

**From:** "Kevin Taylor" <ktaylor@envllc.com>  
**To:** <mmm3@nrc.gov>  
**Date:** Mon, Nov 14, 2005 2:44 PM  
**Subject:** Whittaker waste manifest activities

Marjorie:

To address the last open issue from your site inspection, I have attached a copy of the spreadsheet and laboratory report used to calculate the activity values placed on the Whittaker waste manifests. However, minor mathematical errors were identified and the calculations show activity values slightly higher than what were on the manifest. The correct thorium value is 85.1 compared to 83.9 pCi/g and the correct uranium activity is 16.7 compared to 16.2 pCi/g.

The methodology for determining the activity estimate for the manifests was as follows:

- 1 - Eight representative slag samples (high, medium, and low activity samples) were collected and pulverized on-site using the excavator bucket.
- 2 - Samples were analyzed by STL for thorium and uranium isotopes using alpha spectroscopy. See attached data report..
- 3 - The sums of the reported concentrations plus the 2-sigma analytical error were used to determine the average activity of the data set. See attached spreadsheet.
- 4 - To provide a level of conservatism, the average value was increased by the standard deviation of the data set. This value (mean + 1 sigma) was placed on the waste manifest. See attached spreadsheet.

It is important to note that while only 8 samples were used for the determining the values to put on the manifest, the range of the data is consistent with surveys of large (1.7 cubic yard) composite samples, including on-site gamma spectroscopy analyses.

We are sending out our reply to your comments on the Section 2 FFSP this week.

B/17

Pat is demobilizing from the site this week. I will include a copy for the final fence line survey with the groundwater sample results. Let me know if you have any additional questions.

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6

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**Subject:** Whittaker waste manifest activities  
**Creation Date** Mon, Nov 14, 2005 2:41 PM  
**From:** "Kevin Taylor" <[ktaylor@envllc.com](mailto:ktaylor@envllc.com)>

**Created By:** [ktaylor@envllc.com](mailto:ktaylor@envllc.com)

**Recipients**

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Files	Size	Date & Time
MESSAGE	1964	Monday, November 14, 2005 2:41 PM
TEXT.htm	5773	
alpha spec-1.pdf	745887	
manifest activities.xls	26624	
Mime.822	1067728	

**Options**

**Expiration Date:** None  
**Priority:** Standard  
**ReplyRequested:** No  
**Return Notification:** None

**Concealed Subject:** No  
**Security:** Standard



**STL**

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## ANALYTICAL REPORT

PROJECT NO. 23535

Whittaker, Transfer, PA

Lot #: F5G070301

Rich Moss

Scientech Inc  
143 West Street  
New Milford, CT 06776

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SEVERN TRENT LABORATORIES, INC.

*CDL*  
Chet Scheibel  
Project Manager

July 20, 2005

Leaders in Environmental Testing

Severn Trent Laboratories, Inc.

Case Narrative  
LOT NUMBER: F5G070301

This report contains the analytical results for the eight samples received under chain of custody by STL St. Louis on July 7, 2005. These samples are associated with your Whittaker, Transfer, PA project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by STL St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Isotopic Thorium by A-01-R MOD

The Thorium spectrum are smeared due to a matrix interference. Samples to re-extract with a reduced aliquot to minimize this interference. The re-extract results provided better quality spectrum and will be reported. F5G070301-007 and -007X were stopped during counting to minimize tailing.

Affected Samples:

F5G070301 (1): 6-30-05 S-1  
F5G070301 (2): 6-30-05 S-2  
F5G070301 (3): 6-30-05 S-3  
F5G070301 (4): 6-30-05 S-4  
F5G070301 (5): 6-30-05 S-5  
F5G070301 (6): 6-30-05 S-6  
F5G070301 (7): 6-30-05 S-7  
F5G070301 (8): 6-30-05 S-8

## METHODS SUMMARY

F5G070301

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 1311/3010
Isotopic Thorium by Alpha Spectroscopy	EML A-01-R MOD	
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 1311/7470

### References:

- EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL"  
HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical  
Methods", Third Edition, November 1986 and its updates.

## SAMPLE SUMMARY

F5G070301

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
HE2LG	001	6-30-05 S-1	06/30/05	13:00
HE2L4	002	6-30-05 S-2	06/30/05	13:05
HE2L6	003	6-30-05 S-3	06/30/05	13:10
HE2L8	004	6-30-05 S-4	06/30/05	13:15
HE2MC	005	6-30-05 S-5	06/30/05	13:20
HE2MG	006	6-30-05 S-6	06/30/05	13:25
HE2MH	007	6-30-05 S-7	06/30/05	13:30
HE2MJ	008	6-30-05 S-8	06/30/05	13:35

### NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SCIENTECH INC

Client Sample ID: 6-30-05 S-1

TCLP Metals

Lot-Sample #...: F5G070301-001

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:00 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5193423						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AA
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Barium	4650 J	500	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AC
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AD
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AE
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AF
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AG
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AH
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AJ
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AK
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Nickel	124 B	250	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AL
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Thallium	ND	1250	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AM
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Zinc	11.8 B,J	150	ug/L	SW846 6010B	07/12-07/13/05	HE2LG1AN
		Dilution Factor: 2.5		Analysis Time...: 13:56		
Prep Batch #...: 5194097						
Mercury	ND	10.0	ug/L	SW846 7470A	07/15/05	HE2LG1AP
		Dilution Factor: 5		Analysis Time...: 14:27		

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SCIENTECH INC

Client Sample ID: 6-30-05 S-1

TCLP Metals

Lot-Sample #...: F5G070301-001

Matrix.....: SOLID

**NOTE (S) :**

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Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

SCIENTECH INC

Client Sample ID: 6-30-05 S-2

TCLP Metals

Lot-Sample #...: F5G070301-002

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:05 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5193423						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AA
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Barium	4740 J	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AC
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AD
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AE
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AF
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AG
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AH
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AJ
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AK
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Nickel	1170	250	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AL
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Thallium	ND	1250	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AM
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Zinc	11.3 B,J	150	ug/L	SW846 6010B	07/12-07/13/05	HE2L41AN
		Dilution Factor: 2.5		Analysis Time...: 14:20		
Prep Batch #...: 5194097						
Mercury	ND	10.0	ug/L	SW846 7470A	07/15/05	HE2L41AP
		Dilution Factor: 5		Analysis Time...: 14:35		

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SCIENTECH INC

Client Sample ID: 6-30-05 S-2

TCLP Metals

Lot-Sample #...: F5G070301-002

Matrix.....: SOLID

**NOTE(S) :**

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Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

SCIENITECH INC

Client Sample ID: 6-30-05 S-3

TCLP Metals

Lot-Sample #...: F5G070301-003

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:10 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
Prep Batch #...: 5193423						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AA
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Barium	7740 J	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AC
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AD
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AE
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AF
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AG
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AH
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AJ
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AK
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Nickel	6550	250	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AL
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Thallium	ND	1250	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AM
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Zinc	19.6 B,J	150	ug/L	SW846 6010B	07/12-07/13/05	HE2L61AN
		Dilution Factor: 2.5		Analysis Time...: 14:25		
Prep Batch #...: 5194097						
Mercury	ND	10.0	ug/L	SW846 7470A	07/15/05	HE2L61AP
		Dilution Factor: 5		Analysis Time...: 14:38		

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SCIENTECH INC

Client Sample ID: 6-30-05 S-3

TCLP Metals

Lot-Sample #...: F5G070301-003

Matrix.....: SOLID

**NOTE(S):**

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Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

SCIENTECH INC

Client Sample ID: 6-30-05 S-4

TCLP Metals

Lot-Sample #...: F5G070301-004

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:15 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5193423						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AA
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Barium	5590 J	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AC
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AD
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AE
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AF
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AG
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AH
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AJ
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AK
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Nickel	1780	250	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AL
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Thallium	ND	1250	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AM
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Zinc	25.0 B,J	150	ug/L	SW846 6010B	07/12-07/13/05	HE2L81AN
		Dilution Factor: 2.5		Analysis Time...: 14:41		
Prep Batch #...: 5194097						
Mercury	ND	10.0	ug/L	SW846 7470A	07/15/05	HE2L81AP
		Dilution Factor: 5		Analysis Time...: 14:40		

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SCIENTECH INC

Client Sample ID: 6-30-05 S-4

TCLP Metals

Lot-Sample #...: F5G070301-004

Matrix.....: SOLID

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

SCIENTECH INC

Client Sample ID: 6-30-05 S-5

TCLP Metals

Lot-Sample #...: F5G070301-005

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:20 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5193423						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AA
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Barium	4340 J	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AC
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AD
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AE
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AF
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AG
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AH
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AJ
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AK
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Nickel	591	250	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AL
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Thallium	ND	1250	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AM
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Zinc	10.5 B,J	150	ug/L	SW846 6010B	07/12-07/13/05	HE2MC1AN
		Dilution Factor: 2.5		Analysis Time...: 14:46		
Prep Batch #...: 5194097						
Mercury	ND	10.0	ug/L	SW846 7470A	07/15/05	HE2MC1AP
		Dilution Factor: 5		Analysis Time...: 14:43		

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SCIENTECH INC

Client Sample ID: 6-30-05 S-5

TCLP Metals

Lot-Sample #...: F5G070301-005

Matrix.....: SOLID

NOTE(S) :

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J. Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B. Estimated result. Result is less than RL.

SCIENTECH INC

Client Sample ID: 6-30-05 S-6

TCLP Metals

Lot-Sample #...: F5G070301-006

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:25 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING			METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS				
Prep Batch #...: 5193423							
Arsenic	ND	500	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AA
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Barium	4460 J	500	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AC
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Cadmium	ND	25.0	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AD
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Chromium	ND	50.0	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AE
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Lead	ND	250	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AF
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Silver	ND	50.0	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AG
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Selenium	ND	500	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AH
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Antimony	ND	375	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AJ
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Beryllium	ND	62.5	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AK
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Nickel	1030	250	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AL
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Thallium	ND	1250	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AM
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Zinc	8.8 B,J	150	ug/L		SW846 6010B	07/12-07/13/05	HE2MG1AN
		Dilution Factor: 2.5			Analysis Time...: 14:51		
Prep Batch #...: 5194097							
Mercury	ND	10.0	ug/L		SW846 7470A	07/15/05	HE2MG1AP
		Dilution Factor: 5			Analysis Time...: 14:44		

(Continued on next page)

SCIENTECH INC

Client Sample ID: 6-30-05 S-6

TCLP Metals

Lot-Sample #...: F5G070301-006

Matrix.....: SOLID

**NOTE (S) :**

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

SCIENTECH INC

Client Sample ID: 6-30-05 S-7

TCLP Metals

Lot-Sample #...: F5G070301-007

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:30 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5193423						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AA
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Barium	14600 J	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AC
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AD
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AE
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AF
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AG
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AH
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AJ
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AK
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Nickel	8360	250	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AL
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Thallium	ND	1250	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AM
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Zinc	13.8 B,J	150	ug/L	SW846 6010B	07/12-07/13/05	HE2MH1AN
		Dilution Factor: 2.5		Analysis Time...: 14:56		
Prep Batch #...: 5194097						
Mercury	ND	10.0	ug/L	SW846 7470A	07/15/05	HE2MH1AP
		Dilution Factor: 5		Analysis Time...: 14:47		

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SCIENTECH INC

Client Sample ID: 6-30-05 S-7

TCLP Metals

Lot-Sample #...: F5G070301-007

Matrix.....: SOLID

NOTE(S) :

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

SCIENTECH INC

Client Sample ID: 6-30-05 S-8

TCLP Metals

Lot-Sample #....: F5G070301-008

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:35 Date Received...: 07/07/05

Leach Date.....: 07/11/05 Leach Batch #...: P519204

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #....: 5193423						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AA
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Barium	11000 J	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AC
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AD
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AE
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AF
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AG
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AH
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AJ
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AK
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Nickel	3290	250	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AL
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Thallium	ND	1250	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AM
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Zinc	8.0 B,J	150	ug/L	SW846 6010B	07/12-07/13/05	HE2MJ1AN
		Dilution Factor: 2.5		Analysis Time...: 15:02		
Prep Batch #....: 5194097						
Mercury	ND	10.0	ug/L	SW846 7470A	07/15/05	HE2MJ1AP
		Dilution Factor: 5		Analysis Time...: 14:53		

(Continued on next page)

SCIENTECH INC

Client Sample ID: 6-30-05 S-8

TCLP Metals

Lot-Sample #...: F5G070301-008

Matrix.....: SOLID

NOTE(S) :

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: F5G070301

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F5G110000-412 Prep Batch #...: 5193423						
Leach Date.....: 07/11/05 Leach Batch #...: P519204						
Arsenic	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AA
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Barium	18.2 B	500	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AC
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Cadmium	ND	25.0	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AD
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Chromium	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AE
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Lead	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AF
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Silver	ND	50.0	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AG
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Selenium	ND	500	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AH
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Antimony	ND	375	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AJ
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Beryllium	ND	62.5	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AK
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				
Nickel	ND	250	ug/L	SW846 6010B	07/12-07/13/05	HE8FQ1AL
		Dilution Factor: 2.5				
		Analysis Time...: 13:46				

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METHOD BLANK REPORT

TCLP Metals

Client Lot #...: F5G070301

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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MB Lot-Sample #: F5G110000-412 Prep Batch #...: 5194097  
 Leach Date.....: 07/11/05 Leach Batch #...: P519204  
 Mercury ND 10.0 ug/L SW846 7470A 07/15/05 HE8FQ1AP  
 Dilution Factor: 5  
 Analysis Time...: 14:18

MB Lot-Sample #: F5G110000-412 Prep Batch #...: 5193423  
 Leach Date.....: 07/11/05 Leach Batch #...: P519204  
 Thallium ND 1250 ug/L SW846 6010B 07/12-07/13/05 HE8FQ1AM  
 Dilution Factor: 2.5  
 Analysis Time...: 13:46

Zinc 11.6 B 150 ug/L SW846 6010B 07/12-07/13/05 HE8FQ1AN  
 Dilution Factor: 2.5  
 Analysis Time...: 13:46

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: F5G070301

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
LCS Lot-Sample#: F5G120000-423 Prep Batch #...: 5193423					
Arsenic	106	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AA
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Barium	103	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AC
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Cadmium	99	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AD
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Chromium	95	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AE
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Lead	96	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AF
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Silver	100	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AG
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Selenium	109	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AH
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Antimony	101	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AJ
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Beryllium	105	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AK
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Nickel	95	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AL
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Thallium	96	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AM
		Dilution Factor: 2.5		Analysis Time...: 13:51	
Zinc	104	(80 - 120)	SW846 6010B	07/12-07/13/05	HFA251AN
		Dilution Factor: 2.5		Analysis Time...: 13:51	
LCS Lot-Sample#: F5G130000-097 Prep Batch #...: 5194097					
Mercury	99	(82 - 125)	SW846 7470A	07/15/05	HFCNMLAA
		Dilution Factor: 5		Analysis Time...: 14:20	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: F5G070301

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
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NOTE(S) :

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Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: F5G070301

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:00 Date Received...: 07/07/05

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F5G070301-001 Prep Batch #...: 5193423							
Leach Date.....: 07/11/05 Leach Batch #...: P519204							
Arsenic	105	(83 - 111)			SW846 6010B	07/12-07/13/05	HE2LG1AT
	104	(83 - 111)	1.0	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1AU
Dilution Factor: 2.5							
Analysis Time...: 14:02							
Barium	98	(79 - 111)			SW846 6010B	07/12-07/13/05	HE2LG1AV
	98	(79 - 111)	0.18	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1AW
Dilution Factor: 2.5							
Analysis Time...: 14:02							
Cadmium	95	(65 - 122)			SW846 6010B	07/12-07/13/05	HE2LG1AX
	94	(65 - 122)	0.48	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1AO
Dilution Factor: 2.5							
Analysis Time...: 14:02							
Chromium	92	(74 - 114)			SW846 6010B	07/12-07/13/05	HE2LG1A1
	92	(74 - 114)	0.56	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1A2
Dilution Factor: 2.5							
Analysis Time...: 14:02							
Lead	91	(65 - 121)			SW846 6010B	07/12-07/13/05	HE2LG1A3
	91	(65 - 121)	0.25	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1A4
Dilution Factor: 2.5							
Analysis Time...: 14:02							
Silver	90	(70 - 123)			SW846 6010B	07/12-07/13/05	HE2LG1A5
	89	(70 - 123)	1.6	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1A6
Dilution Factor: 2.5							
Analysis Time...: 14:02							
Selenium	107	(76 - 124)			SW846 6010B	07/12-07/13/05	HE2LG1A7
	106	(76 - 124)	0.74	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1A8
Dilution Factor: 2.5							
Analysis Time...: 14:02							
Antimony	95	(68 - 129)			SW846 6010B	07/12-07/13/05	HE2LG1A9
	95	(68 - 129)	0.38	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1CA
Dilution Factor: 2.5							
Analysis Time...: 14:02							

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #....: F5G070301

Matrix.....: SOLID

Date Sampled...: 06/30/05 13:00 Date Received...: 07/07/05

PARAMETER	PERCENT	RECOVERY	RPD		METHOD	PREPARATION-	WORK
	RECOVERY	LIMITS	RPD	LIMITS		ANALYSIS DATE	ORDBR #
Beryllium	104	(82 - 113)			SW846 6010B	07/12-07/13/05	HE2LG1CC
	103	(82 - 113)	0.34	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1CD
			Dilution Factor: 2.5				
			Analysis Time...: 14:02				
Nickel	91	(75 - 109)			SW846 6010B	07/12-07/13/05	HE2LG1CE
	90	(75 - 109)	0.42	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1CF
			Dilution Factor: 2.5				
			Analysis Time...: 14:02				
Thallium	93	(78 - 110)			SW846 6010B	07/12-07/13/05	HE2LG1CG
	93	(78 - 110)	0.23	(0-20)	SW846 6010B	07/12-07/13/05	HE2LG1CH
			Dilution Factor: 2.5				
			Analysis Time...: 14:02				
Zinc	101	(10 - 150)			SW846 6010B	07/12-07/13/05	HE2LG1CJ
	101	(10 - 150)	0.18	(0-30)	SW846 6010B	07/12-07/13/05	HE2LG1CK
			Dilution Factor: 2.5				
			Analysis Time...: 14:02				

MS Lot-Sample #: F5G070301-001 Prep Batch #....: 5194097

Leach Date.....: 07/11/05 Leach Batch #...: P519204

Mercury	100	(64 - 122)			SW846 7470A	07/15/05	HE2LG1CL
	98	(64 - 122)	2.0	(0-20)	SW846 7470A	07/15/05	HE2LG1CM
			Dilution Factor: 5				
			Analysis Time...: 14:29				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SCIENTECH INC

Client Sample ID: 6-30-05 S-1

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-001  
 Work Order: HE2LG  
 Matrix: SOLID

Date Collected: 06/30/05 1300  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Uranium 234	19.9		2.1	0.05	07/11/05	07/14/05	5192451	85
Uranium 235	0.96	J	0.25	0.07	07/11/05	07/14/05	5192451	85
Uranium 238	19.8		2.1	0.05	07/11/05	07/14/05	5192451	85
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Thorium 228	55.4		5.2	0.2	07/15/05	07/18/05	5196204	86
Thorium 230	12.8		1.5	0.09	07/15/05	07/18/05	5196204	86
Thorium 232	56.0		5.2	0.06	07/15/05	07/18/05	5196204	86

NOTE(S)

Data are incomplete without the case narrative.

DC is determined by instrument performance only.

Jold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

SCIENTECH INC

Client Sample ID: 6-30-05 S-2

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-002  
 Work Order: HE214  
 Matrix: SOLID

Date Collected: 06/30/05 1305  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso. URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Uranium 234	8.09		0.93	0.08	07/11/05	07/14/05	5192451	86
Uranium 235	0.39	J	0.15	0.07	07/11/05	07/14/05	5192451	86
Uranium 238	9.0		1.0	0.09	07/11/05	07/14/05	5192451	86
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Thorium 228	43.3		4.0	0.2	07/15/05	07/18/05	5196204	92
Thorium 230	11.2		1.3	0.1	07/15/05	07/18/05	5196204	92
Thorium 232	41.9		3.9	0.09	07/15/05	07/18/05	5196204	92

NOTE(S)

Data are incomplete without the case narrative.

DC is determined by instrument performance only.

Jold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

SCIENTECH INC

Client Sample ID: 6-30-05 S-3

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-003  
 Work Order: HE2L6  
 Matrix: SOLID

Date Collected: 06/30/05 1310  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Uranium 234	10.3		1.2	0.09	07/11/05	07/14/05	5192451	81
Uranium 235	0.64	J	0.20	0.09	07/11/05	07/14/05	5192451	81
Uranium 238	9.9		1.1	0.05	07/11/05	07/14/05	5192451	81
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Thorium 228	40.7		3.8	0.1	07/15/05	07/18/05	5196204	91
Thorium 230	11.8		1.4	0.05	07/15/05	07/18/05	5196204	91
Thorium 232	39.2		3.7	0.1	07/15/05	07/18/05	5196204	91

NOTE(S)

Data are incomplete without the case narrative.

DC is determined by instrument performance only.

Bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.



SCIENTECH INC

Client Sample ID: 6-30-05 S-4

Seyvern Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-004  
 Work Order: HE2L8  
 Matrix: SOLID

Date Collected: 06/30/05 1315  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Uranium 234	9.2		1.0	0.04	07/11/05	07/14/05	5192451	83
Uranium 235	0.39	J	0.15	0.03	07/11/05	07/14/05	5192451	83
Uranium 238	9.5		1.0	0.03	07/11/05	07/14/05	5192451	83
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Thorium 228	76.6		7.6	0.3	07/15/05	07/18/05	5196204	69
Thorium 230	16.9		2.0	0.2	07/15/05	07/18/05	5196204	69
Thorium 232	75.2		7.5	0.2	07/15/05	07/18/05	5196204	69

NOTE(S)

Data are incomplete without the case narrative.

DC is determined by instrument performance only.

Bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

SCIENTECH INC

Client Sample ID: 6-30-05 S-5

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-005  
 Work Order: HE2MC  
 Matrix: SOLID

Date Collected: 06/30/05 1320  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2σ+/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Uranium 234	10.2		1.2	0.09	07/11/05	07/14/05	5192451	87
Uranium 235	0.78	J	0.24	0.08	07/11/05	07/14/05	5192451	87
Uranium 238	10.3		1.2	0.07	07/11/05	07/14/05	5192451	87
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Thorium 228	28.5		2.9	0.2	07/15/05	07/18/05	5196204	89
Thorium 230	7.4		1.0	0.06	07/15/05	07/18/05	5196204	89
Thorium 232	29.5		3.0	0.09	07/15/05	07/18/05	5196204	89

NOTE(S)

Data are incomplete without the case narrative.

DC is determined by instrument performance only.

Bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

SCIENTECH INC

Client Sample ID: 6-30-05 S-6

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-006  
 Work Order: HE2MG  
 Matrix: SOLID

Date Collected: 06/30/05 1325  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Uranium 234	9.2		1.0	0.05	07/11/05	07/14/05	5192451	88
Uranium 235	0.41	J	0.15	0.06	07/11/05	07/14/05	5192451	88
Uranium 238	9.4		1.0	0.05	07/11/05	07/14/05	5192451	88
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Thorium 228	37.9		3.6	0.2	07/15/05	07/18/05	5196204	90
Thorium 230	10.5		1.3	0.1	07/15/05	07/18/05	5196204	90
Thorium 232	37.8		3.6	0.1	07/15/05	07/18/05	5196204	90

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Sold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

SCIENTECH INC

Client Sample ID: 6-30-05 S-7

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-007  
 Work Order: HE2MH  
 Matrix: SOLID

Date Collected: 06/30/05 1330  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE	A-01-R	MOD		pCi/g		A-01-R	MOD	
Uranium 234	14.3	J	1.6	0.08	07/11/05	07/14/05	5192451	88
Uranium 235	0.70	J	0.21	0.06	07/11/05	07/14/05	5192451	88
Uranium 238	14.4	J	1.6	0.06	07/11/05	07/14/05	5192451	88
Iso THORIUM (SHORT CT) DOE	A-01-R	MOD		pCi/g		A-01-R	MOD	
Thorium 228	90	J	16	0.4	07/15/05	07/19/05	5196204	84
Thorium 230	17.3	J	3.6	0.4	07/15/05	07/19/05	5196204	84
Thorium 232	83	J	14	0.4	07/15/05	07/19/05	5196204	84

NOTE(S)

Data are incomplete without the case narrative.

DC is determined by instrument performance only.

Bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

SCIENTECH INC

Client Sample ID: 6-30-05 S-7 DUP

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F5G070301-007X  
 Work Order: HE2MH  
 Matrix: SOLID

Date Collected: 06/30/05 1330  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g		A-01-R MOD		
Uranium 234	12.7		1.5	0.1	07/11/05	07/14/05	5192451	77
Uranium 235	0.61	J	0.21	0.09	07/11/05	07/14/05	5192451	77
Uranium 238	12.6		1.5	0.07	07/11/05	07/14/05	5192451	77
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g		A-01-R MOD		
Thorium 228	77		14	0.5	07/15/05	07/19/05	5196204	84
Thorium 230	14.8		3.3	0.4	07/15/05	07/19/05	5196204	84
Thorium 232	74		13	0.3	07/15/05	07/19/05	5196204	84

NOTE(S)

Data are incomplete without the case narrative.

MC is determined by instrument performance only.

bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

SCIENTECH INC

Client Sample ID: 6-30-05 S-8

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: FSG070301-008  
 Work Order: HE2MJ  
 Matrix: SOLID

Date Collected: 06/30/05 1335  
 Date Received: 07/07/05 0900

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	MDC	Prep Date	Analysis Date	Batch #	Yld %
Iso URANIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Uranium 234	9.2	J	1.1	0.1	07/11/05	07/14/05	5192451	90
Uranium 235	0.41		0.16	0.09	07/11/05	07/14/05	5192451	90
Uranium 238	9.0		1.0	0.08	07/11/05	07/14/05	5192451	90
Iso THORIUM (SHORT CT) DOE A-01-R MOD				pCi/g	A-01-R MOD			
Thorium 228	30.6	J	3.3	0.2	07/15/05	07/18/05	5196204	69
Thorium 230	7.3		1.1	0.1	07/15/05	07/18/05	5196204	69
Thorium 232	29.9		3.3	0.1	07/15/05	07/18/05	5196204	69

NOTE(S)

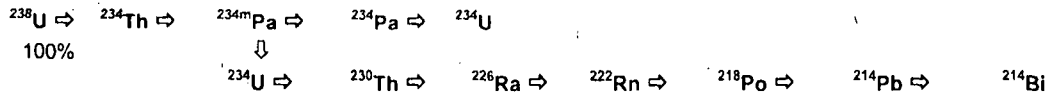
Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

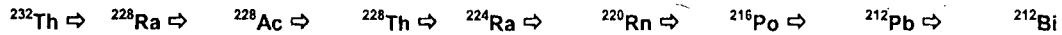
Bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

**Uranium Decay Chain**



**Thorium Decay Chain**



**Note: All sample values include stated +2σ lab variance. No background was subtracted.**

Sample #	$^{232}\text{Th}$ pCi <sup>-9m</sup>	$^{228}\text{Th}$ pCi <sup>-9m</sup>	$\text{Th}_{\text{AVE}}$	$^{238}\text{U}$ pCi <sup>-9m</sup>	$^{234}\text{U}$ pCi <sup>-9m</sup>	$^{230}\text{Th}$ pCi <sup>-9m</sup>	$^{235}\text{U}$ pCi <sup>-9m</sup>	$\text{U}_{\text{AVE}}$	
S-1	61.2	60.6	60.90	21.9	22	14.3	1.21	19.40	
S-2	45.8	47.3	46.55	10	9.02	12.5	0.54	10.51	
S-3	42.9	44.5	43.70	11	11.5	13.2	0.84	11.90	
S-4	82.7	84.2	83.45	10.5	10.2	18.9	0.54	13.20	
S-5	32.5	31.4	31.95	11.5	11.4	8.4	1.02	10.43	
S-6	41.4	41.5	41.45	10.4	10.2	11.8	0.56	10.80	
S-7	97	106	101.50	16	15.9	20.9	0.91	17.60	
S-7[Dup]	87	91	89.00	14.1	14.2	18.1	0.82	15.47	
S-8	33.2	33.9	33.55	10	10.3	8.4	0.57	9.57	
Average =			59.12	pCi <sup>-9m</sup> <sub>Th</sub>				13.21	pCi <sup>-9m</sup> <sub>U</sub>
Standard deviation of data set =			25.94	pCi <sup>-9m</sup> <sub>Th</sub>				3.51	pCi <sup>-9m</sup> <sub>U</sub>
			85.1	pCi <sup>-9m</sup> <sub>Th</sub>				16.7	pCi <sup>-9m</sup> <sub>U</sub>