

Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD I05-030 H3133

DATE RECEIVED: 04/19/05

LVL LOT # :0504L254

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
B1CJ24							
BROMIDE BY IC	001	W	05LIC026	04/18/05	04/19/05	04/19/05	
BROMIDE BY IC	001 REP	W	05LIC026	04/18/05	04/19/05	04/19/05	
BROMIDE BY IC	001 MS	W	05LIC026	04/18/05	04/19/05	04/19/05	
CHLORIDE BY IC	001	W	05LIC026	04/18/05	04/19/05	04/19/05	
CHLORIDE BY IC	001 REP	W	05LIC026	04/18/05	04/19/05	04/19/05	
CHLORIDE BY IC	001 MS	W	05LIC026	04/18/05	04/19/05	04/19/05	
FLUORIDE BY IC	001	W	05LIC026	04/18/05	04/19/05	04/19/05	
FLUORIDE BY IC	001 REP	W	05LIC026	04/18/05	04/19/05	04/19/05	
FLUORIDE BY IC	001 MS	W	05LIC026	04/18/05	04/19/05	04/19/05	
NITRITE BY IC	001	W	05LIC026	04/18/05	04/19/05	04/19/05	1458
NITRITE BY IC	001 REP	W	05LIC026	04/18/05	04/19/05	04/19/05	1541
NITRITE BY IC	001 MS	W	05LIC026	04/18/05	04/19/05	04/19/05	1610
NITRATE BY IC	001	W	05LIC026	04/18/05	04/19/05	04/19/05	1527
NITRATE BY IC	001 REP	W	05LIC026	04/18/05	04/19/05	04/19/05	1556
NITRATE BY IC	001 MS	W	05LIC026	04/18/05	04/19/05	04/19/05	1624
PHOSPHATE BY IC	001	W	05LIC026	04/18/05	04/19/05	04/19/05	1458
PHOSPHATE BY IC	001 REP	W	05LIC026	04/18/05	04/19/05	04/19/05	1541
PHOSPHATE BY IC	001 MS	W	05LIC026	04/18/05	04/19/05	04/19/05	1610
SULFATE BY IC	001	W	05LIC026	04/18/05	04/19/05	04/19/05	
SULFATE BY IC	001 REP	W	05LIC026	04/18/05	04/19/05	04/19/05	
SULFATE BY IC	001 MS	W	05LIC026	04/18/05	04/19/05	04/19/05	

LAB QC:

BROMIDE BY IC	MB1	W	05LIC026	N/A	04/19/05	04/19/05	
BROMIDE BY IC	MB1 BS	W	05LIC026	N/A	04/19/05	04/19/05	
CHLORIDE BY IC	MB1	W	05LIC026	N/A	04/19/05	04/19/05	
CHLORIDE BY IC	MB1 BS	W	05LIC026	N/A	04/19/05	04/19/05	
FLUORIDE BY IC	MB1	W	05LIC026	N/A	04/19/05	04/19/05	
FLUORIDE BY IC	MB1 BS	W	05LIC026	N/A	04/19/05	04/19/05	
NITRITE BY IC	MB1	W	05LIC026	N/A	04/19/05	04/19/05	
NITRITE BY IC	MB1 BS	W	05LIC026	N/A	04/19/05	04/19/05	
NITRATE BY IC	MB1	W	05LIC026	N/A	04/19/05	04/19/05	
NITRATE BY IC	MB1 BS	W	05LIC026	N/A	04/19/05	04/19/05	
PHOSPHATE BY IC	MB1	W	05LIC026	N/A	04/19/05	04/19/05	

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PHOSPHATE BY IC	MB1 BS	W	05LIC026	N/A	04/19/05	04/19/05
SULFATE BY IC	MB1	W	05LIC026	N/A	04/19/05	04/19/05
SULFATE BY IC	MB1 BS	W	05LIC026	N/A	04/19/05	04/19/05



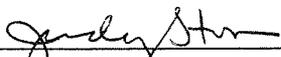
Analytical Report

Client: TNU-HANFORD I05-030 H3133
LVL#: 0504L254

W.O.#: 11343-606-001-9999-00
Date Received: 04-19-05

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 water sample.
2. The sample was prepared and analyzed in accordance with the methods checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met (see the sample chronology summary for analyses times for short hold samples).
4. The results presented in this report are derived from samples 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 for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate and Sulfate were within the 75-125% control limits.
8. The replicate analyses for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate and Sulfate were within the 20% RPD control limit.
9. 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

5/19/05
Date

njpi04-254

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 12 pages.

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WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	<u>EPA /600</u>	<u>SW846</u>	<u>OTHER</u>
Acidity	305.1		
___ Alkalinity ___ Bicarbonate ___ Carbonate	310.1		
BOD	405.1		___ 5210B (b)
Ion Chromatography:			
✓ Bromide ✓ Chloride ✓ Fluoride	300.0	___ 9056	
✓ Nitrate ✓ Nitrite ✓ Phosphate	300.0	___ 9056	
✓ Sulfate ___ Formate ___ Acetate ___ Oxalate	300.0	___ 9056	
Chloride	325.2	___ 9251	
Chlorine, Residual	330.5 (mod)		
Cyanide, Amenable to Chlorination	335.2	___ 9010B	
Cyanide, Total	335.2	___ 9010B	___ 9014 ___ ILMO4.0 (e)
Cyanide, Weak Acid Dissociable			___ 412 (a) ___ 4500CN-I (b)
COD	410.4(mod)		___ 5220C (b)
Color	110.2		
Corrosivity by Coupon		___ 1110(mod)	
Chromium VI		___ 7196A	___ 3500Cr-D (b)
Fluoride	340.2		___ 4500-FC
Hardness, Calcium	215.2		
Hardness, Total	130.2		
Iodide			___ ASTM D19P202 (1)
Surfactant	425.1		
___ Nitrate-Nitrite ___ Nitrate ___ Nitrite	353.2		
Ammonia	350.3		
Total ___ Kjeldahl ___ Organic Nitrogen	351.3		
Total ___ Organic ___ Inorganic Carbon	415.1	___ 9060	
Oil & Grease	413.1	___ 9070	
___ pH ___ pH; paper	150.1	___ 9040B ___ 9041A	
Petroleum Hydrocarbons, Total Recoverable	418.1		
Phenol	420.1	___ 420.2 ___ 9065 ___ 9066	
___ Ortho ___ Total Phosphate	365.2		___ 4500-P B ___ C
Salinity			___ 210A (a) ___ 2520 (b)
Settleable Solids	160.5		
Sulfide	376.1		___ 9030B/9034 (acid soluble)
Reactive ___ Cyanide ___ Sulfide		___ Section 7.3	(___ 9014 ___ 9030B)
Silica	370.1		
Sulfite	377.1		
Sulfate	375.4	___ 9038	
Specific Conductance	120.1	___ 9050A	
Specific Gravity			___ D5057-90 ___ 213E (a)
Synthetic Precipitation Leach		___ 1312	
Total ___ Dissolved ___ Suspended ___ Solids	160 ___ .1 ___ .2 ___ .3		
Total Organic Halides	450.1	___ 9020B	
Turbidity	180.1		
Volatile Solids:			
___ Total ___ Dissolved ___ Suspended	160.4		
Other:		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 04/28/05

CLIENT: TNUHANFORD I05-030 H3133
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0504L254

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	B1CJ24	Bromide by IC	0.25	u MG/L	0.25	1.0
		Chloride by IC	9.0	MG/L	0.25	1.0
		Fluoride by IC	0.25	u MG/L	0.25	1.0
		Nitrite by IC	0.25	u MG/L	0.25	1.0
		Nitrate by IC	15.4	MG/L	2.50	10.0
		Phosphate by IC	0.25	u MG/L	0.25	1.0
		Sulfate by IC	53.0	MG/L	2.5	10.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/28/05

CLIENT: TNUHANFORD I05-030 H3133
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0504L254

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	05LIC026-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	0.25 u	MG/L	0.25	1.0

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INORGANICS ACCURACY REPORT 04/28/05

CLIENT: TNUHANFORD I05-030 H3133
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0504L254

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	B1CJ24	Bromide by IC	10.2	0.00	10.0	102.4	2.0
		Chloride by IC	19.9	9.0	10.0	109.4	2.0
		Fluoride by IC	10.2	0.068	10.0	101.0	2.0
		Nitrite by IC	10.4	0.25u	10.0	104.3	2.0
		Nitrate by IC	118	15.4	100	103.1	20.0
		Phosphate by IC	10.3	0.25u	10.0	103.1	2.0
		Sulfate by IC	155	53.0	100	101.9	20.0
BLANK10	05LIC026-MB1	Bromide by IC	5.0	0.25u	5.0	99.2	1.0
		Chloride by IC	4.9	0.25u	5.0	97.2	1.0
		Fluoride by IC	5.0	0.25u	5.0	99.0	1.0
		Nitrite by IC	4.96	0.25u	5.00	99.1	1.0
		Nitrate by IC	4.88	0.25u	5.00	97.5	1.0
		Phosphate by IC	5.4	0.25u	5.0	108.3	1.0
		Sulfate by IC	5.1	0.25u	5.0	101.7	1.0

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INORGANICS PRECISION REPORT 04/28/05

CLIENT: TNUHANFORD I05-030 H3133
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0504L254

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR(REP)
			RESULT	REPLICATE	RPD	
-001REP	B1CJ24	Bromide by IC	0.25u	0.25u	NC	1.0
		Chloride by IC	9.0	9.1	1.8	1.0
		Fluoride by IC	0.25u	0.25u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	15.4	14.4	6.3	10.0
		Phosphate by IC	0.25u	0.25u	NC	1.0
		Sulfate by IC	53.0	45.8	14.4	10.0

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SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hamford

Date: 4.19.05

Purchase Order / Project# / 105.030
 SAF# / SOW# / Release #:

LvLI Batch #:

0504254

Sample Custodian:

[Signature]

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | |
|---|---|--|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <u>Fed Ex</u> | Airbill# <u>7929 0030 8118</u> |
| 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 <u>cooled</u> or ambient? | Temp <u>1.9</u> °C | Cooler # <u>SAWS - 1000</u> |
| 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 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? 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 |