

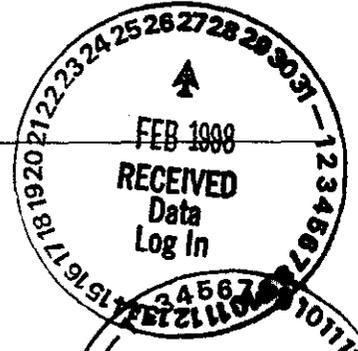
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**RECRA
LabNet**

a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

0049206



**Recra LabNet Philadelphia
Analytical Report
*REVISION***

**Client : TNU-HANFORD
RFW# : 9711L184**

**W.O.# : 10985-001-001-9999
Date Received: 11-06-97**

METALS CASE NARRATIVE

This report is revised to include duplicate Chromium analysis as per client request. Pages 007A, 008 and 009 are included and should replace same pages in original report.

1. This narrative covers the Chromium analysis of 2 TCLP leachate samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. The analysis was performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits.
7. All preparation/method blanks were within method criteria. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. The laboratory control sample (LCS) was within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The TCLP extract from sample BOM967 was selected for the matrix spike (MS) for this analytical batch. The MS recovery was greater than 50% as per method criteria.
11. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
12. The duplicate analysis was within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

J. Michael Taylor
 J. Michael Taylor
 Vice President and Laboratory Manager
 Lionville Analytical Laboratory

2597
 Date

sklm11-184
 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 11 pages (including page 007A).

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

SDG#: H0118
Laboratory Batch: 9711L184

W.O.#: 10985-001-001-9999-00
Collection Dates: 11-06-97

SAMPLE ID
BOM965
BOM967

LABORATORY ID
9711L184-003
9711L184-004



METALS METHODS GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this RFW Lot#: 9711L184

Leaching Procedure: 1310 1311 1312 Other: _____

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A 3050A 3051 200.7 SS17
 Other: _____

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>6010A</u> <u>7041</u> ⁵	<u>200.7</u> <u>204.2</u>			<u>99</u>
Arsenic	<u>6010A</u> <u>7060A</u> ⁵	<u>200.7</u> <u>206.2</u>	<u>3113B</u>		<u>99</u>
Barium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Beryllium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Boron	<u>6010A</u> ¹	<u>200.7</u>			<u>99</u>
Cadmium	<u>6010A</u> <u>7131A</u> ⁵	<u>200.7</u> <u>213.2</u>			<u>99</u>
Calcium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Chromium	<input checked="" type="checkbox"/> <u>6010A</u> <u>7191</u> ⁵	<u>200.7</u> <u>218.2</u>			<u>SS17</u>
Cobalt	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Copper	<u>6010A</u> <u>7211</u> ⁵	<u>200.7</u> <u>220.2</u>			<u>99</u>
Iron	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Lead	<u>6010A</u> <u>7421</u> ⁵	<u>200.7</u> <u>239.2</u>	<u>3113B</u>		<u>99</u>
Lithium	<u>6010A</u> <u>7430</u> ⁴	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A</u> ³ <u>7471A</u> ³	<u>245.1</u> ² <u>245.5</u> ²			<u>99</u>
Molybdenum	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010A</u> <u>7610</u> ⁴	<u>200.7</u> <u>258.1</u> ⁴			<u>99</u>
Rare Earths	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Selenium	<u>6010A</u> <u>7740</u> ⁵	<u>200.7</u> <u>270.2</u>	<u>3113B</u>		<u>99</u>
Silicon	<u>6010A</u> ¹	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010A</u> ¹	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<u>6010A</u> <u>7761</u> ⁵	<u>200.7</u> <u>272.2</u>			<u>99</u>
Sodium	<u>6010A</u> <u>7770</u> ⁴	<u>200.7</u> <u>273.1</u> ⁴			<u>99</u>
Strontium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>6010A</u> <u>7841</u> ⁵	<u>200.7</u> <u>279.2</u> <u>200.9</u>			<u>99</u>
Tin	<u>6010A</u> ¹	<u>200.7</u>			<u>99</u>
Titanium	<u>6010A</u> ¹	<u>200.7</u>			<u>99</u>
Uranium	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Vanadium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>

Other: _____

Method: _____

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

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 12/17/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9711L184

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0M965	Chromium, TCLP Leachate	3410	UG/L	3.1	1.0
-004	B0M967	Chromium, TCLP Leachate	4580	UG/L	3.1	1.0

Recre LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD

DATE RECEIVED: 11/06/97

RFW LOT # :9711L184

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOM965						
TCLP	001	SO	97LTO204	10/30/97	11/11/97	11/12/97
BOM967						
TCLP	002	SO	97LTO204	10/30/97	11/11/97	11/12/97
BOM965						
CHROMIUM, TCLP LEACH	003	W	97L2355	11/12/97	12/03/97	12/05/97
BOM967						
CHROMIUM, TCLP LEACH	004	W	97L2355	11/12/97	12/03/97	12/05/97
CHROMIUM, TCLP LEACH	004 REP	W	97L2527	11/12/97	12/31/97	01/08/98
CHROMIUM, TCLP LEACH	004 MS	W	97L2355	11/12/97	12/03/97	12/05/97

LAB QC:

CHROMIUM LABORATORY	LC1 BS	W	97L2355	N/A	12/03/97	12/05/97
CHROMIUM, TCLP LEACH	MB1	W	97L2355	N/A	12/03/97	12/05/97
CHROMIUM, TCLP LEACH	MB2	W	97L2355	N/A	12/03/97	12/05/97
CHROMIUM, TCLP LEACH	MB3	W	97L2355	N/A	12/03/97	12/05/97
CHROMIUM LABORATORY	LC1 BS	W	97L2527	N/A	12/31/97	01/08/98
CHROMIUM, TCLP LEACH	MB1	W	97L2527	N/A	12/31/97	01/08/98

11/27/98 009

RECRA LabNet Use Only
 97114184

Custody Transfer Record/Lab Work Request

Client: TNU HANFORD	Refrigerator #	414
Est. Final Proj. Sampling Date	#/Type Container	Liquid: 116/116
Project # 10985-001-001-9999-00	Volume	Liquid: 250 LIT
Project Contact/Phone #	Preservatives	
RECRA Project Manager K.C.	ANALYSES REQUESTED	ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN
QC STD Del STD TAT 30 DAY	Date Rec'd 11/16/97 Date Due 12/16/97	
Account # TNU HANFORD		

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only										
			MS	MSD				ITONS	ITUS	ISONS	IMUTC							
	001	BOM965			SO	11/16/97	1112	✓	✓									
	002	BOM967	✓	✓	L		1132	✓	✓									
	003	BOM965 TUE of 001			L													
	004	BOM967 TUE of 002	✓	✓	L													
	005	BOM965 BOM of 001			SO													
	006	BOM967 BOM of 002	✓	✓	L													

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

 Special Instructions:
 SDG HD118
 RSA - Client Inb
 RMSC - Comp
 3.8°C

 DATE/REVISIONS:
 1. see Labchem for leachate
 2. date collected
 3.
 4.
 5.
 6.

RECRA LabNet Use Only	
Samples were: 1) Shipped <input checked="" type="checkbox"/> or Hand Delivered <input type="checkbox"/> Airbill # <input checked="" type="checkbox"/>	COC Tape was: 1) Present on Outer Package <input checked="" type="checkbox"/> Y or N 2) Unbroken on Outer Package <input checked="" type="checkbox"/> Y or N 3) Present on Sample <input checked="" type="checkbox"/> Y or N 4) Unbroken on Sample <input checked="" type="checkbox"/> Y or N COC Record Present Upon Sample Rec'l <input checked="" type="checkbox"/> Y or N
2) Ambient or Chilled <input checked="" type="checkbox"/> 3) Received in Good Condition <input checked="" type="checkbox"/> Y or N 4) Labels Indicate Property Preserved <input checked="" type="checkbox"/> Y or N 5) Received Within Holding Times <input checked="" type="checkbox"/> Y or N	

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Jedey	Jedey	11/16/97	1000				

ORIGINAL
REWRITTEN

 Discrepancies Between Samples Labels and COC Record? Y or N
 NOTES: * 4171415345

010