

START 9713523.1676

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

LK7302-LAS, MN

0046383

LOCKHEED MARTIN



July 29, 1996

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



RE:	Log-in No.:	L7302
	Quotation No.:	Q400000-B
	SAF:	B96-125
	Document File No.:	0622596A
	BHI Document Control No.:	379
	SDG No.:	LK7302

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. Methods 8260 and 8270 were deleted from the login due to insufficient sample volume.

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 M. Hall at (509) 375-4741.

"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.: L7302
Quotation No.: Q400000-B
SAF: B96-125
Document File No.: 0622596A
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SDG No.: LK7302
Page 1

CASE NARRATIVE INORGANIC TCLP METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: instrument tune (ICP/MS only), initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), ICP interference check samples (ICP only), serial dilutions, analytical (post-digestion) spike samples, 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 L7302 and were prepared and analyzed in batch 622 bh2 for TCLP metals. The samples were analyzed by Method 7000 Furnace Metals for arsenic, selenium and lead, Method 7470 Mercury and Method 6010 ICP Metals for all other analytes.

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 (130%), selenium (128%) and mercury (57%) were outside of acceptance limits. The recoveries based on the LCS (arsenic 108.2%, selenium 108% and mercury 105%) support that the analytical system was operating within control limits.
- The duplicate sample precision for lead was outside of acceptance limits. All associated samples are flagged with an "**".

Shellee McGrath
Prepared By

July 29, 1996
Date

9713523.1678 Revised

LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (1n01)
Jul 16 1996, 03:24 pm

Login Number: L7302
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
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* L7302-1 BOHGZO 19-JUN-96 22-JUN-96 07-JUL-96
 TEMP 2; SAF# B96-125, SAMPLING REQUIREMENTS IN ORDER=ACTIVITY SCAN,
 IGNITABILITY, METALS BY ICP, MERCURY, CYANIDE, SULFIDES, VOA, SEMI-VOA, TICS,
 TCLP=(M)
 Location: RFG19-105C
 Liq. Waste 7 S 1010 IGNITABILITY Hold:26-JUN-96
 Liq. Waste 7 S 1311 TCLP REG. EXTR. Hold:03-JUL-96
 TCLP Extr 13 S 6010 ICP METALS Hold:16-DEC-96
 TCLP Extr 13 S 7000 FURNACE METALS Hold:16-DEC-96
 TCLP Extr 13 S 7470 MERCURY Hold:17-JUL-96
 Liq. Waste 7 S SCREENING Hold:16-DEC-96

L7302-2 REPORT TYPE 22-JUN-96 22-JUN-96 07-JUL-96
 SAF# B96-125
 Location:
 Water 1 S EDD - DISK DEL.
 Water 1 S GCMS2
 Water 1 S INORG TYPE 2 RPT

* Deleted 8260 & 8270 Semi-VOA.
Not enough sample to perform analysis.

Signature: Dorothy L Burns
Date: 07-16-96 00 7

07-21-96

9713523.1679

LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Jul 03 1996, 11:54 am

Login Number: L7302
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
L7302-1	BOHGZO	19-JUN-96	22-JUN-96	07-JUL-96
TEMP 2; SAF# B96-125, SAMPLING REQUIREMENTS IN ORDER=ACTIVITY SCAN, IGNITABILITY, METALS BY ICP, MERCURY, CYANIDE, SULFIDES, VOA, SEMI-VOA, TICs, TCLP=(M) Location: 133				
Liq. Waste 7	S 1010	IGNITABILITY	Hold: 26-JUN-96	
Liq. Waste 7	S 1311	TCLP REG. EXTR.	Hold: 03-JUL-96	
TCLP Extr 13	S 6010	ICP METALS	Hold: 16-DEC-96	
TCLP Extr 13	S 7000	FURNACE METALS	Hold: 16-DEC-96	
TCLP Extr 13	S 7470	MERCURY	Hold: 17-JUL-96	
Liq. Waste 7	S 8240	VOLATILES	Hold: 03-JUL-96	
Liq. Waste 7	S 8270	SEMI-VOLATILES	Hold: 03-JUL-96	
Liq. Waste 7	S	SCREENING	Hold: 16-DEC-96	
L7302-2	REPORT TYPE	22-JUN-96	22-JUN-96	07-JUL-96
SAF# B96-125 Location:				
Water 1	S	EDD - DISK DEL.		
Water 1	S	GCMS2		
Water 1	S	INORG TYPE 2 RPT		

* Removed 335.2 TOTAL CYANIDE; TO30 SULFIDE
INSUFFICIENT SAMPLE REMAINING

Page 1

Signature: R. Callan

Date: 7-3-96

00 8
C.G. 7-594A

9713523.1680

LOCKHEED ANALYTICAL SERVICES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Jun 24 1996, 03:42 pm

Login Number: L7302
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
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L7302-1	BOHGZO	19-JUN-96	22-JUN-96	07-JUL-96
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TEMP 2; SAF# B96-125, SAMPLING REQUIREMENTS IN ORDER=ACTIVITY SCAN,
IGNITABILITY, METALS BY ICP, MERCURY, CYANIDE, SULFIDES, VOA, SEMI-VOA, TICs,
TCLP=(M)

Location: 157

Liq. Waste	7	S	1010	IGNITABILITY	Hold:26-JUN-96
Liq. Waste	7	S	1311	TCLP REG. EXTR.	Hold:03-JUL-96
Liq. Waste	7	S	335.2	CYANIDE TOTAL	Hold:03-JUL-96
TCLP Extr	13	S	6010	ICP METALS	Hold:16-DEC-96
TCLP Extr	13	S	7000	FURNACE METALS	Hold:16-DEC-96
TCLP Extr	13	S	7470	MERCURY	Hold:17-JUL-96
Liq. Waste	7	S	8240	VOLATILES	Hold:03-JUL-96
Liq. Waste	7	S	8270	SEMI-VOLATILES	Hold:03-JUL-96
Liq. Waste	7	S	9030	SULFIDE	Hold:26-JUN-96
Liq. Waste	7	S		SCREENING	Hold:16-DEC-96

L7302-2	REPORT TYPE	22-JUN-96	22-JUN-96	07-JUL-96
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SAF# B96-125

Location:

Water	1	S	EDD - DISK DEL.
Water	1	S	GCMS2
Water	1	S	INORG TYPE 2 RPT

Page 1

Signature: *A. Mills*

Date: 6-24-96

00 9

0622590A

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

L7302

Data Turnaround
 Priority
 Normal

Collector Doug Bowers	Company Contact Patty Huff	Telephone 373-4566
Project Designation Waste container 100N-96-0200	Sampling Location 100N waste pad	SAF No. B96-125
Ice Chest No. B.114	Field Logbook No. EFL 1133-1	Method of Shipment Air freight
Shipped To Lockheed	Offsite Property No. W96-0-0640-50	Bill of Lading/Air Bill No. 2909658732

Possible Sample Hazards/Remarks	Preservation	none
	Type of Container	original (P) container
	No. of Container(s)	1
	Special Handling and/or Storage	Volume 500 mL

SAMPLE ANALYSIS

Sample No.	Matrix*	Date Sampled	Time Sampled												
BOHG30	L	6-17-96 7/16/96-17-96	1416	X											

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By Doug Bowers	Date/Time 6-19-96/1531	Received By Patty Huff	Date/Time 6-19-96
Relinquished By Patty Huff	Date/Time 6-21-96	Received By [Signature]	Date/Time [Signature]
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS
 Due to limited sample volume, preform sampling in order listed on the field sampling requirements.
 Item #1 Activity scan, Ignitability, Metals by ICP, Mercury, Cyanide, Sulfides, VOA, Semi-VOA.

- Matrix*
- S - Soil
 - SE - Sediment
 - SO - Solid
 - SL - Sludge
 - W - Water
 - O - Oil
 - A - Air
 - DS - Drum Solids
 - DL - Drum Liquids
 - T - Tinous
 - WI - Wipe
 - L - Liquid
 - V - Vegetation
 - X - Other

LABORATORY SECTION	Received By [Signature]	Title Sample Custodian	Date/Time 6-22-96/0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

9713523-1081
 181-29616

Figure 4.b. NPIC WASTE CERTIFICATION

The undersigned certifies that, to the best of his/her knowledge, that the waste addressed on uniform hazardous waste manifest/item number _____ was generated or stored in an area where there is a potential for contamination due to the presence of unencapsulated or unconfined radioactive material.

It is additionally certified that while the waste was in the location described by the paragraph above, the waste was in a form or location which could not be internally contaminated (aerosol cans, sealed containers, fluorescent light tubes, etc.). The waste's exterior and/or container have additionally met all of the external radiation release requirements of WHC-CM 1-6 (WHC Radiological Control Manual) and DOE Order 5400.5.

Description of Process Knowledge:

: 100N-96-0200
This container contains liquid from punctured aerosol cans (2) - The aerosol cans were originally in a zone - The cans were clean & released from the zone - This waste is NOT radioactive

Pat Huff
Name (print)

Pat Huff
Signature

6/10/96
Date

Shipper
Title

1330N/100N
Facility

BHI
Contractor

o.k per Jim Parsons on phone call 6-19-96 @ 1/36

Post-it Fax Note	7871	Date	6/19	# of pages	1
To	Doug Bowers	From	Lawrence		
Co/Dept.		Co.			
Phone #		Phone #	2-9534		
Fax #	(6-385)	Fax #			

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number L7302

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 form 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>	_____

Almille 6-24-96
primary review signature date

Almille 6-24-96
secondary review signature date

0012 0622596A

SAMPLE CHECK-IN LIST

Date/Time Received: 6-22-96/0930

SDG#: U/A

Work Order Number: N/A

SAF #: 896-125

Shipping Container ID: BILLY

Chain 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:
 tape hazard labels
 custody seals appropriate sample labels

8. Samples are:
 in good condition leaking
 broken have air bubbles

9. Is the information on the COC and Sample bottles in agreement?
 Yes No

Notes: _____

Sample Custodian/Laboratory: Am Miller Date: 6-24-96

Telephoned To: Kendrick Hall On 6-24-96 By Anthony Miller

Lockheed Analytical Services
Sample Receiving Checklist

Client Name: *Bechtel-Hanford*

Job No. *27302*

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>ML</i>
are samples bi-phasic (if so, indicate sample ID'S):			<i>ML</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: *[Signature]* *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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014
0102X5461

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LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHGZO	Date Collected: 19-JUN-96
Matrix: Liq. Waste	Date Received: 22-JUN-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Ignitability	deg F	1010	6.0	N/A		26-JUN-96	38460	L7302-1

9713523.1687

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHGZO	Date Collected: 19-JUN-96
Matrix: TCLP Extr	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, TCLP	mg/l	6010	0.20	0.080	10.	B	1	05-JUL-96	38492	L7302-1
Cadmium, TCLP	mg/l	6010	< 0.030	0.030	0.10	U	1	05-JUL-96	38492	L7302-1
Chromium, TCLP	mg/l	6010	0.20	0.060	0.50	B	1	05-JUL-96	38492	L7302-1
Silver, TCLP	mg/l	6010	< 0.060	0.060	0.50	U	1	05-JUL-96	38492	L7302-1
Arsenic, TCLP	mg/L	7060	0.23	0.030	0.10	NS	1	05-JUL-96	38493	L7302-1
Lead, TCLP	mg/L	7421	0.55	0.020	0.030	*	1	05-JUL-96	38493	L7302-1
Selenium, TCLP	mg/L	7740	< 0.030	0.030	0.050	UN	1	05-JUL-96	38493	L7302-1
Mercury, TCLP	mg/l	7470	< 0.0020	0.0020	0.020	NU	1	08-JUL-96	38494	L7302-1

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