BHC (Lindane)	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Aldrin	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Heptachlor epoxide	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Endosulfan I	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Methoxychlor	0.53 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50 U		
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
alpha-Chlordane	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
gamma-Chlordane	0.053 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050 U		
Toxaphene	5.3 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1221	2.1 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #05
Site: Waste Disposal, Inc.
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 19, 1997

Analysis Type: Low Level Groundwater Samples for Pesticides/PCBs

Concentration in µg/L

Station Location	Field Eqt. Rinsate #6			Pump Decon Water			Method Blank			Method Blank			Method Blank			CRQL					
Sample I.D.	YY589 EB			YY590 EB			PBLKWA			PBLKWB			PBLKWF								
Date of Collection	9/30/97			9/30/97																	
Pesticide/PCB Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
alpha-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
beta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
delta-BHC	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
gamma-BHC (Lindane)	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
Heptachlor	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
Aldrin	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
Heptachlor epoxide	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
Endosulfan I	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
Dieldrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
4,4'-DDE	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
Endrin	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
Endosulfan II	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
4,4'-DDD	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
Endosulfan sulfate	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
4,4'-DDT	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
Methoxychlor	0.50 U			0.50 U			0.50 U			0.50 U			0.50 U			0.50					
Endrin ketone	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
Endrin aldehyde	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10					
alpha-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
gamma-Chlordane	0.050 U			0.050 U			0.050 U			0.050 U			0.050 U			0.050					
Toxaphene	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0					
Aroclor-1016	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0					
Aroclor-1221	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0					
Aroclor-1232	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0					
Aroclor-1242	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0					
Aroclor-1248	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0					
Aroclor-1254	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0					
Aroclor-1260	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0					

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank
BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

LOCKHEED MARTIN

TABLE 2
Semivolatiles: Continuing Calibrations

Case No.: 25700 Memo #05
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Frank Arceneaux, ESAT/Lockheed
Date: December 19, 1997

PERCENT DIFFERENCES

	%D	%D	%D
Analysis date:	10/1/97	10/2/97	10/9/97
Analysis time:	16:02	07:56	14:09
Analyte	Cont.	Cont.	Cont.
Hexachlorocyclopentadiene	-78.5	-75.3	---
2,4-Dinitrophenol	-65.8	-68.4	---
4,6-Dinitro-2-methylphenol	-51.1	-50.2	---
Pentachlorophenol	-26.2	----	---
Pyrene	----	----	+29.2
Butylbenzylphthalate	+25.3	+31.3	+43.4
bis(2-Ethylhexyl)phthalate	----	+27.4	+39.6
Di-n-octylphthalate	+34.8	+38.7	+43.1

ASSOCIATED SAMPLES AND METHOD BLANKS

Cont. 10/1/97: YY575, YY576, YY579, YY579MS, YY579MSD, and SBLK1
Cont. 10/2/97: YY577, YY578, YY580, YY581, YY582, and SBLK2
Cont. 10/9/97: YY583 through YY590, and SBLK3

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY575

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31167.05

Sample wt/vol: 979 (g/mL) ML Lab File ID: V19576.D

Level: (low/med) LOW Date Received: 09/25/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/26/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/01/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.1

Number TICs found: ~~8~~ 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
***	1.	~~UNKNOWN ALCOHOL~~	~~2.699~~	~~6~~	~~JB~~
***	2.	~~UNKNOWN~~	~~2.732~~	~~4~~	~~J~~
***	3.	~~-Benzenediol, -ethyl~~	~~3.227~~	~~5~~	~~J~~
***	4.	~~-Heptadien--one, -dimethyl~~	~~3.366~~	~~12~~	~~J~~
	5.	UNKNOWN ORGANIC ACID	3.506	7	J
	6.	-Propene, -trichloro-	3.549	8	J
	7. 104-76-7	1-Hexanol, 2-ethyl-	3.980	19	NJ
	8. 98-86-2	Acetophenone	4.281	2	NJ
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
	17.				
	18.				
	19.				
	20.				
	21.				
	22.				
	23.				
	24.				
	25.				
	26.				
	27.				
	28.				
	29.				
	30.				

*Also found in method blank SBLK1

**#1 and 2 Eluted more than 30 sec. before phenol.

KM 12-8-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY577

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31193.01

Sample wt/vol: 950 (g/mL) ML Lab File ID: V19597.D

Level: (low/med) LOW Date Received: 09/26/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/27/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: ~~8~~ ~~3~~ 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN~~	~~2.675~~	~~3~~	~~JB~~
~~2.~~		~~UNKNOWN~~	~~2.697~~	~~6~~	~~JB~~
~~3.~~		~~UNKNOWN~~	~~3.149~~	~~6~~	~~JB~~
~~4.~~		~~UNKNOWN~~	~~3.224~~	~~8~~	~~JB~~
~~5.~~		~~UNKNOWN~~	~~3.364~~	~~20~~	~~JB~~
~~6.~~		~~UNKNOWN ORGANIC ACID~~	~~3.504~~	~~8~~	~~JB~~
7.		UNKNOWN	3.536	3	J
8.	104-76-7	1-Hexanol, 2-ethyl-	3.977	11	NJ
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

*Also found in method blank SBLK2.

**#1, 2, and 3 Eluted more than 30 sec. before phenol

[illegible] 12-8-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY578

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31193.02

Sample wt/vol: 950 (g/mL) ML Lab File ID: V19600.D

Level: (low/med) LOW Date Received: 09/26/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/27/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: ~~7~~ 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
*	1.	~~UNKNOWN~~	~~2.678~~	~~2~~	~~JB~~
*	2.	~~UNKNOWN~~	~~2.700~~	~~5~~	~~JB~~
*	3.	~~UNKNOWN~~	~~2.732~~	~~4~~	~~JB~~
*	4.	~~UNKNOWN~~	~~3.227~~	~~7~~	~~JB~~
*	5.	~~UNKNOWN~~	~~3.356~~	~~17~~	~~JB~~
*	6.	~~UNKNOWN~~	~~3.507~~	~~6~~	~~J~~
	7.	UNKNOWN ALKENE	4.615	3	J
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
	17.				
	18.				
	19.				
	20.				
	21.				
	22.				
	23.				
	24.				
	25.				
	26.				
	27.				
	28.				
	29.				
	30.				

*Also found in method blank SBLK2

EA 12-8-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY579

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31167.07

Sample wt/vol: 978 (g/mL) ML Lab File ID: V19578.D

Level: (low/med) LOW Date Received: 09/25/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/26/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.2

Number TICs found: ~~7~~ 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN ALCOHOL~~	~~2.697~~	~~5~~	~~JB~~
~~2.~~		~~Furan, (-dimethylethyl)- me~~	~~3.225~~	~~4~~	~~J~~
~~3.~~		~~-Heptadien-one, -dimethyl-~~	~~3.364~~	~~14~~	~~J~~
4.		UNKNOWN	3.504	6	JB
~~5.~~		~~UNKNOWN~~	~~3.537~~	~~4~~	~~JB~~
6.	104-76-7	1-Hexanol, 2-ethyl-	3.978	2	NJ
7.	~~110-12-3~~	~~2~~-Hexanone, ~~5~~-methyl-	4.989	3	NJ
8.					
9.					
10.					
11.					
12.		*Also found in method blank SBLK1.			
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
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ZA 12-8-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY580

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31193.03

Sample wt/vol: 950 (g/mL) ML Lab File ID: V19601.D

Level: (low/med) LOW Date Received: 09/26/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/27/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.3

Number TICs found: ~~8~~ 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
*	1.	~~UNKNOWN~~	~~2.674~~	~~2~~	~~JB~~
*	2.	~~UNKNOWN~~	~~2.696~~	~~6~~	~~JB~~
*	3.	~~UNKNOWN~~	~~3.137~~	~~2~~	~~JB~~
*	4.	~~UNKNOWN~~	~~3.223~~	~~6~~	~~JB~~
*	5.	~~UNKNOWN~~	~~3.363~~	~~16~~	~~JB~~
	6.	UNKNOWN	3.535	2	J
	7.	UNKNOWN	3.557	2	J
	8.	UNKNOWN	3.976	2	J
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
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	18.				
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*Also found in Method Blank SBLK2

EA 12-8-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY581

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31193.04

Sample wt/vol: 950 (g/mL) ML Lab File ID: V19602.D

Level: (low/med) LOW Date Received: 09/26/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/27/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.7

Number TICs found: ~~6~~ 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~UNKNOWN~~	~~2.685~~	~~5~~	~~JB~~
~~2.~~	~~UNKNOWN~~	~~3.148~~	~~6~~	~~JB~~
~~3.~~	~~UNKNOWN~~	~~3.223~~	~~5~~	~~JB~~
~~4.~~	~~UNKNOWN~~	~~3.363~~	~~13~~	~~JB~~
5. 104-76-7	1-Hexanol, 2-ethyl-	3.977	4	NJ
6.	UNKNOWN ALKENE	4.611	7	J
7.				
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*Also found in Method blank SBLK2

** Eluted more than 30 sec. before phenol. (#1 and 2)

KA 12-8-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY582

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31193.05

Sample wt/vol: 950 (g/mL) ML Lab File ID: V19603.D

Level: (low/med) LOW Date Received: 09/26/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 09/27/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/02/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.7

Number TICs found: ~~5~~ ~~3~~ 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
**	~~1.~~	~~UNKNOWN~~	~~2.696~~	~~6~~	~~JB~~
**	~~2.~~	~~UNKNOWN~~	~~3.159~~	~~3~~	~~JB~~
*	~~3.~~	~~UNKNOWN~~	~~3.234~~	~~4~~	~~JB~~
*	~~4.~~	~~UNKNOWN~~	~~3.363~~	~~14~~	~~JB~~
	5. 98-86-2	Acetophenone	4.278	2	NJ
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
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	25.				
	26.				
	27.				
	28.				
	29.				
	30.				

** Eluted more than 30 sec. before phenol (#1 and #2)

* Also found in method blank SBLK2.

12-9-97 [illegible]

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY583

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31254.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19669.D

Level: (low/med) LOW Date Received: 10/01/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.7

Number TICs found: ~~13~~ 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~UNKNOWN ALCOHOL~~	~~2.641~~	~~11~~	~~JB~~
2.	~~UNKNOWN~~	~~2.673~~	~~2~~	~~JB~~
3.	~~UNKNOWN~~	~~3.160~~	~~10~~	~~JB~~
4.	~~UNKNOWN~~	~~3.290~~	~~22~~	~~JB~~
5.	~~UNKNOWN~~	~~3.430~~	~~3~~	~~JB~~
6.	UNKNOWN	3.685	9	J
7.	UNKNOWN	3.782	2	J
8. 104-76-7	1-Hexanol, 2-ethyl-	3.911	23	NJ
9. 98-86-2	Acetophenone	4.202	3	NJ
10. 87-41-2	1(3H)-Isobenzofuranone	6.268	4	NJ
11. 10544-50-0	Sulfur, mol. (S8)	12.241	3	NJ
12. ~~80-05-7~~	Phenol, ~~4,4'~~-(1-methylethylidene)bis-	13.059	3	NJ
13.	UNKNOWN	20.539	2	J
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27.				
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29.				
30.				

* Also found in Method Blank SBLK3

FH 12-8-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY584

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31254.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19670.D

Level: (low/med) LOW Date Received: 10/01/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.2

Number TICs found: ~~0~~ 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
*	1.	~~UNKNOWN ALCOHOL~~	~~2.638~~	~~8~~	~~JB~~
*	2.	~~UNKNOWN~~	~~3.165~~	~~10~~	~~JB~~
*	3.	~~UNKNOWN~~	~~3.294~~	~~17~~	~~JB~~
	4.	UNKNOWN	3.445	3	JB
	5.	UNKNOWN	3.790	2	J
	6. 104-76-7	1-Hexanol, 2-ethyl-	3.908	3	NJ
	7.				
	8.				
	9.				
	10.				
	11.	*Also found in SBLK3 (Method Blank)			
	12.				
	13.				
	14.				
	15.				
	16.				
	17.				
	18.				
	19.				
	20.				
	21.				
	22.				
	23.				
	24.				
	25.				
	26.				
	27.				
	28.				
	29.				
	30.				

LA 12-9-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY585

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31254.03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19671.D

Level: (low/med) LOW Date Received: 10/01/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.2

Number TICs found: ~~4~~ 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
**	~~1.~~	~~UNKNOWN~~	~~2.616~~	~~3~~	~~JB~~
*	~~2.~~	~~UNKNOWN ALCOHOL~~	~~2.637~~	~~10~~	~~JB~~
*	~~3.~~	~~UNKNOWN~~	~~3.165~~	~~10~~	~~JB~~
*	~~4.~~	~~UNKNOWN~~	~~3.294~~	~~22~~	~~JB~~
	5.	-Methylstyrene	3.681	3	J
	6. 104-76-7	1-Hexanol, 2-ethyl-	3.907	5	NJ
	7.	UNKNOWN	4.908	4	J
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
	17.				
	18.				
	19.				
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	22.				
	23.				
	24.				
	25.				
	26.				
	27.				
	28.				
	29.				
	30.				

** #1 Eluted more than 30 sec. before phenol.

* Also found in Method Blank SBLK3. (#2, 3, and 4)

JB 12-9-97

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY586

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31254.04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19672.D

Level: (low/med) LOW Date Received: 10/01/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: ~~17~~ ~~13~~ 11

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
**	~~1.~~	~~UNKNOWN~~	~~2.576~~	~~2~~	~~JB~~
*	~~2.~~	~~UNKNOWN ALCOHOL~~	~~2.641~~	~~10~~	~~JB~~
*	~~3.~~	~~UNKNOWN~~	~~2.673~~	~~3~~	~~JB~~
**	~~4.~~	~~UNKNOWN~~	~~3.093~~	~~3~~	~~JB~~
*	~~5.~~	~~UNKNOWN~~	~~3.168~~	~~9~~	~~JB~~
*	~~6.~~	~~UNKNOWN~~	~~3.297~~	~~22~~	~~JB~~
	7.	UNKNOWN ORGANIC ACID	3.448	3	J
	8.	UNKNOWN	3.469	2	JB
	9.	UNKNOWN	3.695	3	J
	10.	UNKNOWN	3.782	3	J
	11. 104-76-7	1-Hexanol, 2-ethyl-	3.911	24	NJ
	12. 98-86-2	Acetophenone	4.201	3	NJ
	13.	Benzenemethanol, -dimethy	4.298	3	J
	14. 87-41-2	1(3H)-Isobenzofuranone	6.268	3	NJ
	15. ~~80-05-7~~	Phenol, ~~4,4'~~-(1-methylethylidene)	13.048	2	NJ
	16.	UNKNOWN	18.709	3	J
	17.	UNKNOWN	20.528	2	J
	18.				
	19.				
	20.				
	21.				
	22.				
	23.				
	24.				
	25.				
	26.				
	27.				
	28.				
	29.				
	30.				

** #1 and 4 Eluted more than 30 sec before phenol.
SBLK3.
* Also found in Method Blank 12-9-97
[#2,3,5, and 6]

FORM I SV-TIC OLM03.0

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY587

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31254.05

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19673.D

Level: (low/med) LOW Date Received: 10/01/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.9

Number TICs found: ~~10~~ 6

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
*	1.	~~UNKNOWN ALCOHOL~~	~~2.640~~	~~8~~	~~JB~~
*	2.	~~UNKNOWN~~	~~2.672~~	~~4~~	~~JB~~
*	3.	~~UNKNOWN~~	~~3.167~~	~~9~~	~~JB~~
*	4.	~~UNKNOWN~~	~~3.296~~	~~23~~	~~JB~~
	5.	UNKNOWN ORGANIC ACID	3.447	4	J
	6.	UNKNOWN	3.684	29	J
	7.	UNKNOWN	3.781	3	J
	8. 104-76-7	1-Hexanol, 2-ethyl-	3.910	24	NJ
	9. 87-41-2	1(3H)-Isobenzofuranone	6.267	2	NJ
	10.	UNKNOWN ORGANIC ACID	8.226	2	J
	11.				
	12.				
	13.				
	14.				
	15.	*Also found in Method Blank SBLK3			
	16.				
	17.				
	18.	12-9-97			
	19.				
	20.				
	21.				
	22.				
	23.				
	24.				
	25.				
	26.				
	27.				
	28.				
	29.				
	30.				

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY588

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31254.06

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19674.D

Level: (low/med) LOW Date Received: 10/01/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8

Number TICs found: ~~5~~ 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
* 1.		~~UNKNOWN ALCOHOL~~	~~2.641~~	~~8~~	~~JB~~
* 2.		~~UNKNOWN~~	~~2.673~~	~~3~~	~~JB~~
** 3.		~~UNKNOWN~~	~~2.759~~	~~2~~	~~JB~~
* 4.		~~UNKNOWN~~	~~3.168~~	~~7~~	~~JB~~
* 5.		~~UNKNOWN~~	~~3.298~~	~~17~~	~~JB~~
6.		UNKNOWN	3.448	3	JB
7.		UNKNOWN	3.696	3	J
8.	104-76-7	1-Hexanol, 2-ethyl-	3.911	10	NJ
9.	98-86-2	Acetophenone	4.202	2	NJ
10.					
11.					
12.					
13.					
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30.					

** #3 Eluted more than 30 sec. before phenol (Also #1 and 2)

*Also found in Method Blank SBLK3.

12-9-97 [illegible]

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY589

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31267.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19675.D

Level: (low/med) LOW Date Received: 10/02/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 9.4

Number TICs found: ~~6~~ 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
*	1.	~~UNKNOWN ALCOHOL~~	~~2.640~~	~~8~~	~~JB~~
*	2.	~~UNKNOWN ALCOHOL~~	~~2.673~~	~~2~~	~~JB~~
	3.	~~UNKNOWN~~	~~3.168~~	~~10~~	~~JB~~
*	4. ~~2896-60-8~~	~~1,3-Benzenediol, 4-ethyl-~~	~~3.297~~	~~22~~	~~NJ~~
	5.	UNKNOWN ORGANIC ACID	3.447	4	J
	6.	UNKNOWN	3.781	2	J
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
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	24.				
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	27.				
	28.				
	29.				
	30.				

* Also found in Method Blank SBLK3.

12-9-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YY590

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 25700 SAS No.: SDG No.: YY575

Matrix: (soil/water) WATER Lab Sample ID: 31267.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V19676.D

Level: (low/med) LOW Date Received: 10/02/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/02/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/09/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: ~~5~~ 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
* 1.		~~UNKNOWN ALCOHOL~~	~~2.637~~	~~8~~	~~JB~~
* 2.		~~UNKNOWN~~	~~2.680~~	~~3~~	~~JB~~
* 3.		~~UNKNOWN~~	~~3.164~~	~~8~~	~~JB~~
* 4.		~~UNKNOWN~~	~~3.294~~	~~10~~	~~JB~~
* 5.		~~UNKNOWN~~	~~3.434~~	~~5~~	~~JB~~
6.		-Propene, -trichloro-	3.487	4	J
7.		UNKNOWN	3.692	4	J
8.		UNKNOWN	3.789	3	J
9.	~~934-34-9~~	~~2(3H)~~-Benzothiazolone	8.955	3	NJ
10.					
11.					
12.					
13.		* Also found in Method Blank	SBLK3		
14.					
15.					
16.					
17.		12-9-97			
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Alkane Report for Sample : YY575 Page: 1

Data file : v19576.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	542-85-8	Ethane, isothiocyanato-	3.764	9.27

Concentration Units: Water: UG/L Soil: UG/KG

FA 12-17-97

Alkane Report for Sample : YY576 Page: 1

Data file : v19577.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
1) 20278-87-9	Heptane, 3,3,4-trimethyl-	3.514	4.78

Concentration Units: Water: UG/L Soil: UG/KG

FQ 12-17-97

Alkane Report for Sample : YY577 Page: 1

Data file : v19597.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
* ~~1) 54340-90-8~~	~~Hexane, 1-(1-methoxyethoxy)~~	~~2.729~~	~~2.30~~
2) 16747-31-2	Hexane, 3,3,4-trimethyl-	3.417	2.16
3) 4359-46-0	1,3-Dioxolane, 2-ethyl-4-methyl-	3.751	7.67

Concentration Units: Water: UG/L Soil: UG/KG

* Eluted more than 30 sec. before phenol (#1)

FA 12-17-97

Alkane Report for Sample : YY578 Page: 1

Data file : v19600.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
* ~~1)~~	~~41977-43-9~~	~~Cyclopropane, 1,1,2-trimethyl-3-(2-methy~~	~~3.140~~	~~2.51~~
2)	590-66-9	Cyclohexane, 1,1-dimethyl-	3.528	4.14
3)	4359-46-0	1,3-Dioxolane, 2-ethyl-4-methyl-	3.754	7.43

Concentration Units: Water: UG/L Soil: UG/KG

* #1 Elated more than 30 sec before phenol.

FA 12-17-97

Alkane Report for Sample : YY580 Page: 1

Data file : v19601.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
1) 16747-31-2	Hexane, 3,3,4-trimethyl-	3.513	5.54

Concentration Units: Water: UG/L Soil: UG/KG

ZA 12-17-97

Alkane Report for Sample : YY581 Page: 1

Data file : v19602.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	565-75-3	Pentane, 2,3,4-trimethyl-	3.503	4.99
2)	4923-77-7	Cyclohexane, 1-ethyl-2-methyl-, cis-	3.535	3.17
3)	542-85-8	Ethane, isothiocyanato-	3.750	5.36
4)	0-00-0	trans-1,3-Diethylcyclopentane	4.686	2.55

Concentration Units: Water: UG/L Soil: UG/KG

EA 12-17-97

Alkane Report for Sample : YY582 Page: 1

Data file : v19603.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1)	16747-31-2	Hexane, 3,3,4-trimethyl-	3.513	3.92
2)	25136-55-4	1,4-Dioxane, dimethyl-	3.761	7.86
3)	74421-18-4	Hexane, 1-(hexyloxy)-3-methyl-	3.976	3.86

Concentration Units: Water: UG/L Soil: UG/KG

FA 12-17-97

Alkane Report for Sample : YY585 Page: 1

Data file : v19671.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
* ~~1) 5756-43-4~~	~~Hexane, 1 ethoxy~~	~~3.089~~	~~2.12~~
2) 49622-18-6	Decane, 3,3,4-trimethyl-	3.444	3.71
~~3) 631-36-7~~	~~Silane, tetraethyl~~	~~3.519~~	~~4.55~~

Concentration Units: Water: UG/L Soil: UG/KG

* Product of column bleed. Not a TIC. (#3)

** #1 Eluted more than 30 sec. before phenol.

FR 12-17-97

Alkane Report for Sample : YY589 Page: 1

Data file : v19675.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
* ~~1)~~	~~1072-14-6~~	~~Silane, hexyl-~~	~~2.188~~	~~2.05~~
2)	4923-77-7	Cyclohexane, 1-ethyl-2-methyl-, cis-	3.469	2.46

Concentration Units: Water: UG/L Soil: UG/KG

* Product of column bleed. Not a TIC.

FA 12-17-97

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #05 LABORATORY SWOK

SDG NO. YY575 SITE NAME Waste Disposal, Inc.

SOW OLM03.2 REVIEW COMPLETION DATE December 19, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Frank Arceneaux

NO. OF SAMPLES 16 WATER _____ SOIL _____ OTHER _____

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION		O	O	
2. GC-MS TUNE/GC PERFORMANCE		O	O	
3. INITIAL CALIBRATIONS		O	O	
4. CONTINUING CALIBRATIONS		X	O	
5. FIELD QC		X	O	
6. LABORATORY BLANKS		X	O	
7. SURROGATES		O	O	
8. MATRIX SPIKE/DUPLICATES		O	O	
9. REGIONAL QC		N/A	N/A	
10. INTERNAL STANDARDS		O	N/A	
11. COMPOUND IDENTIFICATION		O	O	
12. COMPOUND QUANTITATION		O	O	
13. SYSTEM PERFORMANCE		O	O	
14. OVERALL ASSESSMENT		X	O	

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: None.

TPO ATTENTION: (1) The detected results for bis(2-ethylhexyl)phthalate are qualified as nondetected and estimated (U,J) due to contamination in method blanks. (2) Several results in the semivolatiles fraction are estimated (J) due to calibration problems.

AREAS OF CONCERN: None.

DATA VALIDATION REPORTS
TOTAL AND DISSOLVED METALS

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-97-1-4
Technical Direction No.: 9714107

DATE: November 18, 1997

SUBJECT: Review of Analytical Data

There is an unresolved telephone record log (TRL) in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS I.D. NO.:	CAD980884357
CASE NO.:	25700 Memo #06
SDG NO.:	MYY105
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Total Metals
SAMPLE NO.:	19 Water Samples (MYY105 through MYY123)
COLLECTION DATE:	September 18, 19, 22, and 23, 1997
REVIEWERS:	Michael J. Fertitta and Margaret L. May, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582, or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [X] FYI [ ] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

ESTW-9A-375/25700M06.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #06
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewers: Michael J. Fertitta and Margaret L. May, ESAT/Lockheed
Date: November 18, 1997

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: MYY105 through MYY123

COLLECTION DATE: September 18, 19, 22, and 23, 1997
SAMPLE RECEIPT DATE: September 19, 20, 24, and 25, 1997

CONCENTRATION & MATRIX: Low Concentration Groundwater

FIELD QC: Field Blanks (FB): MYY110 and MYY114
Equipment Blanks (EB): MYY119 and MYY120
Background Samples (BG): None
Duplicates (D1): MYY105 and MYY106

LABORATORY QC: Matrix Spike: MYY107
Duplicates: MYY107
ICP Serial Dilution: MYY107

ANALYSIS: Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	September 30, 1997	October 2, 5, and 14, 1997
Mercury	October 1, 1997	October 2, 1997

TPO ACTION:

None.

TPO ATTENTION:

None.

SAMPLING ISSUES:

(1) Results for samples MYY116, MYY117, and MYY120 are estimated (J) due to inadequate sample preservation in the field. (2) The chain of custody (CoC) did not specify a sample to be used for laboratory quality control (QC). (3) The field QC samples were not sent blind to the laboratory. (4) Samples MYY105 through MYY111 were incorrectly recorded as MY105 through MY111 in the CoC.

ADDITIONAL COMMENTS:

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW) (ILM04.0) and the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	No	B
3. Calibration	Yes	
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	C
8. Laboratory Duplicate Sample Analysis	No	D
9. Field Duplicate Sample Analysis	No	E
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	Yes	
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and are flagged "J" in Table 1A.

- All results above the instrument detection limit (IDL) but below the contract required detection limit (CRDL) (denoted with an "L" qualifier)

Results above the IDL but below the CRDL are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated due to inadequate sample preservation. The results are flagged "J" in Table 1A.

- All of the analytes in samples MYY116, MYY117, and MYY120

These water analyses did not meet the 40 CFR 136 (Clean Water Act) sample preservation criterion. The samples were not adequately preserved in the field to a pH of less than 2 as shown below.

Sample Number	pH
MYY116	6
MYY117	6
MYY120	6

Sample results may be biased low, and where nondetected, false negatives may exist.

C. The following results are estimated because of matrix spike recovery results outside method QC limits. The results are flagged "J" in Table 1A.

- Aluminum, mercury, and selenium in all of the samples except samples MYY110, MYY114, MYY119, and MYY120

The matrix spike recovery results for aluminum, mercury, and selenium in QC sample MYY107 did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MYY107 % Recovery	MYY107 % Bias
Aluminum	126	+26
Mercury	70	-30
Selenium	129	+29

Results above the IDL are considered quantitatively uncertain. The detected results reported for aluminum and selenium may be biased high. The results reported for mercury may be biased low, and where nondetected, false negatives may exist.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. Post-digestion spike recovery results of 99% and 95% were obtained for aluminum and selenium, respectively, in QC sample MYY107. Since the post-digestion spike recoveries were acceptable, the high pre-digestion spike recovery results (126% and 129%) obtained for aluminum and selenium may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis, enhancing the analytical result.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

D. The following results are estimated because of laboratory duplicate results outside method QC limits. The results are flagged "J" in Table 1A.

- Iron in all of the samples except samples MYY110, MYY114, MYY119, and MYY120

Laboratory duplicate results did not meet the ±20 relative percent difference (RPD) and ±CRDL criteria for precision as listed below.

Analyte	MYY107 Lab. Dup. RPD
Iron	21

The results reported for iron are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may

be due to high levels of solids in the sample, poor laboratory technique, or method defects.

E. A RPD of 38 was obtained for iron in the analysis of field duplicate pair samples MYY105 and MYY106. The results are expected to vary more than laboratory duplicates (±20 RPD or ±CRDL criteria for precision) since sampling variability is included in the measurement. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, high levels of solids in the sample, poor sampling or laboratory technique, or method defects.

Case No.: 25700 Memo #06

TABLE 1A

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Reviewers: Michael J. Fertitta and Margaret L. May, ESAT/Lockheed

Date: November 18, 1997

Concentration in µg/L

Station Location	GW-30			GW-30 DUP			GW-29			GW-28			GW-19			Field Rinsate 1			GW-18		
Sample I.D.	MYY105 D1			MYY106 D1			MYY107			MYY108			MYY109			MYY110 FB			MYY111		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	352	J	C	235	J	C	911	J	C	1700	J	C	2000	J	C	18.0 U			667	J	C
Antimony	2.0 U			2.0 U			2.0 U			2.5 L	J	A	2.7 L	J	A	2.0 U			2.0 U		
Arsenic	4.0 U			4.0 U			4.0 U			4.0 U			4.0 U			4.0 U			4.0 U		
Barium	38.9 L	J	A	38.5 L	J	A	30.7 L	J	A	48.2 L	J	A	48.3 L	J	A	1.2 L	J	A	30.0 L	J	A
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	92500			93300			239000			242000			256000			185 L	J	A	260000		
Chromium	3.0 L	J	A	2.8 L	J	A	9.5 L	J	A	6.8 L	J	A	9.5 L	J	A	1.0 U			8.6 L	J	A
Cobalt	1.0 U			1.0 U			1.0 U			2.0 L	J	A	2.0 L	J	A	1.0 U			1.0 U		
Copper	2.0 U			2.0 U			2.2 L	J	A	6.1 L	J	A	6.9 L	J	A	2.0 U			2.6 L	J	A
Iron	533	J	DE	364	J	DE	1100	J	D	2240	J	D	3140	J	D	34.4 L	J	A	875	J	D
Lead	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Magnesium	25300			25400			70500			70100			73400			51.6 L	J	A	77400		
Manganese	11.6 L	J	A	10.2 L	J	A	59.7			107			1810			2.0 L	J	A	38.0		
Mercury	2.0	J	C	0.10 U	J	C	0.10 U	J	C	0.10 U	J	C	0.10 U	J	C	0.10 U			0.10 U	J	C
Nickel	1.2 L	J	A	1.0 U			4.2 L	J	A	5.6 L	J	A	7.5 L	J	A	1.0 U			2.8 L	J	A
Potassium	3440 L	J	A	3270 L	J	A	5330			4890 L	J	A	4730 L	J	A	63.6 L	J	A	5500		
Selenium	25.3	J	C	25.8	J	C	37.7	J	C	35.4	J	C	37.8	J	C	3.0 U			44.9	J	C
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	59000			59200			154000			144000			135000			373 L	J	A	151000		
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	4.9 L	J	A	4.8 L	J	A	6.7 L	J	A	6.9 L	J	A	8.9 L	J	A	1.0 U			6.0 L	J	A
Zinc	4.3 L	J	A	4.1 L	J	A	15.3 L	J	A	19.2 L	J	A	16.8 L	J	A	13.0 L	J	A	7.0 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

CRDL-Contract Required Detection Limit

Case No.: 25700 Memo #06

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Reviewers: Michael J. Fertitta and Margaret L. May, ESAT/Lockheed

Date: November 18, 1997

TABLE 1A

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	GW-27			GW-26			Field Rinsate 2			GW-24			GW-14			GW-1			GW-8		
Sample I.D.	MYY112			MYY113			MYY114 FB			MYY115			MYY116			MYY117			MYY118		
Date of Collection	9/19/97			9/19/97			9/19/97			9/19/97			9/22/97			9/22/97			9/22/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	5140	J	C	4830	J	C	18.0 U			1770	J	C	2280	J	BC	8820	J	BC	4440	J	C
Antimony	3.1 L	J	A	2.0 U			2.2 L	J	A	2.0 U			2.0 U	J	B	5.4 L	J	AB	3.3 L	J	A
Arsenic	4.0 U			4.3 L	J	A	4.0 U			4.0 U			4.0 U	J	B	7.4 L	J	AB	61.3		
Barium	86.9 L	J	A	121 L	J	A	1.0 U			43.1 L	J	A	52.4 L	J	AB	188 L	J	AB	160 L	J	A
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U	J	B	1.0 U	J	B	1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U	J	B	1.0 U	J	B	1.0 U		
Calcium	234000			272000			229 L	J	A	284000			279000	J	B	271000	J	B	256000		
Chromium	12.1			11.7			1.0 U			7.9 L	J	A	8.2 L	J	AB	19.7	J	B	11.9		
Cobalt	5.0 L	J	A	5.4 L	J	A	1.0 U			1.7 L	J	A	3.6 L	J	AB	8.3 L	J	AB	3.8 L	J	A
Copper	13.2 L	J	A	12.8 L	J	A	2.0 U			5.5 L	J	A	7.8 L	J	AB	20.9 L	J	AB	14.7 L	J	A
Iron	7150	J	D	7940	J	D	46.5 L	J	A	2570	J	D	3610	J	BD	13900	J	BD	12000	J	D
Lead	3.5			3.1			2.0 U			2.0 U			2.0 U	J	B	5.3	J	B	2.5 L	J	A
Magnesium	67400			78600			59.9 L	J	A	76800			75000	J	B	74300	J	B	69900		
Manganese	1030			495			1.0 L	J	A	195			5210	J	B	325	J	B	4600		
Mercury	0.11 L	J	AC	0.71	J	C	0.10 U			0.10 U	J	C	0.10 U	J	BC	0.10 U	J	BC	0.10 U	J	C
Nickel	11.7 L	J	A	9.5 L	J	A	1.0 U			4.8 L	J	A	6.8 L	J	AB	15.7 L	J	AB	8.9 L	J	A
Potassium	5500			6220			64.2 L	J	A	5710			4580 L	J	AB	7150	J	B	4610 L	J	A
Selenium	26.8	J	C	38.5	J	C	3.0 U			44.4	J	C	9.0	J	BC	24.3	J	BC	18.1	J	C
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U	J	B	1.0 U	J	B	1.0 U		
Sodium	179000			165000			395 L	J	A	129000			142000	J	B	148000	J	B	145000		
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U	J	B	3.0 U	J	B	3.0 U		
Vanadium	18.6 L	J	A	17.6 L	J	A	1.0 U			9.0 L	J	A	9.7 L	J	AB	29.9 L	J	AB	13.7 L	J	A
Zinc	26.7			30.7			10.2 L	J	A	12.7 L	J	A	17.6 L	J	AB	36.3	J	B	28.7		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

CRDL-Contract Required Detection Limit

TABLE 1A

Case No.: 25700 Memo #06
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewers: Michael J. Fertitta and Margaret L. May, ESAT/Lockheed
Date: November 18, 1997

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	Filtration Rinsate			Field Equipment Rinse			GW-23			GW-3			GW-3 DUP			Lab Blank			IDL		
Sample I.D.	MYY119 EB			MYY120 EB			MYY121			MYY122			MYY123								
Date of Collection	9/22/97			9/22/97			9/22/97			9/23/97			9/23/97								
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	18.0 U			18.0 U	J	B	1910	J	C	2140	J	C	5050	J	C	18.0 U			18.0		
Antimony	13.8 L	J	A	2.0 U	J	B	2.0 U			2.0 U			2.0 U			2.0 U			2.0		
Arsenic	4.0 U			4.0 U	J	B	4.0 U			4.0 U			6.4 L	J	A	4.0 U			4.0		
Barium	1.0 U			1.5 L	J	AB	56.3 L	J	A	68.0 L	J	A	146 L	J	A	1.0 U			1.0		
Beryllium	1.0 U			1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0		
Cadmium	1.0 U			1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0		
Calcium	134 L	J	A	147 L	J	AB	275000			268000			274000			26.0 U			26.0		
Chromium	1.0 U			1.0 U	J	B	5.1 L	J	A	8.8 L	J	A	16.5			1.0 U			1.0		
Cobalt	1.0 U			1.0 U	J	B	2.0 L	J	A	2.8 L	J	A	4.9 L	J	A	1.0 U			1.0		
Copper	2.0 U			2.0 U	J	B	6.3 L	J	A	7.6 L	J	A	12.2 L	J	A	2.0 U			2.0		
Iron	10.0 U			61.1 L	J	AB	2600	J	D	2900	J	D	7470	J	D	10.0 U			10.0		
Lead	2.0 U			2.0 U	J	B	2.0 U			2.0 U			2.8 L	J	A	2.0 U			2.0		
Magnesium	23.0 U			51.7 L	J	AB	73800			71800			74100			23.0 U			23.0		
Manganese	2.6 L	J	A	4.3 L	J	AB	2890			421			698			1.0 U			1.0		
Mercury	0.10 U			0.10 U	J	B	0.10 U	J	C	0.10 U	J	C	0.10 U	J	C	0.10 U			0.10		
Nickel	1.0 U			1.0 U	J	B	4.2 L	J	A	4.5 L	J	A	8.9 L	J	A	1.0 U			1.0		
Potassium	39.0 U			48.1 L	J	AB	5200			4780 L	J	A	5610			39.0 U			39.0		
Selenium	3.0 U			3.0 U	J	B	25.5	J	C	31.3	J	C	31.9	J	C	3.0 U			3.0		
Silver	1.0 U			1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0		
Sodium	280 L	J	A	310 L	J	AB	169000			129000			133000			48.5 L	J	A	193		
Thallium	3.0 U			3.0 U	J	B	3.0 U			3.0 U			3.0 U			3.0 U			3.0		
Vanadium	1.0 U			1.0 U	J	B	7.8 L	J	A	8.9 L	J	A	17.3 L	J	A	1.0 U			1.0		
Zinc	13.9 L	J	A	4.9 L	J	AB	18.2 L	J	A	13.6 L	J	A	23.1			2.6 L	J	A	2.0		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #06
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewers: Michael J. Fertitta and Margaret L. May, ESAT/Lockheed
Date: November 18, 1997

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Sample I.D.	CRDL																				
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	200																				
Antimony	60.0																				
Arsenic	10.0																				
Barium	200																				
Beryllium	5.0																				
Cadmium	5.0																				
Calcium	5000																				
Chromium	10.0																				
Cobalt	50.0																				
Copper	25.0																				
Iron	100																				
Lead	3.0																				
Magnesium	5000																				
Manganese	15.0																				
Mercury	0.20																				
Nickel	40.0																				
Potassium	5000																				
Selenium	5.0																				
Silver	10.0																				
Sodium	5000																				
Thallium	10.0																				
Vanadium	50.0																				
Zinc	20.0																				

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit.

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

LOCKHEED MARTIN

TPO: [X] FYI [ ] Attention [ ] Action Region 9

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #06 LABORATORY SWOK

SDG NO. MYY105 SITE NAME Waste Disposal, Inc.

SOW NO. ILM04.0 REVIEW COMPLETION DATE November 18, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWERS' NAMES M.J. Fertitta/M.L. May

NO. OF SAMPLES 19 WATER _____ SOIL _____ OTHER

	ICP	GFAA	Hg	Cyanide
1. PRESERVATION AND HOLDING TIMES	X		X	
2. CALIBRATION	O		O	
3. BLANKS	O		O	
4. ICP INTERFERENCE CHECK SAMPLE (ICS)	O			
5. LABORATORY CONTROL SAMPLE (LCS)	O		N/A	
6. DUPLICATE ANALYSIS	X		O	
7. MATRIX SPIKE ANALYSIS	X		X	
8. METHOD OF STANDARD ADDITION (MSA)				
9. ICP SERIAL DILUTION	O			
10. SAMPLE QUANTITATION	O		O	
11. SAMPLE VERIFICATION	O		O	
12. GFAA ANALYTICAL SPIKE				
13. OVERALL ASSESSMENT	X		X	

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable.

TPO ACTION: None.

TPO ATTENTION: None.

AREAS OF CONCERN: None.

In Reference to Case No(s).:

25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Southwest Labs of Oklahoma, Inc. (SWOK)

Lab Contact: Jason D. Ruckman/FAX 918-251-2599

Region: 9

Regional Contact: Steve Remaley, TPO

ESAT Reviewers: M. Fertitta/M. May, 11/10/97

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No. MYY105

Summary of Questions/Issues Discussed:

The following items were noted in the validation of SDG MYY105. Please respond within seven days per Section II.E of Exhibit A of the ILM04.0 Statement of Work. Send response and resubmissions to Lockheed Martin Environmental Services, Environmental Services Assistance Team, Region 9, 301 Howard Street, Suite 970, San Francisco, CA 94105-2241, Fax: 415-278-0588.

1. Please comment on the following contractually noncompliant items.

   The same ICV and CCV solution concentration (Form 2A, page 27) was used for the sodium sample reanalyses on instrument TJA 61E (ILM04.0, E-17, 2.b.).

   The matrix spike concentration used for iron (Form 5A, page 44) was not the amount specified by the SOW (ILM04.0, E-23, Table 3).

   The determination date for ICP TJA ET2 instrument detection limits and linear ranges (Forms 10 and 12, pages 52 and 61) precedes the date of one analytical sequence (Form 14, page 68) by more than three calendar months (ILM04.0; paragraph 5 of page B-36, Section III.N and paragraph 4 of page B-37, Section III.Q).

2. Samples MYY107, MYY107L, MYY107D, and MYY107S were mislabeled as samples MYY103/L/D/S on raw data pages 147, 148, 175, and 176. Please correct and resubmit these pages.

Summary of Resolution:

_____ Regional Contact Signature

_____ Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

DATE OF CALL: _____ REGIONAL CONTACT: Steve Remaley, TPO

AUDIT NO.: 1/98/21 LAB CONTACT: Jason D. Ruckman

CASE NO.: 25700 LAB CODE: SWOK FAX 918-251-2599

SDG NO.: MYY105 LAB NAME: Southwest Labs of Oklahoma, Inc.

ESAT REVIEWER: M.L.May, 11/7/97 LAB LOCATION: Broken Arrow, OK

Summary of Questions/Issues Discussed:

The following items were noted in the audit of the data package for SDG MYY105. Please respond within seven days per Section II.E of Exhibit A of the ILM04.0 Statement of Work. Send responses and resubmissions to Lockheed Martin Environmental Services, Environmental Services Assistance Team, Region 9, 301 Howard Street, Suite 970, San Francisco, CA 94105-2241, Fax: 415-278-0588.

(1) Chain of custody (CoC) record #20831 (page 244) indicates that sample MYY107 was associated with airbill #326 491 5183, but the airbill was not present in the data package or listed on the appropriate Form DC-1 (page 261). Please comment and make necessary resubmissions.

(2) Please clarify which samples in the shipment received on 9/24/97 are associated with airbill # 326 491 5124 since the airbill number is not listed in either of the CoC records. Refer to pages 249, 250, 263, and 285.

(3) Please clarify whether CLASS was contacted for guidance regarding the failure of the sampler to specify in column E of the CoC record what type of RAS analysis was to be performed for samples MYY110 and MYY111. Refer to page 247.

Two additional items were noted in the audit. These are for your information only. Please address them in future data package submittals.

(4) The case number was not recorded in one of the Form DC-1s, as required by Section III.T of Exhibit B. Refer to page 261.

(5) Item 2 of the Form DC-1s was not completed or crossed out, as required by Section III.T of Exhibit B. Refer to page 261.

Summary of Resolution:

_____ _____
Regional Contact Signature Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-97-1-4
Technical Direction No.: 9714107

DATE: November 19, 1997

SUBJECT: Review of Analytical Data

There is an unresolved telephone record log in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS I.D. NO.:	CAD980884357
CASE NO.:	25700 Memo #07
SDG NO.:	MYY124
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Total and Dissolved Metals
SAMPLE NO.:	6 Water Samples
COLLECTION DATE:	September 23 and 24, 1997
REVIEWER:	L. Hoffman/D. Bailey, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582, or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [X] FYI [ ] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

ESTW-9A-385/25700M07.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #07
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc.
Reviewer: L. Hoffman/D. Bailey, ESAT/Lockheed
Date: November 19, 1997

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: Dissolved Metals: MYY162
Total Metals: MYY124 through MYY127 and MYY130

COLLECTION DATE: September 23 and 24, 1997
SAMPLE RECEIPT DATE: September 25, 1997
CONCENTRATION & MATRIX: Low Concentration Groundwater

FIELD QC: Field Blanks (FB): None
Equipment Blanks (EB): MYY119* and MYY127 (*see Additional Comments)
Background Samples (BG): None
Duplicates (D1): None

LABORATORY QC: Matrix Spike: MYY130 and MYY162
Duplicates: MYY130 and MYY162
ICP Serial Dilution: MYY130 and MYY162

ANALYSIS: Total and Dissolved Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	September 30, 1997	October 3, 4, 5, and 7, 1997
Mercury	October 1 and 7, 1997	October 3 and 8, 1997

TPO ACTION:

None.

TPO ATTENTION:

None.

SAMPLING ISSUES:

The station locations for samples MYY124 through MYY126 were not indicated in the chain-of-custody (CoC) records.

ADDITIONAL COMMENTS:

*The results for filtration rinsate MYY119, associated with sample MYY162 for dissolved metals, are located in Case 25700 Memo #06, SDG MYY105. All analyte concentrations in the filtration rinsate are below the contract required detection limits (CRDLs).

The laboratory performed mercury analyses two and seven days past the required quarterly instrument detection limit (IDL) study. This deviation is not expected to significantly affect data quality.

ADDITIONAL COMMENTS: (continued)

The laboratory did not prepare different concentrations for sodium in the analyses of the initial calibration verification (ICV) and continuing calibration verification (CCV) standards. This deviation is not expected to significantly affect data quality.

Sample MYY162 was filtered through a 0.45 µm filter and preserved in the field.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. Laboratory blanks and associated samples are listed below the data qualifiers in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program Inorganic Statement of Work (ILM04.0) and the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	Yes	
3. Calibration	Yes	
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	B
8. Laboratory Duplicate Sample Analysis	Yes	
9. Field Duplicate Sample Analysis	Yes	
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	No	C
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and are flagged "J" in Table 1A.

- All results above the instrument detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) but below the CRDL are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following result is estimated because of a matrix spike recovery result outside method QC limits. The result is flagged "J" in Table 1A.

- Selenium in sample MYY162

The matrix spike recovery result for selenium in QC sample MYY162 did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for selenium are presented below and are based on an ideal recovery of 100%.

Analyte	MYY162 Diss. Metals % Recovery	MYY162 Diss. Metals % Bias
Selenium	72	-28

Results above the IDL are considered quantitatively uncertain. The result reported for selenium in sample MYY162 may be biased low.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. A post-digestion spike recovery result of 90% was obtained for selenium in QC sample MYY162. Since the post-digestion spike recovery was acceptable, the low pre-digestion spike recovery result of 72% obtained for selenium may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis, depressing the analytical result.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

C. The following result is estimated because of an ICP serial dilution result outside the method QC limit. The result is flagged "J" in Table 1A.

- Potassium in sample MYY162

The percent difference of the ICP serial dilution analysis of sample MYY162 did not meet the 10% criterion for the analyte shown below.

Analyte	MYY162 Diss. Metals % Difference
Potassium	29

The result reported for potassium in sample MYY162 is considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #07
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: L. Hoffman/D. Bailey, ESAT/Lockheed
Date: November 19, 1997

Concentration in µg/L

Analysis Type: Low Concentration Groundwater Samples for Total and Dissolved Metals

Type of Analysis	Total			Total			Total			Total			TOTAL			DISSOLVED,					
Station Location	GW-10			GW-11			GW-22			Field Eqt. Rinse			GW-2			GW-2					
Sample I.D.	MYY124			MYY125			MYY126			MYY127 EB			MYY130			MYY162			Lab Blank 1		
Date of Collection	9/23/97			9/23/97			9/23/97			9/23/97			9/24/97			9/24/97					
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	3280			14400			3900			34.6 L	J	A	18.5 L	J	A	18.0 U			35.2 L	J	A
Antimony	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Arsenic	4.4 L	J	A	9.8 L	J	A	5.4 L	J	A	4.0 U			4.0 U			4.0 U			4.0 U		
Barium	113 L	J	A	197 L	J	A	113 L	J	A	1.0 U			29.2 L	J	A	28.9 L	J	A	1.0 U		
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	192000			289000			222000			337 L	J	A	303000			300000			26.0 U		
Chromium	9.0 L	J	A	26.6			8.1 L	J	A	1.0 U			5.8 L	J	A	5.8 L	J	A	1.0 U		
Cobalt	4.8 L	J	A	8.9 L	J	A	3.8 L	J	A	1.0 U			1.0 U			1.0 U			1.0 U		
Copper	9.1 L	J	A	26.4			8.3 L	J	A	2.0 U			2.0 U			2.0 U			2.0 U		
Iron	4870			19300			5800			28.6 L	J	A	18.7 L	J	A	27.7 L	J	A	10.0 U		
Lead	2.0 U			5.7			2.1 L	J	A	2.0 U			2.0 U			2.0 U			2.0 U		
Magnesium	58100			81700			56000			80.7 L	J	A	81000			80300			23.0 U		
Manganese	2930			1550			215			1.0 U			1.0 U			1.0 U			1.0 U		
Mercury	0.63			0.28			2.0			0.10 U			0.10 U			0.10 U			0.10 U		
Nickel	8.9 L	J	A	20.6 L	J	A	8.8 L	J	A	1.0 U			1.0 U			1.0 U			1.0 U		
Potassium	4940 L	J	A	8860			5070			39.0 U			5070			4700 L	J	AC	39.0 U		
Selenium	10.1			35.8			4.0 L	J	A	3.0 U			32.2			32.7	J	B	3.0 U		
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	150000			146000			142000			301 L	J	A	156000			152000			40.4 L	J	A
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	13.0 L	J	A	40.6 L	J	A	15.0 L	J	A	1.0 U			3.3 L	J	A	2.9 L	J	A	1.0 U		
Zinc	22.9			62.8			21.3			4.9 L	J	A	3.2 L	J	A	6.6 L	J	A	2.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #07
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: L. Hoffman/D. Bailey, ESAT/Lockheed
Date: November 19, 1997

Concentration in µg/L

Analysis Type: Low Concentration Groundwater Samples for Total and Dissolved Metals

Sample I.D.	Lab Blank 2			IDL			CRDL														
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	18.0 U			18.0			200														
Antimony	2.0 U			2.0			60.0														
Arsenic	4.0 U			4.0			10.0														
Barium	1.0 U			1.0			200														
Beryllium	1.0 U			1.0			5.0														
Cadmium	1.0 U			1.0			5.0														
Calcium	26.0 U			26.0			5000														
Chromium	1.0 U			1.0			10.0														
Cobalt	1.0 U			1.0			50.0														
Copper	2.0 U			2.0			25.0														
Iron	10.0 U			10.0			100														
Lead	2.0 U			2.0			3.0														
Magnesium	23.0 U			23.0			5000														
Manganese	1.0 U			1.0			15.0														
Mercury	0.10 U			0.10			0.20														
Nickel	1.0 U			1.0			40.0														
Potassium	39.0 U			39.0			5000														
Selenium	3.0 U			3.0			5.0														
Silver	1.0 U			1.0			10.0														
Sodium	30.8 L	J	A	17.0 / 193			5000														
Thallium	3.0 U			3.0			10.0														
Vanadium	1.0 U			1.0			50.0														
Zinc	4.3 L	J	A	2.0			20.0														

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit.

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

Laboratory blanks and associated samples

Lab Blank 1: MYY162

Lab Blank 2: MYY124 through MYY127 and MYY130

LOCKHEED MARTIN

TPO: [X] FYI [ ] Attention [ ] Action Region 9

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #07 LABORATORY SWOK

SDG NO. MYY124 SITE NAME Waste Disposal, Inc.

SOW NO. ILM04.0 REVIEW COMPLETION DATE November 19, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME L. Hoffman/D. Bailey

NO. OF SAMPLES 6 WATER ____ SOIL ____ OTHER

	ICP	GFAA	Hg	Cyanide
1. PRESERVATION AND HOLDING TIMES	O		O	
2. CALIBRATION	O		O	
3. BLANKS	O		O	
4. ICP INTERFERENCE CHECK SAMPLE (ICS)	O			
5. LABORATORY CONTROL SAMPLE (LCS)	O		N/A	
6. DUPLICATE ANALYSIS	O		O	
7. MATRIX SPIKE ANALYSIS	X		O	
8. METHOD OF STANDARD ADDITION (MSA)				
9. ICP SERIAL DILUTION	X			
10. SAMPLE QUANTITATION	O		O	
11. SAMPLE VERIFICATION	O		O	
12. GFAA ANALYTICAL SPIKE				
13. OVERALL ASSESSMENT	X		O	

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable.

TPO ACTION: None.

TPO ATTENTION: None.

AREAS OF CONCERN: None.

In Reference to Case No(s).:
25700 Memo #07

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Southwest Labs of Oklahoma, Inc.

Lab Contact: Jason Ruckman/FAX No. 918-251-2599

Region: 9

Regional Contact: Steve Remaley

ESAT Reviewer: L. Hoffman/D. Bailey, 11/19/97

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample delivery group(s):
SDG No. MYY124

Summary of Questions/Issues Discussed:

The following items were noted in the validation of this SDG. Please respond within 7 days per Section II.E of Exhibit A of the ILM04.0 Statement of Work. Send response and/or resubmissions to Lockheed Martin Environmental Services Assistance Team, Region 9, 301 Howard Street, Suite 970, San Francisco, CA 94105-2241, FAX: 415-278-0588.

1. Form DC-2 was not included in the data package (ILM04.0, Exhibit B, Section III, B-42, U). Please submit the completed Form DC-2.

2. The determination date for the PS200A detection limit preceded the date of the analytical sequences by more than three calendar months (ILM04.0, Exhibit B, Section III, B-36, N). Please explain this contractual deviation.

3. The same ICV and CCV concentrations were used for sodium in the reanalyses on ICP TJA 61E (ILM04.0, Exhibit E, E-17, b, last sentence in 1st paragraph). Please explain this contractual deviation.

4. The following suffix was not included as part of the correct EPA sample number: the "L" on page 103 (ILM04.0, Exhibit B, B-10, Table 2). Please correct and resubmit page 103.

5. The CRA standard (p. 206) from the 2nd mercury run, 10/08/97, was not reported on Form 2B. Please record the CRA results on the appropriate Form 2B and resubmit this page.

Summary of Resolution:

_____ _____
Regional Contact Signature Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-97-1-4
Technical Direction No.: 9714112

DATE: January 28, 1998

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS I.D. NO.:	CAD980884357
CASE NO.:	25700 Memo #09
SDG NO.:	MYY128
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Total Metals
SAMPLE NO.:	13 Water Samples (See Case Summary)
COLLECTION DATE:	September 24, 25, and 30, 1997
REVIEWER:	Margaret L. May, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582, or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [X] FYI [ ] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #09
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: January 28, 1998

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: MYY128, MYY129, and MYY131 through MYY141

COLLECTION DATE: September 24, 25, and 30, 1997
SAMPLE RECEIPT DATE: September 26; and October 1 and 2, 1997

CONCENTRATION & MATRIX: Low concentration groundwater

FIELD QC: Field Blanks (FB): MYY131
Equipment Blanks (EB): MYY140 and MYY141
Background Samples (BG): None
Duplicates (D1): MYY136 and MYY137

LABORATORY QC: Matrix Spike: MYY128 and MYY134
Duplicates: MYY128 and MYY134
ICP Serial Dilution: MYY128 and MYY134

ANALYSIS: Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	October 2 and 7, 1997	October 5, 6, 10, 21, 22, and 23, 1997
Mercury	October 9 and 14, 1997	October 9 and 14, 1997

TPO ACTION:

None.

TPO ATTENTION:

None.

SAMPLING ISSUES:

(1) The field quality control (QC) samples were not sent blind to the laboratory. (2) The chain of custody (CoC) did not specify a sample to be used for laboratory QC. (3) The detected results for magnesium and sodium in samples MYY134 through MYY139 are qualified as nondetected (U) due to equipment blank contamination.

ADDITIONAL COMMENTS:

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. Laboratory blanks and associated samples are listed below the data qualifiers in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program Inorganic Statement of Work (ILM04.0) and the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	Yes	
3. Calibration	No	G
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	No	E
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	B
8. Laboratory Duplicate Sample Analysis	No	C
9. Field Duplicate Sample Analysis	No	F
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	No	D
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and are flagged "J" in Table 1A.

- All results above the instrument detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated because of matrix spike recovery results outside method QC limits. The results are flagged "J" in Table 1A.

- Mercury and selenium in samples MYY129 and MYY132 through MYY139

The matrix spike recovery results for mercury and selenium in QC sample MYY134 did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MYY134 % Recovery	MYY134 % Bias
Mercury	31	-69
Selenium	70	-30

Results above the IDL are considered quantitatively uncertain. The results reported for mercury in samples MYY133 and MYY134 may be biased low, and where nondetected, false negatives may exist. The results reported for selenium in samples MYY129 and MYY132 through MYY139 may be biased low.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. The following post-digestion spike recovery result was obtained.

Analyte	MYY134 Post-Digestion Spike % Recovery
Selenium	95

Since the post-digestion spike recovery was acceptable, the low pre-digestion spike recovery result (70%) obtained for selenium may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis, depressing the analytical result.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

C. The following results are estimated because of laboratory duplicate results outside method QC limits. The results are flagged "J" in Table 1A.

- Aluminum in samples MYY129 and MYY132 through MYY139
- Mercury in samples MYY128, MYY129, and MYY132 through MYY139

Laboratory duplicate results did not meet the ≤20 relative percent difference (RPD) and ±CRDL criteria for precision as listed below.

Analyte	MYY134 Lab. Dup. RPD
Aluminum	21

Mercury was detected at a concentration of 0.21 µg/L in the duplicate analysis of sample MYY128, but was not detected in the initial analysis. Mercury was detected at a concentration of 0.47 µg/L in the initial analysis of sample MYY134, but was not detected in the duplicate analysis. RPDs are not calculated.

The results reported for mercury in samples MYY128, MYY129, and MYY132 through MYY139 are considered quantitatively uncertain. The results reported for aluminum in samples MYY129 and MYY132 through MYY139 are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to high levels of solids in the sample, poor laboratory technique, or method defects.

D. The following results are estimated because of ICP serial dilution results outside method QC limits. The results are flagged "J" in Table 1A.

- Aluminum, barium, calcium, iron, magnesium, manganese, and potassium in samples MYY128, MYY129, MYY132, MYY133, and MYY135 through MYY139

The percent difference of the ICP serial dilution analysis of sample MYY128 did not meet the 10% criterion for the analytes shown below.

Analyte	MYY128 % Difference
Aluminum	21
Barium	16
Calcium	20
Iron	16
Magnesium	16
Manganese	16
Potassium	19

The results reported for aluminum, barium, calcium, iron, magnesium, manganese, and potassium in samples MYY128, MYY129, MYY132, MYY133, and MYY135 through MYY139 are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

E. The following results are qualified because of equipment blank contamination. The results are flagged "U" in Table 1A.

- Magnesium and sodium in samples MYY134 through MYY139

Sample results greater than the IDL are qualified as nondetected (U) unless the concentration of the analyte in the sample exceeds five times the amount in any associated blank.

Reported results of 23,200 µg/L and 77,100 µg/L for magnesium and sodium, respectively, in equipment blank sample MYY141 exceed the CRDL of 5000 µg/L for both analytes.

Although the reported result of 46,700 µg/L for calcium in equipment blank sample MYY141 exceeds the CRDL of 5000 µg/L, the calcium concentrations in the samples associated with this blank exceeded the blank concentration by at least five times. As a result, data quality is not adversely affected.

An equipment blank is reagent water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

F. A RPD of 83 was obtained for zinc in the analysis of field duplicate pair samples MYY136 and MYY137. The results are expected to vary more than laboratory duplicates (≤20 RPD or ±CRDL criteria for precision) since sampling variability is included in the measurement. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, high levels of solids in the sample, poor sampling or laboratory technique, or method defects.

G. A high recovery of 150% was obtained for mercury in the cold vapor analysis of the CRDL standard (CRA). While there are no criteria established for CRDL standard recoveries, high recoveries may indicate high bias for sample results near the CRDL. It should be noted that high recovery may indicate high bias for mercury in sample MYY134.

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25700 Memo #09
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: January 28, 1998

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	GW-6			GW-21			Field Rinse #5			GW-7			GW-4			GW-31			GW-5		
Sample I.D.	MYY128			MYY129			MYY131 FB			MYY132			MYY133			MYY134			MYY135		
Date of Collection	9/24/97			9/24/97			9/24/97			9/25/97			9/25/97			9/30/97			9/30/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	2560	J	D	18.0 U	J	CD	57.2 L	J	A	4030	J	CD	12900	J	CD	1190	J	C	611	J	CD
Antimony	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			3.0 U			3.0 U		
Arsenic	4.0 U			4.0 U			4.0 U			4.0 U			7.4 L	J	A	3.0 U			11.1		
Barium	74.9 L	J	AD	25.1 L	J	AD	1.0 U			156 L	J	AD	235	J	D	66.3 L	J	A	44.5 L	J	AD
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	204000	J	D	222000	J	D	211 L	J	A	235000	J	D	288000	J	D	290000			336000	J	D
Chromium	9.1 L	J	A	1.0 U			1.0 U			10.2			27.3			11.4			2.8 L	J	A
Cobalt	5.9 L	J	A	3.0 L	J	A	1.0 U			4.4 L	J	A	9.5 L	J	A	1.6 L	J	A	2.6 L	J	A
Copper	12.9 L	J	A	2.0 U			2.0 U			13.7 L	J	A	28.3			2.8 L	J	A	2.3 L	J	A
Iron	4160	J	D	27.9 L	J	AD	10.0 U			6500	J	D	19400	J	D	1650			1380	J	D
Lead	2.6 L	J	A	2.0 U			2.0 U			2.2 L	J	A	8.0			1.0 U			1.2 L	J	A
Magnesium	60200	J	D	63400	J	D	33.4 L	J	A	69500	J	D	83900	J	D	76400 U		E	90500 U	J	DE
Manganese	616	J	D	3310	J	D	2.8 L	J	A	847	J	D	526	J	D	211			4270	J	D
Mercury	0.10 U	J	C	0.10 U	J	BC	0.10 U			0.10 U	J	BC	0.36	J	BC	0.47	J	BCG	0.20 U	J	BC
Nickel	5.3 L	J	A	1.9 L	J	A	1.0 U			8.2 L	J	A	19.5 L	J	A	4.9 L	J	A	3.9 L	J	A
Potassium	4730 L	J	AD	2760 L	J	AD	39.0 U			5580	J	D	7280	J	D	4540 L	J	A	3760 L	J	AD
Selenium	23.0			17.5	J	B	3.0 U			33.7	J	B	28.3	J	B	36.4	J	B	20.5	J	B
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	149000			196000			234 L	J	A	170000			123000			127000 U		E	135000 U		E
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	11.0 L	J	A	2.4 L	J	A	1.0 U			15.0 L	J	A	38.4 L	J	A	5.6 L	J	A	3.8 L	J	A
Zinc	19.2 L	J	A	4.1 L	J	A	6.3 L	J	A	44.4			83.8			12.2 L	J	A	10.4 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #09
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: January 28, 1998

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	GW-16			GW-16 DUP			GW-15			GW-13			Field Eqt. Rinsate #6			Pump Decon. Water			Lab Blank I		
Sample I.D.	MYY136 D1			MYY137 D1			MYY138			MYY139			MYY140 EB			MYY141 EB					
Date of Collection	9/30/97			9/30/97			9/30/97			9/30/97			9/30/97			9/30/97					
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	11900	J	CD	11800	J	CD	1500	J	CD	17.0 U	J	CD	17.0 U			21.4 L	J	A	139 L	J	A
Antimony	3.8 L	J	A	3.7 L	J	A	3.0 U			3.0 U			3.0 U			3.0 U			2.0 U		
Arsenic	8.6 L	J	A	8.0 L	J	A	3.0 U			3.0 U			3.0 U			3.0 U			4.0 U		
Barium	206	J	D	207	J	D	46.9 L	J	AD	25.1 L	J	AD	1.0 U			86.4 L	J	A	1.0 U		
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.9 L	J	A
Calcium	286000	J	D	276000	J	D	285000	J	D	290000	J	D	238 L	J	A	46700		E	130 L	J	A
Chromium	27.3			25.2			3.5 L	J	A	1.0 L	J	A	1.0 U			1.0 U			1.0 U		
Cobalt	9.8 L	J	A	9.1 L	J	A	3.4 L	J	A	5.5 L	J	A	1.0 U			1.0 U			1.0 U		
Copper	28.7			28.3			11.1 L	J	A	2.0 U			2.0 U			8.5 L	J	A	2.0 U		
Iron	17500	J	D	16400	J	D	2370	J	D	48.8 L	J	AD	34.0 L	J	A	79.1 L	J	A	68.1 L	J	A
Lead	6.0			6.1			2.2 L	J	A	1.0 U			1.0 L	J	A	1.0 L	J	A	2.0 U		
Magnesium	86700 U	J	DE	83500 U	J	DE	76400 U	J	DE	72200 U	J	DE	35.3 L	J	A	23200		E	128 L	J	A
Manganese	488	J	D	465	J	D	3460	J	D	8280	J	D	5.8 L	J	A	3.1 L	J	A	1.0 U		
Mercury	0.20 U	J	BC	0.20 U	J	BC	0.20 U	J	BC	0.20 U	J	BC	0.20 U			0.20 U			0.10 U		
Nickel	19.0 L	J	A	17.6 L	J	A	3.2 L	J	A	2.3 L	J	A	1.0 U			1.0 U			1.0 U		
Potassium	7230	J	D	6990	J	D	4060 L	J	AD	4460 L	J	AD	44.0 U			3650 L	J	A	39.0 U		
Selenium	54.5	J	B	51.5	J	B	46.4	J	B	16.0	J	B	3.0 U			3.0 U			3.0 U		
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	133000 U		E	131000 U		E	126000 U		E	191000 U		E	258 L	J	A	77100		E	37.7 L	J	A
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	41.1 L	J	A	39.1 L	J	A	6.9 L	J	A	2.1 L	J	A	1.0 U			1.9 L	J	A	1.0 U		
Zinc	53.9		F	130		F	38.0			3.3 L	J	A	14.7 L	J	A	15.4 L	J	A	6.0 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #09
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: January 28, 1998

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Sample I.D.	Lab Blank 2			IDL 1			IDL 2			IDL 3			CRDL								
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	17.0 U			18.0			17.0			N/A			200								
Antimony	3.0 U			2.0			3.0			N/A			60.0								
Arsenic	3.0 U			4.0			3.0			N/A			10.0								
Barium	1.0 U			1.0			1.0			N/A			200								
Beryllium	1.0 U			1.0			1.0			N/A			5.0								
Cadmium	1.0 U			1.0			1.0			N/A			5.0								
Calcium	34.0 U			26.0			34.0			N/A			5000								
Chromium	1.0 U			1.0			1.0			N/A			10.0								
Cobalt	1.0 U			1.0			1.0			N/A			50.0								
Copper	2.0 U			2.0			2.0			N/A			25.0								
Iron	15.5 L	J	A	10.0			11.0			N/A			100								
Lead	1.0 U			2.0			1.0			N/A			3.0								
Magnesium	25.0 U			23.0			25.0			N/A			5000								
Manganese	1.0 U			1.0			1.0			N/A			15.0								
Mercury	0.20 U			0.10			0.20			N/A			0.20								
Nickel	1.0 U			1.0			1.0			N/A			40.0								
Potassium	44.0 U			39.0			44.0			N/A			5000								
Selenium	3.0 U			3.0			3.0			N/A			5.0								
Silver	1.0 U			1.0			1.0			N/A			10.0								
Sodium	33.1 L	J	A	17.0			19.0			135			5000								
Thallium	3.0 U			3.0			3.0			N/A			10.0								
Vanadium	1.0 U			1.0			1.0			N/A			50.0								
Zinc	6.5 L	J	A	2.0			2.0			N/A			20.0								

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit
N/A-Not Applicable

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit.

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence <u>or</u> absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

Lab Blank 1: MYY128, MYY129, MYY131, MYY132, and MYY133

Lab Blank 2: MYY134 through MYY141

LOCKHEED MARTIN

TPO: [X] FYI [ ] Attention [ ] Action Region 9

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #09 LABORATORY SWOK

SDG NO. MYY128 SITE NAME Waste Disposal, Inc.

SOW ILM04.0 REVIEW COMPLETION DATE January 28, 1998

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Margaret L. May

NO. OF SAMPLES 13 WATER _____ SOIL _____ OTHER

	ICP	GFAA	Hg	Cyanide
1. PRESERVATION AND HOLDING TIMES	O		O	
2. CALIBRATION	O		O	
3. BLANKS	X		O	
4. ICP INTERFERENCE CHECK SAMPLE (ICS)	O			
5. LABORATORY CONTROL SAMPLE (LCS)	O		N/A	
6. DUPLICATE ANALYSIS	X		X	
7. MATRIX SPIKE ANALYSIS	X		X	
8. METHOD OF STANDARD ADDITION (MSA)				
9. ICP SERIAL DILUTION	X			
10. SAMPLE QUANTITATION	O		O	
11. SAMPLE VERIFICATION	O		O	
12. GFAA ANALYTICAL SPIKE				
13. OVERALL ASSESSMENT	X		X	

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable.

TPO ACTION: None.

TPO ATTENTION: None.

AREAS OF CONCERN: A high recovery of 150% was obtained for mercury in the cold vapor analysis of the contract required detection limit (CRDL) standard (CRA). While there are no criteria established for CRDL standard recoveries, high recoveries may indicate high bias for sample results near the CRDL. It should be noted that high recovery may indicate high bias for mercury in sample MYY134.

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Mary O'Donnell
Environmental Scientist, USEPA, Region 9
Quality Assurance (QA) Program, PMD-3

THROUGH: Rose Fong
ESAT Regional Project Officer, USEPA, Region 9
Quality Assurance Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-97-1-4
Technical Direction No.: 9714112

DATE: January 28, 1998

SUBJECT: Technical Assessment of CLPAS Contract Compliance

REVIEWER: Margaret L. May, ESAT/Lockheed

Based on the ESAT data review and the Contract Compliance Screening (CCS) report, no changes to the December 2, 1997 Preliminary Technical Assessment of CLPAS Contract Compliance memorandum were noted. Please refer to the data validation report for additional information.

If you have any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582 or Rose Fong (QA Program/EPA) at (415) 744-1534.

CASE NUMBER: 25700 Memo #09 SDG NO. MYY128
SITE NAME: Waste Disposal, Inc.
ANALYSIS: Total Metals
LABORATORY NAME: Southwest Labs of Oklahoma, Inc. (SWOK)
DATE RECEIVED: 11/03/97 ESAT DUE DATE: 12/03/97
END OF 30-DAY INSPECTION AND ACCEPTANCE PERIOD: 12/03/97
TPO Action _____ TPO Attention _____ FYI ✓

In Reference to Case No(s).:

25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: January 5, 1998

Laboratory Name: Southwest Labs of Oklahoma, Inc. (SWOK)

Lab Contact: Jason D. Ruckman/FAX 918-251-2599

Region: 9

Regional Contact: Steve Remaley, TPO

ESAT Reviewers: M. L. May, 1/5/98

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No. MYY128

Summary of Questions/Issues Discussed:

The following items were noted in the validation of SDG MYY128. Please respond within seven days per Section II.E of Exhibit A of the ILM04.0 Statement of Work. Send response and resubmissions to Lockheed Martin Environmental Services, Environmental Services Assistance Team, Region 9, 301 Howard Street, Suite 970, San Francisco, CA 94105-2241, Fax: 415-278-0588.

(1) Airbill number 326 491 5290 was recorded by the sampler in the chain-of-custody (page 302) for samples MYY128, MYY129, and MYY131, but this airbill is not enclosed in the data package, or recorded in Form DC-1 (page 306). Please clarify this deficiency or submit this item.

(2) Please add the following information to mercury in Form 2B (page 24) for the CRA from instrument ID PS200B: true value of 0.2 µg/L, found value of 0.30 µg/L and %R of 150.0.

(3) Please note that Forms 11A and 11B for instrument ID TJA ET2 were submitted in duplicate. Pages 61, 62, and 63 are duplicates of pages 58, 59, and 60, respectively.

(4) Please correct the sodium true value to be 19,514 µg/L instead of 20,000 µg/L in Form 2A (page 17) for instrument ID TJA 61E to reflect the true value listed in the raw instrument output (page 120). Also, please correct the %R to be 101.3 instead of 98.8.

(5) Please submit the Form 12 for the ICP linear range verification dated 7/12/97 for sodium for instrument ID TJA 61E. Page 64 needs to be replaced since the sodium reanalyses of 10/10/97 on this instrument precede the linear range verification dated 10/22/97.

(6) Please clarify why the mercury result of 0.777 µg/L from the reanalysis of QC sample MYY134S (at 12:37 on 10/14/97) was used instead of the initial result of 0.698 µg/L (obtained at 11:49 on 10/14/97). Correct and resubmit forms, if needed.

In Reference to Case No(s).:

25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

In reference to data for the following sample(s):
SDG No. MYY128

Summary of Resolution:

See attached response dated January 13, 1998.

Regional Contact Signature

January 28, 1998
Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

LABORATORY RESPONSE TO RESULTS REGION REVIEW

CASE: 25700 *SDG: MYY128*

Date:	January 5, 1998
Region:	9
Region Contact:	Steve Remaley
Laboratory Name:	SWOK
Lab Contact:	Jason D. Ruckman
Call Initiated By:	Region 9

Summary of Resolutions:

1. Airbill for MYY128, MYY129, and MYY131 was absent from shipment. DC-1 (Page 306) has been corrected and resubmitted for your approval.
2. Form 2B (page 24) for the CRA from instrument ID PS200B has been corrected and submitted for your approval with the following information: True value of 0.2 ug/l, found value of 0.30 ug/l, and %R of 150.0 %R.
3. We have noted for future data package submittals and apoligize for the duplicate pages for Form 11A and 11B for the TJA ET2 (pages 61, 62, and 63).
4. On Form 2A (page 17) the sodium true value for the ICV has been corrected to a value of 19,514 ug/l , and resubmitted for your approval.
5. Form 12 (page 64) has been replaced with the linear range verification dated 7/12/97, and resubmitted for your approval.
6. Analysts was not comfortable with reporting the result. We have verbally reprimanded this analyst and have instructed her to write more detailed reasons for data that is not used.

Signature: _____ *Date:* *01/13/98*

By: Jason D. Ruckman *Title:* Inorganic Program Manager

TECHNICAL DIRECTION NO. 9714112 ESW92 125

SITE ACCOUNT NO: C1 SITE NAME: Waste Disposal Inc

WA NUMBER 9-97-1-4 DATE: 11-06-97 (REC'D@EPA 11/3/97)

WA TITLE: Superfund Data Validation

EPA WAM: Rose Fong CONTRACTOR WAM: De O'Leary

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package Information
Case# 25700 Data type M
SDG# MYY128 & 163
Laboratory SWOK

Project Information:
EPA RPM Andria Benner
Mail Code SFD-7-1
[ ] EPA-Lead Non-CLP [] BPA

Deliverable **Due date**
[] Forms Review
[X] Unvalidated Table 1A email RPM+WAM 7 days from TDF date
[X] Review/Validation Report 12-12-97

WAM Signature Rose Fong Date 11-06-97 Rec'd _____ Transmit _____

ESAT USE

Memo # 09 Analyses CLPAS-IN Matrix W Number 13

Sample Numbers:
MYY128, MYY129,
MYY131 → MYY141

Analyses:
LOW CONCENTRATION
GROUNDWATER SAMPLES FOR
TOTAL METALS

Blanks: MYY131(FB), MYY140, MYY141}(EB)

Background: NONE

CAD980884357

Date(s) Sampled:
9/24,25, 430/97

Duplicates: ~~NONE~~ MYY136 & MYY137

Date Table 1A/Validation Assigned:	11/6/97	11/6/97
Date Table 1A/Validation Completed:	11/12/97	1/28/98
Date Table 1A/Validation Sent to EPA:	11/13/97	1/28/98

Preliminary CCR Frank Arsenault

Reviewer/Staff Margaret L. May, ESAT/Lockheed

Comment The preliminary CCR was sent 12-2-97 (FA)

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong Rose
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges for JAB
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-97-1-4
Technical Direction No.: 9714109

DATE: November 19, 1997

SUBJECT: Review of Analytical Data

There is an unresolved telephone record log (TRL) in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS I.D. NO.:	CAD980884357
CASE NO.:	25700 Memo #08
SDG NO.:	MYY144
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Dissolved Metals
SAMPLE NO.:	18 Water Samples (MYY144 through MYY161)
COLLECTION DATE:	September 18, 19, 22, and 23, 1997
REVIEWERS:	Linda Hoffman and Margaret L. May, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582, or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [X] FYI [ ] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

ESTW-9A-387/25700M08.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25700 Memo #08
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc.
Reviewers: Linda Hoffman and Margaret L. May, ESAT/Lockheed
Date: November 19, 1997

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: MYY144 through MYY161

COLLECTION DATE: September 18, 19, 22, and 23, 1997
SAMPLE RECEIPT DATE: September 19, 20, 24, and 25, 1997
CONCENTRATION & MATRIX: Low concentration groundwater

FIELD QC: Field Blanks (FB): None
Equipment Blanks (EB): MYY119* (*see Additional Comments)
Background Samples (BG): None
Duplicates (D1): MYY144 and MYY145

LABORATORY QC: Matrix Spike: MYY146
Duplicates: MYY146
ICP Serial Dilution: MYY146

ANALYSIS: Dissolved Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	September 30, 1997	October 3, 10, and 14, 1997
Mercury	October 1, 1997	October 2 and 3, 1997

TPO ACTION:

None.

TPO ATTENTION:

None.

SAMPLING ISSUES:

(1) The chain of custody (CoC) did not specify a sample to be used for laboratory quality control (QC). (2) The field QC samples were not sent blind to the laboratory. (3) Samples MYY144, MYY145, MYY146, and MYY149 were incorrectly recorded as MY144, MY145, MY146, and MY149 in the CoC. (4) The CoC did not specify what type of analysis was to be performed for sample MYY149. (5) The CoC did not indicate the station locations for samples MYY157 through MYY161.

ADDITIONAL COMMENTS:

*The results for filtration rinsate MYY119 are located in Case 25700 Memo #06, sample delivery group (SDG) MYY105. All analyte concentrations in the filtration rinsate are below the contract required detection limits (CRDLs).

The CoC indicates that samples MYY153 through MYY161 were filtered through a 0.45 μm filter and preserved in the field.

ADDITIONAL COMMENTS: (continued)

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program Inorganic Statement of Work (ILM04.0) and the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	Yes	
3. Calibration	Yes	
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	Yes	
8. Laboratory Duplicate Sample Analysis	No	B
9. Field Duplicate Sample Analysis	Yes	
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	Yes	
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and are flagged "J" in Table 1A.

- All results above the instrument detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated because of a laboratory duplicate result outside method QC limits. The results are flagged "J" in Table 1A.

- Mercury in all of the samples

Laboratory duplicate results did not meet the ±20 relative percent difference (RPD) and ±CRDL criteria for precision.

Mercury was detected at a concentration of 1.46 μg/L in the duplicate analysis of sample MYY146, but was not detected in the initial analysis. A RPD is not calculated.

The results reported for mercury in all of the samples are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to poor laboratory technique or method defects.

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #08
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewers: Linda Hoffman and Margaret L. May, ESAT/Lockheed
Date: November 19, 1997

Analysis Type: Low Concentration Groundwater Samples for Dissolved Metals

Concentration in µg/L

Station Location	GW-30			GW-30 DUP			GW-29			GW-28			GW-19			GW-18			GW-27		
Sample I.D.	MYY144 D1			MYY145 D1			MYY146			MYY147			MYY148			MYY149			MYY150		
Date of Collection	9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/18/97			9/19/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com		Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	18.0 U			18.0 U			18.0 U			18.0 U			18.0 U			18.0 U			18.0 U		
Antimony	3.4 L	J	A	4.5 L	J	A	2.4 L	J	A	4.3 L	J	A	4.5 L	J	A	4.4 L	J	A	7.6 L	J	A
Arsenic	4.0 U			4.0 U			4.0 U			4.0 U			4.0 U			4.0 U			4.5 L	J	A
Barium	36.6 L	J	A	36.4 L	J	A	22.4 L	J	A	27.4 L	J	A	15.8 L	J	A	19.3 L	J	A	19.7 L	J	A
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	91100			91100			227000			243000			248000			231000			213000		
Chromium	2.1 L	J	A	1.8 L	J	A	4.4 L	J	A	1.3 L	J	A	1.3 L	J	A	4.6 L	J	A	1.3 L	J	A
Cobalt	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Copper	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Iron	14.3 L	J	A	29.0 L	J	A	36.7 L	J	A	19.7 L	J	A	45.3 L	J	A	34.3 L	J	A	10.0 U		
Lead	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Magnesium	24500			24500			66100			68900			69100			68400			59900		
Manganese	2.3 L	J	A	3.4 L	J	A	1.8 L	J	A	7.6 L	J	A	1670			3.6 L	J	A	373		
Mercury	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B
Nickel	1.0 U			1.0 U			1.1 L	J	A	1.0 L	J	A	2.2 L	J	A	1.5 L	J	A	3.0 L	J	A
Potassium	3240 L	J	A	3270 L	J	A	4690 L	J	A	4620 L	J	A	3980 L	J	A	4620 L	J	A	4190 L	J	A
Selenium	25.1			24.7			36.9			34.4			32.4			40.0			25.8		
Silver	1.0 L	J	A	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	59100			57900			143000			155000			132000			141000			169000		
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	4.1 L	J	A	3.4 L	J	A	3.3 L	J	A	2.0 L	J	A	2.5 L	J	A	3.5 L	J	A	2.0 L	J	A
Zinc	5.8 L	J	A	6.1 L	J	A	8.4 L	J	A	5.6 L	J	A	6.6 L	J	A	11.0 L	J	A	8.4 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

Case No.: 25700 Memo #08

TABLE 1A

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Analysis Type: Low Concentration Groundwater Samples for Dissolved Metals

Reviewers: Linda Hoffman and Margaret L. May, ESAT/Lockheed

Date: November 19, 1997

Concentration in µg/L

Station Location	GW-26			GW-24			GW-14			GW-1			GW-8			GW-23			GW-3		
Sample I.D.	MYY151			MYY152			MYY153			MYY154			MYY155			MYY156			MYY157		
Date of Collection	9/19/97			9/19/97			9/22/97			9/22/97			9/22/97			9/22/97			9/23/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	18.0 U			18.0 U			18.0 U			18.0 U			18.0 U			18.0 U			18.0 U		
Antimony	4.5 L	J	A	4.2 L	J	A	4.7 L	J	A	4.6 L	J	A	3.9 L	J	A	2.8 L	J	A	2.1 L	J	A
Arsenic	4.0 U			4.0 U			4.0 U			4.0 U			31.1			4.0 U			4.0 U		
Barium	24.8 L	J	A	22.1 L	J	A	26.4 L	J	A	27.2 L	J	A	38.8 L	J	A	20.7 L	J	A	30.3 L	J	A
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	237000			275000			292000			278000			273000			291000			305000		
Chromium	2.6 L	J	A	2.8 L	J	A	1.3 L	J	A	2.1 L	J	A	1.2 L	J	A	1.8 L	J	A	3.3 L	J	A
Cobalt	1.0 U			1.0 U			1.8 L	J	A	1.0 U			1.4 L	J	A	1.0 U			1.0 U		
Copper	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Iron	24.8 L	J	A	30.2 L	J	A	49.1 L	J	A	10.0 U			2010			25.3 L	J	A	12.3 L	J	A
Lead	2.0 U			2.0 U			2.7 L	J	A	2.0 U			2.0 U			2.0 U			2.0 U		
Magnesium	67900			73200			77000			72900			72900			77600			80400		
Manganese	91.4			141			5440			4.7 L	J	A	4880			2500			12.0 L	J	A
Mercury	0.97	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B
Nickel	2.0 L	J	A	1.4 L	J	A	2.2 L	J	A	2.7 L	J	A	3.1 L	J	A	1.6 L	J	A	2.4 L	J	A
Potassium	4580 L	J	A	5280			3910 L	J	A	5060			3380 L	J	A	4720 L	J	A	4680 L	J	A
Selenium	30.0			44.2			8.9			26.1			18.5			30.9			35.2		
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	157000			134000			154000			157000			144000			161000			136000		
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	3.7 L	J	A	3.5 L	J	A	2.8 L	J	A	3.2 L	J	A	1.0 U			2.2 L	J	A	2.7 L	J	A
Zinc	5.5 L	J	A	3.6 L	J	A	5.4 L	J	A	5.2 L	J	A	6.3 L	J	A	5.1 L	J	A	13.0 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #08
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewers: Linda Hoffman and Margaret L. May, ESAT/Lockheed
Date: November 19, 1997

Analysis Type: Low Concentration Groundwater Samples for Dissolved Metals

Concentration in µg/L

Station Location	GW3-DUP			GW-10			GW-11			GW-22			Lab Blank			IDL			CRDL		
Sample I.D.	MYY158			MYY159			MYY160			MYY161											
Date of Collection	9/23/97			9/23/97			9/23/97			9/23/97											
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	18.0 U			18.0 U			18.0 U			18.0 U			18.0 U			18.0			200		
Antimony	3.1 L	J	A	2.0 U			5.6 L	J	A	3.9 L	J	A	2.2 L	J	A	2.0			60.0		
Arsenic	4.0 U			4.0 U			4.0 U			4.0 U			4.0 U			4.0			10.0		
Barium	30.2 L	J	A	51.5 L	J	A	40.3 L	J	A	45.8 L	J	A	1.0 U			1.0			200		
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0			5.0		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0			5.0		
Calcium	304000			199000			298000			239000			26.0 U			26.0			5000		
Chromium	3.3 L	J	A	1.2 L	J	A	3.0 L	J	A	1.0 U			1.0 U			1.0			10.0		
Cobalt	1.0 U			3.0 L	J	A	1.1 L	J	A	1.0 U			1.0 U			1.0			50.0		
Copper	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0			25.0		
Iron	10.0 U			23.7 L	J	A	15.7 L	J	A	21.7 L	J	A	10.0 U			10.0			100		
Lead	2.0 U			2.0 U			2.0 U			2.1 L	J	A	2.0 U			2.0			3.0		
Magnesium	80200			60000			78400			58500			23.0 U			23.0			5000		
Manganese	13.4 L	J	A	3250			1110			10.6 L	J	A	1.0 U			1.0			15.0		
Mercury	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	1.3	J	B	0.10 U			0.10			0.20		
Nickel	2.3 L	J	A	4.0 L	J	A	1.8 L	J	A	1.4 L	J	A	1.0 U			1.0			40.0		
Potassium	4620 L	J	A	3930 L	J	A	5300			4310 L	J	A	561 U			561/39.0			5000		
Selenium	35.5			9.9			37.2			4.8 L	J	A	3.0 U			3.0			5.0		
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0			10.0		
Sodium	133000			142000			140000			138000			193 U			193/17.0			5000		
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0			10.0		
Vanadium	2.5 L	J	A	3.4 L	J	A	3.6 L	J	A	3.5 L	J	A	1.0 U			1.0			50.0		
Zinc	3.4 L	J	A	6.0 L	J	A	5.2 L	J	A	5.2 L	J	A	2.7 L	J	A	2.0			20.0		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit.

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence <u>or</u> absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

LOCKHEED MARTIN

TPO: [X] FYI [ ] Attention [ ] Action Region 9

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #08 LABORATORY SWOK

SDG NO. MYY144 SITE NAME Waste Disposal, Inc.

SOW NO. ILM04.0 REVIEW COMPLETION DATE November 19, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWERS' NAMES L.Hoffman/M.May

NO. OF SAMPLES 18 WATER _____ SOIL _____ OTHER

	ICP	GFAA	Hg	Cyanide
1. PRESERVATION AND HOLDING TIMES	O		O	
2. CALIBRATION	O		O	
3. BLANKS	O		O	
4. ICP INTERFERENCE CHECK SAMPLE (ICS)	O			
5. LABORATORY CONTROL SAMPLE (LCS)	O		N/A	
6. DUPLICATE ANALYSIS	O		X	
7. MATRIX SPIKE ANALYSIS	O		O	
8. METHOD OF STANDARD ADDITION (MSA)				
9. ICP SERIAL DILUTION	O			
10. SAMPLE QUANTITATION	O		O	
11. SAMPLE VERIFICATION	O		O	
12. GFAA ANALYTICAL SPIKE				
13. OVERALL ASSESSMENT	O		X	

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable.

TPO ACTION: None.

TPO ATTENTION: None.

AREAS OF CONCERN: None.

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

DATE OF CALL:		REGIONAL CONTACT:	Steve Remaley, TPO
AUDIT NO.:	1/98/24	LAB CONTACT:	Jason D. Ruckman
CASE NO.:	25700	LAB CODE:	SWOK FAX 918-251-2599
SDG NO.:	MYY144	LAB NAME:	Southwest Labs of Oklahoma, Inc.
ESAT REVIEWER:	M.L.May, 11/19/97	LAB LOCATION:	Broken Arrow, OK

Summary of Questions/Issues Discussed:

The following item was noted in the audit of the data package for SDG MYY144. Please respond within seven days per Section II.E of Exhibit A of the ILM04.0 Statement of Work. Send responses and resubmissions to Lockheed Martin Environmental Services, Environmental Services Assistance Team, Region 9, 301 Howard Street, Suite 970, San Francisco, CA 94105-2241, Fax: 415-278-0588.

(1) Chain of custody (CoC) record #20831 (page 242) indicates that sample MYY146 was associated with airbill #326 491 5183, but the airbill was not present in the data package or listed on the appropriate Form DC-1 (page 258). Please comment and make necessary resubmissions.

(2) Please clarify whether CLASS was contacted for guidance regarding the failure of the sampler to specify in column E of the CoC record what type of RAS analysis was to be performed for sample MYY149. Refer to page 245.

Two additional items were noted in the audit. These are for your information only. Please address them in future data package submittals.

(3) The case number was not recorded in one of the Form DC-1s, as required by Section III.T of Exhibit B. Refer to page 258.

(4) Item 2 of the Form DC-1s was not completed or crossed out, as required by Section III.T of Exhibit B. Refer to page 258.

Summary of Resolution:

Regional Contact Signature

Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

In Reference to Case No(s).:

25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Southwest Labs of Oklahoma, Inc. (SWOK)

Lab Contact: Jason D. Ruckman/FAX 918-251-2599

Region: 9

Regional Contact: Steve Remaley, TPO

ESAT Reviewers: L. Hoffman/M. May, 11/19/97

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No. MYY144

Summary of Questions/Issues Discussed:

The following items were noted in the validation of SDG MYY144. Please respond within seven days per Section II.E of Exhibit A of the ILM04.0 Statement of Work. Send response and resubmissions to Lockheed Martin Environmental Services, Environmental Services Assistance Team, Region 9, 301 Howard Street, Suite 970, San Francisco, CA 94105-2241, Fax: 415-278-0588.

1. The cooler temperatures (ILM04.0, Exhibit A, A-6, Task I, last paragraph) and the TR/CoC errors (ILM04.0, Exhibit F, F-4, 2.1.9) were not noted in the SDG narrative. Please note for future cases.

2. The determination date for the TJA ET2 detection limit and linear range preceded the date of the analytical sequence by more than three calendar months (ILM04.0, Exhibit B, Section III, B-36, N). Please explain this contractual deviation.

3. The same ICV and CCV concentrations were used for sodium in the reanalyses on ICP TJA 61E (ILM04.0, Exhibit E, E-17, b, last sentence in 1st paragraph). Please explain this contractual deviation.

4. On pages 107, 108, 116, 117, 161, and 162, the samples are not labeled with the correct EPA sample numbers (ILM04.0, Exhibit B, B-10, Table 2). Please correct and resubmit the above pages.

5. The CRA standard (p. 217) from the 2nd mercury run, 10/03/97, was not reported on Form 2B (p. 29). Please record the CRA results on Form 2B and resubmit this page.

Summary of Resolution:

_____ Regional Contact Signature

_____ Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Andria Benner
Remedial Project Manager
AZ/CA Cleanup Section, SFD-7-1

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-97-1-4
Technical Direction No.: 9714112

DATE: January 8, 1998

SUBJECT: Review of Analytical Data

There is an unresolved telephone record log (TRL) in the report, but as data quality is not affected, the report is being submitted. Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Waste Disposal, Inc.
SITE ACCOUNT NO.:	C1
CERCLIS I.D. NO.:	CAD980884357
CASE NO.:	25700 Memo #10
SDG NO.:	MYY163
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Dissolved Metals
SAMPLE NO.:	10 Water Samples (MYY163 through MYY172)
COLLECTION DATE:	September 24, 25, and 30, 1997
REVIEWER:	Margaret L. May, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0582, or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

ESTW-9A-434/25700M10.RPT

Data Validation Report

Case No.: 25700 Memo #10
Site: Waste Disposal, Inc.
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: January 8, 1998

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: MYY163 through MYY172

COLLECTION DATE: September 24, 25, and 30, 1997
SAMPLE RECEIPT DATE: September 26; and October 1, 1997

CONCENTRATION & MATRIX: Low concentration groundwater

FIELD QC: Field Blanks (FB): None
Equipment Blanks (EB): None
Background Samples (BG): None
Duplicates (D1): MYY169 and MYY170

LABORATORY QC: Matrix Spike: MYY163 (ICP Metals and mercury), MYY167 (ICP Metals and mercury), and MYY171 (Mercury)
Duplicates: MYY163 (ICP Metals and mercury), MYY167 (ICP Metals and mercury), and MYY171 (Mercury)
ICP Serial Dilution: MYY163 and MYY167

ANALYSIS: Dissolved Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	October 2 and 7, 1997	October 6, 10, 21, and 22, 1997
Mercury	October 9, 14, and 16, 1997	October 9, 14 and 16, 1997

TPO ACTION:

None.

TPO ATTENTION:

The detected result for mercury in sample MYY163 is qualified as nondetected (U) because of preparation blank contamination. The reported result of 0.26 µg/L for mercury in the preparation blank exceeds the contract required detection limit (CRDL) of 0.20 µg/L.

SAMPLING ISSUES:

(1) The field quality control (QC) sample was not sent blind to the laboratory. (2) The chain of custody (CoC) did not specify a sample to be used for laboratory QC.

ADDITIONAL COMMENTS:

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. Laboratory blanks and associated samples are listed below the data qualifiers in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program Inorganic Statement of Work (ILM04.0) and the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	Yes	
3. Calibration	No	E
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	No	D
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	B
8. Laboratory Duplicate Sample Analysis	Yes	
9. Field Duplicate Sample Analysis	Yes	
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	No	C
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and are flagged "J" in Table 1A.

- All results above the instrument detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated because of matrix spike recovery results outside method QC limits. The results are flagged "J" in Table 1A.

- Mercury in samples MYY171 and MYY172

The matrix spike recovery result for mercury in QC sample MYY171 did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias are presented below and are based on an ideal recovery of 100%.

Analyte	MYY171 % Recovery	MYY171 % Bias
Mercury	191	+91

Results above the IDL are considered quantitatively uncertain. The results reported for mercury in samples MYY171 and MYY172 may be biased high.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

C. The following results are estimated because of ICP serial dilution results outside method QC limits. The results are flagged "J" in Table 1A.

- Potassium and sodium in samples MYY164 through MYY172

The percent difference of the ICP serial dilution analysis of sample MYY167 did not meet the 10% criterion for the analytes shown below.

Analyte	MYY167 % Difference
Potassium	13
Sodium	17

The results reported for potassium and sodium in samples MYY164 through MYY172 are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

D. The following result is qualified because of preparation blank contamination. The result is flagged "U" in Table 1A.

- Mercury in sample MYY163

Sample results greater than the IDL are qualified as nondetected (U) unless the concentration of the analyte in the sample exceeds five times the amount in any associated blank.

The reported result of 0.26 µg/L for mercury in the preparation blank exceeds the CRDL of 0.20 µg/L.

A preparation blank is an analytical control that contains distilled, deionized water, or baked sand for solid matrices, and reagents, which is carried through the entire analytical procedure. The preparation blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

E. A high recovery of 140% was obtained for mercury in the cold vapor analysis of the CRDL standard (CRA). While there are no criteria established for CRDL standard recoveries, high recoveries may indicate high bias for sample results near the CRDL. It should be noted that high recovery may indicate high bias for mercury in samples MYY171 and MYY172.

Case No.: 25700 Memo #10
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: January 8, 1998

TABLE 1A

Analysis Type: Low Concentration Groundwater Samples for Dissolved Metals

Concentration in µg/L

Station Location	GW-7			GW-4			GW-6			GW-21			GW-31			GW-5			GW-16		
Sample I.D.	MYY163			MYY164			MYY165			MYY166			MYY167			MYY168			MYY169 D1		
Date of Collection	9/25/97			9/25/97			9/24/97			9/24/97			9/30/97			9/30/97			9/30/97		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	833			18.0 U			3160			18.0 U			17.0 U			17.0 U			17.0 U		
Antimony	2.0 U			3.5 L	J	A	2.4 L	J	A	2.0 U			3.0 U			3.3 L	J	A	3.0 U		
Arsenic	4.0 U			4.0 U			4.5 L	J	A	4.0 U			3.0 U			10.4			3.0 U		
Barium	43.8 L	J	A	26.7 L	J	A	75.2 L	J	A	25.2 L	J	A	32.8 L	J	A	34.0 L	J	A	23.2 L	J	A
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	1.8 L	J	A	1.2 L	J	A	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Calcium	225000			292000			204000			222000			288000			323000			291000		
Chromium	4.6 L	J	A	4.1 L	J	A	14.1			1.0 U			5.5 L	J	A	1.9 L	J	A	5.1 L	J	A
Cobalt	1.4 L	J	A	1.0 U			6.8 L	J	A	2.8 L	J	A	1.0 U			2.1 L	J	A	1.0 U		
Copper	8.7 L	J	A	2.0 U			9.1 L	J	A	2.0 U			2.0 U			2.0 U			2.0 U		
Iron	1350			19.8 L	J	A	4820			24.8 L	J	A	16.5 L	J	A	431			11.0 U		
Lead	4.5			2.0 U			2.4 L	J	A	2.0 U			1.1 L	J	A	1.2 L	J	A	1.0 U		
Magnesium	66000			80900			60300			63400			76500			87500			85000		
Manganese	142			16.6			606			3270			2.7 L	J	A	3540			1.1 L	J	A
Mercury	0.15 U		D	0.20 U			0.20 U			0.10 U			0.20 U			0.20 U			0.20 U		
Nickel	3.9 L	J	A	2.2 L	J	A	8.3 L	J	A	3.2 L	J	A	1.0 U			2.5 L	J	A	1.0 U		
Potassium	4470 L	J	AC	4390 L	J	AC	4740 L	J	AC	2700 L	J	AC	4290 L	J	AC	3630 L	J	AC	4870 L	J	AC
Selenium	32.4			30.7			22.2			16.9			34.6			19.3			54.0		
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Sodium	158000	J	C	126000	J	C	148000	J	C	186000	J	C	124000	J	C	130000	J	C	135000	J	C
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Vanadium	5.1 L	J	A	2.7 L	J	A	12.6 L	J	A	2.5 L	J	A	2.5 L	J	A	2.1 L	J	A	3.9 L	J	A
Zinc	39.1			18.1 L	J	A	32.1			9.2 L	J	A	11.1 L	J	A	16.8 L	J	A	12.7 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25700 Memo #10
Site: Waste Disposal, Inc.
Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)
Reviewer: Margaret L. May, ESAT/Lockheed
Date: January 8, 1998

Analysis Type: Low Concentration Groundwater Samples for Dissolved Metals

Concentration in µg/L

Station Location	GW-16 DUP			GW-15			GW-13			Lab Blank 1			Lab Blank 2			Lab Blank 3			IDL 1		
Sample I.D.	MYY170 D1			MYY171			MYY172														
Date of Collection	9/30/97			9/30/97			9/30/97														
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	17.0 U			17.0 U			17.0 U			18.0 U			17.0 U			N/A			18.0		
Antimony	3.1 L	J	A	3.0 U			3.5 L	J	A	2.0 U			3.0 U			N/A			2.0		
Arsenic	3.0 U			12.0			3.0 U			4.0 U			3.0 U			N/A			4.0		
Barium	22.6 L	J	A	22.7 L	J	A	24.8 L	J	A	1.0 U			1.0 U			N/A			1.0		
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			N/A			1.0		
Cadmium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			N/A			1.0		
Calcium	284000			287000			286000			26.0 U			34.0 U			N/A			26.0		
Chromium	4.9 L	J	A	1.0 L	J	A	1.3 L	J	A	1.0 U			1.0 U			N/A			1.0		
Cobalt	1.0 U			1.8 L	J	A	5.0 L	J	A	1.0 U			1.0 U			N/A			1.0		
Copper	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			N/A			2.0		
Iron	11.0 U			12.7 L	J	A	11.0 U			11.2 L	J	A	13.5 L	J	A	N/A			10.0		
Lead	1.0 U			1.0 U			2.1 L	J	A	2.0 U			1.0 U			N/A			2.0		
Magnesium	82700			76400			71900			23.0 U			25.0 U			N/A			23.0		
Manganese	1.1 L	J	A	3060			8120			1.0 U			1.0 U			N/A			1.0		
Mercury	0.20 U			0.12 L	J	ABE	0.18 L	J	ABE	0.26		D	0.20 U			0.10 U			0.10		
Nickel	1.0 U			1.2 L	J	A	2.5 L	J	A	1.0 U			1.0 U			N/A			1.0		
Potassium	4840 L	J	AC	3740 L	J	AC	4610 L	J	AC	39.0 U			44.0 U			N/A			39.0		
Selenium	50.7			40.8			14.8			3.0 U			3.0 U			N/A			3.0		
Silver	1.0 U			1.0 U			1.0 U			1.0 U			1.2 L	J	A	N/A			1.0		
Sodium	135000	J	C	134000	J	C	191000	J	C	135 U			46.2 L	J	A	N/A			135		
Thallium	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			N/A			3.0		
Vanadium	3.9 L	J	A	2.3 L	J	A	2.1 L	J	A	1.0 U			1.0 U			N/A			1.0		
Zinc	10.1 L	J	A	19.9 L	J	A	7.8 L	J	A	7.9 L	J	A	3.8 L	J	A	N/A			2.0		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit
N/A-Not Applicable

Case No.: 25700 Memo #10

TABLE 1A

Site: Waste Disposal, Inc.

Lab.: Southwest Labs Of Oklahoma, Inc. (SWOK)

Analysis Type: Low Concentration Groundwater Samples for Dissolved Metals

Reviewer: Margaret L. May, ESAT/Lockheed

Date: January 8, 1998

Concentration in µg/L

Sample I.D.	IDL 2			CRDL																	
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	17.0			200																	
Antimony	3.0			60.0																	
Arsenic	3.0			10.0																	
Barium	1.0			200																	
Beryllium	1.0			5.0																	
Cadmium	1.0			5.0																	
Calcium	34.0			5000																	
Chromium	1.0			10.0																	
Cobalt	1.0			50.0																	
Copper	2.0			25.0																	
Iron	11.0			100																	
Lead	1.0			3.0																	
Magnesium	25.0			5000																	
Manganese	1.0			15.0																	
Mercury	0.20			0.20																	
Nickel	1.0			40.0																	
Potassium	44.0			5000																	
Selenium	3.0			5.0																	
Silver	1.0			10.0																	
Sodium	19.0			5000																	
Thallium	3.0			10.0																	
Vanadium	1.0			50.0																	
Zinc	2.0			20.0																	

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.

IDL-Instrument Detection Limit

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample

CRDL-Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit.

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence <u>or</u> absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

Lab Blank 1: MYY163 through MYY166 (ICP Metals)

Lab Blank 2: MYY167 through MYY172 (ICP Metals)

Lab Blank 1: MYY163 and MYY166 (Mercury)

Lab Blank 2: MYY164, MYY165, and MYY167 through MYY170 (Mercury)

Lab Blank 3: MYY171 and MYY172 (Mercury)

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25700 Memo #10 LABORATORY SWOK

SDG NO. MYY163 SITE NAME Waste Disposal, Inc.

SOW ILM04.0 REVIEW COMPLETION DATE January 8, 1998

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Margaret L. May

NO. OF SAMPLES 10 WATER _____ SOIL _____ OTHER

	ICP	GFAA	Hg	Cyanide
1. PRESERVATION AND HOLDING TIMES	O		O	
2. CALIBRATION	O		O	
3. BLANKS	O		X	
4. ICP INTERFERENCE CHECK SAMPLE (ICS)	O			
5. LABORATORY CONTROL SAMPLE (LCS)	O		N/A	
6. DUPLICATE ANALYSIS	O		O	
7. MATRIX SPIKE ANALYSIS	O		X	
8. METHOD OF STANDARD ADDITION (MSA)				
9. ICP SERIAL DILUTION	X			
10. SAMPLE QUANTITATION	O		O	
11. SAMPLE VERIFICATION	O		O	
12. GFAA ANALYTICAL SPIKE				
13. OVERALL ASSESSMENT	X		X	

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable.

TPO ACTION: None.

TPO ATTENTION: The detected result for mercury in sample MYY163 is qualified as nondetected (U) because of preparation blank contamination. The reported result of 0.26 µg/L for mercury in the preparation blank exceeds the contract required detection limit (CRDL) of 0.20 µg/L.

AREAS OF CONCERN: A high recovery of 140% was obtained for mercury in the cold vapor analysis of the CRDL standard (CRA). While there are no criteria established for CRDL standard recoveries, high recoveries may indicate high bias for sample results near the CRDL. It should be noted that high recovery may indicate high bias for mercury in samples MYY171 and MYY172.

In Reference to Case No(s).:

25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Southwest Labs of Oklahoma, Inc. (SWOK)

Lab Contact: Jason D. Ruckman/FAX 918-251-2599

Region: 9

Regional Contact: Steve Remaley, TPO

ESAT Reviewers: M. L. May, 1/6/98

Call Initiated By: ____ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No. MYY163

Summary of Questions/Issues Discussed:

The following items were noted in the validation of SDG MYY163. Please respond within seven days per Section II.E of Exhibit A of the ILM04.0 Statement of Work. Send response and resubmissions to Lockheed Martin Environmental Services, Environmental Services Assistance Team, Region 9, 301 Howard Street, Suite 970, San Francisco, CA 94105-2241, Fax: 415-278-0588.

(1) Airbill number 326 491 5290 was recorded by the sampler in the chain-of-custody (page 274) for samples MYY165 and MYY166, but this airbill is not enclosed in the data package, or recorded in Form DC-1 (page 281). Please clarify this deficiency or submit this item.

(2) Please submit a Form 2B for the CRA from instrument ID PS200B with the following information: true value of 0.2 µg/L, found value of 0.30 µg/L, and %R of 150.0.

(3) Please clarify why the mercury result of 0.13 µg/L from the reanalysis of preparation blank PBW971009B (at 14:58 on 10/09/97) was used, when the initial result of 0.26 µg/L (obtained at 14:26 on 10/09/97) did not meet the technical acceptance criteria specified in Section V.4.b of Exhibit E. See pages 236 and 237 of the data package.

(4) Please note that Forms 11A and 11B for instrument ID TJA ET2 were submitted in duplicate. Pages 54, 55, and 56 are duplicates of pages 51, 52, and 53, respectively.

(5) Please submit the Form 12 for the ICP linear range verification dated 7/12/97 for sodium for instrument ID TJA 61E. Page 57 needs to be replaced since the sodium reanalyses of 10/10/97 on this instrument precede the linear range verification dated 10/22/97.

(6) Please correct the sodium true value to be 19,514 µg/L instead of 20,000 µg/L in Form 2A (page 12) for instrument ID TJA 61E to reflect the true value listed in the raw instrument output (page 114). Also, please correct the %R to be 101.6 instead of 99.1.

In Reference to Case No(s).:

25700

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

In reference to data for the following sample(s):
SDG No. MYY163

Summary of Resolution:

Regional Contact Signature

Date of Resolution

Distribution: (Original) ESAT, (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

APPENDIX B

CHAIN OF CUSTODY RECORDS

VOA

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 10/1/97	Carrier: FED EX
Regional Information:		Sampler (Name): GEORGE NICHOL		Airbill Number: 3240484240	
Non-Superfund Program:		Sampler Signature: George Nichol		5. Ship To: PDP ANALYTICAL SERVICES, 1680 LAKEFRONT CIRCLE, SUITE B, THE WOODLANDS, TX 77380	
Site Name: WOI SUPERFUND SITE		3. Purpose* Lead: [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD		ATTN:	
City, State: SANTA FE SPRINGS, CA	Site Spill ID:				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only / ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY544	2	L	G	1	X					GW-31	9/30/97 0830	MYY134	[illegible]	
YY545	2	L	G	1	X					GW-5	9/30/97 0930	MYY135	[illegible]	
YY547	2	L	G	1	X					GW-16	9/30/97 1130	MYY136	[illegible]	
YY550	2	L	G	1	X					GW-15	9/30/97 1330	MYY138	[illegible]	
YY548	2	L	G	1	X					Dup. #3	9/30/97	MYY137	[illegible]	
YY551	2	L	G	1	X					GW-13	9/30/97 1500	MYY139	[illegible]	
YY552	4	L	G	1	X				Field Eqt. Rinsate #6		9/30/97 1600	MYY140	[illegible]	
YY553	4	L	G	1	X				Pump Decon.	water	9/30/97 1620	MYY141	[illegible]	
YY549	4	L	G	1	X				Trip Blank		9/30/97 1630	—	[illegible]	

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	10/1/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

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EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

372516 10/1/97

VOA

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	10/1/97	FED EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3273141395

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012
ATTN:

Site Name: WDI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose*
Lead: [ ] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI
Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY589	4	L	G	5		X			Field Eqt. Rinsate #6		9/30/97 1600	MYY140	GN	
YY589	4	L	G	5			X		Field Eqt. Rinsate #6		9/30/97 1600	MYY140	GN	
YY590	4	L	G	5		X			Pump Decon Water		9/30/97 1630	MYY141	GN	
YY590	4	L	G	5			X		Pump Decon Water		9/30/97 1630	MYY141	GN	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	10/1/97 1200				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

BNA/PPCB

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/30/97	Carrier: FedEx
Regional Information		Sampler (Name): George Nichol		Airbill Number: 3264915312	
Non-Superfund Program		Sampler Signature: George Nichol		5. Ship To: Southwest Labs of Oklahoma Inc 1700 West Albany Ste. C Broken Arrow, OK 74012	
Site Name: WOI Superfund Site		3. Purpose* Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD		ATTN:	
City, State: Fe Springs CA	Site Spill ID				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY585	2	L	G	5		X				DUP. 3	9/30/97 1200	MYY137	GN	
YY585	2	L	G	5			X			DUP. 3	9/30/97 1200	MYY137	GN	
YY587	2	L	G	5		X				GW-15	9/30/97 1550	MYY138	GN	
YY587	2	L	G	5			X			GW-15	9/30/97 1550	MYY138	GN	
YY588	2	L	G	5		X				GW-13	9/30/97 1500	MYY139	GN	
YY588	2	L	G	5			X			GW-13	9/30/97 1500	MYY139	GN	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/30/97 1600				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

372530 9/30/97

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/30/97	Carrier: FED EX
Regional Information:		Sampler (Name): George Nichol		Airbill Number: 3273141384	
Non-Superfund Program:		Sampler Signature: George Nichol		5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012 ATTN:	
Site Name: WDI SUPERFUND SITE		3. Purpose* Lead: [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD			
City, State: ~~SANTA FE~~ SPRINGS, CA	Site Spill ID:				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. --- = Not a QC Sample)
YY586	2	L	G	5		X				GW-31	9/30/97 0830	MYY134	GN	
YY586	2	L	G	5			X			GW-31	9/30/97 0830	MYY134	GN	
YY583	2	L	G	5		X				GW-5	9/30/97 0950	MYY135	GN	
YY583	2	L	G	5			X			GW-5	9/30/97 0950	MYY135	GN	
YY584	2	L	G	5		X				GW-16	9/30/97 1130	MYY136	GN	
YY584	2	L	G	5			X			GW-16	9/30/97 1130	MYY136	GN	
~~YY587~~	~~2~~	~~L~~	~~G~~	~~5~~		~~X~~			Deleted GN	~~GW-15~~	~~9/30/97 1330~~	~~MYY138~~	~~GN~~	
~~YY587~~	~~2~~	~~L~~	~~G~~	~~5~~			~~X~~		Deleted GN	~~GW-15~~	~~9/30/97 1330~~	~~MYY138~~	~~GN~~	

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/30/97 1600				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	9/24/97	FED EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3240482372

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

ATTN:

Site Name: WDI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose*

Lead: SF, PRP, ST, FED

Early Action: CLEM, PA, REM, RI, SI, ESI

Long-Term Action: FS, RD, RA, O&M, NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY538	2	L	G	1	X					GW-6	9/24/97 0830	MYY 128	GN	
YY539	2	L	G	1	X					GW-21	9/24/97 1015	MYY 129	GN	
YY540	2	L	G	1	X					GW-2	9/24/97 12:30	MYY 130	GN	
YY540 (LAB QC)	2	L	G	1	X					LAB QC	9/24/97 12:30		GN	
YY540 (LAB QC)	2	L	G	1	X					LAB QC	9/24/97 12:30		GN	
YY543	2	L	G	1	X					GW-7	9/24/97 0830	MYY 132	GN	
YY541	2	L	G	1	X					FIELD RINSE #5	9/24/97 1500		GN	
YY546	2	L	G	1	X					TRIP BLANK	9/24/97		GN	
YY542	2	L	G	1	X					GW-4	9/25/97	MYY133	GN	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1	YY540		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/25/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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272521 9/25/97

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/24/97	Carrier: FED EX
Regional Information:		Sampler (Name): GEORGE NICHOL [redacted]		Airbill Number: 32649/5290	
Non-Superfund Program		Sampler Signature: George Nichol		5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012	
Site Name: WOI SUPERFUND SITE		3. Purpose* Lead: ☐ SF ☐ PRP ☐ ST ☐ FED; Early Action: ☐ CLEM ☐ PA ☐ REM ☐ RI ☐ SI ☐ ESI; Long-Term Action: ☐ FS ☒ RD ☐ RA ☐ O&M ☐ NPLD			
City, State: SANTA FE SPRINGS, CA	Site Spill ID			ATTN:	

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY577	2	L	G	5		X				GW-6	9/24/97 0830	MYY128	[illegible]	
YY577	2	L	G	5			X			GW-6	9/24/97 0830	MYY128	[illegible]	
YY578	2	L	G	5		X				GW-21	9/24/97 1015	MYY129	[illegible]	
YY578	2	L	G	5			X			GW-21	9/24/97 1015	MYY129	[illegible]	
YY580	2	L	G	5		X				FIELD RINSE #5	9/24/97 1500	MYY131	[illegible]	
YY580	2	L	G	5			X			FIELD RINSE #5	9/24/97 1500	MYY131	[illegible]	

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/25/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

9/25/97

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No.: 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE - SPK		FED EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3264915286

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

ATTN:

Site Name: WOI SUPERFUND SITE

City, State: ~~SANTA FE~~ SPRINGS, CA

Site Spill ID

3. Purpose*

Lead: [ ] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI

Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY582	2	L	G	5		X				GW-4	9/25/97 1100	MYY133	GN	
YY582	2	L	G	5			X			GW-4	9/25/97 1100	MYY133	GN	
YY581	2	L	G	5		X				GW-7	9/25/97 0830	MYY132	GN	
YY581	2	L	G	5			X			GW-7	9/25/97 0830	MYY132	GN	

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/25/97 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

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272511 9

WED BNA/PPCB

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No.

1. Project Code: SF	Account Code	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/24/97	Carrier: Fed EX
Regional Information		Sampler (Name): George Nichol		Airbill Number: 3264915275	
Non-Superfund Program		Sampler Signature: George Nichol		5. Ship To: Southwest Labs of Oklahoma, 1700 W. Albany, Suite C, Broken Arrow, OK. 74012	
Site Name: WDI SANTA FE SPRINGS		3. Purpose* Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD		ATTN:	
City, State: SANTA FE SPRINGS CA	Site Spill ID				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7)	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
~~YY577~~	~~2~~	~~L~~	~~G~~	~~5~~		~~X~~					~~9/24/97 0800~~	~~MYY128~~	~~[illegible]~~	
~~YY577~~	~~2~~	~~L~~	~~G~~	~~5~~		~~X~~					~~9/24/97 0800~~	~~MYY128~~	~~[illegible]~~	
~~YY578~~	~~2~~	~~L~~	~~G~~	~~5~~		~~X~~					~~9/24/97 0810~~	~~MYY129~~	~~[illegible]~~	
~~YY578~~	~~2~~	~~L~~	~~G~~	~~5~~		~~X~~					~~9/24/97 0810~~	~~MYY129~~	~~[illegible]~~	
YY579	2	L	G	5		X			In this ice chest.		9/24/97 1230	MYY130	[illegible]	GW-2
YY579	2	L	G	5			X				9/24/97 1230	MYY130	[illegible]	
YY579	2	L	G	5		X					9/24/97 1230	MYY130	[illegible]	GW-2
YY579	2	L	G	5			X				9/24/97 1230	MYY130	[illegible]	Lab QC
YY579	2	L	G	5		X					9/24/97 1230	MYY130	[illegible]	GW-2
YY579	2	L	G	5			X				9/24/97 1230	MYY130	[illegible]	Lab QC

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/24/97 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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9/29

BNA
PCL

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.:	4. Date Shipped: 9/24/97	Carrier: Fed Ex
Regional Information:		Sampler (Name): George Nichol		Airbill Number: 3240484166	
Non-Superfund Program:		Sampler Signature: George Nichol		5. Ship To: Southwest Labs of Oklahoma. 1700 W. Albany, Suite C Broken Arrow, OK. 74012 ATTN:	
Site Name: WDI Santa Fe Springs		3. Purpose* Lead: ☐ SF ☐ PRP ☐ ST ☐ FED; Early Action: ☐ CLEM ☐ PA ☐ REM ☐ RI ☐ SI ☐ ESI; Long-Term Action: ☐ FS ☒ RD ☐ RA ☐ O&M ☐ NPLD			
City, State: SANTA FE SPRINGS, CA	Site Spill ID:				

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY576				5		X			Field Eqt. Rinsate		9/23/97 1500		GN	
YY576				5			X		Field Eqt Rinsate		9/23/97 1500		GN	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	2 of 2			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/24/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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272517

9/24/97

BNA
PPCB

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/23/97	Carrier: Fed Ex
Regional Information		Sampler (Name): George Nichol		Airbill Number: 3240484166	
Non-Superfund Program		Sampler Signature: George Nichol		5. Ship To: SouthWest Labs of Oklahoma Inc, 1700 West Albany, Ste. C, Broken Arrow, OK 74012	
Site Name: ~~[illegible]~~ WDI Superfund Site		3. Purpose* Lead: ☐ SF ☐ PRP ☐ ST ☐ FED; Early Action: ☐ CLEM ☐ PA ☐ REM ☐ RI ☐ SI ☐ ESI; Long-Term Action: ☐ FS ☒ RD ☐ RA ☐ O&M ☐ NPLD		ATTN:	
City, State: ~~[illegible]~~ CA	Site Spill ID				

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY571	2	L	G	5		X					9/23/97 0830	MYY122	GN	
YY571	2	L	G	5			X				9/23/97 0830	MYY122	GN	
YY572	2	L	G	5		X					9/23/97	MYY123	GN	
YY572	2	L	G	5			X				9/23/97	MYY123	GN	
YY573	2	L	G	5		X					9/23/97 1000	MYY124	GN	
YY573	2	L	G	5			X				9/23/97 1000	MYY124	GN	
YY574	2	L	G	5		X					9/23/97 1200	MYY125	GN	
YY574	2	L	G	5			X				9/23/97 1200	MYY125	GN	
YY575	2	L	G	5		X					9/23/97 1400	MYY126	GN	
YY575	2	L	G	5			X				9/23/97 1400	MYY126	GN	

Shipment for Case Complete? (Y/N): Y	Page 1 of 2	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/24/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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BNA
PRL

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped:	Carrier: Fed Ex
Regional Information:		Sampler (Name): George Nichol		Airbill Number: 3264915345	
Non-Superfund Program:		Sampler Signature: George Nichol		5. Ship To: South West Labs of Oklahoma Inc, 1700 West Albany Ste. C, Broken Arrow, OK 74012	
Site Name: WDI Santa Fe Springs		3. Purpose* Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD			
City, State: SANTA FE SPRINGS, CA	Site Spill ID:			ATTN:	

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only / ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY565 (same no.)	2	L	G	5		X			Not in this Ice chest	GW-14	9/22/97 0905	MYY116	JN	
YY565	2	L	G	5			X			GW-14	9/22/97 0910	MYY116	JN	
YY567 (same no.)	2	L	G	5		X				GW-23	9/22/97	MYY[illegible]	JN	121
YY567	2	L	G	5			X			GW-23	9/22/97	MYY[illegible]	JN	121
YY568 (same no.)	2	L	G	5		X				GW-1	9/22/97 1215	MYY117	JN	
YY568	2	L	G	5			X			GW-1	9/22/97 1215	MYY117	JN	
YY569 (same no.)	2	L	G	5		X				GW-8	9/22/97 1345	MYY118	JN	
YY569	2	L	G	5			X			GW-8	9/22/97 1345	MYY118	JN	
YY570				5		X			Field Eqt. Rinsate		9/22/97 1400		JN	
YY570				5			X		Field Eqt Rinsate		9/22/97 1400		JN	

Shipment for Case Complete? (Y/N): Y	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George D Nichol	9/23/97 1200				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		[illegible]	9/25/97 1030	YY566 + YY568 not on COC	

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372505

VOA

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No.

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	9/23/97	Fed Ex

Regional Information

Sampler (Name): George Nichol

Airbill Number: 3264915356

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: Reddy Pakanati, PDP Analytical Services, 1680 Lakefront Circle Suite B, The Woodlands, TX 77380

ATTN:

Site Name: WDI Santa Fe Springs

City, State: Santa Fe Springs, CA

Site Spill ID

3. Purpose: Lead [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY532	2	L	G	1	X						9/23/97 0830	MYY122	GN	
YY533	2	L	G	1	X						9/23/97	MYY123	GN	
YY534	2	L	G	1	X						9/23/97 1000	MYY124	GN	
YY535	2	L	G	1	X						9/23/97 1200	MYY125	GN	
YY536	2	L	G	1	X						9/23/97 1400	MYY126	GN	
YY537									Field Rinsate 4		9/23/97 1500	MYY127	GN	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/23/97 1600				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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VOA

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 1	Sampling Co.: USACE-SPK	4. Date Shipped: 9/23/97	Carrier: Fed Ex
Regional Information:		Sampler (Name): George Nichol		Airbill Number: 3264915356	
Non-Superfund Program		Sampler Signature: George Nichol		5. Ship To: PDP Analytical Services, 1680 Lakefront Circle, Ste B, The Woodlands, TX 77380	
Site Name: WDI Superfund Site		3. Purpose: Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD		ATTN:	
City, State: Santa Fe Springs CA	Site Spill ID				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY526	2	L	G	1	X					GW-14 (0900)	9/22/97	MYY116	GN	
YY527	2	L	G	1	X					GW-23 (1000)	9/22/97	MYY[illegible]	GN	(21)
YY528	2	L	G	1	X					GW-1	9/22/97 1215	MYY117	GN	
YY529	2	L	G	1	X					GW-8	9/22/97 1345	MYY119	GN	
YY531	Trip Blank			1	X						9/22/97 1500		GN	
YY530	Field Equipment Rinse			1	X						9/22/97 1400		GN	

Shipment for Case Complete? (Y/N) Y	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/23/97 1200				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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372509

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE -SPK	4. Date Shipped: 9/18/97	Carrier: FED EX
Regional Information:		Sampler (Name): JIM BARTON		Airbill Number: 3264915161	
Non-Superfund Program:		Sampler Signature: Jim Barton		5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK	
Site Name: WDI SUPERFUND SITE		3. Purpose* Lead: [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD		ATTN: 74012	
City, State: ~~SANTA FE~~ SPRINGS, CA	Site Spill ID:				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY560	2	L	G	N		X	X			GW-27	9-19-97 1021		JB	
YY561	2	L	G	N		X	X			GW-26	9-19-97 1129		JB	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9-19-97 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		Gwilliams	9/20/97 0815	intact	

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A21-012-15 REV.

272509

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	9/19/97	FED EX

Regional Information

Sampler (Name): JIM BARTON

Airbill Number: 3264915146

Non-Superfund Program

Sampler Signature: Jim Barton

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

ATTN:

Site Name: WDI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose*

Lead: [ ] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI

Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY562	2	L	G	N		X				Field Rinsate 2	9-19-97 1325		JB	
YY563	2	L	G	N		X	X			GW-24	9-19-97 1356		JB	

Shipment for Case Complete? (Y/N): Y

Page 1 of 1

Sample(s) to be Used for Laboratory QC

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9-19-97 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		[signature]	9/20/97 0815	intact	

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A21-012-15 REV.

372533

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	9/18/97	FED EX

Regional Information

Sampler (Name): JIM BARTON

Airbill Number: 32649/5172

Non-Superfund Program

Sampler Signature: Jim Barton

Site Name: WDI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose*

Lead	Early Action	Long-Term Action
[ ] SF	[ ] CLEM	[ ] FS
[ ] PRP	[ ] PA	[X] RD
[ ] ST	[ ] REM	[ ] RA
[ ] FED	[ ] RI	[ ] O&M
	[ ] SI	[ ] NPLD
	[ ] ESI	

5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC
1700 WEST ALBANY, SUITE C
BROKEN ARROW, OK 74012
ATTN:

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY558	2	L	G	2		X				Field Rinsate 1	9/18/97 1513		JB	
YY559	2	L	G	2		X	X			W-18	↓ 1526		JB	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9/19/97 0805				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		[illegible]	9/20/97 0815	INTACT	

A21-012-15 REV.

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EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
JF		9	USACE-SPK	9/19/97	FED EX

Regional Information

Sampler (Name): JIM BARTON

Airbill Number: 3265024685

Non-Superfund Program

Sampler Signature: Jim Barton

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

ATTN:

Site Name: WDI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose*

Lead: [ ] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI

Long-Term Action: [ ] ES [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only / ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY556	2	L	G	N		X	X			GW-28	9/18/97 1136		JB	
YY557	2	L	G	N		X	X			GW-19	↓ 1346		JB	

Shipment for Case Complete? (Y/N) Y

Page 1 of 1

Sample(s) to be Used for Laboratory QC

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9-19-97 0809				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		[signature]	9/20/97 0815	INTACT	

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272527

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EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9-19-97	Carrier: FedEx
Regional Information		Sampler (Name): Jim Barton		Airbill Number: 3264915150	
Non-Superfund Program		Sampler Signature: Jim Barton		5. Ship To: PDP Analytical, 1680 Lakefront Circle Ste. B, The Woodlands, TX 77380	
Site Name: WDI Superfund Site		3. Purpose* Lead: [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD		ATTN:	
City, State: Forest Grove OR	Site Spill ID				

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
YY522	2	L	G	1	X					GW-27	9-19-97 1021		JB	
YY523	2	L	G	1	X					GW-26	1201		JB	
YY524	2	L	G	1	X					FieldRinsate 2	1325		JB	
YY525	2	L	G	1	X					GW-24	1356		JB	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9-19-97 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	CESPK-ED-EG	9/18/97	

Regional Information

Sampler (Name): Jim Barton

Airbill Number: 32649/5183

Non-Superfund Program

Sampler Signature: Jim Barton

Site Name: WDI Superfund Site

City, State: Santa Fe Springs CA

Site Spill ID

3. Purpose*: Lead [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To: Southwest Labs of Oklahoma Inc, 1700 West Albany Ste. C, Broken Arrow OK 74012

ATTN:

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY555	2	L	G	N		X	X			GW-29	9/18/97 1023		JB	

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton					
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none
		[signature]	9/19/97 1000		

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

YY553

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A21-012-15 REV.

372508

EPA United States Environmental Protection Agency Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code: SF
Account Code:
2. Region No.: 9
Sampling Co.: USACE-SPK
4. Date Shipped: 9-18-97
Carrier: Fed Ex

Regional Information:
Sampler (Name): Jim Barton
Airbill Number: 3265024700

Non-Superfund Program:
Sampler Signature: Jim Barton
5. Ship To: PDP Analytical Services, 1680 Lakefront Circle, Ste B, The Woodlands, TX 77380
ATTN: Reddy Pakanati

Site Name: WDI Superfund Site
3. Purpose*: Lead: [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

City, State: Santa Fe Springs CA
Site Spill ID: —

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY514	2	L	G	1	X					GW-30	9-18-97 0832		JB	
YY515	2	L	G	1	X					GW-30DUP	0833		JB	
YY516	2	L	G	1	X					GW-29 MS/MSD	1020		JB	
YY517	2	L	G	1	X					GW-28	1136		JB	
YY518	2	L	G	1	X					GW-19	1316		JB	
YY519	2	L	G	1	X					Field Rinsate 1	1513		JB	
YY520	2	L	G	1	X					GW-18	1526		JB	
YY521	2	L	G	1	X					Trip Blank	none		—	

Shipment for Case Complete? (Y/N): Y
Page 1 of 1
Sample(s) to be Used for Laboratory QC: YY516
Additional Sampler Signatures:
Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9-18-97 1630				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-15 REV.

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372525

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	9/8-97	FedEx

Regional Information

Sampler (Name): Jim Barton

Airbill Number: 3265024 696

Non-Superfund Program

Sampler Signature: Jim Barton

5. Ship To

Site Name: WDI Superfund Site

City, State: Santa Fe Springs CA

Site Spill ID

3. Purpose*: Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

ATTN:

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
YY553	2	L	G	2		X	X			GW-30	9/18/97 0832		JB	
YY554	2	L	G	2		X	X			GW-30 Dup	↓ 0833		JB	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9/18/97 1803				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		[signature] YY553	9/19/97 1000		

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

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A21-012-15 REV.

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372526

States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 25700

2. Region No. 9	Sampling Co. USACE-SPK	4. Date Shipped 9/8-97	Carrier FedEx
Sampler (Name) Jim Barton		Airbill Number 3205024 696	
Sampler Signature Jim Barton		5. Ship To	
3. Purpose* Lead: ☐ SF ☐ PRP ☐ ST ☐ FED	Early Action: ☐ CLEM ☐ PA ☐ REM ☐ RI ☐ SI ☐ ESI	Long-Term Action: ☐ FS ☐ RD ☐ RA ☐ O&M ☐ NPLD	ATTN:

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

D Preservative (from Box 7) Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
2		X	X			GW-30	9/18/97 0832		JB	
2		X	X			GW-30 Dup	↓ 0833		JB	

Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
9/18/97 1503				
Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
	[signature]	9/19/97 1000		

YY553

Pink - CLASS Copy
Yellow - Lab Copy for Return to CLASS
or Return to Region

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A21-012-15 REV.

3c

372526

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE - SPK	10/1/97	FED EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3273141395

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

ATTN:

Site Name: WDI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose*: Lead: SF, PRP, ST, FED. Early Action: CLEM, PA, REM, RI, SI, ESI. Long-Term Action: FS, RD, RA, O&M, NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MYY140	4	L	G	2		X						Field Eqt. Rinsate #6		9/30/97 1630	YY589	GN	
MYY141	4	L	G	2		X						Pump Decon. Water		9/30/97 1630	YY590	GN	

Shipment for Case Complete? (Y/N)

Page 1 of 1

Sample(s) to be Used for Laboratory QC

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	10/1/97 1200				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

266240 10/1/97

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE - SPK	9/30/97	Fed EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3264915312

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

ATTN:

Site Name: LODI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose — Lead: [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. – = Not a QC Sample)
MYY137	2	L	G	2		X							DUP.3	9/30/97 –	YY585	GN	
MYY170	2	L	G	2	X								DUP.3	9/30/97 –	YY585	GN	
MYY138	2	L	G	2		X							GW-15	9/30/97 1330	YY587	GN	
MYY171	2	L	G	2	X								GW-15	9/30/97 1330	YY587	GN	
MYY139	2	L	G	2		X							GW-13	9/30/97 1500	YY588	GN	
MYY172	2	L	G	2	X								GW-13	9/30/97 1500	YY588	GN	

Shipment for Case Complete? (Y/N)	Page ___ of ___	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/30/97 1600				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

10/2

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	9/30/97	FED EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3273141384

Non-Superfund Program

Sampler Signature: George Nichol

Site Name: BUDI SUPERFUND SITE

3. Purpose*: Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

City, State: SMITH FE SPRINGS, CA

Site Spill ID

5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC.
1700 WEST ALBANY, SUITE C
BROKEN ARROW, OK 74012

ATTN:

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MYY134	2	L	G	2		X							GW-31	9/30/97 0830	YY586	GN	
MYY167	2	L	G	2	X								GW-31	9/30/97 0830	YY586	GN	
MYY135	2	L	G	2		X							GW-5	9/30/97 0950	YY583	GN	
MYY168	2	L	G	2	X								GW-5	9/30/97 0950	YY583	GN	
MYY136	2	L	G	2		X							GW-16	9/30/97 1130	YY584	GN	
MYY169	2	L	G	2	X								GW-16	9/30/97 1130	YY584	GN	
~~MYY138~~	~~2~~	~~L~~	~~G~~	~~2~~		~~X~~						Deleted GN	~~GW-15~~	~~9/30/97 1330~~	~~YY587~~	~~GN~~	
~~MYY171~~	~~2~~	~~L~~	~~G~~	~~2~~	~~X~~							Deleted GN	~~GW-15~~	~~9/30/97 1330~~	~~YY587~~	~~GN~~	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/30/97 1600				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV.

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

366256 9/30/

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK	9/25/97	FED EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3264915290

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTHWEST LABS OF OKLAHOMA INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

ATTN:

Site Name: WDI SANTA FE SPRINGS SUPERFUND SITE

City, State: SANTA FE SPRINGS

Site Spill ID

3. Purpose

Lead: [ ] SF [ ] PRP [ ] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI

Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MYY128	2	L	G	1		X							GW-6	9/24/97 0830	YY577	GN	
MYY129	2	L	G	1		X							GW-21	9/24/97 1015	YY578	GN	
MYY131	2	L	G	1		X							FIELD RINSE #5	9/24/97 1500	YY580	GN	
MYY165	2	L	G	1	X								GW-6	9/24/97 0830	YY577	GN	
MYY166	2	L	G	1	X								GW-21	9/24/97 1015	YY578	GN	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/25/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

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21-012-13 REV

9/25/97

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE - SPK	9/25/97	Fed EX

Regional Information

Sampler (Name): GEORGE NICHOL

Airbill Number: 3264915286

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012 ATTN:

Site Name: WRCC SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

3. Purpose*: Lead: [ ] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [X] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MYY133	2	L	G	2		X							GW-4	9/25/97 1100	YY582	GN	
MYY169	2	L	G	2	X							A	GW-4	9/25/97 1100	YY582	GN	
MYY132	2	L	G	2		X							GW-7	9/25/97 0830	YY581	GN	
MYY163	2	L	G	2	X							A	GW-7	9/25/97 0830	YY581	GN	

A means filtered thru 0.45u filter. Digestion needed for filtered samples

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/25/97 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

9/25/97

366311

For Wed met

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code: SF
Account Code:
2. Region No.: 9
Sampling Co.: USACE - SPK
4. Date Shipped: 9/22/97
Carrier: FED EX

Regional Information:
Sampler (Name): GEORGE NICHOL
Airbill Number: 3264915275

Non-Superfund Program:
Sampler Signature: George Nichol
5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

Site Name: WPI SUPERFUND SITE
4. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

City, State: SANTA FE SPRINGS, CA
Site Spill ID:

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
~~MYY138~~	~~2~~	~~L~~	~~G~~	~~2~~	~~X~~									~~9/24/97 0830~~	~~GN~~	~~YY577~~	
~~MYY165~~	~~2~~	~~L~~	~~G~~	~~2~~		~~X~~						~~A~~		~~9/24/97 0830~~	~~GN~~	~~YY577~~	
~~MYY129~~	~~2~~	~~L~~	~~G~~	~~2~~	~~X~~									~~9/24/97 1000~~	~~GN~~	~~YY578~~	
~~MYY161~~	~~2~~	~~L~~	~~G~~	~~2~~		~~X~~						~~A~~		~~9/24/97 1000~~	~~GN~~	~~YY578~~	
MYY130	2	L	G	2	X								GW-2	9/24/97 1230	GN	YY579	In this ice chest
MYY162	2	L	G	2		X						A		9/24/97 1230	GN	YY579	
MYY130	2	L	G	2	X								GW-2	9/24/97 1230	GN	YY579	
MYY162	2	L	G	2		X						A	Lab QC	9/24/97 1230	GN	YY579	

A mean filtered thru 0.45 µ filter. Digestion needed for dissolved samples.

Shipment for Case complete? (Y/N):
Page 1 of 2
Sample used for a spike and/or duplicate:
Additional Sampler Signatures:
Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/24/97 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
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Inorg-1

9/24

For Wed 9/24

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No.

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
SF		9	USACE-SPK		Fed Ex

Regional Information

Sampler (Name): George Nichol

Airbill Number: 3264 9152 75

Non-Superfund Program

Sampler Signature: George Nichol

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, 1700 W. Albany, Suite C, Broken Arrow, OK. 74012

ATTN:

Site Name: WDI Santa Fe Springs

City, State: SANTA FE SPRS, CA

Site Spill ID

3. Purpose*

Lead: SF, PRP, ST, FED

Early Action: CLEM, PA, REM, RI, SI, ESI

Long-Term Action: FS, [X] RD, RA, O&M, NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MY1130	2	L	G	2		X						GW-2		9/24/97 1230	YY579	gm	In the ice chest.
MY4162	2	L	G	2	X							A Lab QC		9/24/97 1230	YY579	gm	

A means filtered thru 0.45μ filter. Digestion needed for dissolved samples.

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	2 of 2			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/24/97 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV

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9/24/97

TUE. SAMPLES

Met

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code: SF
Account Code:
2. Region No.: 9
Sampling Co.: USACE-SPK
4. Date Shipped: 9/24/97
Carrier: FED EX

Regional Information:
Sampler (Name): GEORGE NICHOL
Airbill Number: 3240484166

Non-Superfund Program:
Sampler Signature: George Nichol
5. Ship To: SOUTH WEST LABS OF OKLAHOMA, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012

Site Name: WDI SUPERFUND SITE
4. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

City, State: ~~SANTA FE~~ SPRINGS, CA
Site Spill ID:

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/ Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MYY122	2	L	G	2	X									9/23/97 0800	GN	YY571	
MYY157	2	L	G	2		X						A		9/23/97 0830	GN	YY571	
MYY123	2	L	G	2	X									9/23/97 [redacted]	GN	YY572	
MYY158	2	L	G	2		X						A		9/23/97	GN	YY572	
MYY124	2	L	G	2	X									9/23/97 1000	GN	YY573	
MYY159	2	L	G	2		X						A		9/23/97 1000	GN	YY573	
MYY125	2	L	G	2	X									9/23/97 1200	GN	YY574	
MYY160	2	L	G	2		X						A		9/23/97 1200	GN	YY574	

A means filtered in field, 0.45 u filter. Digestion reqd for dissolved samples.

Shipment for Case complete? (Y/N):
Page 1 of ____
Sample used for a spike and/or duplicate:
Additional Sampler Signatures:
Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/24/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
Green - Region Copy Pink - SMO Copy White - Lab Copy Yellow - Lab Copy for Return to SMO

Split Samples: ☐ Accepted (Signature) ☐ Declined

9/24/97

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record

9/24/97 (For Inorganic CLP Analysis)

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.:	4. Date Shipped: USACE-SPK	Carrier: FED EX
Regional Information		Sampler (Name): George Nichol		Airbill Number: 3240484166	
Non-Superfund Program		Sampler Signature: George Nichol		5. Ship To: Southwest Labs of Oklahoma, 1700 W. Albany, Suite C, Broken Arrow, OK, 74012	
Site Name: WDI Santa Fe Springs		3. Purpose: Lead: ☐ SF ☐ PRP ☐ ST ☐ FED; Early Action: ☐ CLEM ☐ PA ☐ REM ☐ RI ☐ SI ☐ ESI; Long-Term Action: ☐ FS ☒ RD ☐ RA ☐ O&M ☐ NPLD		ATTN:	
City, State: SANTA FE SPRGS, CA	Site Spill ID:				

6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MYY126	2	L	G	2		X								9/23/97 1400	YY575	GN	
MYY161	2	L	G	2	X							A		9/23/97 1400	YY575	GN	
MYY127						X						Field Eqt Rinse		9/23/97 1500	YY576	GN	

A means filtered in 0.45u filter. Digestion reqd for diss. samples.

Shipment for Case Complete? (Y/N)	Page ___ of ___	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/24/97 1400				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV

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EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

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Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code: SF
Account Code:
2. Region No.: 9
Sampling Co.: USACE-SPK
4. Date Shipped: 9/22/97
Carrier: FED EX

Regional Information:

Sampler (Name): GEORGE NICHOL

Airbill Number: 326491 ~~5342~~ 5345

Non-Superfund Program:

Sampler Signature: George Nichol

5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC
1700 WEST ALBANY, SUITE C
BROKEN ARROW, OK 74012

Site Name: WDE SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID:

4. Type of Activity

Lead		Pre-Remedial		Remedial		Removal	
SF	☐			RIFS	☐	CLEM	☐
PRP	☐	PA	☐	RD	☒	REMA	☐
ST	☐	SSI	☐	RA	☐	REM	☐
FED	☐	LSI	☐	O&M	☐	OIL	☐
				NPLD	☐	UST	☐

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (SAS) (Specify)
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MYY119	2	L		2	X							Filtration	Rinsate	9/22/97 1500	GN		
MYY120	2	L		2	X							Field Equipment Rinse		9/22/97 1400	GN		

Shipment for Case complete? (Y/N): Y

Page 1 of 1

Sample used for a spike and/or duplicate:

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/23/97 1200				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		J. Ellison	9/24/97 1030		

Split Samples: ☐ Accepted (Signature) ☐ Declined

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Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/22/97	Carrier: FED EX
Regional Information:		Sampler (Name): GEORGE NICHOL		Airbill Number: 326491 5345 [redacted]	
Non-Superfund Program:		Sampler Signature: George D. Nichol		5. Ship To: SOUTH WEST LABS OF OKLAHOMA, INC. SUITE C 1700 WEST ALBANY, [redacted] BROKEN ARROW, OK 74012	
Site Name: WDE SUPERFUND SITE		4. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST			
City, State: SOUTH HI SPRINGS, CA	Site Spill ID:				

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MYY116	2	L	G	2	X								GW-14	9/22/97 0855	GN		Not in this ice chest.
MYY153	2	L	G	2		X						A	GW-14	9/22/97 0855	GN		
21 MYY[redacted]	2	L	G	2	X								GW-23	9/22/97 1030	GN		
56 MYY[redacted]	2	L	G	2		X						A	GW-23	9/22/97 1045	GN		
MYY117	2	L	G	2	X								GW-1	9/22/97 1215	GN		
MYY154	2	L	G	2		X						A	GW-1	9/22/97 1215	GN		
MYY118	2	L	G	2	X								GW-8	9/22/97 1345	GN		
MYY155	2	L	G	2		X						A	GW-8	9/22/97 1345	GN		

A = Field filtered, 0.45 µ, digestion reqd for all dissolved samples.

Shipment for Case complete? (Y/N): Y	Page 1 of 1	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
George Nichol	9/23/97 1200				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		J. Williams	9/24/97 1030	INTACT	

Split Samples: ☐ Accepted (Signature) ☐ Declined

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Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code	Account Code	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/18/97	Carrier: FED EX
Regional Information		Sampler (Name): JIM BARTON		Airbill Number: 3264 915146	
Non-Superfund Program		Sampler Signature: Jim Barton		5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012	
Site Name: WDI SUPERFUND SITE		4. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST			
City, State: SANTA FE SPRINGS, CA	Site Spill ID				

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals: Total	Metals: Dissolved	Cyanide	Low Conc.: Nitrate/Nitrite	Low Conc.: Fluoride	High: pH	High: Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MYY114	2	L	G	2	X								Field Rinsate 2	9-19-97 1325	JB		
MYY115	2	L	G	2	X								GW-24	9-19-97 1356	JB		
MYY152	2	L	G	2		X							GW-24	9-19-97 1356	JB		

Shipment for Case complete? (Y/N): Y	Page 1 of 1	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9/19/97 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		[illegible]	9/20/97 0815		

Split Samples: ☐ Accepted (Signature) ☐ Declined

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Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 25700

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		9	USACE SPK	9/19/97	FED EX

Regional Information

Sampler (Name): JIM BARTON

Airbill Number: 3264915161

Non-Superfund Program

Sampler Signature: Jim Barton

Site Name: NDI SUPERFUND SITE

City, State: SANTA FE SPRINGS, CA

Site Spill ID

4. Type of Activity

Lead		Pre-Remedial		Remedial		Removal	
SP				RIFS		CLEM	
PRP		PA		RD	X	REMA	
ST		SSI		RA		REM	
FED		LSI		O&M		OIL	
				NPLD		UST	

5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (SAS) (Specify)
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MYY112	2	L	G	2	X								GW-27	9-19-97 1021	JB		
MYY150	2	L	G	2		X							GW-27	9-19-97 ↓	JB		
MYY113	2	L	G	2	X								GW-26	9-19-97 1201	JB		
MYY151	2	L	G	2		X							GW-26	9-19-97 ↓	JB		

Shipment for Case complete? (Y/N) Y

Page 1 of 1

Sample used for a spike and/or duplicate

Additional Sampler Signatures

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9-19-97 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none
		[signature]	9/20/97 0815		

Split Samples ☐ Accepted (Signature) ☐ Declined

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Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/19/97	Carrier: FedEx
Regional Information:		Sampler (Name): JIM BARTON		Airbill Number: 3264915172	
Non-Superfund Program:		Sampler Signature: Jim Barton		5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012	
Site Name: WOI SUPERFUND SITE		4. Type of Activity			
City, State: SANTA FE SPRINGS, CA	Site Spill ID:				

4. Type of Activity:

Lead		Pre-Remedial		Remedial		Removal	
				RIFS		CLEM	
				RD	X	REMA	
PRP		PA		RA		REM	
ST		SSI		O&M		OIL	
FED		LSI		NPLD		UST	

6. Preservative (Enter in Column D):
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (SAS) (Specify)
N. Not preserved

7. Sample Description (Enter in Column A):
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MY110	2	L	G										Field Rinsate 1	9/18/97 1513	JB		
MY111	2	L	G										GW-18	↓ 1526	JB		
MY149	2	L	G										GW-18	↓ 1526	JB		

Shipment for Case complete? (Y/N) Y	Page 1 of 1	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9/19/97 0805				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? (Y/N/none)	
		[illegible]	9/20/97 0815		

Split Samples: ☐ Accepted (Signature) ☐ Declined

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Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code: SF
Account Code:
2. Region No.: 9
Sampling Co.: USAGE -SPK
4. Date Shipped: 9/19/97
Carrier: FED EX

Regional Information:
Sampler (Name): JIM BARTON
Airbill Number: 3265024685

Non-Superfund Program:
Sampler Signature:
5. Ship To: SOUTHWEST LABS OF OKLAHOMA, INC. 1700 WEST ALBANY, SUITE C BROKEN ARROW, OK 74012

Site Name: WDI SUPERFUND SITE
City, State: ~~SANTA FE~~ SPRINGS, CA
Site Spill ID:

4. Type of Activity:
Lead: SF, PRP, ST, FED
Pre-Remedial: PA, SSI, LSI
Remedial: RIFS, RD (X), RA, O&M, NPLD
Removal: CLEM, REMA, REM, OIL, UST

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MYY108	2	L	G	2	X								GW-28	9/18/97 1136	JB		
MYY109	2	L	G	2	X								GW-19	1346	JB		
MYY147	2	L	G	2		X							GW-28	1136	JB		
MYY148	2	L	G	2		X							GW-19	1346	JB		

Shipment for Case complete? (Y/N): Y

Page 1 of 1

Sample used for a spike and/or duplicate:

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9/19-97 0809				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		[signature]	9/20/97 0815		

Split Samples: ☐ Accepted (Signature) ☐ Declined

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Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 25700

1. Project Code: SF
Account Code:
2. Region No.: 9
Sampling Co.: USACE-SPK
4. Date Shipped: 9/18/97
Carrier: Fed Ex

Regional Information:
Sampler (Name): Jim Barton
Airbill Number: 3265 024 696

Non-Superfund Program:
Sampler Signature: Jim Barton
5. Ship To: Southwest Labs of Oklahoma Inc
1700 W. Albany Ste C
Broken Arrow OK 74012

Site Name: WD1 Superfund Site
City, State: Santa Fe Springs CA
Site Spill ID: 1

4. Type of Activity:
Lead: SF, PRP, ST, FED
Pre-Remedial: PA, SSI, LSI
Remedial: RIFS, RD, RA, O&M, NPLD
Removal: CLEM, REMA, REM, OIL, UST

6. Preservative (Enter in Column D):
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (SAS) (Specify)
N. Not preserved

7. Sample Description (Enter in Column A):
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MY105	2	L	G	2	X								GW-30	9/18/97 0832	JB		—
MY106	2	L	G	2	X								GW-30 DUP	0833			—
MY144	2	L	G	2		X							GW30	0832			—
MY145	2	L	G	2		X							GW-30 Dup	0833			—

Shipment for Case complete? (Y/N): Y
Page 1 of 1
Sample used for a spike and/or duplicate:
Additional Sampler Signatures:
Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9/18/97 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		[signature]	9/19/97 1000		

Split Samples: ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

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EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No. 25700

1. Project Code: SF	Account Code:	2. Region No.: 9	Sampling Co.: USACE-SPK	4. Date Shipped: 9/18/97	Carrier: FedEx
Regional Information:		Sampler (Name): Jim Barton		Airbill Number: 3264915183	
Non-Superfund Program:		Sampler Signature: Jim Barton		5. Ship To: Southwest Labs of Oklahoma Inc, 1700 West Albany, Ste C, Broken Arrow, OK 74012	
Site Name: WDI Superfund Site		4. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI; Remedial: RIFS, RD (X), RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST			
City, State: Santa Fe Springs, CA	Site Spill ID: —				

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC
MY107	2	L	G	2	X								GW-29	9/18/97 1023	JB		
MY106	2	L	G	2		X							GW-29	↓ ↓	JB		

Shipment for Case complete? (Y/N) Y

Page 1 of 1

Sample used for a spike and/or duplicate:

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jim Barton	9/18/97 1710				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		[signature]	9/19/97 1000		

Split Samples: ☐ Accepted (Signature) ☐ Declined

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