

RECEIVED JUNE 24, 2008

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD F08-031 H3731

DATE RECEIVED: 05/07/08

LVL LOT # :0805L066

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1TFT0						
% SOLIDS	001	S	08L%S046	02/14/08	05/12/08	05/12/08
% SOLIDS	001 REP	S	08L%S046	02/14/08	05/12/08	05/12/08
FLUORIDE BY IC	001	S	08LICS38	02/14/08	05/22/08	05/23/08
FLUORIDE BY IC	001 REP	S	08LICS38	02/14/08	05/22/08	05/23/08
FLUORIDE BY IC	001 MS	S	08LICS38	02/14/08	05/22/08	05/23/08
NITRITE BY IC	001	S	08LICS38	02/14/08	05/22/08	05/23/08
NITRITE BY IC	001 REP	S	08LICS38	02/14/08	05/22/08	05/23/08
NITRITE BY IC	001 MS	S	08LICS38	02/14/08	05/22/08	05/23/08
NITRATE BY IC	001	S	08LICS38	02/14/08	05/22/08	05/23/08
NITRATE BY IC	001 REP	S	08LICS38	02/14/08	05/22/08	05/23/08
NITRATE BY IC	001 MS	S	08LICS38	02/14/08	05/22/08	05/23/08
SULFATE BY IC	001	S	08LICS38	02/14/08	05/22/08	05/23/08
SULFATE BY IC	001 REP	S	08LICS38	02/14/08	05/22/08	05/23/08
SULFATE BY IC	001 MS	S	08LICS38	02/14/08	05/22/08	05/23/08

LAB QC:

FLUORIDE BY IC	MB1	S	08LICS38	N/A	05/22/08	05/22/08
FLUORIDE BY IC	MB1 BS	S	08LICS38	N/A	05/22/08	05/22/08
NITRITE BY IC	MB1	S	08LICS38	N/A	05/22/08	05/22/08
NITRITE BY IC	MB1 BS	S	08LICS38	N/A	05/22/08	05/22/08
NITRATE BY IC	MB1	S	08LICS38	N/A	05/22/08	05/22/08
NITRATE BY IC	MB1 BS	S	08LICS38	N/A	05/22/08	05/22/08
SULFATE BY IC	MB1	S	08LICS38	N/A	05/22/08	05/22/08
SULFATE BY IC	MB1 BS	S	08LICS38	N/A	05/22/08	05/22/08

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## Analytical Report

Client: TNU-HANFORD F08-031 H3731  
LVL#: 0805L066

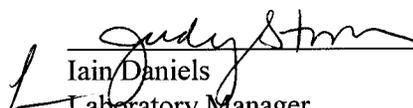
W.O.#: 11343-606-001-9999-00  
Date Received: 05-07-08

### INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.
2. The sample was prepared and analyzed in accordance with the methods indicated on the attached glossary.

LvLI is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvLI certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met as the analysis was performed upon extract preparation.
4. The results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries were within the 75-125% control limits.
8. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.
9. Results for soil samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

6/10/08  
Date

njpl05-066

The results presented in this report relate to the analytical testing and conditions of the samples upon 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 11 pages.

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## WET CHEMISTRY

### METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	___ D2216-80		
% Moisture	___ D2216-80		___ ILMO4.0 (e)
% Solids	___ ✓ D2216-80		___ ILMO4.0 (e)
% Volatile Solids	___ D2216-80		
ASTM Extraction in Water	___ D3987-81/85		
BTU	___ D240-87		
CEC		___ 9081	___ c
Chromium VI		___ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		___ 1110(mod) ___ 9045C	
Cyanide, Total		___ 9010B	___ ILMO4.0 (e)
Cyanide, Reactive		___ Section 7.3/9014	
Halides, Extractable Organic		___ 9020B	___ EPA 600/4/84-008
Halides, Total		___ 9020B	___ EPA 600/4/84-008
EP Toxicity		___ 1310A	
Flash Point		___ 1010	
Ignitability		___ 1010	
Oil & Grease		___ 9071A	
Carbon, Total Organic		___ 9060	___ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	___ D240-87(mod)	___ 5050	
Petroleum Hydrocarbons, Total Recoverable		___ 9071	___ EPA 418.1
pH, Soil		___ 9045C	
Sulfide, Reactive		___ Section 7.3/9030B	
Sulfide		___ 9030B(mod)	
Specific Gravity	___ D1429-76C/	___ D5057-90	
Sulfur, Total		___ 9056	
Synthetic Preparation Leach		___ 1312	
Paint Filter		___ 9095A	
Other: Fluoride, Nitrite	Method: } EPA 300.0		
Other: Nitrate, Sulfate	Method }		

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## METHOD REFERENCES AND DATA QUALIFIERS

### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

### ABBREVIATIONS

- MB = Method or Preparation Blank.  
MS = Matrix Spike.  
MSD = Matrix Spike Duplicate.  
REP = Sample Replicate  
LC = Laboratory Control Sample.  
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

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INORGANICS DATA SUMMARY REPORT 06/06/08

CLIENT: TNUHANFORD F08-031 H3731  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0805L066

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B1TFT0	% Solids	87.4	%	0.01	1.0
		Fluoride by IC	2.5	u MG/KG	2.5	1.0
		Nitrite by IC	2.46	u MG/KG	2.46	1.0
		Nitrate by IC	2.46	u MG/KG	2.46	1.0
		Sulfate by IC	5.0	MG/KG	2.5	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/06/08

CLIENT: TNUHANFORD F08-031 H3731  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0805L066

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LICS38-MB1	Fluoride by IC	2.5	u MG/KG	2.5	1.0
		Nitrite by IC	2.48	u MG/KG	2.48	1.0
		Nitrate by IC	2.48	u MG/KG	2.48	1.0
		Sulfate by IC	2.5	u MG/KG	2.5	1.0

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INORGANICS ACCURACY REPORT 06/06/08

CLIENT: TNUHANFORD F08-031 H3731  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0805L066

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	B1TFT0	Fluoride by IC	106	0.08	106	99.6	1.0
		Nitrite by IC	107	2.46u	106	100.4	1.0
		Nitrate by IC	113	2.46u	106	106.4	2.0
		Sulfate by IC	115	5.0	106	103.3	2.0
BLANK10	08LICS38-MB1	Fluoride by IC	56.0	2.5 u	58.2	96.2	1.0
		Nitrite by IC	55.5	2.48u	58.2	95.3	1.0
		Nitrate by IC	54.7	2.48u	58.2	94.0	1.0
		Sulfate by IC	55.5	2.5 u	58.2	95.3	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/06/08

CLIENT: TNUHANFORD F08-031 H3731  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0805L066

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE RPD		
-001REP	B1TFT0	% Solids	87.4	86.6	0.91	1.0
		Fluoride by IC	2.5 u	2.2 u	NC	1.0
		Nitrite by IC	2.46u	2.17u	NC	1.0
		Nitrate by IC	2.46u	2.17u	NC	1.0
		Sulfate by IC	5.0	5.6	10.7	1.0

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

CLIENT: TNU  
Project/SAF/SOW/Release #: F08-031

Date: 5/7/08

LvLI Batch #:

Sample Custodian: A. Cover

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |  |   |
|---|--|---|
| 1. Samples Hand Delivered or <u>Shipped</u> ?   | Carrier <u>Fed Ex</u>  | Airbill # <u>7920 5168 6529</u>                                     |
| 2. Custody Seals on coolers or shipping containers intact, signed & dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | <input type="checkbox"/> No Seals                                   |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | Comments:   |
| 4. All expected paperwork received (coc & 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 <u>4.2</u> °C   | Cooler # <u>Guss W</u>  |
| How was the temperature taken?  | <input checked="" type="checkbox"/> IR <input type="checkbox"/> Temp. Blank  | <input type="checkbox"/> Other (Specify):                           |
| Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 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 (Client & LvLI) signed & dated?  | <input checked="" 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?<br>All samples received on COC?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><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? (If #5 is no, then this is no.)   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 12. Samples received within hold times?<br>Short holds taken to wet lab?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> Yes <input type="checkbox"/> No            | <u>collected 2/14/08</u><br><input checked="" type="checkbox"/> N/A |
| 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | <input checked="" type="checkbox"/> N/A<br><u>AC TC 9/7/08</u>      |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |   |
| 16. Project Manager contacted concerning any discrepancies?<br>Person Contacted _____   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | <input type="checkbox"/> N/A<br>Date _____                          |

