

0713507 2940  
**START**

LK22-LAS

192

0045979



# *Lockheed Analytical Services*

*BECHTEL HANFORD, INC.*

ANALYTICAL DATA REPORT

FOR

MERCURY



**RECORD COPY**

LOG-IN NUMBER: L3362  
QUOTATION NUMBER: Q400000-B  
SAF: B94-068  
DOCUMENT FILE NUMBER: 1119596A  
WHC DOCUMENT CONTROL NO.: 106  
SDG NUMBER: LK22



*Environmental Systems & Technologies, Inc.*

Lockheed Analytical Services  
975 Kelly Johnson Drive  
Las Vegas, Nevada 89119-3705

November 23, 1994

Phone: (702) 361-0220  
Phone: (800) 582-7605  
Fax: (702) 361-8146

Ms. Doris Ayres  
Bechtel Hanford, Inc.  
345 Hills P.O. Box 969  
Richland, WA 99352

RE: Log-in No.: L3362  
Quotation No.: Q400000-B  
SAF: B94-068  
Document File No.: 1119596A  
WHC Document File No.: 106  
SDG No.: LK22

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 19 November 1994.

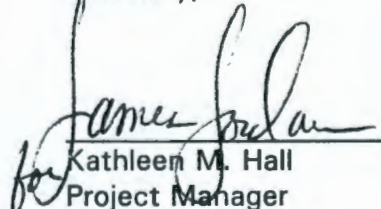
The temperature of the cooler upon receipt was 2°C. Sample containers received agree with the chain-of-custody documentation. Sample containers were received intact. Samples were received in time to meet the analytical holding time requirements.

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) 943-4423.

" 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  
Project Manager

knh:sm

cc: Client Services  
Document Control

## CASE NARRATIVE INORGANIC 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).

### Holding Times-

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

### Method Blanks-

The method blanks were free of contamination.

### Internal Quality Control-

All Internal Quality Control were within acceptance limits.

Shellee McGrath  
Prepared By

November 23, 1994  
Date

## TOTAL METALS RESULTS

Client Sample ID: BOD9F8	Date Collected: 11-16-94	Matrix: water
LAL Batch ID(s): 1119 wh	Date Received: 11-19-94	

Constituents	Method	Concentration (mg/L)	IDL (mg/L)	RDL (mg/L)	Data Qualifier(s)	Date Analyzed	LAL ID
Mercury	CLP	<0.0002	0.0002	0.0002	U	11-22-94	L3362-5

Comments:
-----------

## TOTAL METALS RESULTS

Client Sample ID: BOD9F9	Date Collected: 11-16-94	Matrix: water
LAL Batch ID(s): 1119 wh	Date Received: 11-19-94	

Constituents	Method	Concentration (mg/L)	IDL (mg/L)	RDL (mg/L)	Data Qualifier(s)	Date Analyzed	LAL ID
Mercury	CLP	0.00067	0.0002	0.0002		11-22-94	L3362-6

Comments:

9713507.2945

### TOTAL METALS RESULTS

Client Sample ID: BOD9G0	Date Collected: 11-16-94	Matrix: water
LAL Batch ID(s): 1119 wh	Date Received: 11-19-94	

Constituents	Method	Concentration (mg/L)	IDL (mg/L)	RDL (mg/L)	Data Qualifier(s)	Date Analyzed	LAL ID
Mercury	CLP	<0.0002	0.0002	0.0002	U	11-22-94	L3362-7

Comments:

7  
7AC

## TOTAL METALS RESULTS

Client Sample ID: BOD9G1	Date Collected: 11-16-94	Matrix: water
LAL Batch ID(s): 1119 wh	Date Received: 11-19-94	

Constituents	Method	Concentration (mg/L)	IDL (mg/L)	RDL (mg/L)	Data Qualifier(s)	Date Analyzed	LAL ID
Mercury	CLP	<0.0002	0.0002	0.0002	U	11-22-94	L3362-8

Comments:

## TOTAL METALS QC DATA SUMMARY

LAL Batch ID(s): 1119 wh

Constituent	Client Sample ID	LAL Sample ID	Date Analyzed	QC Sample Analyses		
				Reagent Blank (mg/L)	Duplicate Precision (% RPD)	Matrix Spike Recovery (%)
Mercury	BOD9F8	L3362-5	11-22-94	<0.0002	b	111

"b" - The RPD cannot be computed, because the sample or the duplicate concentration was below the Reporting Detection Limit.

Comments:



9713507.2948

TOTAL METALS QC DATA SUMMARY

LAL Batch ID(s): 1119-wb

Constituent	Client Sample ID	LAL Sample ID	Date Analyzed	Reagent Blank (mg/L)	QC Sample Analyses		
					Duplicate Precision (% RPD)	LCS Recovery (%)	Matrix Spike Recovery (%)
Mercury	BOD9F8	L3362-b	11-22-94	<0.0002	b	104	111

"b" - The RPD cannot be computed, because the sample or the duplicate concentration was below the Reporting Detection Limit.

Comments:

98  
788

971507.2949

LOGIN CHAIN OF CUSTODY REPORT (ln01)  
Nov 21 1994, 10:24 am

Login Number: L3362  
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
L3362-1 temp 2 Location: 157 Water 1 S SCREENING	BOD9F8	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:15-MAY-95		
L3362-2 temp 2 Location: 157 Water 1 S SCREENING	BOD9F9	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:15-MAY-95		
L3362-3 temp 2 Location: 157 Water 1 S SCREENING	BOD9G0	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:15-MAY-95		
L3362-4 temp 2 Location: 157 Water 1 S SCREENING	BOD9G1	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:15-MAY-95		
L3362-5 temp 2 Location: 157 Water 1 S CLP MERCURY	BOD9F8	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:14-DEC-94		
L3362-6 temp 2 Location: 157 Water 1 S CLP MERCURY	BOD9F9	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:14-DEC-94		
L3362-7 temp 2 Location: 157 Water 1 S CLP MERCURY	BOD9G0	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:14-DEC-94		
L3362-8 temp 2 Location: 157 Water 1 S CLP MERCURY	BOD9G1	16-NOV-94	19-NOV-94	23-NOV-94
		Hold:14-DEC-94		
L3362-9 Location: Water 1 S EDD - DISK DEL. Water 1 S INORG TYPE 2 RPT	REPORT TYPE	21-NOV-94	19-NOV-94	23-NOV-94

Signature: Mumll  
Date: 11-21-94

1119596

L3362

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Data Turnaround

Priority  
 Normal

Collector <b>Doug Bowers</b>	Company Contact <b>Mike Frank</b>	Telephone No. <b>376-2731</b>
Project Designation <b>200 BP-5 Tank Characterization Unit 2</b>	Sampling Location <b>200 West</b>	SAF No. <b>894-068</b>
Ice Chest No.	Field Logbook No. <b>N/A</b>	Method of Shipment <b>Hand deliver</b>
Shipped To <b>Quenterra 11-17-94 Lockheed</b>	Offsite Property No. <b>W95-0-0073-28</b>	Bill of Lading/Air Bill No. <b>1402135149</b>

Possible Sample Hazards/Remarks unknown	Preservative	HNO3	NONE	NONE															
	Type of Container	G	G/P	P/G															
	No. of Container(s)	1	1	1															
	Volume	1 L	20mL	20 mL															
Special Handling and/or Storage store at 4 C	AA Metals-Mercury	ACTIV-ITY-SCREEN	TOTAL ACTIV-ITY																

SAMPLE ANALYSIS

Sample No.	Matrix *	Date Sampled	Time Sampled																
BOD9F8	W	11-16-94	0940	X	X														
BOD9F9	W	11-16-94	0949	X	X														
BOD9G0	W	11-16-94	1025	X	X														
BOD9G1	W	11-16-94	1030	X	X														

9715507-2950

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix *
Relinquished By <i>Doug Bowers</i>	Date/Time 0830	Received By <i>Paul C. Davis</i>	Date/Time 11-17-94
Relinquished By <i>Paul C. Davis</i>	Date/Time 0830	Received By <i>Mike Frank</i>	Date/Time 11-17-94
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

THESE SAMPLES FOR MERCURY ANALYSIS ONLY OFF OF THIS SAF.

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

LABORATORY SECTION	Received By <i>Paul C. Davis</i>	Title Sample Custodian	Date/Time 11-19-94 16:00
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

111959104

9713507.2951

SAMPLE STATUS REPORT FOR N 3849. RAD SCREEN BOD9F9 TIME: 11/17/94 7:49  
DISPATCHED: 11/15/94 15:17 SAMPLE HAS NOT BEEN SLURPED  
RECEIVED: 11/17/94 5:53

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	*****	*****	***	***	*****
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	P51HC

END OF REPORT

12

.....

9713507.2952

SAMPLE STATUS REPORT FOR N 3848. RAD SCREEN BOD9F8 TIME: 11/17/94 7:49  
DISPATCHED: 11/15/94 15:17 SAMPLE HAS NOT BEEN SLURPED  
RECEIVED: 11/17/94 5:52

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	*****	*****	***	***	*****
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	P51HC

END OF REPORT

9713507.2953

SAMPLE STATUS REPORT FOR N 3851. RAD SCREEN BOD9G1 TIME: 11/17/94 7:49  
 DISPATCHED: 11/15/94 15:17 SAMPLE HAS NOT BEEN SLURPED  
 RECEIVED: 11/17/94 5:53

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	*****	*****	***	***	*****
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	P51HC

END OF REPORT

9713507 2954

SAMPLE STATUS REPORT FOR N 3850. RAD SCREEN BOD9G0 TIME: 11/17/94 7:49  
 DISPATCHED: 11/15/94 15:17 SAMPLE HAS NOT BEEN SLURPED  
 RECEIVED: 11/17/94 5:53

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	*****	*****	***	***	*****
4271	TOT-ACT	< 5.00000E 01 pCi/G	N	Y	P51HC

END OF REPORT

15

1119 < G.

Login Review Checklist

Lot Number L3362

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

Sample Summary Report

Yes No

N/A

- |    |  |          |          |          |
|----|--|----------|----------|----------|
| 1. | Are all sample IDs correct?  | <u>Y</u> | <u>—</u> | <u>—</u> |
| 2. | Are all samples present?   | <u>Y</u> | <u>—</u> | <u>—</u> |
| 3. | Are all matrices correct?<br><small>(e.g., TCLP analyses should be on a TCLP leachate, field blanks should be water)</small>   | <u>Y</u> | <u>—</u> | <u>—</u> |
| 4. | Are all analyses on the chain of custody/login quotation included?   | <u>Y</u> | <u>—</u> | <u>—</u> |
| 5. | Are analyses logged in for the correct container?<br><small>(e.g., analyses requiring preservation logged in for a preserved container and vice versa)</small>   | <u>Y</u> | <u>—</u> | <u>—</u> |
| 6. | Are samples logged in according to laboratory batching procedures?<br><small>(e.g., TCLP regular leaching and associated metals/semivolatiles organics should be logged in on the same bottle)</small> | <u>Y</u> | <u>—</u> | <u>—</u> |

Login Chain of Custody Report

- |    |  |          |          |          |
|----|--|----------|----------|----------|
| 1. | Are the Collect, Receive, and Due dates correct for every sample?  | <u>Y</u> | <u>—</u> | <u>—</u> |
| 2. | Have appropriate sample comments been included?<br><small>(e.g., MS/MSD designation, comments from the client concerning method modifications)</small> | <u>Y</u> | <u>—</u> | <u>—</u> |

Sample Receiving Checklist

- |    |  |
|----|--|
| 1. | Are any discrepancies between the chain of custody and the login noted? <u>—</u> <u>—</u> <u>N/A</u><br><small>(e.g., client IDs different on chains of custody and bottle labels, samples not sent, samples lost from breakage)</small> |
|----|--|

M. Malle

11-21-94

Derek Henderson 11-21-94

Primary review signature

Date

Secondary review signature

Date



Figure 1

**SAMPLE CHECK-IN LIST**

(1 Per Shipping Container)

Date/Time Received 11-19-94 / 1600 Client Name Westinghouse/Itak Ltd  
 Project/Client # B94-068 Batch or Case # N/A  
 Cooler ID (if noted on outside of cooler) ER-80

1. Condition of shipping container? Bad - corner of cooler smashed in
  2. Custody Seals on cooler intact? Yes  No [ ]
  3. Custody Seals dated and signed? Yes  No [ ]
  4. Chain of Custody record is taped on inside of cooler lid? Yes  No [ ]
  5. Vermiculite/packing material is: Wet [ ] Dry  \_\_\_\_\_
  6. Each sample is in a plastic bag? Yes  No [ ] \_\_\_\_\_
  7. Number of sample containers in cooler: \_\_\_\_\_
  8. Samples have: \_\_\_\_\_ tape \_\_\_\_\_ hazard labels  
                                    custody seals                                    appropriate sample labels
  9. Samples are:                    in good condition                                   \_\_\_\_\_ leaking  
                                   \_\_\_\_\_ broken   \_\_\_\_\_ have air bubbles  
                                   \_\_\_\_\_ other
  10. Coolant Present? Yes  No [ ] Sample Temperature 2°C
  11. The following paperwork should be accounted for (N/A if not applicable):  
     Chain of Custody #(s) N/A  
     Request for Analysis #(s) N/A  
     Airbill # 140 213 5449                                   Carrier Emery
  12. Have any anomalies been identified above? Yes [ ] No [ ] N/A
  13. Memos have been initiated for all anomalies identified above? Yes [ ] N/A
- Printed Name/Signature [Signature] Date/Time 11-21-94

**Lockheed Analytical Services  
Sample Receiving Checklist**

Client Name: *Westhousen / Winkler*

Job No. *L3362*

Cooler ID: *ER-80*

**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>NA</i>
are samples bi-phasic (if so, indicate sample ID'S):			<i>NA</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: *MM [signature] 11-21-94*

Sent to the client (date/initials): *11-21-94*      \*\* 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

9713507.2957

1119594

9713507.2958

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOD9F8 -	L3362-1 L3362-5		Water Water	SCREENING - CLP MERCURY -
BOD9F9 -	L3362-2 L3362-6		Water Water	SCREENING - CLP MERCURY -
BOD9G0 -	L3362-3 L3362-7		Water Water	SCREENING - CLP MERCURY -
BOD9G1 -	L3362-4 L3362-8		Water Water	SCREENING - CLP MERCURY -
REPORT TYPE -	L3362-9 L3362-9		Water Water	EDD - DISK DEL.- INORG TYPE 2 RP1

1  
1119561