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LK 5835

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

LOCKHEED MARTIN



December 15, 1995

Ms. Joan Kessner
Bechtel Hanford, Inc.
P.O. Box 969
1022 Lee Boulevard
Richland, WA 99352



RE: Log-in No.:	L5835
Quotation No.:	Q400000-B
SAF:	B96-035
Document File No.:	1114596
BHI Document File No.:	296
SDG No.:	LK5835

The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 14 November 1995.

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 designated for Hexavalent chromium analysis were not received in time to meet the analytical holding time requirements.

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.

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Lockheed Analytical Services

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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 Manger or a designee, as verified by the following signature."

Sincerely,

A handwritten signature in cursive script that reads "Karen Hermann for". The signature is written in black ink and is positioned above the printed name and title.

Kathleen M. Hall
Client Services Representative

cc: Client Services
Document Control

**CASE NARRATIVE
INORGANIC NON 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

- Two water samples were received for LK5835 and analyzed in batch 1114 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOGRM5	L5835-5	MS, DUP	7196 Chromium (VI)

Holding Time Requirements

- All samples were received outside of the method-specific holding time and are flagged with an "H".

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.

Kay McCann
Prepared By

November 27, 1995
Date

CASE NARRATIVE INORGANIC 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 November 14, 1995. The samples were logged in as L5835 and were prepared and analyzed in batch 1114 bh.

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.

Shellee McGrath
Prepared By

December 15, 1995
Date

LOCKHEED ANALYTICAL SERVICES
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Nov 14 1995, 11:18 am

Login Number: L5835
 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
L5835-1 TEMP 2 Location: 157 Water 1 S SCREENING	BOGRM5	10-NOV-95	14-NOV-95	19-DEC-95
		Hold:08-MAY-96		
L5835-2 TEMP 2 Location: 157 Water 1 S SCREENING	BOGRM6	10-NOV-95	14-NOV-95	19-DEC-95
		Hold:08-MAY-96		
L5835-3 TEMP 2 Location: 157 Water 1 S 218.2 CHROMIUM	BOGRM5	10-NOV-95	14-NOV-95	19-DEC-95
		Hold:08-MAY-96		
L5835-4 TEMP 2 Location: 157 Water 1 S 218.2 CHROMIUM	BOGRM6	10-NOV-95	14-NOV-95	19-DEC-95
		Hold:08-MAY-96		
L5835-5 TEMP 2 Location: 157 Water 1 S 7196 CHROMIUM (VI)	BOGRM5	10-NOV-95	14-NOV-95	19-DEC-95
		Hold:11-NOV-95		
L5835-6 TEMP 2 Location: 157 Water 1 S 7196 CHROMIUM (VI)	BOGRM6	10-NOV-95	14-NOV-95	19-DEC-95
		Hold:11-NOV-95		
L5835-7 Location: Water 1 S EDD - DISK DEL. Water 1 S GERMANN Water 1 S INORG TYPE 2 RPT	REPORT TYPE	14-NOV-95	14-NOV-95	19-DEC-95

Signature: *Paul Davis*
 Date: 11-14-95 0010

1114546

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

L5835

Page 1 of 1

Data Turnaround

-
- Priority
-
-
- Normal

Collector K. Trapp		Company Contact B. D. Blumenkranz			Telephone (509) 372-9658		
Project Designation 100-HR-3 Pump and Treatment		Sampling Location 100-HR-3 Pump and Treat			SAF No. B96-035		
Ice Chest No. 6WS-026		Field Logbook No. NA			Method of Shipment Federal Express		
Shipped To Lockheed		Offsite Property No. W96-0-0640-08			Bill of Lading/Air Bill No. 2904646087		
Possible Sample Hazards/Remarks		Preservation		HNO ₃	Cool 4°C	None	
		Type of Container		P/G	P/G	P	
		No. of Container(s)		1	1	1	
Special Handling and/or Storage Maintain samples between 2°C and 6°C		Volume		500mL	500mL	20mL	
SAMPLE ANALYSIS				Chrom-ium - Total	Chrom-ium VI	Activity Scan	
Sample No.	Matrix*	Date Sampled	Time Sampled				
B0GRM5	W	11/10/95	1007	X	X	X	
B0GRM6	W	11/12/95	1015	X	X	X	
CHAIN OF POSSESSION		Sign/Print Names			SPECIAL INSTRUCTIONS		
Relinquished By K. Trapp		Date/Time 11/13/95	Received By B. Whitten		Date/Time 11-13-95	Matrix*	
Relinquished By B. Whitten		Date/Time 11-13-95	Received By		Date/Time	S = Soil	
Relinquished By		Date/Time	Received By		Date/Time	SE = Sediment	
Relinquished By		Date/Time	Received By		Date/Time	SO = Solid	
Relinquished By		Date/Time	Received By		Date/Time	SL = Sludge	
Relinquished By		Date/Time	Received By		Date/Time	W = Water	
Relinquished By		Date/Time	Received By		Date/Time	O = Oil	
Relinquished By		Date/Time	Received By		Date/Time	A = Air	
Relinquished By		Date/Time	Received By		Date/Time	DS = Drum Solids	
Relinquished By		Date/Time	Received By		Date/Time	DL = Drum Liquids	
Relinquished By		Date/Time	Received By		Date/Time	T = Tissue	
Relinquished By		Date/Time	Received By		Date/Time	WI = Wipe	
Relinquished By		Date/Time	Received By		Date/Time	L = Liquid	
Relinquished By		Date/Time	Received By		Date/Time	V = Vegetation	
Relinquished By		Date/Time	Received By		Date/Time	X = Other	
LABORATORY SECTION	Received By A. Miller	Title Sample Custodian			Date/Time 11-14-95 / 0940		
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By			Date/Time		

Environmental Restoration Contractor **ERC Team**
Interoffice Memorandum

Job No. 22192
Written Response Required: NO
CCN: N/A
OD: R0000-3
TUD: N/A
ERAs: N/A
Subject Code: 5480

TO: Dave Blumenkranz H4-90

DATE: April 26, 1995

COPIES: Doug Bowers N3-05

FROM: Mike Wesselman
Radiological Controls
N3-06/376-2084

Post-it* Fax Note	7671	Date	5/1	# of pages	1
To	D. Bowers	From	D. Blumenkranz		
Co./Dept.	ITH/SAMP.	Co.	CHI/E&S		
Phone #	376-1007	Phone #	372-9658		
Fax #	376-5991	Fax #			

SUBJECT: EXEMPTION OF SAMPLES FROM 100-HR-3 PUMP AND TREAT FROM TOTAL ACTIVITY ANALYSIS.

After reviewing sampling data recorded on GeoDat as well as data from the latest resin change at the unit, it has been concluded that there is no need to perform total activity analysis of water sample from 100-HR-3 prior to offsite shipment. Water from all wells in the area is well below levels which would deliver 100 millirem per year CEDE to any one drinking two liters a day, no water exceeds the 2000 picocurie per gram limit for shipment as non radioactive by Department of Transportation. Activity trends in all wells have been downward for the last twenty years. Sample from the pump and treat system itself indicate less than six picocuries per gram of tritium and less than ten picocuries per liter of both alpha and beta contamination. All discharges of radioactive material to the ground in the 100-D Area have ceased, the actions of the pump and treat system do not appear to be mobilizing previously deposited materials. Based on the above information and the results of total activities performed to date, there is sufficient process knowledge to conclude that preshipment screening of water samples is no longer required.


Mike Wesselman

maw

Distribution

0012

11145416

SAMPLE CHECK-IN LIST

Date/Time Received: 11-14-95 / 9:45 AM

SDG#: 1117

Work Order Number: 1117

SAF #: B96-035

Shipping Container ID: 1117

Chain of Custody # 0.2

- 1. Custody Seals on shipping container intact? Yes No
- 2. Custody Seals dated and signed? Yes No
- 3. Sample temperature 20
- 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: Chromium IV was received PSES Holding Time

Sample Custodian/Laboratory: Paula Davis / LNS Date: 11-14-95
 Telephoned To: KATHLEEN HALL On 11-14-95 By Paula Davis
 PCO 11-14-95

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number LS835

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>	_____

Paula Davis
primary review signature

11-14-95
date

Adm De
secondary review signature

11-14-95 0014
date

1167596

Lockheed Analytical Services Sample Receiving Checklist

Client Name: *Bechtel - Hartford*Job No. *L5835*Cooler ID: *114*

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: *22*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			
are samples bi-phasic (if so, indicate sample ID'S):			<i>None</i>

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times	<input checked="" type="checkbox"/>		<i>Chromium III, was received per spec holding</i>
samples to subcontract			<i>None</i>

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: *Paula Davis 11-14-95*

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

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOGRM5 -	L5835-1		Water	SCREENING -
	L5835-3		Water	218.2 CHROMIUM -
	L5835-5		Water	7196 CHROMIUM (VI)
BOGRM6 -	L5835-2		Water	SCREENING -
	L5835-4		Water	218.2 CHROMIUM -
	L5835-6		Water	7196 CHROMIUM (VI)
REPORT TYPE -	L5835-7		Water	EDD - DISK DEL.-
	L5835-7		Water	INORG TYPE 2 RPT

0016

1114596

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GRM5	Date Collected: 10-NOV-95
Matrix: Water	Date Received: 14-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, hexavalent	mg/L	7196	0.69	0.10	HD(1:5)	15-NOV-95	30269	L5835-5

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GRM6	Date Collected: 10-NOV-95
Matrix: Water	Date Received: 14-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, hexavalent	mg/L	7196	0.47	0.040	HD(1:2)	15-NOV-95	30269	L5835-6

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GRM5	Date Collected: 10-NOV-95
Matrix: Water	Date Received: 14-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	IDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, Total	mg/L	200.7	0.78	0.0010	0.010		1	14-DEC-95	31299	L5835-3

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0GRM6	Date Collected: 10-NOV-95
Matrix: Water	Date Received: 14-NOV-95
Percent Solids: N/A	

Constituent	Units	Method	Result	IDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, Total	mg/L	200.7	0.50	0.0010	0.010		1	14-DEC-95	31299	L5835-4