



19 January 2004

Mr. Steve Trent  
Fluor Hanford Inc.  
825 Jadwin Ave.  
Richland, WA 99352

**Subject: Contract No. 630  
Analytical Data Package**



Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0312L368
SDG #	H2482
SAF #	F03-020
Date Received	12-15-03
# Samples	1
Matrix	Soil
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
Herbicides	X
GC Alcohol	
Metals	
Inorganics	

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

*Orlette S. Johnson*  
Orlette S. Johnson  
Project Manager

**RECEIVED**  
JUN 21 2004

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**EDMC**

Lionville Laboratory, Inc.  
HBGX ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F03-020 H2482

DATE RECEIVED: 12/15/03

LVL LOT # :0312L368

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B183L3	001	S	03LE1654	12/05/03	12/19/03	12/31/03
B183L3	001 MS	S	03LE1654	12/05/03	12/19/03	12/31/03
B183L3	001 MSD	S	03LE1654	12/05/03	12/19/03	12/31/03

LAB QC:

PBLKTM	MB1	S	03LE1654	N/A	12/19/03	12/31/03
PBLKTM	MB1 BS	S	03LE1654	N/A	12/19/03	12/31/03

*g* 1/15/04

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Analytical Report

Client: TNU HANFORD F03-020
LVL#: 0312L368
SDG/SAF#: H2482/F03-020

W.O.#: 11343-606-001-9999-00
Date Received: 12-15-03

HERBICIDE

One (1) soil sample was collected on 12-05-03.

The sample and its associated QC samples were extracted on 12-19-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 12-31-03. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. Eleven (11) of sixteen (16) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. Confirmation was not required because target compounds were not detected in any of the samples.
10. To the best of my knowledge, this data report is in compliance with the terms and conditions of the purchase order, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant laboratory manager or his/her designee to be accurate as verified by the following signature.

Jain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

Date

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pefr:\group\data\herb\tnu\12L-368.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.

Handwritten initials and a star symbol

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 046023

Initiator: DRYCHLAK  
 Date: 1/15/09  
 Client: TNU

Batch: 0312L368, 369, 424  
 Samples: MS/MSD'S  
 Method: SW846/MCAWW/CLP

Parameter: H2O  
 Matrix: SOIL  
 Prep Batch: 03LE1654, 03LE1655, 03LE1656

## 1. Reason for SDR

a. COC Discrepancy  Tech Profile Error  Client Request  Sampler Error on C-O-C  
 Transcription Error  Wrong Test Code  Other \_\_\_\_\_

### b. General Discrepancy

Missing Sample/Extract  Container Broken  Wrong Sample Pulled  Label ID's Illegible  
 Hold Time Exceeded  Insufficient Sample  Preservation Wrong  Received Past Hold  
 Improper Bottle Type  Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: \_\_\_\_\_

c. Problem (Include all relevant specific results; attach data if necessary) most recoveries low w  
368-001 MS/MSD - associated & BS met criteria all targets (03LE1654)  
369-001 MS/MSD - low recoveries associated & BS (03LE1654) acceptable  
424-001 MS/MSD - several low recoveries - associated BS (03LE1656)  
all target recoveries not criteria  
Narrate

## 2. Known or Probable Causes(s) MATRIX

## 3. Discussion and Proposed Action

Other Description: \_\_\_\_\_

- Re-log
- Entire Batch
- Following Samples: \_\_\_\_\_
- Re-leach
- Re-extract
- Re-digest
- Revise EDD
- Change Test Code to \_\_\_\_\_
- Place On/Take Off Hold (circle)

narrate

## 4. Project Manager Instructions...signature/date: [Signature] 1/15/09

- Concur with Proposed Action
- Disagree with Proposed Action; See Instruction
- Include in Case Narrative
- Client Contacted: \_\_\_\_\_
- Date/Person \_\_\_\_\_
- Add
- Cancel

## 5. Final Action...signature/date: DRYCHLAK 1/15/09

Other Explanation: \_\_\_\_\_

- Verified re-[log][leach][extract][digest][analysis] (circle)
- Included in Case Narrative
- Hard Copy COC Revised
- Electronic COC Revised
- EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
<input type="checkbox"/>	<input checked="" type="checkbox"/> Initiator	<input type="checkbox"/>	<input type="checkbox"/> Metals: Beegle
<input type="checkbox"/>	<input checked="" type="checkbox"/> Lab General Manager M. Taylor	<input type="checkbox"/>	<input type="checkbox"/> Inorganic: Perrone
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Project Mgr: Stone/Johnson/Haslett	<u>2</u>	<input checked="" type="checkbox"/> GC/LO: Kiger
<input type="checkbox"/>	<input checked="" type="checkbox"/> Technical Mgr: Wesson/Daniels	<input type="checkbox"/>	<input type="checkbox"/> MS: Rychlak/Layman
<input type="checkbox"/>	<input checked="" type="checkbox"/> QA (file): Alberts	<input type="checkbox"/>	<input type="checkbox"/> Log-in: Melnic
<input type="checkbox"/>	<input type="checkbox"/> Data Management: Feldman	<input type="checkbox"/>	<input type="checkbox"/> Admin: Soos
<input type="checkbox"/>	<input type="checkbox"/> Sample Prep: Beegle/Kiger	<input type="checkbox"/>	<input type="checkbox"/> Other: _____

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## GLOSSARY OF HERBICIDE DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.

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## GLOSSARY OF HERBICIDE DATA

- P** = This flag is used for an Herbicide target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by HPLC.

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Lionville Laboratory, Inc.  
Herbicides, Special List

Report Date: 01/15/04 10:40

RFW Batch Number: 0312L368

Client: TNUHANFORD F03-020 H2482 Work Order: 11343606001 Page: 1

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	Cust ID:	B183L3	B183L3	B183L3	PBLKTM	PBLKTM BS	
Sample Information	RFW#:	001	001 MS	001 MSD	03LE1654-MB1	03LE1654-MB1	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	D.F.:	1.00	1.00	1.00	1.00	1.00	
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Surrogate:	DCAA	41 %	34 %	45 %	61 %	112 %	
		fl	fl	fl	fl	fl	fl
Dalapon		170 U	35 * %	43 * %	170 U	92 %	
Dicamba		69 U	28 * %	38 * %	67 U	116 %	
Dichloroprop		170 U	35 * %	45 * %	170 U	111 %	
2,4-D		35 U	35 * %	49 %	33 U	120 %	
2,4,5-TP (Silvex)		17 U	50 %	59 %	17 U	110 %	
2,4,5-T		17 U	39 * %	46 * %	17 U	122 %	
2,4-DB		170 U	39 * %	46 * %	170 U	134 %	
Dinoseb		17 U	51 %	60 %	17 U	88 %	

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*Handwritten signature*

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
% = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \* = Outside of EPA CLP QC



FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-020-001		Page 1 of 1	
Collector Pope/Hughes/Pfister		Company Contact Steve Treat		Telephone No. 373-5869		Project Coordinator TRENT, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 216-B-26 Characterization Sampling - Soil Sampling		Sampling Location C3245 (0.5 ft)		SAF No. F03-020		Air Quality <input type="checkbox"/>		45 Days	
Ice Chest No. ERC 02501		Field Logbook No. HNF-N-356-1		COA 119142ESI0		Method of Shipment Federal Express		8001000000	
Shipped To BERLINE SERVICES (Formerly TWA)		Offsite Property No. A040059		Bill of Lading/Air Bill No. S0505PC					
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation Cool 4C					
Special Handling and/or Storage				Type of Container eG					
				No. of Container(s) 1					
				Volume 300ml R 250ml					
SAMPLE ANALYSIS				Cobro- Herbicides - EPAS151					
Sample No.	Matrix *	Sample Date	Sample Time						
B183L3	SOIL	12-5-03	0845	✓		TIF TO	B184P3		
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS			
Relinquished By/Removed From P. REISTER/Roloff		Date/Time 12-5-3 1600		Received By/Stored In JAO-G26 FRIE #1		Date/Time 12-5-3 1600		Personnel not available to relinquish samples from 3728 Ref # 11 on 12/12/03	
Relinquished By/Removed From MO-026 Ref #1		Date/Time 12/8/03		Received By/Stored In Greg Thomas / Greg Thomas		Date/Time 12/8/03			
Relinquished By/Removed From Greg Thomas / Greg Thomas		Date/Time 12/8/03		Received By/Stored In Greg Thomas / Greg Thomas		Date/Time 12/8/03			
Relinquished By/Removed From S. GALEA/John		Date/Time 12-12-03 0930		Received By/Stored In FED EX		Date/Time			
Relinquished By/Removed From B. J. ...		Date/Time 12-15-03 0950		Received By/Stored In P. ...		Date/Time 12-15-03 0950			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

FLUOR Hanford Inc.		CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-020-002	Page 1 of 1	
Collector Pope/Pfister/Hughes	Company Contact Steve Trent	Telephone No. 373-5869	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days			
Project Designation 216-B-26 Characterization Sampling - Soil Sampling	Sampling Location C3245 (9.5-12 ft) (3.5-16.0 ft)	SAF No. E03-020	F03-025	Air Quality	<input type="checkbox"/>			
Ice Chest No. ER 02 501	Field Logbook No. HNF-N-350-1	COA 119142ES10	Method Federal Express	Federal Express				
Shipped To BERLINE SERVICES (Formerly TMA)	Offsite Property No. A040 059	Bill of Lading/Air Bill No. SEE CSPC		SEE CSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS								
Special Handling and/or Storage	Preservation	Cool 4C	None					
	Type of Container	gG	gG					
	No. of Container(s)	1	1					
	Volume	120mL	60mL					
SAMPLE ANALYSIS		Chromium Hex - 7196; NO2/NO3 - 553.2	See item (1) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time					
B183L4	SOIL	12-6-03	14:30				TIE TO B17RT 2	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From		Sign/Print Names		(1) Isotopic Thorium (Thorium-232); Strontium-89,90 -- Total Sr; Nickel-63; Technetium-99; Carbon-14; Tritium - H3; Gamma Spec - Radium (Radium-226, Radium-228)  Personnel not available to Relinquish samples from 3728 Ref # JA on 12/12/03				Matrix * g-Soil SP-Sediment SO-Solid SL-Sludge W-Water O-Oil A-Air DS-Dry Solid DL-Dry Liquid T-Tissue Wf-Wire L-Liquid V-Vegetation X-Other
Date/Time 12/6/03		Received By/Stored In						
Kevin Lucas		MO-026 Fridge #1						
Date/Time 12/8/03		Received By/Stored In						
MO-026 Fridge #1		Greg Thomas & Greg Thomas						
Date/Time 12/8/03		Received By/Stored In						
Greg Thomas & Greg Thomas		Date/Time 12/8/03						
Date/Time 12/12/03		Received By/Stored In						
SKALED/ALB		FED EX						
Date/Time 12-15-03		Received By/Stored In						
FED EX		Date/Time 12-15-03						
Date/Time 0950		Received By/Stored In						
FED EX		Date/Time						
LABORATORY SECTION	Received By	Title				Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time		

**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TNU HANFORD*

Date: *12-15-03*

Purchase Order / Project# /

~~SAF#~~ SOW# / Release #: *F03-020*

LvLI Batch #:

*0312L368*

Sample Custodian:

*V. Kennedy*

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |   |                             |  |                       |
|---|---|-----------------------------|--|-----------------------|
| 1. Samples Hand Delivered or Shipped  | Carrier                                 | <i>FedEx</i>                | Airbill#   | <i>7923 8938 8227</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    | Comments              |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 5. Samples received cooled or ambient?  | Temp                                    | °C                          | Cooler #   | <i>ERC-02-501</i>     |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |                       |
| 7. coc signed and dated?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No |  |                       |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A              |                       |
| 14. QC stickers placed on bottles designated by client?   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A              |                       |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |                       |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies |                       |