

Lockheed Environmental Systems & Technologies Co.
Lockheed Analytical Services
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Telephone 702-361-0220 800-582-7605 Facsimile 702-361-8146

LK7417-LAS

0046206

LOCKHEED MARTIN 

July 25, 1996

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

RE: Log-in No.: L7417
Quotation No.: Q400000-B
SAF: B96-092
Document File No.: 0713596
BHI Document File No.: 385
SDG No.: LK7417



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on 13 July 1996.

The temperature of the cooler upon receipt was 5°C. Sample containers received agree with the chain-of-custody documentation. Sample containers were received intact. Samples designated for hexachrome 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 black ink that reads "Kathleen M. Hall" followed by "FOR" in a smaller, less legible script.

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

- One water sample was received for LK7417 and analyzed in batch 713 bh for selected analytes as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOHD45	L7417-3	DUP,MS	7196 Chromium (VI)

Holding Time Requirements

- All samples were received and analyzed outside of the method-specific holding times and the associated sample is flagged with an "H".

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Kay McCann
Prepared By

July 18, 1996
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 July 13, 1996. The samples were logged in as L7417 and were prepared and analyzed in batch 713 bh. The samples were analyzed by Method 200.7 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.

Shellee McGrath
Prepared By

July 24, 1996
Date

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

77417

Date Turnaround

Priority Normal

Collector
Doug Bowers

Company Contact
Mike Stankovich

Telephone No.
372-9626

Project Designation
100-HR-3 Treatability Study for pump & treat process

Sampling Location
100-HR-3

SAF No.
B96-092

Ice Chest No.

Field Logbook No.
EL-1309

Method of Shipment
Air Freight

Shipped To
Locked

Offsite Property No.
W96-0-0314-2

Bill of Lading/Air Bill No.
2904659773

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Preservation	PHN03 to pH \leq	None	None
Type of Container	G	G	P
No. of Container(s)	1	1	1
Volume	500ml	500ml	20ml

Special Handling and/or Storage
Cool between 2 degrees and 4 degrees C.

SAMPLE ANALYSIS

Metals & Trace Elements by ICP - 200.7 (Chromium)

Chromium Hex - 7195

Activity Scan

Sample No.	Matrix *	Sample Date	Sample Time	X	X	X	SP10											
B0HD45	Water	7-11-96	0944	X	X	X	SP10											

CHAIN OF POSSESSION

Sign/Print Names

SPECIAL INSTRUCTIONS

Sample analysis for Chromium VI is requested for information only. The ERC Contractor acknowledges the 24-hour holding time will not be met.

Relinquished By	Date/Time	Relinquished By	Date/Time
ERC	7-11-96	ERC	7-11-96
Doug Bowers	7-11-96	Mike Stankovich	7-11-96
ERC	7-11-96	ERC	7-11-96

Relinquished By	Date/Time	Relinquished By	Date/Time
ERC	7-11-96	ERC	7-11-96
Doug Bowers	7-11-96	Mike Stankovich	7-11-96
ERC	7-11-96	ERC	7-11-96

LABORATORY SECTION: Received By: *[Signature]* Title: *Sample Custodian* Date/Time: *7-13-96/0930*

FINAL SAMPLE DISPOSITION: Disposal Method: *[Blank]* Disposed By: *[Blank]*

713596

MESSAGE CONFIRMATION

SESSION NO. = 129

07/13/96 11:31
ID=LOCKHEED LAB SAMPLE RECEIVING

DATE	TIME	S,R-TIME	DISTANT STATION ID	MODE	PAGES	RESULT
07/13	11:29	02'29"	5093754238	G3 -S	03	OK 0000

0011

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SAMPLE CHECK-IN LIST

Date/Time Received: 7-13-96 / C930

SDG#: None

Work Order Number: None

SAF #: D96-092

Shipping Container ID: _____

Chain of Custody # None

1. Custody Seals on shipping container intact? Yes No
2. Custody Seals dated and signed? Yes No
3. Sample temperature 50
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 <input checked="" type="checkbox"/> custody seals _____ appropriate sample labels

8. Samples are: <input checked="" type="checkbox"/> 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: Paula D. / L125 Date: 7-13-96
FAXED
Telephoned To: Kathleen Hall On 7-13-96 By Paula D.
Per 7-13-96

LOCKHEED MARTIN



Sample Login Login Review Checklist

Lot Number 67417

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>	_____

Paul Davis
primary review signature
2-18-96
date

Paul Davis
secondary review signature
2-18-96
date

0013

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**Lockheed Analytical Services
Sample Receiving Checklist**

Client Name: *Rebecca Hamilton*

Job No. *6.7417*

Cooler ID: *1117*

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: *5°C*

temperature of temp. blank upon receipt:

	Yes	No	* Comments/Discrepancies
custody seals intact	X		
chain of custody present	X		
blue ice (or equiv.) present/frozen	X		
rad survey completed	X		

SAMPLE CONDITION UPON RECEIPT

	Yes	No	* Comments/Discrepancies
all bottles labeled	X		
samples intact	X		
proper container used for sample type	X		
sample volume sufficient for analysis	X		
proper pres. indicated on the COC	X		
VOA's contain headspace			
are samples bi-phasic (if so, indicate sample ID'S):			<i>1117 1117</i>

MISCELLANEOUS ITEMS

	Yes	No	* Comments/Discrepancies
samples with short holding times	X	<i>PLD 7-13-96</i>	<i>C. Hamilton Ki</i>
samples to subcontract		<i>1117</i>	

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: *Paul D Davis 7-13-96*

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 Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BOHD45	L7417-1 L7417-2 L7417-3		Water Water Water	SCREENING 200.7 METALS 7196 CHROMIUM (V
REPOT TYPE	L7417-4 L7417-4		Water Water	EDD - DISK DEL. INORG TYPE 4A RP

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LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: B0HD45	Date Collected: 11-JUL-96
Matrix: Water	Date Received: 13-JUL-96
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	0.83	0.020	H	15-JUL-96	38891	L7417-3

Lockheed Analytical Laboratory
Determination of Hexavalent Chromium
Calibration and Calibration Verification Results

LAL Batch ID: 713-BH
 Work Group: 7196 CHROMIUM (VI)_38891
 Method: 7196 (Hexavalent Chromium)

Calibration Results

Standard Concentration (mg/L)	Measured Instrument Response	Linearized Instrument Response	Calculated Concentration (mg/L)	Standard Recovery (%)
0.000	0.000	0.000	-0.001	
0.025	0.021	0.021	0.025	99
0.050	0.042	0.042	0.051	102
0.100	0.082	0.082	0.101	101
0.200	0.162	0.162	0.201	101
0.250	0.200	0.200	0.249	99

Slope = 1.2499
 Intercept = -0.0015
 Correlation (r) = 0.9999

Measured Instrument Response: Absorbance (540 nm)

Calibration Verification Results

Sample Identification	True Concentration (mg/L)	Found Concentration (mg/L)	Analyte Recovery (%)
ICV	0.1	0.106	106
CCV	0.1	0.101	101

Calibration Blank Results

Sample Identification	Analyte Found (mg/L)
ICB	0.003 U
CCB	0.003 U

Lockheed Analytical Laboratory
Determination of Hexavalent Chromium
Quality Control Results

LAL Batch ID: 713-BH
 Work Group: 7196 CHROMIUM (VI)_38891
 Method: 7196 (Hexavalent Chromium)

Laboratory Control Sample/Duplicate Results (Recovery)

Sample Identification	True Concentration (mg/L)	Found Concentration (mg/L)	Analyte Recovery (%)
LCS	0.05	0.052	105
LCSD	(No LCSD analyzed)		

Laboratory Control Sample/Duplicate Results (Difference)

LCS Result (mg/L)	LCSD Result (mg/L)	Relative Difference (%)	Flag
(No LCSD analyzed)			

Preparation Blank Results

Sample Identification	Analyte Found (mg/L)
PB	0.003 U

Sample Duplicate Results (Difference)

LAL Sample Identification	Sample Result (mg/L)	Duplicate Result (mg/L)	Relative Difference (%)	Flag
L7417-3	0.830	0.836	1	

Spiked Sample/Spike Duplicate Results (Recovery)

LAL Sample Identification	Sample Result (mg/L)	Analyte Added (mg/L)	Spike Result (mg/L)	Spike Recovery (%)	Flag
L7417-3S	0.830	0.25	1.086	102	

Spiked Sample/Spike Duplicate Results (Difference)

Spike Result (mg/L)	Spike Dup Result (mg/L)	Relative Difference (%)	Flag
(No spike duplicate analyzed)			

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOHD45	Date Collected: 11-JUL-96
Matrix: Water	Date Received: 13-JUL-96
Percent Solids: N/A	

Constituent	Units	Method	Result	MDL	RDL	Data Qual	Dilution	Date Analyzed	LAS Batch ID	LAS Sample ID
CHROMIUM	mg/L	200.7	0.81	0.0060	0.010		1	16-JUL-96	38892	L7417-2