

**START**

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LK 5386

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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

0044406

**LOCKHEED MARTIN**



October 20, 1995

Ms. Joan Kessner  
Bechtel Hanford, Inc.  
345 Hills  
P.O. Box 969  
Richland, WA 99352

RE:	Log-in No.:	L5386
	Quotation No.:	Q400000-B
	SAF:	B95-053
	Document File No.:	0919596
	BHI Document File No.:	273
	SDG No.:	LK5386



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 19 September 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 were not received in time to meet the analytical holding time requirements for Hexavalent Chromium.

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.

**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,



Kathleen M. Hall  
Client Services Representative

cc: Client Services  
Document Control

**Lockheed Analytical Services**

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## 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 sample were received on September 19, 1995 for LK5386 and analyzed in batch 919 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following sample:

Client ID	LAL #		Method
BOG957	L5386-4	MS, DUP	7196 Hexavalent Chromium

### Holding Time Requirements

- The samples were received outside of holding time and the associated samples 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

September 26, 1995  
 Date

**Lockheed Analytical Services**

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## **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 September 19, 1995. The samples were logged in as L5386 and were prepared and analyzed in batch 919 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

October 20, 1995  
Date

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LOCKHEED ANALYTICAL SERVICES  
 LOGIN CHAIN OF CUSTODY REPORT (ln01)  
 Sep 19 1995, 03:29 pm

Login Number: L5386  
 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
L5386-1 TEMP 2 Location: RFG01-43D Water 1 S SCREENING	BOG957	15-SEP-95	19-SEP-95	24-OCT-95
		Hold:13-MAR-96		
L5386-2 TEMP 2 Location: RFG01-7B Water 1 S 218.2 CHROMIUM	BOG957	15-SEP-95	19-SEP-95	24-OCT-95
		Hold:13-MAR-96		
L5386-3 TEMP 2 Location: RFG01-7B Water 1 S 218.2 CHROMIUM	BOGKW5	15-SEP-95	19-SEP-95	24-OCT-95
		Hold:13-MAR-96		
L5386-4 TEMP 2 Location: RFG01-7B Water 1 S 7196 CHROMIUM (VI)	BOG957	15-SEP-95	19-SEP-95	24-OCT-95
		Hold:16-SEP-95		
L5386-5 TEMP 2 Location: RFG01-7B Water 1 S 7196 CHROMIUM (VI)	BOGKW5	15-SEP-95	19-SEP-95	24-OCT-95
		Hold:16-SEP-95		
L5386-6 Location: Water 1 S EDD - DISK DEL. Water 1 S INORG TYPE 2 RPT	REPORT TYPE	19-SEP-95	19-SEP-95	24-OCT-95

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Signature: Paul LewisDate: 9-19-95

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

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOG957 ~	L5386-1 L5386-2 L5386-4		Water Water Water	SCREENING ~ 218.2 CHROMIUM ~ 7196 CHROMIUM (
BOGKW5 -	L5386-3 L5386-5		Water Water	218.2 CHROMIUM - 7196 CHROMIUM (
REPORT TYPE -	L5386-6 L5386-6		Water Water	EDD - DISK DEL. INORG TYPE 2 RP

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L5386

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector Doug Bowers	Company Contact Dave Blumenkranz	Telephone No. 372-9658
Project Designation HR-3 Treatability Study	Sampling Location 100 D	SAF No. 895-053
Chest No. ER-511	Field Logbook No. EFL 1144-2	Method of Shipment Air Freight
Shipped To Ckheed	Offsite Property No. W95-0-0600-1	Bill of Lading/Air Bill No. 2904640986

Data Turnaround  
 Priority  
 Normal

Visible Sample Hazards/Remarks (Known)	Preservative	HN03	none	none	none
	Type of Container	G/P	G/P	P/G	P/G
Special Handling and/or Storage (1 to 4 C)	No. of Container(s)	1	1	1	1
	Volume	500 ml	500 ml	20 ml	20 ml
SAMPLE ANALYSIS	Chromium - Total				
	Chromium VI				
	Activity Scan				
	Red Screen				

Sample No.	Matrix	Date Sampled	Time Sampled	Chromium - Total	Chromium VI	Activity Scan	Red Screen
B06957	W	9-15-95	1036	X	X	X	
B06KWS	W	9-15-95	1039	Y	Y	X	

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By	Date/Time	Received By	Date/Time
Doug Bowers	9-15-95/1130	Eric B. Whitton	9-15-95
Relinquished By	Date/Time	Received By	Date/Time
Eric B. Whitton	9-15-95		

SPECIAL INSTRUCTIONS  
 Analysis for Chromium (VI) by SU-846 7196 is being requested for information only. The ERC Contractor acknowledges the 24-hour holding time will not be met.

LABORATORY COPY

- 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

LABORATORY SECTION	Received By <i>humb</i>	Title Sample Custodian	Date/Time 9-19-95/0900
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

09/22/95 08:03 LOOK-HEAD ANALYTICAL SERVICES + 509 372 2106 NO. 660 D04

Environmental  
Restoration  
Contractor

# ERC Team

## Interoffice Memorandum

Job No. 22192  
Written Response Required: N  
CCY: N/A  
COT: J000003  
TID: N/A  
ERAs: N/A  
Subject Code: 5000

TO: Dave Blumenkranz H4-90

DATE: April 26, 1995

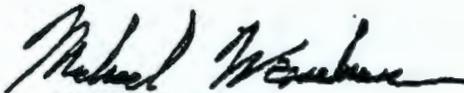
COPIES: Doug Bowers N3-05

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/ELS		
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 picocuries 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-C 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

### SAMPLE CHECK-IN LIST

Date/Time Received: 9-19-95/9:30 AM SDG#: not  
 Work Order Number: not SAF #: B95-053  
 Shipping Container ID: ER-511 Chain of Custody #: not

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: Chromic acid (H2SO4) Hot Day Time

Sample Custodian/Laboratory: Paul Davis/LAS Date: 9-19-95  
 Telephoned To: Kathleen Hehl On 9-19-95 By Paul Davis  
faxed 9-19-95

# LOCKHEED MARTIN



## Sample Login Login Review Checklist

Lot Number L5386

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?	X	—	—	_____
2. Are all samples present?	X	—	—	_____
3. Are all matrices indicated correctly?	X	—	—	_____
4. Are all analyses on the COC logged in for the appropriate samples?	X	—	—	_____
5. Are all analyses logged in for the correct container?	X	—	—	_____
6. Are samples logged in according to LAS batching procedures?	X	—	—	_____

### 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?	X	—	—	_____
2. Have all appropriate comments been indicated in the comment section?	X	—	—	_____

### 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)?	—	—	X	_____

Paula Davis  
primary review signature

9-19-95  
date

[Signature]  
secondary review signature

9-19-95  
date

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Lockheed Analytical Services  
Sample Receiving Checklist

Client Name: *Westinghouse Hanford*

Job No. *L5356*

Cooler ID: *1117*

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt:

*20*  
*20*

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>not</i>

MISCELLANEOUS ITEMS

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

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: *Paul Davis 9-19-95*

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

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## LOCKHEED ANALYTICAL SERVICES

## Sample Results

Client Sample ID: BOG957	Date Collected: 15-SEP-95
Matrix: Water	Date Received: 19-SEP-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	0.89	0.20	HD(1:10)	23-SEP-95	27690	L5386-4

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## LOCKHEED ANALYTICAL SERVICES

## Sample Results

Client Sample ID: BOGKW5	Date Collected: 15-SEP-95
Matrix: Water	Date Received: 19-SEP-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	0.46	0.040	HD(1:2)	23-SEP-95	27690	L5386-5

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LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOG957	Date Collected: 15-SEP-95
Matrix: Water	Date Received: 19-SEP-95
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, Total	mg/L	218.2	0.79	0.025		25	09-OCT-95	27907	L5386-2

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LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOGKW5	Date Collected: 15-SEP-95
Matrix: Water	Date Received: 19-SEP-95
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
Chromium, Total	mg/L	218.2	0.40	0.020		20	09-OCT-95	27907	L5386-3