ATTACHMENT 10

NYSDEC INDEPENDENT RADIOLOGICAL VERIFICATION RESULTS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS
BUREAU OF RADIATION & HAZARDOUS SITE MANAGEMENT
RADIATION SECTION

Radiation Survey Report

DATE OF SURVEY: **March 14 - 16, 2000**

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COUNTY: **Suffolk** DEC REGION: **1**

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TYPE OF SURVEY: **Post-remediation confirmation survey**

REPORTING STAFF MEMBER: **Robert Rommel**

Robert R. Rommel
Signature

4/6/00
Date of Report

ACCOMPANYING STAFF: **None**

REVIEWED BY: Barbara Youngberg DATE 4/13/00

SUMMARY

On March 14, 2000, in order to confirm that radionuclide soil concentrations met established cleanup goals, an excavation that previously contained the Pile Fan Sump (Sub-AOC 9D) was surveyed using portable gamma radiation detection instruments and 11 soil samples were obtained for laboratory analysis. Because it was determined during the remediation surveys that contamination at the 90 feet above mean sea level (AMSL) depth continued in a north-northeastern direction past the initial excavation, a second excavation north-east of the initial hole was dug to remove additional soil contamination on March 15, 2000. From this second excavation, two additional samples were obtained from the bottom on March 16, 2000. No residual contamination exceeding cleanup goals or areas exhibiting elevated radioactivity were detected after remediation was complete.

INTRODUCTION

The Pile Fan Sump (PFS) was an eleven foot deep concrete sump that was located between Building 801 (the Hot Laboratory) and Building 704 (the Fan House). It received floor drains from Buildings 704 and 802/802A, drains from the BGRR/HFBR stack, and fume hood condensate from Building 801. Because some of the discharges to the sump contained radioactive material, the sump became contaminated with

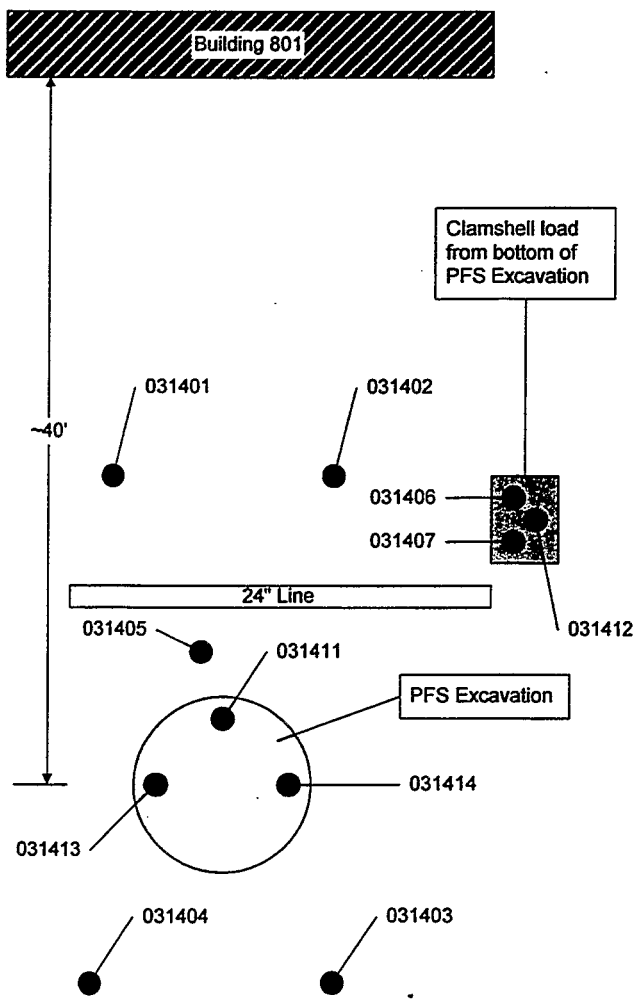
various radionuclides. The sump was removed as part of the Brookhaven Graphite Research Reactor (BGRR) Decommissioning Project in March of 2000.

As part of the PFS Final Status Survey, a member of the DEC's Radiation Section obtained confirmatory samples for radionuclide analysis after the PFS was removed. Some samples obtained were splits of BNL's final verification samples, and others were splits of samples obtained by this project's independent verification contractor (IVC), the Oak Ridge Institute for Science and Education (ORISE). Because some contamination was detectable in a north-northeast direction from the initial excavation, a second excavation was completed on March 15, 2000 and was sampled on March 16, 2000.

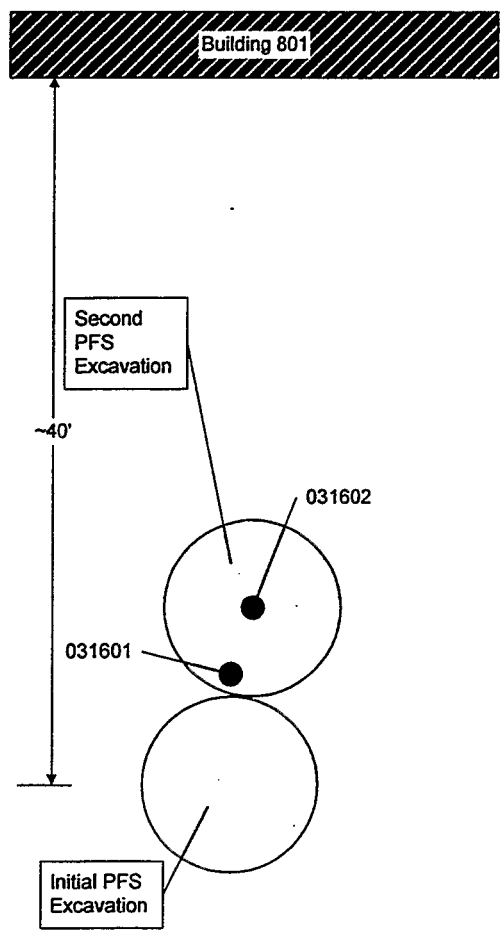
MATERIALS AND METHODS

In total, thirteen soil samples were taken from the PFS excavation area on two different days. These were obtained from a clamshell load taken of the bottom of the PFS, from the bottom of both PFS excavations using a long handled auger, and from exposed soil outside of the initial caisson (10' diameter vertical concrete cylinder which kept the surrounding sand out of the excavated holes). Below are two diagrams showing the approximate sample locations.

PFS Excavation Samples 3/14/00



PFS Excavation Samples 3/16/00



A gamma radiation detecting survey instrument was used to survey the excavated area around the caisson on March 14. Details of the instrument are provided below. No unexplained areas of elevated readings were noted. Two areas of elevated radiation were observed, (1) radiation streaming from a gap in the shielded foundation in Building 801, and (2) the BNL identified contamination north-northeast of the initial caisson at a depth of approximately 18 feet from the top of the caisson. Background was 31,000 counts per minute (CPM) around the upper surfaces of the excavation. This instrument was satisfactorily checked in Albany prior to leaving for BNL on March 13, 2000, and again on March 20, 2000 after returning. No abnormalities were noted in instrument performance.

SURVEY INSTRUMENT: Meter: Ludlum Model 2221 Portable SCA, S/N 132864
Calibration Date: August 12, 1999
Probe: Ludlum Model 44-10 Scintillation Detector, S/N PR135862
2"×2" NaI(Tl) scintillator

Due to the lack of a detector cable of sufficient length to reach the bottom of the excavation, the sampler relied on direction from ORISE staff where to obtain samples, as they had a cable of sufficient length. Some samples were taken in a systematic fashion, while others, particularly those inside the caissons, were obtained in areas having the highest detector readings.

RESULTS

To identify sample locations on the figure on page 2, the last six digits are used from the full DEC sample number. The reason for the three number gap in the numbering sequence (031408 - 031410) is that three samples were taken at the Glass Holes project at BNL on the same day, and were assigned these numbers. Analyses were run twice on samples 031401 and 031602 (duplicate samples). The summary below reports the highest results reported from either of the duplicates for 031401 and 031602. Included in the Appendix to this report is the original laboratory analysis results for these samples.

Sample Number: NR100 0303S **031401**
Location: Area NW of PFS, outside of caisson #1, 0-6", Split w/ ORISE

γ Spec:	Cs-137:	0.16 ± 0.06 pCi/g	[MDA = 0.04 pCi/g]	
	Co-60:	Not Detected	[MDA = 0.07 pCi/g]	
	Ra-226:	0.25 ± 0.08 pCi/g	[MDA = 0.08 pCi/g]	
Gross α activity:		Not Detected	[MDA = 12.81 pCi/g]	
Gross β activity:		Not Detected	[MDA = 7.36 pCi/g]	
Americium-241:		Not Detected	[MDA = 0.73 pCi/g]	
Nickel-63:		Not Detected	[MDA = 4.44 pCi/g]	
Plutonium-238:		Not Detected	[MDA = 0.12 pCi/g]	
Plutonium-239:		Not Detected	[MDA = 0.14 pCi/g]	
Strontium-90:		Not Detected	[MDA = 0.71 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.14 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 6.86 pCi/g]	
Uranium-234:		0.76 ± 0.30 pCi/g	[MDA = 0.17 pCi/g]	
Uranium-235:		0.21 ± 0.16 pCi/g	[MDA = 0.15 pCi/g]	Notes 1 & D
Uranium-238:		0.97 ± 0.35 pCi/g	[MDA = 0.18 pCi/g]	

Sample Number: NR100 0303S **031402**
Location: Area NE of PFS, outside of caisson #1, 0-6", Split w/ORISE

γ Spec:	Cs-137:	Not Detected	[MDA = 0.08 pCi/g]	
	Co-60:	Not Detected	[MDA = 0.08 pCi/g]	
	Ra-226:	0.23 ± 0.10 pCi/g	[MDA = 0.12 pCi/g]	
Gross α activity:		Not Detected	[MDA = 9.46 pCi/g]	
Gross β activity:		Not Detected	[MDA = 8.44 pCi/g]	
Americium-241:		Not Detected	[MDA = 0.37 pCi/g]	
Nickel-63:		Not Detected	[MDA = 2.64 pCi/g]	
Plutonium-238:		Not Detected	[MDA = 0.14 pCi/g]	
Plutonium-239:		Not Detected	[MDA = 0.06 pCi/g]	
Strontium-90:		Not Detected	[MDA = 0.65 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.14 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 5.30 pCi/g]	
Uranium-234:		0.39 ± 0.21 pCi/g	[MDA = 0.15 pCi/g]	Note 1
Uranium-235:		Not Detected	[MDA = 0.16 pCi/g]	
Uranium-238:		0.41 ± 0.21 pCi/g	[MDA = 0.16 pCi/g]	Note 1

Sample Number: NR100 0303S **031403**

Location: Area SE of PFS, outside of caisson #1, 0-6", Split w/ORISE

γ Spec:	Cs-137:	Not Detected	[MDA = 0.08 pCi/g]	
	Co-60:	Not Detected	[MDA = 0.08 pCi/g]	
	Ra-226:	0.25 ± 0.11 pCi/g	[MDA = 0.21 pCi/g]	
Gross α activity:		Not Detected	[MDA = 8.97 pCi/g]	
Gross β activity:		Not Detected	[MDA = 6.93 pCi/g]	
Americium-241:		0.75 ± 0.49 pCi/g	[MDA = 0.43 pCi/g]	Note 1
Nickel-63:		Not Detected	[MDA = 2.31 pCi/g]	
Plutonium-238:		Not Detected	[MDA = 0.14 pCi/g]	
Plutonium-239:		Not Detected	[MDA = 0.07 pCi/g]	
Strontium-90:		Not Detected	[MDA = 0.54 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.41 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 4.96 pCi/g]	
Uranium-234:		0.75 ± 0.29 pCi/g	[MDA = 0.15 pCi/g]	
Uranium-235:		Not Detected	[MDA = 0.14 pCi/g]	
Uranium-238:		0.45 ± 0.21 pCi/g	[MDA = 0.16 pCi/g]	

Sample Number: NR100 0303S **031404**

Location: Area SW of PFS, outside of caisson #1, 0-6", Split w/ORISE

γ Spec:	Cs-137:	Not Detected	[MDA = 0.07 pCi/g]	
	Co-60:	Not Detected	[MDA = 0.08 pCi/g]	
	Ra-226:	0.26 ± 0.09 pCi/g	[MDA = 0.12 pCi/g]	
Gross α activity:		Not Detected	[MDA = 13.69 pCi/g]	
Gross β activity:		Not Detected	[MDA = 8.10 pCi/g]	
Americium-241:		Not Detected	[MDA = 0.46 pCi/g]	
Nickel-63:		Not Detected	[MDA = 4.91 pCi/g]	
Plutonium-238:		Not Detected	[MDA = 0.17 pCi/g]	
Plutonium-239:		Not Detected	[MDA = 0.19 pCi/g]	
Strontium-90:		Not Detected	[MDA = 0.62 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 6.05 pCi/g]	
Uranium-234:		0.39 ± 0.21 pCi/g	[MDA = 0.21 pCi/g]	Note 1
Uranium-235:		Not Detected	[MDA = 0.17 pCi/g]	
Uranium-238:		0.59 ± 0.26 pCi/g	[MDA = 0.17 pCi/g]	

Sample Number: NR100 0303S **031405**

Location: Area just North of PFS, outside of caisson #1, 0-6", Split w/ORISE

γ Spec:	Cs-137:	0.10 ± 0.05 pCi/g	[MDA = 0.05 pCi/g]	Note 1
	Co-60:	Not Detected	[MDA = 0.05 pCi/g]	
	Ra-226:	0.29 ± 0.08 pCi/g	[MDA = 0.09 pCi/g]	
Gross α activity:		Not Detected	[MDA = 6.16 pCi/g]	
Gross β activity:		Not Detected	[MDA = 8.05 pCi/g]	
Americium-241:		0.75 ± 0.47 pCi/g	[MDA = 0.30 pCi/g]	Note 1
Nickel-63:		Not Detected	[MDA = 3.01 pCi/g]	
Plutonium-238:		Not Detected	[MDA = 0.17 pCi/g]	
Plutonium-239:		0.12 ± 0.11	[MDA = 0.12 pCi/g]	Notes 1 & 2
Strontium-90:		Not Detected	[MDA = 0.52 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 5.77 pCi/g]	
Uranium-234:		0.71 ± 0.28 pCi/g	[MDA = 0.17 pCi/g]	
Uranium-235:		Not Detected	[MDA = 0.18 pCi/g]	
Uranium-238:		0.87 ± 0.31 pCi/g	[MDA = 0.11 pCi/g]	

Sample Number: NR100 0303S **031406**

Location: Composite of Clamshell from caisson #1 bottom, Split w/ORISE

γ Spec:	Cs-137:	0.64 ± 0.14 pCi/g	[MDA = 0.07 pCi/g]
	Co-60:	Not Detected	[MDA = 0.08 pCi/g]
	Ra-226:	0.32 ± 0.11 pCi/g	[MDA = 0.15 pCi/g]
Gross α activity:		Not Detected	[MDA = 10.01 pCi/g]
Gross β activity:		Not Detected	[MDA = 8.39 pCi/g]
Americium-241:		Not Detected	[MDA = 0.54 pCi/g]
Nickel-63:		Not Detected	[MDA = 2.82 pCi/g]
Plutonium-238:		Not Detected	[MDA = 0.12 pCi/g]
Plutonium-239:		Not Detected	[MDA = 0.12 pCi/g]

Sample Number: NR100 0303S **031406 (continued)**

Strontium-90:	Not Detected	[MDA = 0.66 pCi/g]	
Technetium-99:	Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):	Not Detected	[MDA = 4.68 pCi/g]	
Uranium-234:	0.38 ± 0.21 pCi/g	[MDA = 0.12 pCi/g]	Note 1
Uranium-235:	0.37 ± 0.23 pCi/g	[MDA = 0.17 pCi/g]	Note 1
Uranium-238:	0.33 ± 0.20 pCi/g	[MDA = 0.20 pCi/g]	Note 1

Sample Number: NR100 0303S **031407**

Location: Second Composite of Clamshell from caisson #1 bottom, Split w/ORISE

γ Spec: Cs-137:	1.91 ± 0.25 pCi/g	[MDA = 0.08 pCi/g]	
Co-60:	Not Detected	[MDA = 0.08 pCi/g]	
Ra-226:	0.34 ± 0.13 pCi/g	[MDA = 0.14 pCi/g]	
Gross α activity:	Not Detected	[MDA = 11.68 pCi/g]	
Gross β activity:	9.91 ± 5.15 pCi/g	[MDA = 7.67 pCi/g]	Note 1
Americium-241:	0.35 ± 0.28 pCi/g	[MDA = 0.29 pCi/g]	Note 1
Nickel-63:	Not Detected	[MDA = 3.18 pCi/g]	
Plutonium-238:	Not Detected	[MDA = 0.20 pCi/g]	
Plutonium-239:	Not Detected	[MDA = 0.16 pCi/g]	
Strontium-90:	Not Detected	[MDA = 0.53 pCi/g]	
Technetium-99:	Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):	Not Detected	[MDA = 5.22 pCi/g]	
Uranium-234:	0.55 ± 0.25 pCi/g	[MDA = 0.19 pCi/g]	
Uranium-235:	Not Detected	[MDA = 0.17 pCi/g]	
Uranium-238:	0.70 ± 0.28 pCi/g	[MDA = 0.19 pCi/g]	

Sample Number: NR100 0303S **031411**

Location: N side of PFS excavation, within caisson #1, 0-6", Split with BNL, ID: 6516-001

γ Spec: Cs-137:	6.45 ± 0.73 pCi/g	[MDA = 0.10 pCi/g]	
Co-60:	Not Detected	[MDA = 0.08 pCi/g]	
Ra-226:	0.32 ± 0.20 pCi/g	[MDA = 0.27 pCi/g]	Note 1
Gross α activity:	Not Detected	[MDA = 8.48 pCi/g]	
Gross β activity:	Not Detected	[MDA = 7.66 pCi/g]	
Americium-241:	0.63 ± 0.46 pCi/g	[MDA = 0.62 pCi/g]	Note 1
Nickel-63:	Not Detected	[MDA = 2.72 pCi/g]	
Plutonium-238:	Not Detected	[MDA = 0.22 pCi/g]	
Plutonium-239:	0.18 ± 0.16 pCi/g	[MDA = 0.15 pCi/g]	Note 1
Strontium-90:	0.56 ± 0.32 pCi/g	[MDA = 0.49 pCi/g]	Note 1
Technetium-99:	Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):	Not Detected	[MDA = 5.33 pCi/g]	
Uranium-234:	0.71 ± 0.30 pCi/g	[MDA = 0.18 pCi/g]	
Uranium-235:	Not Detected	[MDA = 0.09 pCi/g]	
Uranium-238:	0.57 ± 0.27 pCi/g	[MDA = 0.18 pCi/g]	

Sample Number: NR100 0303S **031412**

Location: Clamshell Composite from bottom of caisson #1, 0-6", Split with BNL, ID: 6516-002

γ Spec: Cs-137:	0.99 ± 0.15 pCi/g	[MDA = 0.07 pCi/g]	
Co-60:	Not Detected	[MDA = 0.08 pCi/g]	
Ra-226:	0.25 ± 0.12 pCi/g	[MDA = 0.20 pCi/g]	
Gross α activity:	Not Detected	[MDA = 11.22 pCi/g]	
Gross β activity:	Not Detected	[MDA = 7.26 pCi/g]	
Americium-241:	Not Detected	[MDA = 0.46 pCi/g]	
Nickel-63:	Not Detected	[MDA = 2.36 pCi/g]	
Plutonium-238:	Not Detected	[MDA = 0.11 pCi/g]	
Plutonium-239:	Not Detected	[MDA = 0.08 pCi/g]	
Strontium-90:	Not Detected	[MDA = 0.47 pCi/g]	
Technetium-99:	Not Detected	[MDA = 0.15 pCi/g]	
Tritium (H-3):	10.53 ± 3.63 pCi/g	[MDA = 5.29 pCi/g]	
Uranium-234:	0.60 ± 0.24 pCi/g	[MDA = 0.10 pCi/g]	
Uranium-235:	0.19 ± 0.14 pCi/g	[MDA = 0.06 pCi/g]	Note 1
Uranium-238:	0.24 ± 0.14 pCi/g	[MDA = 0.09 pCi/g]	Note 1

Sample Number: NR100 0303S **031413**

Location: W side of PFS excavation, within caisson #1, 0-6", Split with BNL, ID: 6516-003

γ Spec:	Cs-137:	0.05 ± 0.04 pCi/g	[MDA = 0.04 pCi/g]	Note 1
	Co-60:	Not Detected	[MDA = 0.06 pCi/g]	
	Ra-226:	Not Detected	[MDA = 0.15 pCi/g]	
Gross α activity:		Not Detected	[MDA = 10.06 pCi/g]	
Gross β activity:		Not Detected	[MDA = 7.30 pCi/g]	
Americium-241:		0.36 ± 0.31 pCi/g	[MDA = 0.34 pCi/g]	Note 1
Nickel-63:		Not Detected	[MDA = 2.50 pCi/g]	
Plutonium-238:		Not Detected	[MDA = 0.19 pCi/g]	
Plutonium-239:		Not Detected	[MDA = 0.17 pCi/g]	
Strontium-90:		Not Detected	[MDA = 0.43 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 4.91 pCi/g]	
Uranium-234:		0.42 ± 0.19 pCi/g	[MDA = 0.08 pCi/g]	
Uranium-235:		Not Detected	[MDA = 0.12 pCi/g]	
Uranium-238:		0.25 ± 0.14 pCi/g	[MDA = 0.11 pCi/g]	Note 1

Sample Number: NR100 0303S **031414**

Location: E side of PFS excavation, within caisson #1, 0-6", Split with BNL, ID: 6516-004

γ Spec:	Cs-137:	0.08 ± 0.06 pCi/g	[MDA = 0.07 pCi/g]	Note 1
	Co-60:	Not Detected	[MDA = 0.07 pCi/g]	
	Ra-226:	Not Detected	[MDA = 0.19 pCi/g]	
Gross α activity:		Not Detected	[MDA = 10.88 pCi/g]	
Gross β activity:		Not Detected	[MDA = 9.65 pCi/g]	
Americium-241:		Not Detected	[MDA = 0.54 pCi/g]	
Nickel-63:		3.30 ± 1.82 pCi/g	[MDA = 2.98 pCi/g]	Note 1
Plutonium-238:		Not Detected	[MDA = 0.18 pCi/g]	
Plutonium-239:		Not Detected	[MDA = 0.12 pCi/g]	
Strontium-90:		Not Detected	[MDA = 0.59 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 4.60 pCi/g]	
Uranium-234:		0.58 ± 0.27 pCi/g	[MDA = 0.07 pCi/g]	
Uranium-235:		0.20 ± 0.17 pCi/g	[MDA = 0.16 pCi/g]	Note 1
Uranium-238:		0.77 ± 0.32 pCi/g	[MDA = 0.07 pCi/g]	

Sample Number: NR199 0303S **031601**

Location: South wall edge, within caisson #2 (northernmost), Split with ORISE, ID: 0913-S012

γ Spec:	Cs-137:	4.05 ± 0.49 pCi/g	[MDA = 0.07 pCi/g]	
	Co-60:	Not Detected	[MDA = 0.07 pCi/g]	
	Ra-226:	0.22 ± 0.12 pCi/g	[MDA = 0.14 pCi/g]	Note 1
Gross α activity:		Not Detected	[MDA = 14.3 pCi/g]	
Gross β activity:		Not Detected	[MDA = 8.43 pCi/g]	
Americium-241:		1.04 ± 0.66 pCi/g	[MDA = 0.55 pCi/g]	Note 1
Nickel-63:		Not Detected	[MDA = 7.45 pCi/g]	
Plutonium-238:		Not Detected	[MDA = 0.19 pCi/g]	
Plutonium-239:		Not Detected	[MDA = 0.13 pCi/g]	
Strontium-90:		2.58 ± 0.52 pCi/g	[MDA = 0.65 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.13 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 5.66 pCi/g]	
Uranium-234:		0.45 ± 0.22 pCi/g	[MDA = 0.16 pCi/g]	
Uranium-235:		0.24 ± 0.17 pCi/g	[MDA = 0.15 pCi/g]	Note 1
Uranium-238:		0.80 ± 0.31 pCi/g	[MDA = 0.16 pCi/g]	

Sample Number: NR199 0303S **031602**

Location: Center of caisson #2 (northernmost), Split with ORISE, ID: 0913-S013

γ Spec:	Cs-137:	1.58 ± 0.22 pCi/g	[MDA = 0.07 pCi/g]	
	Co-60:	0.07 ± 0.04 pCi/g	[MDA = 0.06 pCi/g]	Notes 1 & D
	Ra-226:	0.34 ± 0.10 pCi/g	[MDA = 0.14 pCi/g]	
Gross α activity:		Not Detected	[MDA = 14.4 pCi/g]	
Gross β activity:		Not Detected	[MDA = 9.13 pCi/g]	
Americium-241:		0.71 ± 0.52 pCi/g	[MDA = 0.44 pCi/g]	Notes 1 & D
Nickel-63:		Not Detected	[MDA = 5.39 pCi/g]	
Plutonium-238:		0.20 ± 0.15 pCi/g	[MDA = 0.17 pCi/g]	Notes 1 & D
Plutonium-239:		Not Detected	[MDA = 0.19 pCi/g]	
Strontium-90:		Not Detected	[MDA = 0.66 pCi/g]	
Technetium-99:		Not Detected	[MDA = 0.18 pCi/g]	
Tritium (H-3):		Not Detected	[MDA = 4.84 pCi/g]	
Uranium-234:		0.51 ± 0.24 pCi/g	[MDA = 0.18 pCi/g]	
Uranium-235:		0.19 ± 0.15 pCi/g	[MDA = 0.15 pCi/g]	Notes 1 & D
Uranium-238:		0.62 ± 0.27 pCi/g	[MDA = 0.18 pCi/g]	

Notes on Sample Results

If the analysis result was less than the minimum detectable activity for the analysis, the nuclide is listed as "Not Detected." In the case of duplicate samples, "Not Detected" means that both samples did not show detectable activity for the nuclide in question.

Note 1 - The reported error is at least 50% of the reported activity.
Note 2 - The reported activity is at the detection limit (MDA) of the analytical procedure.
Note D - This nuclide was not detected in the duplicate sample.

INTERPRETATION OF RESULTS

None of the samples analyzed exceeded the 23 pCi/g primary remediation goal for cesium-137. However, the determination of whether a site meets remediation goals is more than a matter of ensuring that the primary radionuclide contaminant is below guidelines. It further entails checking that each radionuclide contributing to the dose be below their respective guideline and that the resultant contribution from all involved nuclides does not exceed the applicable dose limit. For this report, concentrations are compared to the cleanup goals developed for radiologically contaminated soils on-site, based on a 15 mrem/year dose limit, specifically the soil concentration limits specified in the *Record of Decision, Operable Unit I and Radiologically Contaminated Soils* (OU I ROD), dated August 25, 1999, and its supporting documentation. Since the future use of the BGRR property has not been determined, a residential scenario was conservatively assumed for comparison. The goals specified in the OU I ROD are 23 pCi/g of cesium-137, 15 pCi/g of strontium-90, and 5 pCi/g of radium-226. For other radionuclides, the concentration goals are those developed for the Landscaping Soils (AOC 16) in OU II/VII.

In order to determine that none of the samples obtained exceed the 15 mrem/year dose limit, a "sum of ratios" was calculated which divides each detected radionuclide concentration by its cleanup goal and then summing all these ratios together. A sum less than one indicates that the combined effect of a large area contaminated with that radionuclide concentration would result in a dose less than 15 mrem/year, a sum equal to one means the dose from a large area with that concentration would equal 15 mrem/year, and a sum greater than one would result in a dose exceeding 15 mrem/year and thus exceeds the remediation goal. Sums of ratios (SOR) were calculated using the following equation (in which [Cs-137] means "concentration of cesium-137 in pCi/g"):

$$SOR = \frac{[Cs-137]}{23} + \frac{[Sr-90]}{15} + \frac{[Ra-226]}{5} + \frac{[Co-60]}{1300} + \frac{[Am-241]}{40} + \frac{[Pu-238]}{66} + \frac{[Pu-239]}{40} + \frac{[Ni-63]}{3000} + \frac{[H-3]}{3000}$$

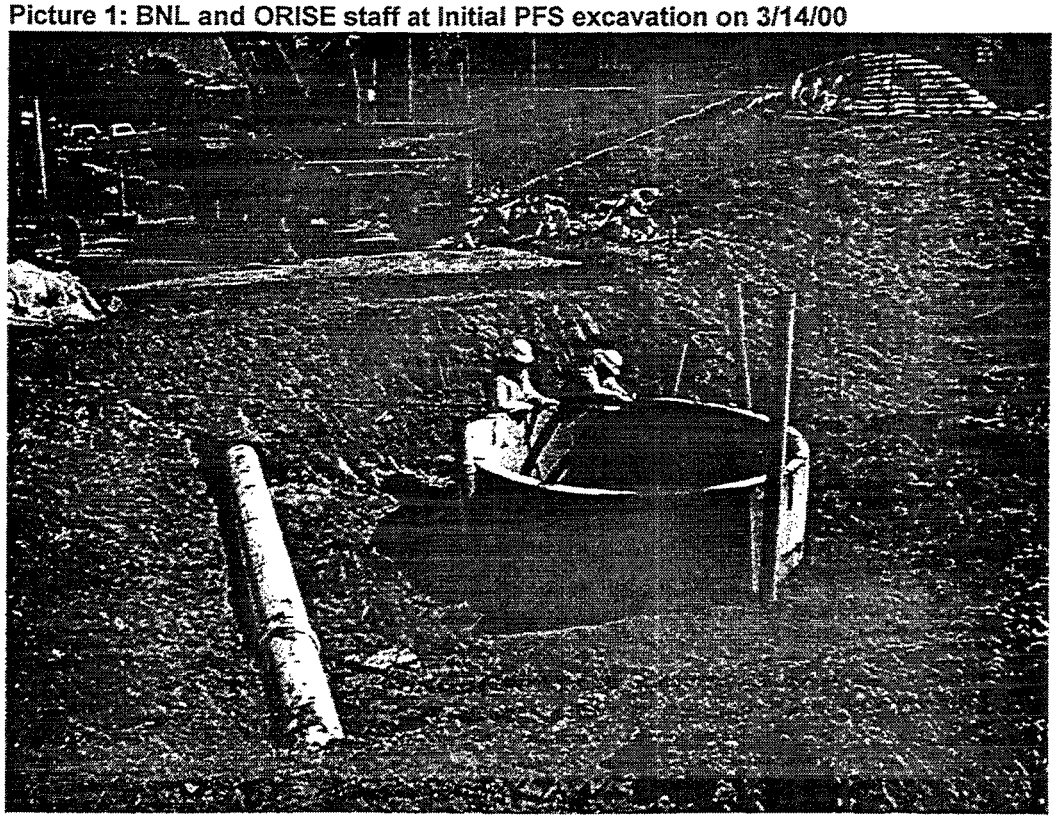
The last two terms, for nickel-63 and tritium, did not have soil concentration guidelines developed in the OU I ROD, since they were not contaminants of concern. The 3000 pCi/g value used here is based on the volumetric screening level for clearance for both of these nuclides as developed in ANSI/HPS N13.12-1999, *Surface and Volume Radioactivity Standards for Clearance*. These concentrations are based on a conservative exposure scenario and a 1 mrem/year dose standard. Uranium isotopes were ignored in this comparison since none of their concentrations exceeded expected background values for uranium in soil, and it is not desired to remediate areas due to normally present natural isotopes. The sums of ratios for each sample is provided in Table 1, below. None of the sums of ratios approaches 1, indicating that remediation goals were met in all areas sampled.

Table 1: Calculated Sums of Ratios

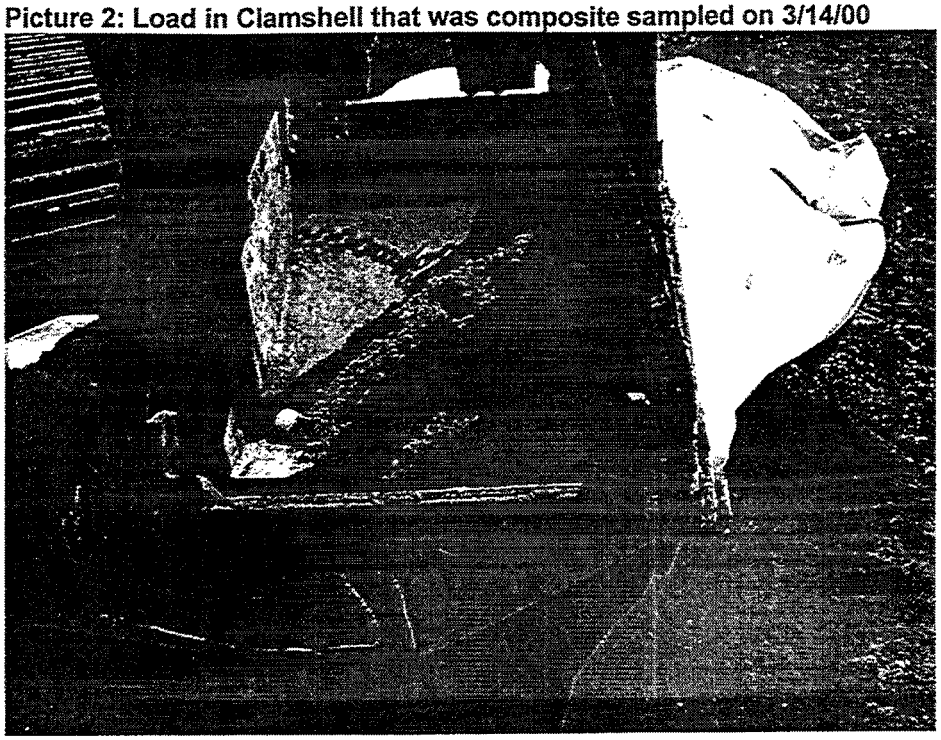
Sample Number	Identified Isotopes	Sum of Ratios (SOR)
031401	Cs-137, Ra-226, Co-60	0.057
031402	Sr-90, Ra-226	0.333
031403	Ra-226, Am-241	0.065
031404	Ra-226	0.052
031405	Cs-137, Ra-226, Am-241, Pu-239	0.084
031406	Cs-137, Ra-226	0.092
031407	Cs-137, Ra-226, Am-241	0.160
031411	Cs-137, Sr-90, Ra-226, Am-241, Pu-239	0.402
031412	Cs-137, Ra-226, Tritium (H-3)	0.096
031413	Cs-137, Am-241	0.011
031414	Ni-63	0.001
031601	Cs-137, Sr-90, Ra-226, Am-241	0.418
031602	Cs-137, Ra-226, Co-60, Am-241, Pu-238	0.158

PHOTOGRAPHS

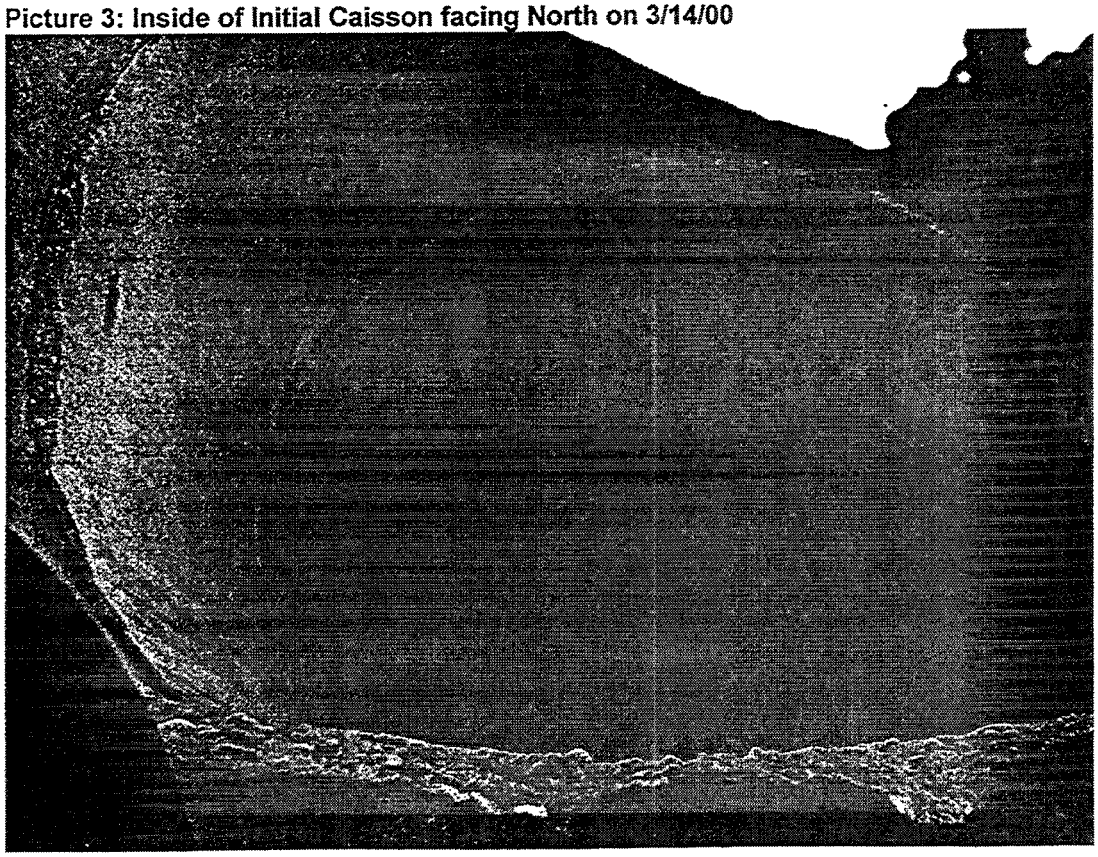
Picture 1: BNL and ORISE staff at Initial PFS excavation on 3/14/00



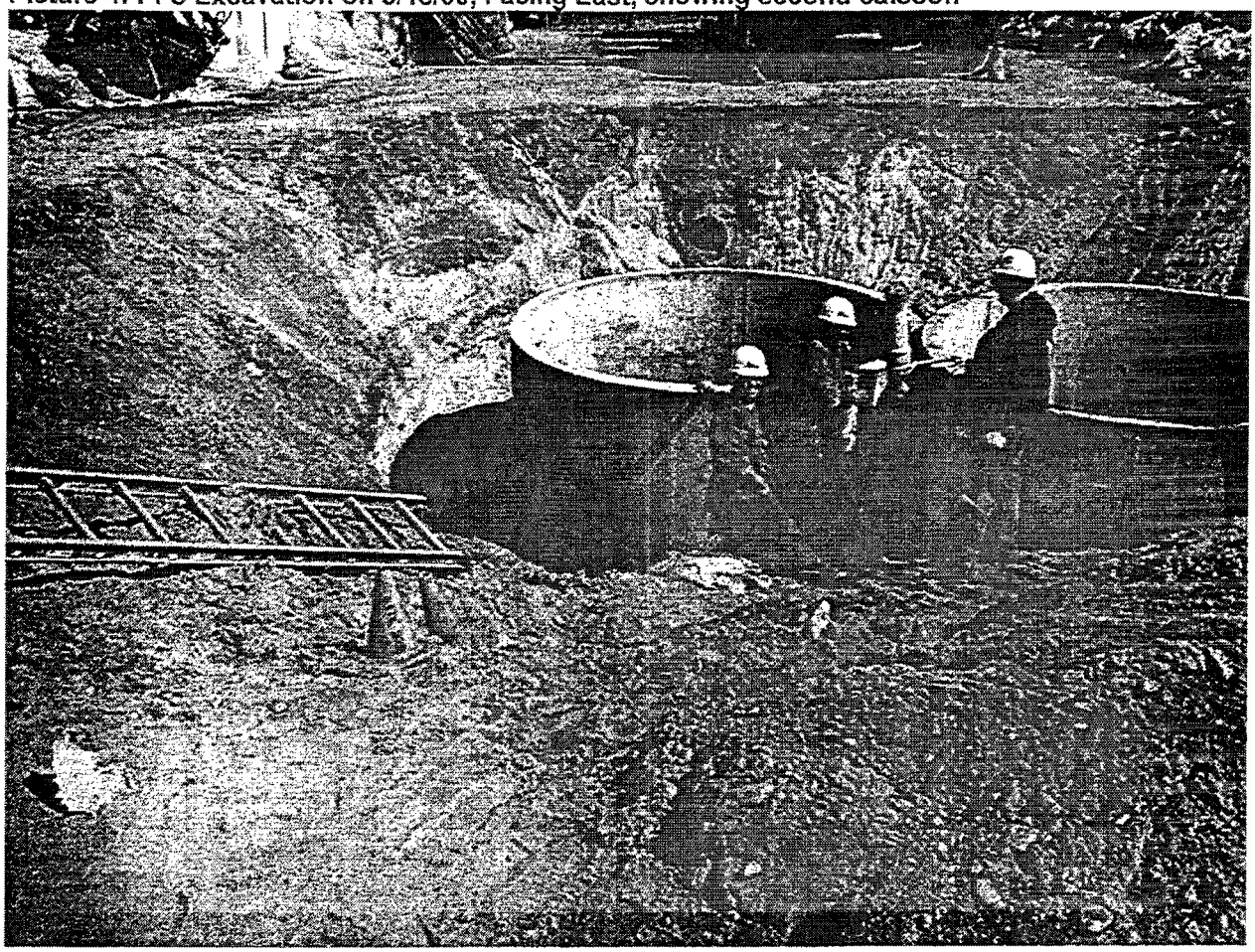
Picture 2: Load in Clamshell that was composite sampled on 3/14/00



Picture 3: Inside of Initial Caisson facing North on 3/14/00



Picture 4: PFS Excavation on 3/15/00, Facing East, showing second caisson



CONCLUSION

Final radiation surveys in the area of the PFS excavation did not exhibit any abnormal radiological conditions once remediation was complete. All samples obtained were well below established remediation goals.

Appendix

Laboratory Sample Results

ThermoRetec
Smart Solutions, Positive Outcomes.
Nuclear Services
A Thermo Electron Company
601 Scarboro Road
Oak Ridge, TN 37830
(865) 481-0683 Phone
(865) 483-4621 Lab Fax
(865) 481-0121 Adm. Fax
www.thermoretec.com

TNU-OR-11240

March 29, 2000

Ms. Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

CASE NARRATIVE
Work Order #00-03128-OR

SAMPLE RECEIPT

This work order contains fourteen soil samples received 3/20/2000. These samples were analyzed for Americium-241, Gross Alpha/Beta, Nickel-63, Isotopic Plutonium, Strontium-90, Technetium-99, Isotopic Uranium, Tritium, and by Gamma Spectroscopy.

CLIENT ID	RFW#	LAB ID
NR1000303S031401	0003L784-001	00-03128-04
NR1000303S031402	0003L784-002	00-03128-05
NR1000303S031403	0003L784-003	00-03128-06
NR1000303S031404	0003L784-004	00-03128-07
NR1000303S031405	0003L784-005	00-03128-08
NR1000303S031406	0003L784-006	00-03128-09
NR1000303S031407	0003L784-007	00-03128-10
NR1000303S031408	0003L784-008	00-03128-11
NR1000303S031409	0003L784-009	00-03128-12
NR1000303S031410	0003L784-010	00-03128-13
NR1000303S031411	0003L784-011	00-03128-14
NR1000303S031412	0003L784-012	00-03128-15
NR1000303S031413	0003L784-013	00-03128-16
NR1000303S031414	0003L784-014	00-03128-17

ANALYTICAL METHODS

Americium-241 was analyzed using Method EML Am-01 Modified. Gross Alpha/Beta was performed by gas flow proportional counting using Method LANL MLR-100 Modified. Nickel-63 was analyzed using Method ASTM 3500-Ni-E Modified. Isotopic Plutonium was performed using Method EML Pu-02 Modified. Strontium-90 was analyzed using EiCHrom Method SRW01 modified. Technetium-99 was analyzed using EIChroM Method TCS01 Modified. Isotopic Uranium was analyzed using Method EML U-02 Modified. Tritium was performed by beta liquid scintillation using Method LANL ER-210 modified. Gamma Spectroscopy was performed using Method LANL ER-130 modified.

PROBLEMS OR UNUSUAL CIRCUMSTANCES

No problems or unusual circumstances were noted during the analytical process.

CERTIFICATION OF ACCURACY

I certify that 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 above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

M.R. McDougall
Laboratory Manager
Date: 3/29/00

Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 0003128
MATRIX: Soil

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	6.51	0.20		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	5.90	1.30	0.28	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.04	0.11	0.25	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.01	0.12	0.41	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.44	0.45	0.73	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.34	0.29	0.37	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.75	0.49	0.43	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.37	0.36	0.46	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.75	0.47	0.30	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.23	0.29	0.54	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.35	0.28	0.29	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.44	0.33	0.39	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.41	0.43	0.71	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.72	0.40	0.37	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.63	0.48	0.62	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.30	0.29	0.46	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.36	0.31	0.34	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Americium-241	EML Am-01 Modified	0.29	0.34	0.54	pCi/g
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	214.59	9.23		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	216.95	4.83	0.39	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-0.06	0.18	0.41	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	0.81	6.52	12.81	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	0.00	4.19	9.10	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	0.79	4.62	9.46	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	0.00	4.13	8.97	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-4.71	5.76	13.69	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	3.34	4.01	6.16	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-2.50	3.65	10.01	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-1.65	5.13	11.68	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-0.83	4.29	9.94	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-0.79	2.69	7.39	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	3.16	4.89	8.51	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-0.79	3.45	8.48	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	-1.59	4.93	11.22	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	0.00	4.75	10.06	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Alpha	LANL MLR-100 Modified	0.77	5.45	10.88	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	204.29	4.29		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	200.92	4.08	0.77	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	-0.30	0.31	0.61	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	-0.57	4.87	8.77	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	4.81	4.48	7.36	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	-1.07	4.66	8.44	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	-0.18	3.83	6.93	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	3.53	4.80	8.10	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	1.50	4.61	8.05	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	5.37	5.11	8.39	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	9.91	5.15	7.87	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	7.70	4.40	6.75	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	4.05	4.02	6.61	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	3.58	4.45	7.47	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	4.82	4.66	7.66	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	2.81	4.27	7.26	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	0.97	4.12	7.30	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Gross Beta	LANL MLR-100 Modified	-0.40	5.40	9.65	pCi/g
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	1005.29	41.22		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	1010.02	10.12	3.17	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/23/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	0.00	1.36	2.33	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	2.94	2.66	4.44	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	1.65	2.06	3.47	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	-1.21	1.62	2.84	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/23/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	2.15	1.40	2.31	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	0.19	2.86	4.91	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	2.14	1.81	3.01	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	-0.45	1.63	2.82	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	0.09	1.85	3.18	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	2.44	2.20	3.68	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	-2.36	2.98	5.23	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	-0.24	1.37	2.36	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	-0.91	1.56	2.72	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	1.39	1.41	2.36	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	-0.59	1.44	2.50	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Nickel-63	ASTM 3500 Ni-E Modified	3.30	1.82	2.98	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	5.97	0.17		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	5.80	1.37	0.22	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.10	0.13	0.22	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	-0.02	0.06	0.23	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.00	0.01	0.12	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	-0.01	0.01	0.14	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.02	0.05	0.14	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	-0.02	0.02	0.17	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.15	0.13	0.17	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.00	0.01	0.12	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	-0.03	0.02	0.20	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.09	0.15	0.32	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.05	0.08	0.13	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.02	0.09	0.25	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.18	0.16	0.22	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.06	0.07	0.11	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.05	0.09	0.19	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Plutonium-238	EML Pu-02 Modified	0.02	0.07	0.18	pCi/g
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	7.11	0.22		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	7.80	1.77	0.12	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.06	0.12	0.24	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.02	0.05	0.14	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.00	0.01	0.12	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.02	0.04	0.06	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.03	0.05	0.07	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.07	0.10	0.19	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.12	0.11	0.12	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.07	0.09	0.12	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	-0.01	0.02	0.16	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.51	0.30	0.20	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.04	0.08	0.18	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.12	0.14	0.19	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.18	0.15	0.15	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.03	0.05	0.08	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.02	0.06	0.17	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Plutonium-239/2	EML Pu-02 Modified	0.04	0.07	0.12	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	21.45	0.45		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	18.21	1.15	0.75	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.25	0.35	0.67	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.57	0.35	0.70	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.51	0.36	0.71	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	4.31	0.61	0.65	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	0.25	0.32	0.54	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.06	0.34	0.62	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.13	0.28	0.52	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.18	0.35	0.66	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.17	0.29	0.53	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.26	0.33	0.63	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.03	0.32	0.58	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	0.04	0.34	0.61	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	0.56	0.32	0.49	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	0.28	0.28	0.47	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.01	0.24	0.43	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Strontium-90	EIChroM SRW01 Modified	-0.09	0.32	0.59	pCi/g
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	1008.89	22.20		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	1146.54	7.12	1.53	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/24/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	-0.12	0.91	1.56	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	-0.01	0.08	0.14	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.01	0.08	0.14	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/24/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	-0.05	0.08	0.14	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.17	0.24	0.41	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.08	0.08	0.13	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.04	0.08	0.13	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.02	0.08	0.13	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.08	0.08	0.13	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.07	0.08	0.13	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	-0.01	0.08	0.14	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.08	0.08	0.13	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.00	0.07	0.13	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.05	0.09	0.15	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	0.02	0.07	0.13	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Technetium-99	EIChroM TCS01 Modified	-0.02	0.08	0.13	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 0003128
MATRIX: Soil

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	1231.47	44.35		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	1141.90	80.05	59.22	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-1.09	3.38	6.15	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-0.75	3.66	6.61	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	3.23	4.08	6.86	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-1.20	2.89	5.30	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	0.76	2.84	4.96	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	0.98	3.47	6.05	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-1.55	3.13	5.77	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-1.53	2.52	4.68	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	1.01	3.01	5.22	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	0.00	2.91	5.18	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-0.23	3.17	5.66	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-2.04	2.81	5.26	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-3.38	2.75	5.33	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	10.53	3.63	5.29	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	1.35	2.85	4.91	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/25/00	03/29/00	0003128	Tritium	LANL ER-210 Modified	-1.31	2.60	4.80	pCi/g
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	12.77	0.46		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	12.87	2.61	0.17	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.08	0.09	0.15	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.76	0.30	0.17	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.59	0.26	0.19	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.39	0.21	0.16	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.75	0.29	0.15	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.39	0.21	0.21	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.71	0.28	0.17	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.38	0.21	0.12	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.55	0.25	0.19	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	1.27	0.43	0.18	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.64	0.30	0.19	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	1.00	0.35	0.13	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.71	0.30	0.18	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.60	0.24	0.10	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.42	0.19	0.08	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-234	EML U-02 Modified	0.58	0.27	0.07	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.58	0.02		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.79	0.33	0.17	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.08	0.10	0.13	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.13	0.13	0.15	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.21	0.16	0.15	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.05	0.08	0.15	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.12	0.12	0.14	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.07	0.10	0.17	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.16	0.14	0.18	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.37	0.23	0.17	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.04	0.08	0.17	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.38	0.23	0.18	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.09	0.12	0.19	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.06	0.08	0.08	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.06	0.09	0.09	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.19	0.14	0.06	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.04	0.07	0.12	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-235	EML U-02 Modified	0.20	0.17	0.16	pCi/g
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	12.45	0.45		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	12.63	2.57	0.13	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.05	0.08	0.15	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.76	0.30	0.11	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.97	0.35	0.18	pCi/g
00-03128-05		NR1000303S031402	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.41	0.21	0.16	pCi/g
00-03128-06		NR1000303S031403	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.45	0.21	0.16	pCi/g
00-03128-07		NR1000303S031404	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.59	0.26	0.17	pCi/g
00-03128-08		NR1000303S031405	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.87	0.31	0.11	pCi/g
00-03128-09		NR1000303S031406	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.33	0.20	0.20	pCi/g
00-03128-10		NR1000303S031407	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.70	0.28	0.19	pCi/g
00-03128-11		NR1000303S031408	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	1.13	0.40	0.19	pCi/g
00-03128-12		NR1000303S031409	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.84	0.35	0.19	pCi/g
00-03128-13		NR1000303S031410	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.72	0.28	0.11	pCi/g
00-03128-14		NR1000303S031411	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.57	0.27	0.18	pCi/g
00-03128-15		NR1000303S031412	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.24	0.14	0.09	pCi/g
00-03128-16		NR1000303S031413	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.25	0.14	0.11	pCi/g
00-03128-17		NR1000303S031414	03/14/00	03/20/00	03/27/00	03/29/00	0003128	Uranium-238	EML U-02 Modified	0.77	0.32	0.07	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 0003128
MATRIX: Soil

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	230.96	9.93		pCi/g
00-03128-01	K	KNOWN	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	137.76	6.47		pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	229.10	15.75	1.33	pCi/g
00-03128-01	S	SPIKE	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	135.40	14.16	1.19	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	0.31	0.26	0.58	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	-0.01	0.03	0.05	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	-0.03	0.03	0.05	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	-0.01	0.08	0.15	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.05	0.07	0.06	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.01	0.06	0.10	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.02	0.06	0.12	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.09	0.16	0.20	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.09	0.16	0.20	pCi/g
00-03128-02	B	BLANK	03/20/00	03/20/00	03/22/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	-0.42	0.49	0.96	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	4.20	0.84	0.38	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.00	0.03	0.06	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.11	0.06	0.06	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.40	0.11	0.15	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.39	0.14	0.07	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.18	0.10	0.10	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.22	0.12	0.18	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.29	0.13	0.18	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.29	0.13	0.18	pCi/g
00-03128-03	D	NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	0.14	0.58	1.08	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.99	0.89	0.49	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.03	0.05	0.07	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.16	0.06	0.04	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.25	0.10	0.14	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.24	0.12	0.07	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.23	0.09	0.08	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.25	0.08	0.08	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.27	0.12	0.19	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.27	0.12	0.19	pCi/g
00-03128-04		NR1000303S031401	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	0.51	0.59	1.13	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	2.63	0.93	0.45	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.01	0.04	0.08	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.04	0.04	0.08	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.30	0.15	0.18	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.15	0.13	0.10	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.14	0.11	0.10	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.23	0.10	0.12	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.30	0.16	0.16	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.30	0.16	0.16	pCi/g
00-03128-05	NR1000303S031402	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	1.46	1.10	1.10	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.67	1.03	0.41	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.00	0.04	0.08	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.03	0.04	0.08	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.64	0.16	0.15	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.44	0.16	0.19	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.30	0.14	0.12	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.25	0.11	0.21	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.42	0.17	0.25	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.42	0.17	0.25	pCi/g
00-03128-06	NR1000303S031403	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	1.00	1.39	1.21	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.64	0.92	0.35	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.01	0.04	0.08	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	-0.02	0.04	0.07	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.37	0.13	0.19	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.22	0.14	0.10	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.27	0.12	0.11	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.26	0.09	0.12	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.52	0.19	0.20	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.52	0.19	0.20	pCi/g
00-03128-07	NR1000303S031404	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	1.10	1.43	1.19	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.73	0.76	0.47	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.00	0.03	0.05	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.10	0.05	0.05	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.31	0.10	0.14	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.33	0.12	0.08	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.20	0.09	0.10	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.29	0.08	0.09	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.36	0.13	0.16	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.36	0.13	0.16	pCi/g
00-03128-08	NR1000303S031405	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	0.52	0.64	0.86	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.93	1.11	0.69	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.01	0.04	0.08	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.64	0.14	0.07	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.33	0.17	0.25	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.24	0.16	0.12	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.23	0.12	0.15	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.32	0.11	0.15	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.55	0.18	0.30	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.55	0.18	0.30	pCi/g
00-03128-09	NR1000303S031406	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	0.12	1.41	1.38	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	4.85	1.25	0.71	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.00	0.04	0.08	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	1.91	0.25	0.08	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.48	0.14	0.23	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.55	0.21	0.11	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.37	0.15	0.17	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.34	0.13	0.14	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.54	0.22	0.48	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.54	0.22	0.48	pCi/g
00-03128-10	NR1000303S031407	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	-0.42	0.91	1.55	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	7.57	1.35	0.60	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	-0.01	0.05	0.09	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.26	0.10	0.07	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.53	0.14	0.20	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.52	0.17	0.12	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.38	0.14	0.14	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.50	0.13	0.16	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.56	0.22	0.27	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.56	0.22	0.27	pCi/g
00-03128-11	NR1000303S031408	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	0.42	0.84	1.35	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.76	0.77	0.38	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.01	0.03	0.06	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.00	0.03	0.06	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.28	0.11	0.14	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.33	0.13	0.07	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.18	0.09	0.08	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.22	0.09	0.10	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.31	0.13	0.17	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.31	0.13	0.17	pCi/g
00-03128-12	NR1000303S031409	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	-0.16	0.55	1.00	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	6.53	1.83	1.08	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.07	0.08	0.16	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.20	0.11	0.13	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.65	0.25	0.37	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.55	0.26	0.20	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.49	0.21	0.26	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.64	0.23	0.22	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.69	0.37	0.43	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.69	0.37	0.43	pCi/g
00-03128-13	NR1000303S031410	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	0.40	1.38	2.18	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 0003128
MATRIX: Soil

Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	4.49	1.21	0.60	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.00	0.04	0.08	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	6.45	0.73	0.10	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.24	0.21	0.41	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.42	0.17	0.16	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.34	0.22	0.23	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.32	0.20	0.27	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.49	0.20	0.28	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.49	0.20	0.28	pCi/g
00-03128-14	NR1000303S031411	03/14/00	03/20/00	03/21/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	1.87	1.50	1.38	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.52	0.81	0.47	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.03	0.04	0.08	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.99	0.15	0.07	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.34	0.15	0.30	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.44	0.16	0.10	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.15	0.10	0.18	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.25	0.12	0.20	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.40	0.18	0.35	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.40	0.18	0.35	pCi/g
00-03128-15	NR1000303S031412	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	0.14	0.92	1.10	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	2.92	0.86	0.58	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	0.00	0.03	0.06	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.05	0.04	0.04	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.29	0.10	0.14	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.07	0.08	0.07	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.16	0.09	0.09	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.12	0.10	0.15	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.25	0.11	0.19	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.25	0.11	0.19	pCi/g
00-03128-16	NR1000303S031413	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	-0.13	0.51	0.97	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 0003128
MATRIX: Soil

Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Potassium-40	LANL ER-130 Modified	3.63	0.93	0.66	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Cobalt-60	LANL ER-130 Modified	-0.01	0.04	0.07	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Cesium-137	LANL ER-130 Modified	0.08	0.06	0.07	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thallium-208	LANL ER-130 Modified	0.40	0.13	0.21	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Lead-212	LANL ER-130 Modified	0.38	0.12	0.11	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Lead-214	LANL ER-130 Modified	0.28	0.12	0.13	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Radium-226	LANL ER-130 Modified	0.18	0.11	0.19	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-228	LANL ER-130 Modified	0.51	0.21	0.22	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Thorium-232	LANL ER-130 Modified	0.51	0.21	0.22	pCi/g
00-03128-17	NR1000303S031414	03/14/00	03/20/00	03/22/00	03/29/00	0003128	Uranium-238	LANL ER-130 Modified	-0.83	0.77	1.33	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

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TNU-OR-12271

April 5, 2000

Ms. Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

NYSDEC 0003L774

CASE NARRATIVE
Work Order # 00-03143-OR

SAMPLE RECEIPT

This work order contains two soil samples received 03/22/00. Both samples were analyzed for Gross Alpha/Beta, Americium-241, Nickel-63, Isotopic Plutonium, Total Strontium, Technetium-99, Tritium, Isotopic Uranium and by Gamma Spectroscopy.

CLIENT ID	LAB ID
NR1990303S031602	00-03143-04
NR1990303S031601	00-03143-05

ANALYTICAL METHODS

Gross Alpha/Beta was performed by gas-flow proportional counting using Method LANL MLR-100 modified Americium-241 was analyzed using Method EML Am-01 modified. Nickel-63 was performed using Method ASTM 3500-Ni E modified. Isotopic Plutonium was analyzed using Method EML Pu-02 modified. Total Strontium was analyzed using EIChroM Method SRW01 modified. Technetium-99 was analyzed using EIChroM Method TCS01 modified. Tritium was performed by beta liquid scintillation using Method LANL ER-210 modified. Isotopic Uranium was analyzed using Method EML U-02 modified. Gamma Spectroscopy was performed using Method LANL ER-130 modified.

PROBLEMS OR UNUSUAL CIRCUMSTANCES

No problems or unusual circumstances were noted during the analytical process.

CERTIFICATION OF ACCURACY

I certify that 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 above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

Martin R. Keller for

M.R. McDougall
Laboratory Manager

Date: 4/5/2000

Judy Stone
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 0003143
MATRIX: Soil

Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03143-01	K KNOWN	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Gross Alpha	LANL MLR-100 Modified	234.85	10.10		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Gross Alpha	LANL MLR-100 Modified	256.72	7.94	0.80	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Gross Alpha	LANL MLR-100 Modified	0.16	0.38	0.80	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Gross Alpha	LANL MLR-100 Modified	-2.60	6.58	14.45	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/24/00	04/05/00	0003143	Gross Alpha	LANL MLR-100 Modified	-2.64	6.67	14.66	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/24/00	04/05/00	0003143	Gross Alpha	LANL MLR-100 Modified	-0.86	6.94	14.33	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Gross Beta	LANL MLR-100 Modified	223.56	4.69		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Gross Beta	LANL MLR-100 Modified	232.47	6.61	1.08	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Gross Beta	LANL MLR-100 Modified	1.75	0.71	1.08	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Gross Beta	LANL MLR-100 Modified	-0.86	4.75	8.68	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/24/00	04/05/00	0003143	Gross Beta	LANL MLR-100 Modified	1.58	5.21	9.13	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/24/00	04/05/00	0003143	Gross Beta	LANL MLR-100 Modified	5.00	5.10	8.43	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Americium-241	EML Am-01 Modified	6.50	0.20		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Americium-241	EML Am-01 Modified	6.12	1.49	0.30	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Americium-241	EML Am-01 Modified	0.13	0.18	0.32	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Americium-241	EML Am-01 Modified	0.37	0.35	0.52	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Americium-241	EML Am-01 Modified	0.71	0.52	0.44	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Americium-241	EML Am-01 Modified	1.04	0.66	0.55	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	04/01/00	04/05/00	0003143	Nickel-63	ASTM 3500-Ni-E Modified	1108.81	45.46		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	04/01/00	04/05/00	0003143	Nickel-63	ASTM 3500-Ni-E Modified	980.53	3.51	0.10	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	04/01/00	04/05/00	0003143	Nickel-63	ASTM 3500-Ni-E Modified	0.07	3.18	5.72	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	04/01/00	04/05/00	0003143	Nickel-63	ASTM 3500-Ni-E Modified	0.79	3.15	5.39	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	04/01/00	04/05/00	0003143	Nickel-63	ASTM 3500-Ni-E Modified	-3.75	4.56	10.15	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	04/01/00	04/05/00	0003143	Nickel-63	ASTM 3500-Ni-E Modified	1.39	4.44	7.45	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-238	EML Pu-02 Modified	5.02	0.14		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-238	EML Pu-02 Modified	4.28	0.91	0.15	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-238	EML Pu-02 Modified	0.06	0.09	0.17	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-238	EML Pu-02 Modified	0.02	0.05	0.14	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-238	EML Pu-02 Modified	0.20	0.15	0.17	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-238	EML Pu-02 Modified	0.02	0.07	0.19	pCi/g

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Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Report Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
00-03143-01	K KNOWN	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-239/240	EML Pu-02 Modified	6.44	0.20		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-239/240	EML Pu-02 Modified	6.01	1.20	0.10	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-239/240	EML Pu-02 Modified	-0.01	0.01	0.12	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-239/240	EML Pu-02 Modified	0.03	0.05	0.07	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-239/240	EML Pu-02 Modified	0.07	0.10	0.19	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Plutonium-239/240	EML Pu-02 Modified	-0.01	0.01	0.13	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Total Strontium	EIChroM SRW01 Modified	21.55	0.45		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Total Strontium	EIChroM SRW01 Modified	18.17	1.14	0.77	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Total Strontium	EIChroM SRW01 Modified	-0.17	0.40	0.74	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Total Strontium	EIChroM SRW01 Modified	-0.06	0.40	0.72	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Total Strontium	EIChroM SRW01 Modified	0.12	0.38	0.66	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Total Strontium	EIChroM SRW01 Modified	2.58	0.52	0.65	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/27/00	04/05/00	0003143	Technetium-99	EIChroM TCS01 Modified	976.12	21.48		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/27/00	04/05/00	0003143	Technetium-99	EIChroM TCS01 Modified	1040.54	6.82	1.52	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/27/00	04/05/00	0003143	Technetium-99	EIChroM TCS01 Modified	0.15	0.79	1.35	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/27/00	04/05/00	0003143	Technetium-99	EIChroM TCS01 Modified	0.06	0.08	0.13	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/27/00	04/05/00	0003143	Technetium-99	EIChroM TCS01 Modified	0.10	0.11	0.18	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/27/00	04/05/00	0003143	Technetium-99	EIChroM TCS01 Modified	0.11	0.08	0.13	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	04/03/00	04/05/00	0003143	Tritium	LANL ER-210 Modified	1227.28	441.86		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	04/03/00	04/05/00	0003143	Tritium	LANL ER-210 Modified	1302.35	84.14	56.80	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	04/03/00	04/05/00	0003143	Tritium	LANL ER-210 Modified	0.22	3.29	5.84	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	04/03/00	04/05/00	0003143	Tritium	LANL ER-210 Modified	1.22	2.80	4.84	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	04/03/00	04/05/00	0003143	Tritium	LANL ER-210 Modified	-0.20	2.65	4.75	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	04/03/00	04/05/00	0003143	Tritium	LANL ER-210 Modified	2.06	3.32	5.66	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-234	EML U-02 Modified	12.78	0.46		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-234	EML U-02 Modified	13.12	2.67	0.15	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-234	EML U-02 Modified	0.14	0.12	0.15	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-234	EML U-02 Modified	0.51	0.22	0.15	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-234	EML U-02 Modified	0.51	0.24	0.18	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-234	EML U-02 Modified	0.45	0.22	0.16	pCi/g

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00-03143-01	K KNOWN	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-235	EML U-02 Modified	0.58	0.02		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-235	EML U-02 Modified	0.55	0.27	0.17	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-235	EML U-02 Modified	0.00	0.01	0.13	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-235	EML U-02 Modified	0.02	0.05	0.11	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-235	EML U-02 Modified	0.19	0.15	0.15	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-235	EML U-02 Modified	0.24	0.17	0.15	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-238	EML U-02 Modified	12.46	0.45		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-238	EML U-02 Modified	13.02	2.65	0.15	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-238	EML U-02 Modified	0.01	0.05	0.15	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-238	EML U-02 Modified	0.52	0.22	0.12	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-238	EML U-02 Modified	0.62	0.27	0.18	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/28/00	04/05/00	0003143	Uranium-238	EML U-02 Modified	0.80	0.31	0.16	pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Cesium-137	LANL ER-130 Modified	73.64	3.39		pCi/g
00-03143-01	K KNOWN	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Cobalt-60	LANL ER-130 Modified	130.30	5.87		pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Cesium-137	LANL ER-130 Modified	77.82	8.18	0.79	pCi/g
00-03143-01	S SPIKE	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Cobalt-60	LANL ER-130 Modified	130.60	9.41	0.84	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Cesium-137	LANL ER-130 Modified	0.02	0.03	0.06	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Cobalt-60	LANL ER-130 Modified	0.02	0.03	0.06	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Lead-212	LANL ER-130 Modified	-0.04	0.05	0.08	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Lead-214	LANL ER-130 Modified	0.05	0.07	0.11	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Potassium-40	LANL ER-130 Modified	-0.08	0.27	0.56	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Radium-226	LANL ER-130 Modified	-0.03	0.06	0.10	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Thallium-208	LANL ER-130 Modified	-0.02	0.08	0.15	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-228	LANL ER-130 Modified	0.11	0.11	0.21	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-232	LANL ER-130 Modified	0.11	0.11	0.21	pCi/g
00-03143-02	B BLANK	03/22/00	03/22/00	03/23/00	04/05/00	0003143	Uranium-238	LANL ER-130 Modified	0.11	0.62	0.95	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Cesium-137	LANL ER-130 Modified	1.46	0.21	0.07	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Cobalt-60	LANL ER-130 Modified	0.02	0.05	0.09	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Lead-212	LANL ER-130 Modified	0.45	0.17	0.09	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Lead-214	LANL ER-130 Modified	0.28	0.13	0.13	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Potassium-40	LANL ER-130 Modified	2.52	0.88	0.30	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Radium-226	LANL ER-130 Modified	0.19	0.12	0.13	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thallium-208	LANL ER-130 Modified	0.42	0.14	0.19	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-228	LANL ER-130 Modified	0.42	0.17	0.20	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-232	LANL ER-130 Modified	0.42	0.17	0.20	pCi/g
00-03143-03	D NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Uranium-238	LANL ER-130 Modified	0.78	1.08	1.38	pCi/g

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00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Cesium-137	LANL ER-130 Modified	1.58	0.22	0.07	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Cobalt-60	LANL ER-130 Modified	0.07	0.04	0.06	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Lead-212	LANL ER-130 Modified	0.18	0.15	0.11	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Lead-214	LANL ER-130 Modified	0.39	0.13	0.14	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Potassium-40	LANL ER-130 Modified	3.24	0.86	0.67	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Radium-226	LANL ER-130 Modified	0.34	0.10	0.14	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thallium-208	LANL ER-130 Modified	0.34	0.21	0.32	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-228	LANL ER-130 Modified	0.42	0.18	0.19	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-232	LANL ER-130 Modified	0.42	0.18	0.19	pCi/g
00-03143-04	NR1990303S031602	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Uranium-238	LANL ER-130 Modified	0.56	0.89	1.46	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Cesium-137	LANL ER-130 Modified	4.05	0.49	0.07	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Cobalt-60	LANL ER-130 Modified	0.00	0.04	0.07	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Lead-212	LANL ER-130 Modified	0.24	0.14	0.14	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Lead-214	LANL ER-130 Modified	0.14	0.14	0.18	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Potassium-40	LANL ER-130 Modified	2.57	0.88	0.62	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Radium-226	LANL ER-130 Modified	0.22	0.12	0.14	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thallium-208	LANL ER-130 Modified	0.21	0.14	0.22	pCi/g
00 03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-228	LANL ER-130 Modified	0.15	0.16	0.30	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Thorium-232	LANL ER-130 Modified	0.15	0.16	0.30	pCi/g
00-03143-05	NR1990303S031601	03/16/00	03/22/00	03/23/00	04/05/00	0003143	Uranium-238	LANL ER-130 Modified	0.71	0.98	1.46	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike