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Lockheed Environmental Systems & Technologies Co.
Lockheed Analytical Services
975 Kelly Johnson Drive Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 800-582-7605 Facsimile 702-361-8146

LK 7303-LAS

0046384

LOCKHEED MARTIN



Ms. Joan Kessner
Bechtel Hanford, Inc.
3350 George Washington Way
MISN B1-35
Richland, WA 99352



July 29, 1996

RE:	Log-in No.:	L7303
	Quotation No.:	Q400000-B
	SAF:	B96-118
	Document File No.:	0622596B
	BHI Document File No.:	380
	SDG No.:	LK7303



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 22 June 1996.

The temperature of the cooler upon receipt was 2°C. Sample containers received agree with the chain-of-custody documentation. Sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. The vials for volatile analyses did not contain headspace.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Kathleen Hall at (509) 375-4741.

0003

Lockheed Analytical Services

Log-in No.: L7303
Quotation No.: Q400000-B
SAF: B96-118
Document File No.: 0622596B
BHI Document File No.:380
SDG No.: LK7303
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Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

" I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Sincerely,


Kathleen M. Hall
Client Services Representative

cc: Client Services
Document Control

Lockheed Analytical Services

Log-in No.: L7303
Quotation No.: Q400000-B
SAF: B96-118
Document File No.: 0622596B
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CASE NARRATIVE INORGANIC METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirements

All samples were received on June 22, 1996. The samples were logged in as L7303 and were prepared and analyzed in batch 622 bt1 for total metals. The samples were analyzed by Method 7000 Furnace Metals, 7471 Mercury and Method 6010 ICP Metals.

Holding Time Requirements

- All samples were analyzed within the method-specific holding times.

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits with the following exceptions: The matrix spike recoveries for arsenic (131%) and selenium (0%) were outside of acceptance limits. The recoveries based on the LCS (arsenic 109.5% and selenium 109%) support that the analytical system was operating within control limits.

Sample Results

- The oil sample was prepared as a solid and the density was determined in order to report the results in mg/L.
- The LCS Oil sample does not contain arsenic, selenium or mercury, therefore the LCSW is also reported.

Shellee McGrath
Prepared By

July 29, 1996
Date

0005

Lockheed Analytical Services

Log-in No.: L7303
Quotation No.: Q400000-B
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CASE NARRATIVE ORGANIC ANALYSES

Analytical Method 8260A Volatiles

Analytical Batch 062896-8260-E-1 (oil)

Note: Sample BOHGJ2 (L7303-2) was the native sample used for the medium level matrix spike (38533MS) and matrix spike duplicate (38533MSD) analyzed in this analytical batch. All associated samples for login L7303 were analyzed using the medium level method, which is LAS default method for oil samples.

The laboratory control sample (38533LCS-1) solution contained many target compounds in addition to the five (5) required spiked compounds.

The samples were analyzed within holding time on June 28, 1996. All instrument tunes, initial and continuing calibrations met QC criteria. Target compound Bromomethane was detected in the medium level method blank (38533MB-1). All associated samples with a detected target compound as in the method blank were flagged with the qualifier "B". Surrogate recoveries were within QC limits in the method blank and LCS. Surrogate recoveries were slightly low in sample BOHGJ2 (L7303-2) except for 1,2-Dichloroethane-d4. Surrogate recoveries were all diluted out in the 1:200 diluted samples BOHGJ2 (L7303-2), 38533MS, and 38533MSD. Compound recoveries were diluted out in 38533MS and 38533MSD. Compound recoveries were within QC limits in 38533LCS-1. The relative percent differences (RPDs) between the MS and MSD recoveries could not be evaluated, since the MS and MSD recoveries were diluted out. When this happens, the RPDs have the default value of zero (0). All internal standard area counts and retention times were within QC limits. The concentration of Dichlorodifluoromethane exceeded the calibration range in sample BOHGJ2 (L7303-2). This sample was diluted 1:200 and reanalyzed in this analytical batch. All analyses results were reported in this data package.

Lydia M. Coleman
Prepared By

July 22, 1996
Date

9713523.1693

LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Jul 01 1996, 11:18 am

Login Number: L7303
 Account: 596 Bechtel Hanford, Inc. * Richland, WA
 Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L7303-1 TEMP 2; SAF# B96-118 Location: RFG01-43C Oil 6 S SCREENING	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-2 TEMP 2; SAF# B96-118, TRIFLUOROETHANE, DICHLOROFLUOROMETHANE, TRICHLOROMONOFUOROMETHANE Location: 130 Oil 6 S 8260 VOLATILES	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-3 TEMP 2; SAF# B96-118, TCLP=(M) Location: 133 Oil 6 S 1311 TCLP REG. EXTR. Oil 6 S 6010 ICP METALS Oil 6 S 7000 FURNACE METALS Oil 6 S 7471 MERCURY	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-4 TEMP 2; SAF# B96-118, TCLP=(M) Location: RFG02-40B	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-5 SAF# B96-118 Location: Water 1 S EDD - DISK DEL. Water 1 S GCMS2 Water 1 S INORG TYPE 2 RPT	REPORT TYPE	22-JUN-96	22-JUN-96	07-JUL-96

* Matrix changed to Oil

Page 1

Signature: *[Signature]*Date: 7-1-96

0010

0622 596B

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LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Jun 25 1996, 09:18 am

Login Number: L7303
Account: 596 Bechtel Hanford, Inc. * Richland, WA
Project: BECHTEL-HANFORD Bechtel Hanford Project

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L7303-1 TEMP 2; SAF# B96-118 Location: 157 Oil 6 S SCREENING	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-2 TEMP 2; SAF# B96-118, TRIFLUOROETHANE, DICHLOROFLUOROMETHANE, TRICHLOROMONOFUOROMETHANE Location: 157 Oil 6 S 8260 VOLATILES	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-3 TEMP 2; SAF# B96-118, TCLP=(M) Location: 157 Oil 6 S 1311 TCLP REG. EXTR. TCLP Extr 13 S 6010 ICP METALS TCLP Extr 13 S 7000 FURNACE METALS TCLP Extr 13 S 7470 MERCURY	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-4 TEMP 2; SAF# B96-118, TCLP=(M) Location: 157	BOHGJ2	18-JUN-96	22-JUN-96	07-JUL-96
L7303-5 SAF# B96-118 Location: Water 1 S EDD - DISK DEL. Water 1 S GCMS2 Water 1 S INORG TYPE 2 RPT	REPORT TYPE	22-JUN-96	22-JUN-96	07-JUL-96

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Signature: *[Signature]*Date: 6-25-96

0011

0622596B

Bechtel Hanford, Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						L7303		Page <u>1</u> of <u>1</u>	
Collector D. Bowers, R. Fahlberg		Company Contact P.K. Huff				Telephone 373-4566		Data Turnaround <input checked="" type="checkbox"/> Priority <input type="checkbox"/> Normal			
Project Designation Waste Container 100N-96-0153		Sampling Location 100 AREA N-Pad				SAF No. B96-118					
Ice Chest No. <i>Billy</i>		Field Logbook No. EFL 1133-1				Method of Shipment Hand Delivered		2904658732			
Shipped To Lockheed		Offsite Property No. <i>W96-0-0640-50</i>				Bill of Lading/Air Bill No. <i>2904658565</i>					
Possible Sample Hazards/Remarks		Preservation	Cool 4c	None	None	None					
		Type of Container	G	G	G	G/P					
		No. of Container(s)	1	1	1	1					
Special Handling and/or Storage		Volume	125mL	250mL	250mL	20mL					
SAMPLE ANALYSIS		See Item #1 Below	Metals By ICP (TCLP)	Mercury (TCLP)	Activity Scan						
Sample No.	Matrix*	Date Sampled	Time Sampled								
BOHGJ2	O	6/18/96	1245	X	X	X	X				
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS Item #1: VOA 1,1,2-trichloro-1,2,2-trifluoroethane, Dichlorofluoromethane, Trichloromonofluoromethane				Matrix* S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tissue WI - Wipe L - Liquid V - Vegetation X - Other	
Relinquished By	Date/Time	Received By	Date/Time								
Relinquished By	Date/Time	Received By	Date/Time								
Relinquished By	Date/Time	Received By	Date/Time								
Relinquished By	Date/Time	Received By	Date/Time								
LABORATORY SECTION		Received By	Title		Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method	Disposed By		Date/Time						

9/13/96 23:16 95

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VALIDATED RESULTS SHORT REPORT

19 Jun 19

Customer ID: BOHGJ2
Lab Sample#: S96R000743

Sample Date:
Recv. Date: 06/18/96 14:06

PARAMETER	RESULTS	UNITS
-----	-----	-----
Total Activity by LSC		
Total Act. by LSC: % Uncert.	38.31	%Uncertainty
Total Activity by LSC (Solid)	< 8.28e-6	uCi/g

00130622596E

SAMPLE CHECK-IN LIST

Date/Time Received: 6-22-96/0930SDG#: N/AWork Order Number: N/ASAF #: B96-118Shipping Container ID: BILLYChain of Custody #: N/A

1. Custody Seals on shipping container intact? Yes ☒ No ☐
2. Custody Seals dated and signed? Yes ☒ No ☐
3. Sample temperature 2°C
4. Vermiculite/packing materials is Wet ☐ Dry ☒
5. Each sample is in a plastic bag? Yes ☒ No ☐
6. Sample holding times exceeded? Yes ☐ No ☒

7. Samples have:

<u> </u> tape	<u> </u> hazard labels
<u> X </u> custody seals	<u> X </u> appropriate sample labels

8. Samples are:

<u> X </u> in good condition	<u> </u> leaking
<u> </u> broken	<u> </u> have air bubbles

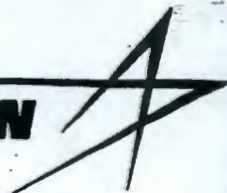
9. Is the information on the COC and Sample bottles in agreement?

Yes ☒No ☐

Notes: _____

Sample Custodian/Laboratory: IndivaleDate: 6-24-96Telephoned To: Kathleen HallOn 6-24-96By Anthony M. Her

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LOCKHEED MARTIN

**Sample Login
Login Review Checklist**

Lot Number L7303

The login review should be conducted by that person logging in the samples as well as a peer. Please use this checklist to ensure that such reviews occur in a uniform basis. Please sign and date below to verify that a login review has occurred. This checklist should be affixed to each login package prior to distribution.

For effective login review, at a minimum, five reports from the login process are required. These are the COC (or equivalent), the login COC report, the sample summary report, the sample receiving checklist, and the login quotation. Before beginning review, ensure that these five components are available. Jobs with single component samples, the sample summary report may be omitted.

SAMPLE SUMMARY REPORT

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all sample ID's correct?	<u>X</u>	—	—	_____
2. Are all samples present?	<u>X</u>	—	—	_____
3. Are all matrices indicated correctly?	<u>X</u>	—	—	_____
4. Are all analyses on the COC logged in for the appropriate samples?	<u>X</u>	—	—	_____
5. Are all analyses logged in for the correct container?	<u>X</u>	—	—	_____
6. Are samples logged in according to LAS batching procedures?	<u>X</u>	—	—	_____

LOGIN CHAIN OF CUSTODY

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are the collect, receive, and due dates correct for every sample?	<u>X</u>	—	—	_____
2. Have all appropriate comments been indicated in the comment section?	—	—	<u>X</u>	_____

SAMPLE RECEIVING CHECKLIST

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>Comment</u>
1. Are all discrepancies between the COC and the login noted (if applicable)?	—	—	<u>X</u>	_____

Admille
primary review signature

6-24-96
date

Admille
secondary review signature

6-24-96
date
0015 0622596

Lockheed Analytical Services

Sample Receiving Checklist

Page of

Client Name: *Buchel-Hanford*

Job No. *L7303*

Cooler ID:

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: *2°C*

temperature of temp. blank upon receipt:

	Yes	No	* Comments/Discrepancies
custody seals intact	<input checked="" type="checkbox"/>		
chain of custody present	<input checked="" type="checkbox"/>		
blue ice (or equiv.) present/frozen	<input checked="" type="checkbox"/>		
rad survey completed	<input checked="" type="checkbox"/>		

SAMPLE CONDITION UPON RECEIPT

	Yes	No	* Comments/Discrepancies
all bottles labeled	<input checked="" type="checkbox"/>		
samples intact	<input checked="" type="checkbox"/>		
proper container used for sample type	<input checked="" type="checkbox"/>		
sample volume sufficient for analysis	<input checked="" type="checkbox"/>		
proper pres. indicated on the COC	<input checked="" type="checkbox"/>		
VOA's contain headspace			<i>N/A</i>
are samples bi-phasic (if so, indicate sample ID'S):			<i>N/A</i>

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times		<input checked="" type="checkbox"/>	
samples to subcontract		<input checked="" type="checkbox"/>	

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: *Arvill 6-24-96*

Sent to the client (date/initials):

** Client's signature upon receipt:

Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt

** = please review this information and return via facsimile to the appropriate CSR (702) 361-8146

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Lockheed Analytical Laboratory
 SAMPLE SUMMARY REPORT (su02)
 Bechtel Hanford, Inc. * Richland, WA

Client	LAL	SDG	
Sample Number	Sample Number	Number	Matrix Method
BOHGJ2 -	L7303-1	Oil	SCREENING -
	L7303-2	Oil	8260 VOLATILES -
	L7303-3	Oil	1311 TCLP REG. E
	L7303-3	TCLP Extr	6010 ICP METALS
	L7303-3	TCLP Extr	7000 FURNACE MET
	L7303-3	TCLP Extr	7470 MERCURY .
REPORT TYPE -	L7303-5	Water	EDD - DISK DEL.
	L7303-5	Water	GCMS2 -
	L7303-5	Water	INORG TYPE 2 RPT

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LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHGJ2	Date Collected: 18-JUN-96
Matrix: Oil	Date Received: 22-JUN-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
BARIUM	mg/l	6010	< 1.7	1.7	42.	U	1	10-JUL-96	38585	L7303-3
CADMIUM	mg/l	6010	< 0.63	0.63	1.1	U	1	10-JUL-96	38585	L7303-3
CHROMIUM	mg/l	6010	< 1.3	1.3	2.1	U	1	10-JUL-96	38585	L7303-3
SILVER	mg/l	6010	< 1.3	1.3	2.1	U	1	10-JUL-96	38585	L7303-3
ARSENIC	mg/l	7060	< 0.63	0.63	2.1	NUW	1	05-JUL-96	38586	L7303-3
LEAD	mg/l	7421	< 0.42	0.42	0.63	U	1	10-JUL-96	38586	L7303-3
SELENIUM	mg/l	7740	< 3.2	3.2	5.3	NUW	5	05-JUL-96	38586	L7303-3
Mercury	mg/l	7471	< 0.11	0.11	0.11	U	1	03-JUL-96	38587	L7303-3

9713523.1702

LOCKHEED ANALYTICAL SERVICESVOLATILE ORGANICS BY GC/MS
8260 VOLATILES

Client Sample ID:	BOHGJ2	LAL Sample ID:	L7303-2
Date Collected:	18-JUN-96	Date Received:	22-JUN-96
Date Analyzed:	28-JUN-96	Analytical Dilution:	1
Matrix:	Oil	Analytical Batch ID:	062896-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	124.

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	87%	77-127
Toluene-d8	73% *	84-120
Bromofluorobenzene	74% *	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL QUANTITATION LIMIT ug/kg	DATA QUALIFIER(s)
Dichlorodifluoromethane	75-71-8	1600000	620	E
Chloromethane	74-87-3	<620	620	
Vinyl Chloride	75-01-4	<620	620	
Bromomethane	74-83-9	<620	620	
Chloroethane	75-00-3	<620	620	
Trichlorofluoromethane	75-69-4	740	620	
Freon 113	76-13-1	<1200	1200	
Acetone	67-64-1	<1200	1200	
1,1-Dichloroethene	75-35-4	<620	620	
Carbon Disulfide	75-15-0	<620	620	
Methylene Chloride	75-09-2	<620	620	
trans-1,2-Dichloroethene	156-60-5	<620	620	
Vinyl Acetate	108-05-4	<1200	1200	
1,1-Dichloroethane	75-34-3	<620	620	
2-Butanone	78-93-3	<1200	1200	
cis-1,2-Dichloroethene	156-59-2	<620	620	
Chloroform	67-66-3	<620	620	
2-Hexanone	591-78-6	<1200	1200	
1,1,1-Trichloroethane	71-55-6	<620	620	
Carbon tetrachloride	56-23-5	<620	620	
1,2-Dichloroethane	107-06-2	<620	620	
Benzene	71-43-2	3500	620	
Trichloroethene	79-01-6	<620	620	
1,2-Dichloropropane	78-87-5	<620	620	
Bromodichloromethane	75-27-4	<620	620	
2-Chloroethylvinylether	110-75-8	<2500	2500	
4-Methyl-2-Pentanone	108-10-1	<1200	1200	
cis-1,3-Dichloropropene	10061-01-5	<620	620	
Toluene	108-88-3	2800	620	
trans-1,3-Dichloropropene	10061-02-6	<620	620	
1,1,2-Trichloroethane	79-00-5	<620	620	
Tetrachloroethene	127-18-4	<620	620	
Dibromochloromethane	124-48-1	<620	620	
Chlorobenzene	108-90-7	630	620	
Ethylbenzene	100-41-4	<620	620	
m,p-Xylene	136777-61-2	1500	620	
o-Xylene	95-47-6	680	620	
Styrene	100-42-5	<620	620	
Bromoform	75-25-2	<620	620	
1,1,2,2-Tetrachloroethane	79-34-5	<620	620	
1,3-Dichlorobenzene	541-73-1	<620	620	

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LOCKHEED ANALYTICAL SERVICESVOLATILE ORGANICS BY GC/MS
8260 VOLATILESClient Sample ID: B0HGJ2
Date Collected: 18-JUN-96
Date Analyzed: 28-JUN-96
Matrix: Oil
Percent Moisture: N/ALAL Sample ID: L7303-2
Date Received: 22-JUN-96
Analytical Dilution: 1
Analytical Batch ID: 062896-8260-E1
Preparation Dilution: 124.

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL	DATA
			QUANTITATION LIMIT ug/kg	QUALIFIER(s)
1,4-Dichlorobenzene	106-46-7	<620	620	
1,2-Dichlorobenzene	95-50-1	<620	620	

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LOCKHEED ANALYTICAL SERVICES

VOLATILE ORGANICS BY GC/MS
8260 VOLATILES

Client Sample ID:	BOHGJ2	LAL Sample ID:	L7303-2
Date Collected:	18-JUN-96	Date Received:	22-JUN-96
Date Analyzed:	28-JUN-96	Analytical Dilution:	200
Matrix:	Oil	Analytical Batch ID:	062896-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	124.

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	0.00% *	77-127
Toluene-d8	0.00% *	84-120
Bromofluorobenzene	0.00% *	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL QUANTITATION LIMIT ug/kg	DATA QUALIFIER(s)
Dichlorodifluoromethane	75-71-8	4200000	120000	
Chloromethane	74-87-3	<120000	120000	
Vinyl Chloride	75-01-4	<120000	120000	
Bromomethane	74-83-9	<120000	120000	
Chloroethane	75-00-3	<120000	120000	
Trichlorofluoromethane	75-69-4	<120000	120000	
Freon 113	76-13-1	<250000	250000	
Acetone	67-64-1	<250000	250000	
1,1-Dichloroethene	75-35-4	<120000	120000	
Carbon Disulfide	75-15-0	<120000	120000	
Methylene Chloride	75-09-2	<120000	120000	
trans-1,2-Dichloroethene	156-60-5	<120000	120000	
Vinyl Acetate	108-05-4	<250000	250000	
1,1-Dichloroethane	75-34-3	<120000	120000	
2-Butanone	78-93-3	<250000	250000	
cis-1,2-Dichloroethene	156-59-2	<120000	120000	
Chloroform	67-66-3	<120000	120000	
2-Hexanone	591-78-6	<250000	250000	
1,1,1-Trichloroethane	71-55-6	<120000	120000	
Carbon tetrachloride	56-23-5	<120000	120000	
1,2-Dichloroethane	107-06-2	<120000	120000	
Benzene	71-43-2	<120000	120000	
Trichloroethene	79-01-6	<120000	120000	
1,2-Dichloropropane	78-87-5	<120000	120000	
Bromodichloromethane	75-27-4	<120000	120000	
2-Chloroethylvinylether	110-75-8	<500000	500000	
4-Methyl-2-Pentanone	108-10-1	<250000	250000	
cis-1,3-Dichloropropene	10061-01-5	<120000	120000	
Toluene	108-88-3	<120000	120000	
trans-1,3-Dichloropropene	10061-02-6	<120000	120000	
1,1,2-Trichloroethane	79-00-5	<120000	120000	
Tetrachloroethene	127-18-4	<120000	120000	
Dibromochloromethane	124-48-1	<120000	120000	
Chlorobenzene	108-90-7	<120000	120000	
Ethylbenzene	100-41-4	<120000	120000	
m,p-Xylene	136777-61-2	<120000	120000	
o-Xylene	95-47-6	<120000	120000	
Styrene	100-42-5	<120000	120000	
Bromoform	75-25-2	<120000	120000	
1,1,2,2-Tetrachloroethane	79-34-5	<120000	120000	
1,3-Dichlorobenzene	541-73-1	<120000	120000	

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LOCKHEED ANALYTICAL SERVICESVOLATILE ORGANICS BY GC/MS
8260 VOLATILESClient Sample ID: B0HGJ2
Date Collected: 18-JUN-96
Date Analyzed: 28-JUN-96
Matrix: Oil
Percent Moisture: N/ALAL Sample ID: L7303-2
Date Received: 22-JUN-96
Analytical Dilution: 200
Analytical Batch ID: 062896-8260-E1
Preparation Dilution: 124.

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL	DATA
			QUANTITATION LIMIT ug/kg	QUALIFIER(s)
1,4-Dichlorobenzene	106-46-7	<120000	120000	
1,2-Dichlorobenzene	95-50-1	<120000	120000	

LOCKHEED ANALYTICAL SERVICESSPIKED SAMPLE RESULT
VOLATILE ORGANICS BY GC/MS

Client Sample ID:	BOHGJ2	LAL Sample ID:	38533MS
Date Collected:	18-JUN-96	Date Received:	22-JUN-96
Date Analyzed:	28-JUN-96	Analytical Dilution:	200
		Analytical Batch ID:	062896-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	124.

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	0.00% *	77-127
Toluene-d8	0.00% *	84-120
Bromofluorobenzene	0.00% *	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL QUANTITATION LIMIT ug/kg	DATA QUALIFIER(s)
Dichlorodifluoromethane	75-71-8	4800000	120000	
Chloromethane	74-87-3	<120000	120000	
Vinyl Chloride	75-01-4	<120000	120000	
Bromomethane	74-83-9	<120000	120000	
Chloroethane	75-00-3	<120000	120000	
Trichlorofluoromethane	75-69-4	<120000	120000	
Freon 113	76-13-1	<250000	250000	
Acetone	67-64-1	<250000	250000	
1,1-Dichloroethene	75-35-4	<120000	120000	
Carbon Disulfide	75-15-0	<120000	120000	
Methylene Chloride	75-09-2	<120000	120000	
trans-1,2-Dichloroethene	156-60-5	<120000	120000	
Vinyl Acetate	108-05-4	<250000	250000	
1,1-Dichloroethane	75-34-3	<120000	120000	
2-Butanone	78-93-3	<250000	250000	
cis-1,2-Dichloroethene	156-59-2	<120000	120000	
Chloroform	67-66-3	<120000	120000	
2-Hexanone	591-78-6	<250000	250000	
1,1,1-Trichloroethane	71-55-6	<120000	120000	
Carbon tetrachloride	56-23-5	<120000	120000	
1,2-Dichloroethane	107-06-2	<120000	120000	
Benzene	71-43-2	<120000	120000	
Trichloroethene	79-01-6	<120000	120000	
1,2-Dichloropropane	78-87-5	<120000	120000	
Bromodichloromethane	75-27-4	<120000	120000	
2-Chloroethylvinylether	110-75-8	<500000	500000	
4-Methyl-2-Pentanone	108-10-1	<250000	250000	
cis-1,3-Dichloropropene	10061-01-5	<120000	120000	
Toluene	108-88-3	<120000	120000	
trans-1,3-Dichloropropene	10061-02-6	<120000	120000	
1,1,2-Trichloroethane	79-00-5	<120000	120000	
Tetrachloroethene	127-18-4	<120000	120000	
Dibromochloromethane	124-48-1	<120000	120000	
Chlorobenzene	108-90-7	<120000	120000	
Ethylbenzene	100-41-4	<120000	120000	
m,p-Xylene	136777-61-2	<120000	120000	
o-Xylene	95-47-6	<120000	120000	
Styrene	100-42-5	<120000	120000	
Bromoform	75-25-2	<120000	120000	
1,1,2,2-Tetrachloroethane	79-34-5	<120000	120000	
1,3-Dichlorobenzene	541-73-1	<120000	120000	

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LOCKHEED ANALYTICAL SERVICES

SPIKED SAMPLE RESULT

VOLATILE ORGANICS BY GC/MS

Client Sample ID:	BOHGJ2	LAL Sample ID:	38533MS
Date Collected:	18-JUN-96	Date Received:	22-JUN-96
Date Analyzed:	28-JUN-96	Analytical Dilution:	200
		Analytical Batch ID:	062896-8260-E1
Percent Moisture:	N/A	Preparation Dilution:	124.

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL	DATA
			QUANTITATION LIMIT ug/kg	QUALIFIER(s)
1,4-Dichlorobenzene	106-46-7	<120000	120000	
1,2-Dichlorobenzene	95-50-1	<120000	120000	

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LOCKHEED ANALYTICAL SERVICESSPIKED SAMPLE RESULT
VOLATILE ORGANICS BY GC/MSClient Sample ID: BOHGJ2
Date Collected: 18-JUN-96
Date Analyzed: 28-JUN-96LAL Sample ID: 38533MSD
Date Received: 22-JUN-96
Analytical Dilution: 200
Analytical Batch ID: 062896-8260-E1
Preparation Dilution: 125.

Percent Moisture: N/A

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	0.00% *	77-127
Toluene-d8	0.00% *	84-120
Bromofluorobenzene	0.00% *	78-125

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL QUANTITATION LIMIT ug/kg	DATA QUALIFIER(S)
Dichlorodifluoromethane	75-71-8	5000000	130000	
Chloromethane	74-87-3	<130000	130000	
Vinyl Chloride	75-01-4	<130000	130000	
Bromomethane	74-83-9	<130000	130000	
Chloroethane	75-00-3	<130000	130000	
Trichlorofluoromethane	75-69-4	<130000	130000	
Freon 113	76-13-1	<250000	250000	
Acetone	67-64-1	<250000	250000	
1,1-Dichloroethene	75-35-4	<130000	130000	
Carbon Disulfide	75-15-0	<130000	130000	
Methylene Chloride	75-09-2	<130000	130000	
trans-1,2-Dichloroethene	156-60-5	<130000	130000	
Vinyl Acetate	108-05-4	<250000	250000	
1,1-Dichloroethane	75-34-3	<130000	130000	
2-Butanone	78-93-3	<250000	250000	
cis-1,2-Dichloroethene	156-59-2	<130000	130000	
Chloroform	67-66-3	<130000	130000	
2-Hexanone	591-78-6	<250000	250000	
1,1,1-Trichloroethane	71-55-6	<130000	130000	
Carbon tetrachloride	56-23-5	<130000	130000	
1,2-Dichloroethane	107-06-2	<130000	130000	
Benzene	71-43-2	<130000	130000	
Trichloroethene	79-01-6	<130000	130000	
1,2-Dichloropropane	78-87-5	<130000	130000	
Bromodichloromethane	75-27-4	<130000	130000	
2-Chloroethylvinylether	110-75-8	<500000	500000	
4-Methyl-2-Pentanone	108-10-1	<250000	250000	
cis-1,3-Dichloropropene	10061-01-5	<130000	130000	
Toluene	108-88-3	<130000	130000	
trans-1,3-Dichloropropene	10061-02-6	<130000	130000	
1,1,2-Trichloroethane	79-00-5	<130000	130000	
Tetrachloroethene	127-18-4	<130000	130000	
Dibromochloromethane	124-48-1	<130000	130000	
Chlorobenzene	108-90-7	<130000	130000	
Ethylbenzene	100-41-4	<130000	130000	
m,p-Xylene	136777-61-2	<130000	130000	
o-Xylene	95-47-6	<130000	130000	
Styrene	100-42-5	<130000	130000	
Bromoform	75-25-2	<130000	130000	
1,1,2,2-Tetrachloroethane	79-34-5	<130000	130000	
1,3-Dichlorobenzene	541-73-1	<130000	130000	

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LOCKHEED ANALYTICAL SERVICES

SPIKED SAMPLE RESULT

VOLATILE ORGANICS BY GC/MS

Client Sample ID: BOHGJ2
Date Collected: 18-JUN-96
Date Analyzed: 28-JUN-96

LAL Sample ID: 38533MSD
Date Received: 22-JUN-96
Analytical Dilution: 200
Analytical Batch ID: 062896-8260-E1
Preparation Dilution: 125.

Percent Moisture: N/A

CONSTITUENT	CAS NO.	RESULT ug/kg	PRACTICAL	DATA
			QUANTITATION LIMIT ug/kg	QUALIFIER(s)
1,4-Dichlorobenzene	106-46-7	<130000	130000	
1,2-Dichlorobenzene	95-50-1	<130000	130000	

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LOCKHEED ANALYTICAL SERVICES

MATRIX SPIKE DATA SUMMARY

VOLATILE ORGANICS BY GC/MS

Client Sample ID: BOHGJ2
 Date Collected: 18-JUN-96
 Date Analyzed: 28-JUN-96

LAL Sample ID: 38533MS
 Date Received: 22-JUN-96
 Analytical Dilution: 200
 Analytical Batch ID: 062896-8260-E1
 Preparation Dilution: 124.

Percent Moisture: N/A

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	0.00% *	77-127
Toluene-d8	0.00% *	84-120
Bromofluorobenzene	0.00% *	78-125

Constituent	Spike Added ug/kg	Sample Concentration ug/kg	MS Concentration ug/kg	% Recovery	QC Limits
					% Recovery
1,1-Dichloroethene	6210	0.000	0.000	0.00*	54-138
Benzene	6210	0.000	0.000	0.00*	70-130
Trichloroethene	6210	0.000	0.000	0.00*	57-132
Toluene	6210	0.000	0.000	0.00*	71-129
Chlorobenzene	6210	0.000	0.000	0.00*	72-128

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LOCKHEED ANALYTICAL SERVICESMATRIX SPIKE DUPLICATE DATA SUMMARY
VOLATILE ORGANICS BY GC/MSClient Sample ID: BOHGJ2
Date Collected: 18-JUN-96
Date Analyzed: 28-JUN-96LAL Sample ID: 38533MSb
Date Received: 22-JUN-96
Analytical Dilution: 200
Analytical Batch ID: 062896-8260-E1
Preparation Dilution: 125.

Percent Moisture: N/A

SURROGATE	RECOVERY	QC Limits
1,2-Dichloroethane-d4	0.00% *	77-127
Toluene-d8	0.00% *	84-120
Bromofluorobenzene	0.00% *	78-125

Constituent	Spike Added ug/kg	MSD Concentration ug/kg	% Recovery	RPD	QC Limits	
					RPD	% Recovery
1,1-Dichloroethene	6230	0.000	0.00*	0	22	54-138
Benzene	6230	0.000	0.00*	0	21	70-130
Trichloroethene	6230	0.000	0.00*	0	24	57-132
Toluene	6230	0.000	0.00*	0	21	71-129
Chlorobenzene	6230	0.000	0.00*	0	21	72-128

LOCKHEED ANALYTICAL SERVICES

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Instrument ID: GC/MS-E

Date/Time Analyzed: 28-JUN-96 15:56
LAL Batch ID: 062896-8260-E1

		IS1 (PFB) Area	RT	IS2 (DFB) Area	RT	IS3 (CBZ) Area	RT	IS4 (DCB) Area	RT
12 HOUR STD		616096	11.08	1043663	12.21	957609	16.33	865145	20.37
UPPER LIMIT		1232192	11.58	2087326	12.71	1915218	16.83	1730290	20.87
LOWER LIMIT		308048	10.58	521831	11.71	478804	15.83	432572	19.87
Client Sample ID	LAL Sample ID								
BOHGJ2	38533MS	671277	11.09	1137864	12.23	1039889	16.34	837894	20.36
BOHGJ2	L7303-2	677144	11.11	1178380	12.23	1002127	16.33	706653	20.37
BOHGJ2	L7303-2	678988	11.09	1161338	12.24	1050221	16.35	838299	20.37
NBCB\GDBGW00103	L7311-1	557020	11.08	955185	12.22	885851	16.33	706991	20.36
NBCB\GDBGW01D03	L7311-4	535732	11.08	932434	12.22	865585	16.33	684631	20.36
NBCB\GDBTW00103	L7311-7	541378	11.07	957882	12.22	875536	16.33	677894	20.36
NBCA\GDATW00303	L7317-5	621066	11.09	1079853	12.23	982351	16.34	793006	20.37
NBCA\GDAGW00303	L7317-8	560106	11.08	976253	12.22	900135	16.34	706156	20.37
NBCB\GDBTW00303	L7320-1	609475	11.08	1055668	12.22	958502	16.34	763689	20.37
Method Blank	MB38533	629187	11.09	1055699	12.22	989911	16.34	798515	20.37
BOHGJ2	38533MSD	639902	11.09	1090137	12.23	1001593	16.34	791073	20.37
Lab Ctrl Sample	LCS38533	669544	11.10	1144165	12.23	1030791	16.35	934284	20.37
Method Blank	38533MB-1	667898	11.09	1131704	12.22	1007906	16.33	836313	20.37
Lab Ctrl Sample	38533LCS-1	663501	11.10	1158912	12.22	1069046	16.34	943878	20.37

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = -50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

IS1 (PFB) = Pentafluorobenzene
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (CBZ) = Chlorobenzene-d5
 IS4 (DCB) = 1,4-Dichlorobenzene-d4