



DEPARTMENT OF THE ARMY
U.S. ARMY JEFFERSON PROVING GROUND
MADISON, INDIANA 47250-5100



February 6, 1995

REPLY TO
ATTENTION OF

STEJP-CT-FN

U.S. Nuclear Regulatory Commission
Office of NMSS
Dr. Rateb (Boby) Eid
Division of Low Level Waste and Decommissioning
Washington, DC 20555

RE: DOCKET # 040-08838

Dear Sir:

In accordance with commitments made during recent meeting, enclosed are the reports of analysis of environmental samples taken at Jefferson Proving Ground.

Should you have any questions concerning this matter, please contact Mr. Richard Herring at 812-273-7303/7606.

FOR THE COMMANDER:

Sincerely,

Paul D. Cloud
Chief, Environmental
Management Office

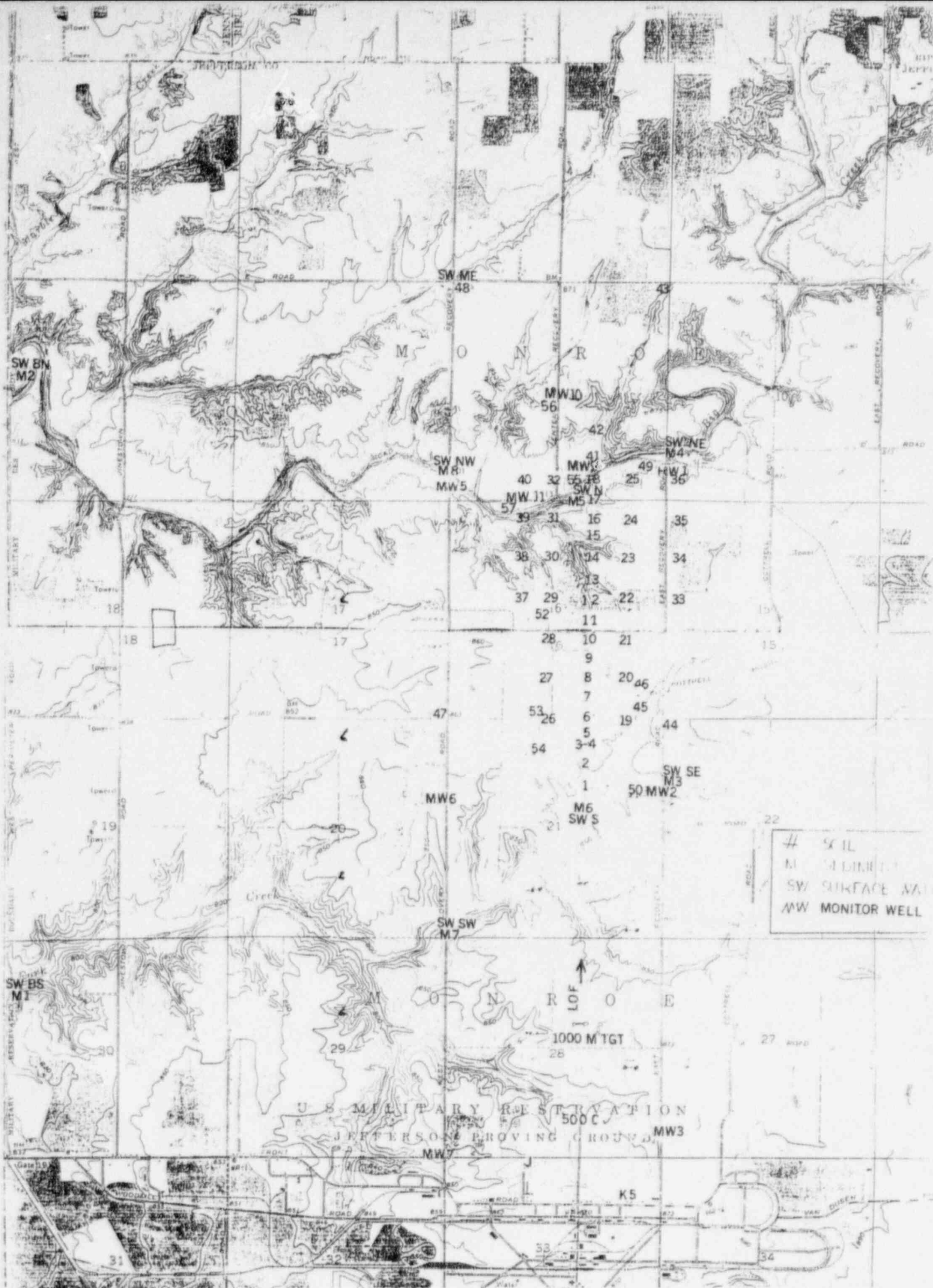
Enclosure

CC:
Mr. K. Lambert, R III NRC
HQ, TECOM-ST

200061

950302CJ7B 950206
PDR ADOCK 04008838
C PDR

NHD.



TELEDYNE BROWN ENGINEERING ENVIRONMENTAL SERVICES

REPORT OF ANALYSIS

RUN DATE 10/13/94

USA JEFFERSON PROVING GROUND	WORK ORDER NUMBER	CUSTOMER P.O. NUMBER	DATE RECEIVED	DELIVERY DATE	PAGE	7
ATTN: STEJP-CT (RICHARD HERRING)	2-3353		09/15/94	10/07/94		
MADISON IN	47250-5100					

W A T E R

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M *	KID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% *	LAB.
			START DATE	STOP DATE				DATE	TIME		
62457	SWSB-94-1		09/08		U-234	L.T. 2. E-01		09/22		6	
					U-235	L.T. 2. E-01		09/22	6		
					U-238	2.8 +-2.5 E-01		09/22	6		
62458	SWME-94-1		09/08		U-234	L.T. 1. E-01		09/22		6	
					U-235	L.T. 1. E-01		09/22	6		
					U-238	L.T. 1. E-01		09/22	6		

LAST PAGE OF REPORT

J. Guenther
APPROVED BY J. GUENTHER 10/13/94

SEND 1 COPIES TO UN5705 USA JEFFERSON PROVING GROUND

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GEILLI GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TELEDYNE BROWN ENGINEERING ENVIRONMENTAL SERVICES

REPORT OF ANALYSIS

RUN DATE 10/13/94

USA JEFFERSON PROVING GROUND
ATTN: STEJP-CT (RICHARD HERRING)
MADISON IN

WORK ORDER NUMBER

2-3353

CUSTOMER P.O. NUMBER

DATE RECEIVED

09/15/94

DELIVERY DATE

10/07/94

PAGE 6

47250-5100

W A T E R

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-X U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% *	LAB.
			START DATE	STOP TIME				DATE	TIME		
62449	MW1-93-2		09/0R		U-234	L.T. 2. E-01		09/22		6	
					U-235	L.T. 2. E-01		09/22		6	
					U-238	L.T. 2. E-01		09/22		6	
62450	MW2-93-2		09/0R		U-234	9.2 +-3.6 E-01		09/22		6	
					U-235	L.T. 1. E-01		09/22		6	
					U-238	4.7 +-2.6 E-01		09/22		6	
62451	SWN-93-2		09/0R		U-234	2.8 +-2.5 E-01		09/22		6	
					U-235	L.T. 1. E-01		09/22		6	
					U-238	2.6 +-2.1 E-01		09/22		6	
62452	SWNE-93-2		09/0R		U-234	L.T. 2. E-01		09/22		6	
					U-235	L.T. 1. E-01		09/22		6	
					U-238	L.T. 1. E-01		09/22		6	
62453	SWSE-93-2 2 BOTTLES		09/0R		U-234	L.T. 2. E-01		09/22		6	
					U-235	L.T. 2. E-01		09/22		6	
					U-238	L.T. 2. E-01		09/22		6	
62454	SWSW-93-2		09/0R		U-234	L.T. 2. E-01		09/22		6	
					U-235	L.T. 2. E-01		09/22		6	
					U-238	L.T. 2. E-01		09/22		6	
62455	SWNW-93-2		09/0R		U-234	L.T. 2. E-01		09/22		6	
					U-235	L.T. 2. E-01		09/22		6	
					U-238	3.5 +-2.5 E-01		09/22		6	
62456	SWNB-94-1		09/0R		U-234	L.T. 3. E-01		09/22		6	
					U-235	L.T. 2. E-01		09/22		6	
					U-238	L.T. 2. E-01		09/22		6	

TELEDYNE BROWN ENGINEERING ENVIRONMENTAL SERVICES

REPORT OF ANALYSIS

RUN DATE 10/13/94

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 3

USA JEFFERSON PROVING GROUND
ATTN: STEJP-CT (RICHARD HERRING)
MADISON IN

2-3353

09/15/94

10/07/94

47250-5100

SEDIMENT/SILT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE			NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% *	LAB.
			START DATE	STOP DATE	TIME				DATE	TIME		
62442	47-94-1		09/0R			U-234	1.3 +-0.5 E-01		09/26		6	
						U-235	L.T. 1. E-02		09/26		6	
						U-238	8.3 +-3.6 E-02		09/26		6	
62443	48-94-1		09/0R			U-234	3.3 +-0.7 E-01		09/26		6	
						U-235	L.T. 1. E-02		09/26		6	
						U-238	3.1 +-0.7 E-01		09/26		6	
62444	M3-94-1		09/0R			U-234	9.5 +-1.4 E-01		09/26		6	
						U-235	4.4 +-2.8 E-02		09/26		6	
						U-238	8.4 +-1.3 E-01		09/26		6	
62445	M1-94-1		09/0R			U-234	1.1 +-0.4 E-01		09/26		6	
						U-235	L.T. 1. E-02		09/26		6	
						U-238	1.2 +-0.4 E-01		09/26		6	
62446	M7-94-1		09/0R			U-234	1.7 +-0.5 E-01		09/26		6	
						U-235	L.T. 1. E-02		09/26		6	
						U-238	1.7 +-0.5 E-01		09/26		6	
62447	M8-94-1		09/0R			U-234	4.0 +-2.8 E-02		09/26		6	
						U-235	L.T. 2. E-02		09/26		6	
						U-238	5.0 +-2.9 E-02		09/26		6	
62448	M4-94-1		09/0R			U-234	5.5 +-3.1 E-02		09/29		6	
						U-235	L.T. 2. E-02		09/29		6	
						U-238	3.2 +-2.4 E-02		09/29		6	

TELEDYNE BROWN ENGINEERING ENVIRONMENTAL SERVICES

REPORT OF ANALYSIS

RUN DATE 10/13/94

USA JEFFERSON PROVING GROUND	WORK ORDER NUMBER	CUSTOMER P.O. NUMBER	DATE RECEIVED	DELIVERY DATE	PAGE 2
ATTN: STEJP-CI (RICHARD HERRING)	2-3353		09/15/94	10/07/94	
MADISON IN	47250-5100				

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE TIME STOP DATE TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE TIME	VOLUME - LUNITS ASH-WGHT-%	LAB.
62437	55-94-1		09/0R	U-234	2.0 +-0.6 E-01		09/26		6
				U-235	1.7. 2. E-02		09/26		6
				U-238	2.1 +-0.6 E-01		09/26		6
62438	56-94-1		09/0R	U-234	1.5 +-0.5 E-01		09/26		6
				U-235	1.7. 2. E-02		09/26		6
				U-238	1.8 +-0.6 E-01		09/26		6
62439	57-94-1		09/0R	U-234	1.7 +-0.5 E-01		09/26		6
				U-235	1.7. 1. E-02		09/26		6
				U-238	1.8 +-0.5 E-01		09/26		6
62440	M2-94-1		09/0P	U-234	4.1 +-2.5 E-02		09/26		6
				U-235	1.7. 1. E-02		09/26		6
				U-238	6.2 +-3.1 E-02		09/26		6
62441	M5-94-1		09/0R	U-234	1.4 +-0.4 E-01		09/26		6
				U-235	1.7. 1. E-02		09/26		6
				U-238	3.6 +-0.7 E-01		09/26		6

TELEDYNE BROWN ENGINEERING ENVIRONMENTAL SERVICES

REPORT OF ANALYSIS

RUN DATE 10/13/94

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 1

USA JEFFERSON PROVING GROUND
ATTN: STEJP-CT (RICHARD HERRING)
MADISON IN

2-3353

09/15/94

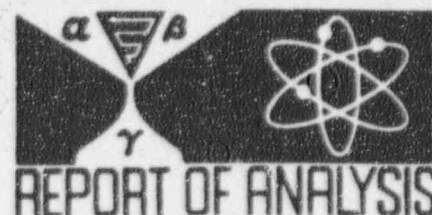
10/07/94

47250-5100

AIR PARTICULATE FILTERS

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (TOTAL PCI)	NUCL-UNIT-% U/M ±	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% ±	LAB.
			START DATE	STOP DATE				DATE	TIME		
62469	A1-94-1		09/0R		U-234	L.T. 7. E-02		09/27		6	
					U-235	L.T. 7. E-02		09/27		6	
					U-238	L.T. 7. E-02		09/27		6	
62470	A2-94-1		09/0R		U-234	L.T. 9. E-02		09/27		6	
					U-235	L.T. 5. E-02		09/27		6	
					U-238	9.0 +-7.3 E-02		09/27		6	
62471	A3-94-1		09/0R		U-234	L.T. 8. E-02		09/27		6	
					U-235	L.T. 6. E-02		09/27		6	
					U-238	8.7 +-7.7 E-02		09/27		6	
62472	A4-94-1		09/0R		U-234	L.T. 7. E-02		09/27		6	
					U-235	L.T. 5. E-02		09/27		6	
					U-238	L.T. 5. E-02		09/27		6	
62473	A5-94-1		09/0R		U-234	L.T. 7. E-02		09/27		6	
					U-235	L.T. 7. E-02		09/27		6	
					U-238	L.T. 7. E-02		09/27		6	
62474	A6-94-1		09/0R		U-234	L.T. 1. E-01		09/27		6	
					U-235	L.T. 1. E-01		09/27		6	
					U-238	L.T. 1. E-01		09/27		6	

CUSTOMER US Army Jefferson Proving Ground
 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 94-02-197



Deer-Isotopic Uranium
 TYPE OF ANALYSIS

DAAD03-93-P-0320
 CUSTOMER ORDER NUMBER

02/23/94
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	Total Volume	
			wet/dry(g)	pCi/g(wet)
DK1-93-2	11/06/93	U234	74/18.4	<0.01
		U235		<0.01
		U238		<0.01
DK2-93-2	11/06/93	U234	127/57.6	<0.02
		U235		<0.01
		U238		<0.01
DK3-93-2	11/06/93	U234	161/99.2	<0.02
		U235		<0.02
		U238		<0.01
DK4-93-2	11/06/93	U234	190/71.0	<0.01
		U235		<0.01
		U238		<0.01
DK5-93-2	11/06/93	U234	260/151.6	<0.01
		U235		<0.01
		U238		<0.01

☐ REPORTED VIA TELEPHONE

☐ FAX

PAGE OF

1 1

TMA Eberline
 Thermo Analytical Inc.

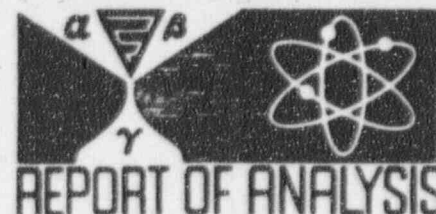
7021 PAN AMERICAN FREEWAY, N.E.
 ALBUQUERQUE, NEW MEXICO 87109
 PHONE (505) 345-3461

APPROVED BY Cliff Gravel, Data Analyst

Cliff Gravel

DATE

CUSTOMER US Army Jefferson Proving Ground
 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 94-02-197



Deer-Isotopic Uranium

DAAD03-93-P-0320

02/23/94

CUSTOMER ORDER NUMBER

SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	Total Volume wet/dry(g)	pCi/g(wet)
DK1-93-2	11/06/93	U234	74/18.4	<0.01
		U235		<0.01
		U238		<0.01
DK2-93-2	11/06/93	U234	127/57.6	<0.02
		U235		<0.01
		U238		<0.01
DK3-93-2	11/06/93	U234	161/99.2	<0.02
		U235		<0.02
		U238		<0.01
DK4-93-2	11/06/93	U234	190/71.0	<0.01
		U235		<0.01
		U238		<0.01
DK5-93-2	11/06/93	U234	260/151.6	<0.01
		U235		<0.01
		U238		<0.01

☐ REPORTED VIA TELEPHONE

☐ FAX

PAGE 1 OF 1

TMA Eberline
Thermo Analytical Inc.

7021 PAN AMERICAN FREEWAY, N.E.
 ALBUQUERQUE, NEW MEXICO 87109
 PHONE (505) 345-3461
 FAX (505) 761-5416

APPROVED BY Cliff Gravel, Data Analyst

DATE



Accu-Labs Research, Inc.

4663 Table Mountain Drive Golden, Colorado 80403-1650
(303) 277-9514 FAX (303) 277-9512

ANALYSIS REPORT

DATE: 12/22/92 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-45685-4
Date Samples Received: 11/18/92
Customer PO Number: DAAD03-92-P-0436

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-45685-4-1	9897-45685-4-2	9897-45685-4-3	9897-45685-4-4
Sponsor Designation -	M1-92-2	M2-92-2	6-92-2	4B-92-2
Date Collected -				

Determinations in pCi/g (dry) unless noted

Uranium-233 & -234 - total	0.2 ± 0.1 *	0.2 ± 0.1 *	3.3 ± 0.4 *	0.9 ± 0.2 *
Uranium-235 - total	0.0 ± 0.1 *	0.0 ± 0.1 *	0.6 ± 0.2 *	0.0 ± 0.1 *
Uranium-238 - total	0.2 ± 0.1 *	0.1 ± 0.1 *	20 ± 1 *	0.8 ± 0.2 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By: *Bud Summers*
Bud Summers
Radiochemistry Supervisor

BS/ep
JP



Accu-Labs Research, Inc.

4663 Table Mountain Drive Golden, Colorado 80403-1650
(303) 277-9514 FAX (303) 277-9512

ANALYSIS REPORT

DATE: 11/19/92 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-45511-4
Date Samples Received: 11/06/92
Customer PO Number: WO4ZAA-2098-0002

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-45511-4-1	9897-45511-4-2	9897-45511-4-3	9897-45511-4-4
Sponsor Designation -	SWN-92-1	SWSW-92-1	MW10-92-1	MW11-92-1
Date Collected -				

Determinations in pCi/L unless noted

Uranium-233 & -234 - total	0.2 ± 0.2 *	0.0 ± 0.1 *	1.6 ± 0.4 *	0.0 ± 0.1 *
Uranium-235 - total	0.0 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *
Uranium-238 - total	0.1 ± 0.1 *	0.0 ± 0.1 *	0.9 ± 0.3 *	0.4 ± 0.2 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By:


Bud Summers
Radiochemistry Supervisor

BS/ep




Accu-Labs Research, Inc.

4663 Table Mountain Drive Golden, Colorado 80403-1650
(303) 277-9514 FAX (303) 277-9512

ANALYSIS REPORT

DATE: 11/24/92 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-45513-2
Date Samples Received: 11/06/92
Customer PO Number: WO4ZAA-2098-0002

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-45513-2-1	9897-45513-2-2
Sponsor Designation -	A4-92-1	A5-92-1
Date Collected -		

Determinations in pCi/Filter unless noted

Uranium-233 & -234 - total	0.0 ± 0.1 *	0.2 ± 0.2 *
Uranium-235 - total	0.0 ± 0.1 *	0.0 ± 0.1 *
Uranium-238 - total	0.1 ± 0.2 *	0.2 ± 0.2 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By:

Bud Summers
for Bud Summers

Radiochemistry Supervisor

BS/dh

dh



Accu-Labs Research, Inc.

4663 Table Mountain Drive Golden, Colorado 80403-1650
(303) 277-9514 FAX (303) 277-9512

ANALYSIS REPORT

DATE: 11/30/92 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-45512-1
Date Samples Received: 11/06/92
Customer PO Number: WO4ZAA-2098-0001

* These samples to be disposed of 30 days after the date of this report.

ALR Designation - 9897-45512-1-1
Sponsor Designation - 48-92-1
Date Collected -

Determinations in pCi/g (dry) unless noted

Uranium-233 & -234 - total	0.5 ± 0.2 *
Uranium-235 - total	0.0 ± 0.1 *
Uranium-238 - total	0.1 ± 0.1 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By: _____

Bud Summers
Radiochemistry Supervisor

BS/ep
SP



Accu-Labs Research, Inc.

4663 Table Mountain Drive Golden, Colorado 80403-1650
(303) 277-9514 FAX (303) 277-9512

ANALYSIS REPORT

DATE: 12/09/92 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-45684-4
Date Samples Received: 11/18/92
Customer PO Number: DAAD03-92-P-0436

These samples to be disposed of 30 days after the date of this report.

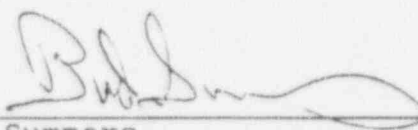
ALR Designation -	9897-45684-4-1	9897-45684-4-2	9897-45684-4-3	9897-45684-4-4
Sponsor Designation -	MW6-92-2	MW10-92-1	SWBN-92-2	SWBS-92-2
Date Collected -				

Determinations in pCi/L unless noted

Uranium-233 & -234 - total	2.2 ± 0.3 *	2.3 ± 0.4 *	0.2 ± 0.1 *	0.3 ± 0.1 *
Uranium-235 - total	0.1 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *
Uranium-238 - total	2.0 ± 0.3 *	0.9 ± 0.2 *	0.4 ± 0.2 *	0.2 ± 0.1 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.95σ.

By:


Bud Summers
Radiochemistry Supervisor

BS/ep


TELEDYNE ISOTOPFS

REPORT OF ANALYSIS

RUN DATE 12/03/92

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 6

COMMANDER
ATTN STEJP-CT-EN
US ARMY JEFFERSON PROVING GRD
MADISON IN 47250-5100

2-4960

11/18/92

12/09/92

WATER - GROUND

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE TIME	STOP DATE TIME	NUCLIDE	ACTIVITY (PC/LITER)	NUCL-UNIT-% U/M %	MID-COUNT TIME DATE TIME	VOLUME - UNITS ASH-WEIGHT-%	LAB.
96171	SWN-92-2		11/0R		U-234	L.T. 1. E-01		11/24		6
					U-235	L.T. 9. E-02		11/24		6
					U-238	4.2 +-2.0 E-01		11/24		6
96172	SWS-92-2		11/0R		U-234	L.T. 2. E-01		11/24		6
					U-235	L.T. 9. E-02		11/24		6
					U-238	1.3 +-1.2 E-01		11/24		6
96173	SWNE-92-2		11/0R		U-234	1.9 +-1.5 E-01		11/24		6
					U-235	L.T. 1. E-01		11/24		6
					U-238	2.4 +-1.7 E-01		11/24		6
96174	SWE-92-2		11/0R		U-234	2.4 +-1.9 E-01		11/24		6
					U-235	L.T. 1. E-01		11/24		6
					U-238	2.1 +-1.7 E-01		11/24		6
96175	SWNW-92-2		11/0R		U-234	L.T. 1. E-01		11/24		6
					U-235	L.T. 1. E-01		11/24		6
					U-238	6.5 +-2.7 E-01		11/24		6
96176	SWSW-92-2		11/0R		U-234	1.4 +-1.2 E-01		11/24		6
					U-235	L.T. 9. E-02		11/24		6
					U-238	2.3 +-1.5 E-01		11/24		6
96177	SWBN-92-2		11/0R		U-234	L.T. 1. E-01	2.1 ± .1	11/24		6
					U-235	L.T. 1. E-01	0.2 ± .1	11/24		6
					U-238	2.9 +-2.0 E-01	.9 ± .1	11/24		6
96178	SWBS-92-2		11/0R		U-234	1.6 +-1.3 E-01	.3 ± .1	11/24		6
					U-235	L.T. 1. E-01	.2 ± .1	11/24		6
					U-238	L.T. 9. E-02	.2 ± .1	11/24		6

LAST PAGE OF REPORT

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2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - GELT GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB.

6 - ALPHA SPEC LAB.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 12/03/92

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 5

2-4960

11/18/92

12/09/92

COMMANDER
ATTN STEJP-CT-EN
US ARMY JEFFERSON PROVING GRD
MADISON IN 47250-5100

WATER - GROUND

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M ±	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% ±	LAB.
			START DATE TIME	STOP DATE TIME				DATE	TIME		
96163	MW 1-92-2		11/0R		U-234	2.1 ±1.7 E-01		11/24		6	
					U-235	L.T. 1. E-01		11/24		6	
					U-238	5.7 ±2.7 E-01		11/24		6	
96164	MW 2-92-2		11/0R		U-234	1.0 ±0.3 E 00		11/24		6	
					U-235	L.T. 1. E-01		11/24		6	
					U-238	1.4 ±0.4 E 00		11/24		6	
96165	MW 3-92-2		11/0R		U-234	2.1 ±2.0 E-01		11/24		6	
					U-235	L.T. 1. E-01		11/24		6	
					U-238	L.T. 1. E-01		11/24		6	
96166	MW 5-92-2		11/0R		U-234	1.5 ±0.4 E 00		11/24		6	
					U-235	L.T. 1. E-01		11/24		6	
					U-238	8.4 ±3.2 E-01		11/24		6	
96167	MW 6-92-2		11/0R		U-234	2.0 ±0.5 E 00	2.2 ±.3	11/24		6	
					U-235	L.T. 1. E-01	.1 ±.1	11/24		6	
					U-238	1.7 ±0.5 E 00	2.0 ±.3	11/24		6	
96168	MW 9-92-2		11/0R		U-234	1.6 ±0.4 E 00		11/24		6	
					U-235	L.T. 1. E-01		11/24		6	
					U-238	1.3 ±0.4 E 00		11/24		6	
96169	MW10-92-2		11/0R		U-234	2.0 ±0.6 E 00	2.3 ±.4	11/24		6	
					U-235	L.T. 2. E-01	6 ±.1	11/24		6	
					U-238	9.2 ±4.0 E-01	1.9 ±.2	11/24		6	
96170	MW11-92-2		11/0R		U-234	2.3 ±2.1 E-01		11/24		6	
					U-235	L.T. 1. E-01		11/24		6	
					U-238	4.3 ±2.6 E-01		11/24		6	

TELEDYNE ISOTOPES
REPORT OF ANALYSIS

RUN DATE 12/03/92

WORK ORDER NUMBER	CUSTOMER P.O. NUMBER	DATE RECEIVED	DELIVERY DATE	PAGE 2
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COMMANDER
ATTN STEJP-CT-EN
US ARMY JEFFERSON PROVING GRD
MADISON IN 47250-5100

SEDIMENT/SILT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M ±	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% ±	LAB.
			START DATE TIME	STOP DATE TIME				DATE	TIME		
96179	M1-92-2		11/0R		U-234	7.8 +-2.9 E-02	.2 ±.1	11/30		6	
					U-235	L.T. 1. E-02	0 ±.1	11/30		6	
					U-238	5.3 +-2.4 E-02	.2 ±.1	11/30		6	
96180	M2-92-2		11/0R		U-234	5.4 +-2.4 E-02	.2 ±.1	11/26		6	
					U-235	L.T. 1. E-02	0 ±.1	11/26		6	
					U-238	3.5 +-1.9 E-02	.1 ±.1	11/26		6	
96181	M3-92-2		11/0R		U-234	2.3 +-0.4 E-01		11/26		6	
					U-235	L.T. 9. E-03		11/26		6	
					U-238	1.9 +-0.4 E-01		11/26		6	
96182	M4-92-2		11/0R		U-234	4.1 +-2.2 E-02		11/26		6	
					U-235	L.T. 1. E-02		11/26		6	
					U-238	4.5 +-2.2 E-02		11/26		6	
96183	M5-92-2		11/0R		U-234	6.8 +-2.6 E-02		11/26		6	
					U-235	L.T. 9. E-03		11/26		6	
					U-238	5.4 +-2.3 E-02		11/26		6	
96184	M6-92-2		11/0R		U-234	3.0 +-0.5 E-01		11/26		6	
					U-235	L.T. 9. E-03		11/26		6	
					U-238	2.8 +-0.5 E-01		11/26		6	
96185	M7-92-2		11/0R		U-234	2.3 +-0.5 E-01		11/26		6	
					U-235	L.T. 1. E-02		11/26		6	
					U-238	1.6 +-0.4 E-01		11/26		6	
96186	M8-92-2		11/0R		U-234	7.3 +-2.8 E-02		11/26		6	
					U-235	L.T. 1. E-02		11/26		6	
					U-238	7.0 +-2.8 E-02		11/26		6	

TELEDYNE ISOTOPFS

REPORT OF ANALYSIS

RUN DATE 12/03/92

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 1

COMMANDER
ATTN STEJP-CT-EN
US ARMY JEFFERSON PROVING GRD
MADISON IN 47250-5100

2-4960

11/18/92

12/09/92

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M =	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE				DATE	TIME		
96187 06-92-2			11/0R		U-234	1.6 +-0.4 E-01	33 ± .4	11/26		6	
					U-235	L.T. 8. E-03	.6 ± .2	11/26		6	
					U-238	6.2 +-0.7 E-01	20 ± 1	11/26		6	
96188 44-92-2			11/0R		U-234	1.6 +-0.4 E-01		11/26		6	
					U-235	L.T. 8. E-03		11/26		6	
					U-238	1.7 +-0.4 E-01		11/26		6	
96189 47-92-2			11/0R		U-234	1.5 +-0.4 E-01		11/26		6	
					U-235	L.T. 1. E-02		11/26		5	
					U-238	1.3 +-0.4 E-01		11/26		6	
96190 48-92-2			11/0R		U-234	2.0 +-0.4 E-01	.7 ± .2	11/26		6	
					U-235	L.T. 9. E-03	.7 ± .2	11/26		6	
					U-238	1.7 +-0.4 E-01	.8 ± .2	11/26		5	

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 08/27/92

WORK ORDER NUMBER 2-2831 CUSTOMER P.O. NUMBER DATE RECEIVED 07/17/92 DELIVERY DATE 08/14/92 PAGE 7
 COMMANDER
 ATTN STEJP-CT-EN
 US ARMY JEFFERSON PROVING GRD
 MADISON IN 47250-5100

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT/-% U/M *	MID-COUNT TIME		VOLUME - UNITS		LAB.
			START DATE	STOP TIME				DATE	TIME	ASH-WGHT-% *		
83569	SWN -92-1		07/08		U-234	1.2 +-1.1 E-01		08/14			6	
					U-235	L.T. 8. E-02		08/14			6	
					U-238	1.4 +-1.2 E-01		08/14			6	
83570	SWNW-92-1		07/08		U-234	L.T. 1. E-01		08/14			6	
					U-235	L.T. 9. E-02		08/14			6	
					U-238	L.T. 3. E-01		08/14			6	

LAST PAGE OF REPORT

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TELEDYNE ISOTOPFS

REPORT OF ANALYSIS

RUN DATE 08/27/92

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

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COMMANDER

2-2831

07/17/92

08/14/92

ATTN STEJP-CT-EN

US ARMY JEFFERSON PROVING GRO

MADISON IN

47250-5100

WATER - GROUND

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-GATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M %	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE TIME	STOP DATE TIME				DATE	TIME		
83563	MW 5-92-1		07/0R		U-234	1.0 +-0.3 E 00		08/17		6	
					U-235	L.T. 9. E-02		08/17		6	
					U-238	9.8 +-3.0 E-01		08/17		6	
83564	MW 6-92-1		07/0R		U-234	2.1 +-0.4 E 00		08/16		6	
					U-235	L.T. 7. E-02		08/16		6	
					U-238	2.6 +-0.4 E 00		08/16		6	
83565	MW 7-92-1		07/0R		U-234	1.7 +-0.5 E 00		08/14		6	
					U-235	L.T. 2. E-01		08/14		6	
					U-238	1.3 +-0.4 E 00		08/14		6	
83566	MW 9-92-1		07/0R		U-234	2.4 +-0.4 E 00		08/14		6	
					U-235	L.T. 7. E-02		08/14		6	
					U-238	2.2 +-0.4 E 00		08/14		6	
83567	MW 10-92-1		07/0R		U-234	2.2 +-0.5 E 00	1.6 ± .4	08/20		6	
					U-235	L.T. 1. E-01	0.1 ± .1	08/20		6	
					U-238	1.1 +-0.4 E 00	0.9 ± .1	08/20		6	
83568	MW 11-92-1		07/0R		U-234	L.T. 3. E-01	0.1 ± .1	08/14		6	
					U-235	L.T. 1. E-01	0.1 ± .1	08/14		6	
					U-238	5.5 +-2.8 E-01	0.1 ± .1	08/14		6	

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 09/27/92

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WORK ORDER NUMBER

2-2831

CUSTOMER P.O. NUMBER

08/14/92

DELIVERY DATE

07/17/92

DATE RECEIVED

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COMMANDER
ATTN: STEEP-CT-EN
US ARMY JEFFERSON PROVING GRD
MADISON IN 47250-5100

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
83562	57-92-1		07/08		U-234	2.2 ± 0.8 E-01		08/14		6
					U-235	1.1 ± 0.3 E-02		08/14		6
					U-238	1.8 ± 0.7 E-01		08/14		6

TELEDYNE ISOTOPEX

REPORT OF ANALYSIS

RUN DATE 08/27/92

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 2

COMMANDER

2-2831

07/17/92

08/14/92

ATTN STEJP-CT-EN

US ARMY JEFFERSON PROVING GRO

MADISON IN

47250-5100

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% *	LAB.
			START DATE	STOP DATE				DATE	TIME		
83554	8-92-1		07/0R		U-234	7.5 +-0.5 E 00		08/13		6	
					U-235	7.2 +-1.6 E-01		08/13		6	
					U-238	5.7 +-0.1 E 01		08/13		6	
83555	10-92-1		07/0R		U-234	9.0 +-1.2 E 00		08/13		6	
					U-235	8.7 +-3.8 E-01		08/13		6	
					U-238	6.5 +-0.3 E 01		08/13		6	
83556	12-92-1		07/0R		U-234	2.4 +-1.2 E-01		08/13		6	
					U-235	L.T. 4. E-02		08/13		6	
					U-238	1.6 +-1.0 E-01		08/13		6	
83557	43-92-1		07/0R		U-234	1.4 +-0.9 E-01		08/13		6	
					U-235	L.T. 3. E-02		08/13		6	
					U-238	1.5 +-0.9 E-01		08/13		6	
83558	47-92-1		07/0R		U-234	1.4 +-1.3 E-01		08/13		6	
					U-235	L.T. 6. E-02		08/13		6	
					U-238	2.8 +-1.9 E-01		08/13		6	
83559	48-92-1		07/0R		U-234	2.6 +-1.3 E-01	0.5 ±.2	08/13		6	
					U-235	L.T. 5. E-02	0.1 ±.1	08/13		6	
					U-238	2.7 +-1.3 E-01	0.1 ±.1	08/13		6	
83560	55-92-1		07/0R		U-234	4.0 +-1.6 E-01		08/13		6	
					U-235	L.T. 4. E-02		08/13		6	
					U-238	5.2 +-1.8 E-01		08/13		6	
83561	56-92-1		07/0R		U-234	3.0 +-1.5 E-01		08/13		6	
					U-235	L.T. 5. E-02		08/13		6	
					U-238	2.6 +-1.4 E-01		08/13		6	

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 08/27/92

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 1

COMMANDER

2-2831

07/17/92

08/14/92

ATTN STEJP-CT-EN

US ARMY JEFFERSON PROVING GRD

MADISON IN

47250-5100

AIR PARTICULATE FILTERS

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (TOTAL PCI)	NUCL-UNIT-% U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% *	LAB.
			START DATE	STOP DATE				DATE	TIME		
83571	A1-92-1		07/0R		U-234	2.0 +-1.1 E-01		08/14		6	
					U-235	L.T. 5. E-02		08/14		6	
					U-238	1.9 +-1.1 E-01		08/14		6	
83572	A2-92-1		07/0R		U-234	9.1 +-7.7 E-02		08/14		6	
					U-235	L.T. 7. E-02		08/14		6	
					U-238	6.4 +-6.2 E-02		08/14		6	
83573	A3-92-1		07/0R		U-234	9.3 +-7.6 E-02		08/17		6	
					U-235	L.T. 5. E-02		08/17		6	
					U-238	8.2 +-6.6 E-02		08/17		6	
83574	A6-92-1		07/0R		U-234	L.T. 4. E-02		08/17		6	
					U-235	L.T. 4. E-02		08/17		6	
					U-238	6.8 +-6.0 E-02		08/17		6	

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 01/05/93

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 1

COMMANDER
 ATTN: STEJHA-CT-FN
 US ARMY JEFFERSON PROVING GRD
 MADISON IN 47250-5100

2-5427

12/16/92

01/15/93

ANIMALS

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM WET)	NUCL-UNIT-% U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-% *	LAB.
			START DATE	STOP DATE				DATE	TIME		
98732	DEER 60K		12/0R		U-234	L.T. 9. E-04		12/23		6	
					U-235	L.T. 9. E-04		12/23		6	
					U-238	L.T. 9. E-04		12/23		6	
98733	DEER 62K		12/0R		U-234	L.T. 3. E-04		12/23		6	
					U-235	L.T. 3. E-04		12/23		6	
					U-238	L.T. 3. E-04		12/23		6	
98734	DEER 48K		12/0R		U-234	L.T. 3. E-04		12/23		6	
					U-235	L.T. 3. E-04		12/23		6	
					U-238	L.T. 3. E-04		12/23		6	
98735	DEER 60L		12/0R		U-234	L.T. 2. E-03		12/30		6	
					U-235	L.T. 2. E-03		12/30		6	
					U-238	L.T. 2. E-03		12/30		6	
98736	DEER 62L		12/0R		U-234	L.T. 1. E-03		12/30		6	
					U-235	L.T. 8. E-04		12/30		6	
					U-238	L.T. 8. E-04		12/30		6	
98737	DEER 48L		12/0R		U-234	L.T. 1. E-03		12/30		6	
					U-235	L.T. 1. E-03		12/30		6	
					U-238	L.T. 2. E-03		12/30		6	

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6 - ALPHA SPEC LAB.



Poliflor Inc.
P.O. Box 5051
Santa Fe, NM 87505

Attn:
Phone: 505-982-9288

Commander
US Army Jefferson Proving
Ground - Building 205
Madison, IN 47220-5100
Attn: Neil Pierson, P50

Order # 01-008
Date 01-20-91
Qty 15
Date Recd 01-15-91
Date Comp. Recd 01-27-91

Purchase Order 046000000000
Invoice Number

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample No.	Sample Defect
01	M1-2-90	02	M2-2-90
03	M2-2-90	04	M3-2-90
05	M5-2-90	06	M6-2-90
07	M7-2-90	08	M8-2-90
09	M9-2-90	10	M10-2-90
11	M11-2-90	12	M12-2-90
13	M13-2-90	14	M14-2-90
15	M15-2-90	16	M16-2-90
17	M17-2-90	18	M18-2-90
19	M19-2-90	20	M20-2-90



Order # 91-01-305
01/22/91 15 10

PO BOX 5455 • Santa Fe, NM 87505

Page

Remainder of samples for analysis will be of three weeks from final report. Analysis only, will be displayed in the report. This is not applicable if other samples are not available.



Order # 9101

01/29/91 13 13

Sample 01A MI-2-90

Test Description

Uranium-234

Uranium-235

Uranium-238

Sample 02A MI-2-90

Test Description

Uranium-234

Uranium-235

Uranium-238

Sample 03A MI-2-90

Test Description

Uranium-234

Uranium-235

Uranium-238

Sample 04 MI-2-90

Test Description

Uranium-234

Uranium-235

Uranium-238

Order # 01-11-11
01/29/91 15 13Test Description
Uranium-238

Sample 05A M5-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 06A M6-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 07A M7-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 08A M8-2-90

Test Description
Uranium-234
Uranium-235Test Description
Uranium-238

Sample 05A M5-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 06A M6-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 07A M7-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 08A M8-2-90

Test Description
Uranium-234
Uranium-235



Order # 91-01-262
6/1/27/91 15 13

Test Description
Uranium-238

Sample 094 M9-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 106 M10-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238

Sample 11A M11-2-90

Test Description
Uranium-234
Uranium-235
Uranium-236

Sample 12A M12-2-90

Test Description
Uranium-234
Uranium-235

Order # 91-01-305
01/27/91 15 13Test Description
Uranium-238

Sample 13A SWNE-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238

Sample 14A SWNE-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238

Sample 15A SWN-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238

Sample 16A SWNE-2-90

Test Description
Uranium-234
Uranium-235

Order # 91-01-305
01/11/91 11:15 AM

Test Description
Uranium-234

Sample 17A SWSW-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238

Sample 18A SWS-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238

Sample 17A SWS-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238

Sample 20A SWSW-2-90

Test Description
Uranium-234
Uranium-235
Uranium-238



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01/27/91 12:11

Test Description
Orientation 238

01/27/91 12:11



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US Army Jefferson Proving
Ground
Madison, IN 47250-5100

Date Received: 07/08/91
Date Reported: 08/07/91
Work Order: 91-07-115
Category:

Spring 91
Inspector

Attn: STEUP-CT (R. Herring)

Work ID: Water (NR)
P O #: DAAD0391P0458

Approved By:

Water

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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-115

SAMPLE ID MW-1-91-1 FRACTION 01A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u><0.6</u>
Uranium-235	0.6	<u><0.6</u>
Uranium-238	0.6	<u><0.6</u>

All results report in:
UNITS pCi/liter

SAMPLE ID MW-2-91-1 FRACTION 02A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u>1.7+/-1.3</u>
Uranium-235	0.6	<u><0.6</u>
Uranium-238	0.6	<u>1.7+/-1.3</u>

All results report in:
UNITS pCi/liter



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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-115

SAMPLE ID MW-3-91-1 FRACTION 03A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u>0.9+/-0.7</u>
Uranium-235	0.6	<u><0.6</u>
Uranium-238	0.6	<u>1.8+/-1.0</u>

All results report in:
UNITS pCi/liter

SAMPLE ID MW-4-91-1 FRACTION 04A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u><0.6</u>
Uranium-235	0.6	<u><0.6</u>
Uranium-238	0.6	<u><0.6</u>

All results report in:
UNITS pCi/liter

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Received: 07/08/91

CEP, Inc.

REPORT

Work Order # 91-07-115

Results by Sample

SAMPLE ID MW-5-91-1

FRACTION 05A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected not specified

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

1.3+/-0.8

Uranium-235

0.6

<0.6

Uranium-238

0.6

1.9+/-1.0

All results report in:
UNITS pCi/liter

SAMPLE ID MW-6-91-1

FRACTION 06A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected not specified

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6

Uranium-235

0.6

<0.6

Uranium-238

0.6

<0.6

All results report in:
UNITS pCi/liter



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CEP, Inc.

REPORT

Work Order # 91-07-115

Received: 07/08/91

Results by Sample

SAMPLE ID MW-7-91-1

FRACTION 07A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected not specified

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

3.0+/-1.0

Uranium-235

0.6

<0.6

Uranium-238

0.6

2.6+/-1.0

All results report in:
UNITS pCi/liter

SAMPLE ID MW-8-91-1

FRACTION 08A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected not specified

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

1.4+/-1.0

Uranium-235

0.6

<0.6

Uranium-238

0.6

1.8+/-0.9

All results report in:
UNITS pCi/liter



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CEP, Inc.

REPORT

Work Order # 91-07-115

Received: 07/08/91

Results by Sample

SAMPLE ID MW-9-91-1FRACTION 09ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

1.7+/-1.1

1.4

Uranium-235

0.6

<0.6

1.0

Uranium-238

0.6

2.2+/-1.1

2.7

All results report in:

UNITS pCi/literSAMPLE ID MW-10-91-1FRACTION 10ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

0.9+/-0.6

Uranium-235

0.6

<0.6

Uranium-238

0.6

0.9+/-0.7

All results report in:

UNITS pCi/liter



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CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-115

SAMPLE ID MW-11-91-1

FRACTION 11A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u><0.6</u>
Uranium-235	0.6	<u><0.6</u>
Uranium-238	0.6	<u><0.6</u>

All results report in:
UNITS pCi/liter

SAMPLE ID SW-BN-91-1

FRACTION 12A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u>2.6+/-1.4</u>
Uranium-235	0.6	<u><0.6</u>
Uranium-238	0.6	<u>1.7+/-1.0</u>

All results report in:
UNITS pCi/liter

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CEP, Inc.

REPORT

Work Order # 91-07-115

Received: 07/08/91

Results by Sample

SAMPLE ID SW-BS-91-1FRACTION 13ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6

Uranium-235

0.6

<0.6

Uranium-238

0.6

<0.6All results report in:
UNITS pCi/literSAMPLE ID SW-ME-91-1FRACTION 14ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

2.9+/-1.4

Uranium-235

0.6

<0.6

Uranium-238

0.6

8.8+/-2.4All results report in:
UNITS pCi/liter

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CEP, Inc.

REPORT

Work Order # 91-07-115

Received: 07/08/91

Results by Sample

SAMPLE ID SW-N-91-1FRACTION 15ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

5.3+/-1.9

Uranium-235

0.6

<0.6

Uranium-238

0.6

12.0+/-2.9

All results report in:

UNITS pCi/literSAMPLE ID SW-NE-91-1FRACTION 16ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

1.2+/-1.0

Uranium-235

0.6

<0.6

Uranium-238

0.6

1.6+/-1.1

All results report in:

UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-115

SAMPLE ID SW-NW-91-1

FRACTION 17A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u>19.6 +/- 2.5</u>
Uranium-235	0.6	<u>0.8 +/- 0.4</u>
Uranium-238	0.6	<u>20.8 +/- 3.6</u>

All results report in:
UNITS pCi/liter

SAMPLE ID SW-S-91-1

FRACTION 18A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected not specified Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<u><0.6</u>
Uranium-235	0.6	<u><0.6</u>
Uranium-238	0.6	<u><0.6</u>

All results report in:
UNITS pCi/liter

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CEP, Inc.

REPORT

Work Order # 91-07-115

Received: 07/08/91

Results by Sample

SAMPLE ID SW-SE-91-1FRACTION 19ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6

Uranium-235

0.6

<0.6

Uranium-238

0.6

<0.6All results report in:
UNITS pCi/literSAMPLE ID SW-SW-91-1FRACTION 20ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected not specifiedCategory WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

1.5+/-0.8

Uranium-235

0.6

<0.6

Uranium-238

0.6

0.9+/-0.7All results report in:
UNITS pCi/liter



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US Army Jefferson Proving
Ground
Madison, IN 47250-3100

Date Received: 07/08/91
Date Reported: 08/07/91
Work Order: 91-07-116
Category:

Spring 91
Soil

Attn: STEJP-CT (R. Herring)

Work ID: Soil (NR)
P O # : DAAD0391P0458

Approved By:

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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-116

SAMPLE ID 6-91-1

FRACTION 01A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>19.2+/-0.6</u>
Uranium-235	0.05	<u>1.00+/-0.21</u>
Uranium-238	0.05	<u>44.4+/-1.4</u>

All results report in:

UNITS pCi/gram

SAMPLE ID 8-91-1

FRACTION 02A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>2.04+/-0.24</u>
Uranium-235	0.05	<u>0.12+/-0.03</u>
Uranium-238	0.05	<u>4.72+/-0.19</u>

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-116

SAMPLE ID 10-91-1 FRACTION 03A TEST CODE ISOV S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>2.95+/-0.54</u>
Uranium-235	0.05	<u>0.18+/-0.06</u>
Uranium-238	0.05	<u>6.82+/-0.39</u>

All results report in:

UNITS pCi/gram

SAMPLE ID 12-91-1 FRACTION 04A TEST CODE ISOV S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.53+/-0.18</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>1.01+/-0.09</u>

All results report in:

UNITS pCi/gram



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CEP, Inc.

REPORT

Work Order # 91-07-116

Results by Sample

SAMPLE ID 40-2-90A

FRACTION 05A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.18+/-0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.41+/-0.05

All results report in:

UNITS pCi/gram

SAMPLE ID 43-91-1

FRACTION 06A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.06+/-0.03
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.06+/-0.03

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

Work Order # 91-07-116

SAMPLE ID 44-91-1

Results by Sample

FRACTION 07A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.18+/-0.06
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.43+/-0.05

All results report in:

UNITS pCi/gram

SAMPLE ID 47-91-1

FRACTION 08A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.09+/-0.04
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.22+/-0.06

All results report in:

UNITS pCi/gram



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CEP, Inc.

REPORT

Work Order # 91-07-116

Received: 07/08/91

Results by Sample

SAMPLE ID 48-2-90A

FRACTION 09A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	11.5+/-1.7
Uranium-235	0.05	0.83+/-0.13
Uranium-238	0.05	26.6+/-1.4

All results report in:

UNITS pCi/gram

SAMPLE ID 48-91-1

FRACTION 10A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.43+/-0.08
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.71+/-0.10

All results report in:

UNITS pCi/gram

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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-116

SAMPLE ID 54-91-1

FRACTION 11A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected not specified Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.18+/-0.06</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.45+/-0.07</u>

All results report in:

UNITS pCi/gram



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US Army Jefferson Proving
Ground
Madison, IN 47250-5100

Date Received: 07/08/91
Date Reported: 08/12/91
Work Order: 91-07-118
Category:

air
Spring 91

Attn: STEJP-CT (R. Herring)

Work ID: Air Filter (NR)
P O # : DAAD0391P0458

Approved By:



Page 2
Received: 07/08/91

CEP, Inc.

REPORT

Work Order # 91-07-118

Results by Sample

SAMPLE ID A1

FRACTION 01A

TEST CODE ISOU A

NAME Isotopic Uranium

Date & Time Collected not specifiedCategory AIR FILTER

Type of Analysis

RESULT

Uranium-234

2.38+/-0.71

Uranium-235

<0.1

Uranium-238

6.18+/-1.23

All results reported in:

UNITS pCi/filter

SAMPLE ID A3

FRACTION 02A

TEST CODE ISOU A

NAME Isotopic Uranium

Date & Time Collected not specifiedCategory AIR FILTER

Type of Analysis

RESULT

Uranium-234

2.48+/-0.56

Uranium-235

<0.1

Uranium-238

5.74+/-0.56

All results reported in:

UNITS pCi/filter



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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-118

SAMPLE ID A4

FRACTION 03A TEST CODE ISOU A NAME Isotopic Uranium
Date & Time Collected not specified Category AIR FILTER

Type of Analysis

RESULT

Uranium-234

0.93+/-0.32

Uranium-235

<0.1

Uranium-238

2.15+/-0.78

42
5.7
2
6.3

All results reported in:

UNITS pCi/filter

SAMPLE ID A5

FRACTION 04A TEST CODE ISOU A NAME Isotopic Uranium
Date & Time Collected not specified Category AIR FILTER

Type of Analysis

RESULT

Uranium-234

0.48+/-0.20

Uranium-235

<0.1

Uranium-238

1.11+/-0.39

All results reported in:

UNITS pCi/filter



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CEP, Inc.

REPORT

Work Order # 91-07-118

Received: 07/08/91

Results by Sample

SAMPLE ID A6FRACTION 05A TEST CODE ISOU A NAME Isotopic UraniumDate & Time Collected not specified Category AIR FILTER

Type of Analysis

RESULT

Uranium-234

2.28+/-1.24

Uranium-235

<0.1

Uranium-238

5.79+/-1.98

All results reported in:

UNITS pCi/filter



US Army Jefferson Proving
Ground
Madison, IN 47250-5100

Date Received: 07/08/91
Date Reported: 08/12/91
Work Order: 91-07-117
Category:

*Springs 21
Sediment*

Attn: STEJP-CT (R. Herring)

Work ID: Sediment (NR)
P O # : DAAD0391P0458

Approved By: _____



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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-117

SAMPLE ID M1-91-1

FRACTION Q1A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u><0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.08+/-0.02</u>

Q1A
1.6
0
1.5

All results report in:

UNITS pCi/gram

SAMPLE ID M2-91-1

FRACTION Q2A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.06+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.13+/-0.03</u>

Q2A
1.6
2.1

All results report in:

UNITS pCi/gram



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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-117

SAMPLE ID M3-91-1

FRACTION 03A TEST CODE ISOV S NAME Isotopic Uranium
Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u><0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u><0.05</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M4-91-1

FRACTION 04A TEST CODE ISOV S NAME Isotopic Uranium
Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.15+/-0.06</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.35+/-0.10</u>

All results report in:

UNITS pCi/gram



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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-117

SAMPLE ID M5-91-1

FRACTION 05A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.25+/-0.09</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.58+/-0.09</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M6-91-1

FRACTION 06A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.13+/-0.05</u>
Uranium-235	0.05	<u>0.05+/-0.02</u>
Uranium-238	0.05	<u>0.30+/-0.10</u>

All results report in:

UNITS pCi/gram



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Received: 07/08/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-07-117

SAMPLE ID M7-91-1

FRACTION 07A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.20+/-0.06</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.46+/-0.10</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M8-91-1

FRACTION 08A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected not specified Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.06+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.08+/-0.02</u>

All results report in:

UNITS pCi/gram

US Army Jefferson Proving
Ground
Madison, IN 47250-5100

Date Received: 02/28/92
Date Reported: 03/25/92
Work Order: 92-02-611
Category:

Attn: STEJP-CT (R. Herring)

Work ID: Sediment (NR)
P O # : DAAD03-92-P-0264

Approved By: _____

A handwritten signature in dark ink, appearing to be 'R. Herring', is written over a horizontal line.

Page 2
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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-611

SAMPLE ID M1-91-2 FRACTION 01A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT	QC Lab
Uranium-234	0.05	<u>1.08 +/- 0.24</u>	0.4 ± .1
Uranium-235	0.05	<u><0.05</u>	0 ± .1
Uranium-238	0.05	<u>1.20 +/- 0.26</u>	0.3 ± .1

All results report in:

UNITS pCi/gram

SAMPLE ID M2-91-2 FRACTION 02A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT	QC Lab
Uranium-234	0.05	<u>0.68 +/- 0.20</u>	0.3 ± .1
Uranium-235	0.05	<u><0.05</u>	0
Uranium-238	0.05	<u>1.08 +/- 0.26</u>	0.3 ± .1

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-611

SAMPLE ID M3-91-2

FRACTION 03A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.12+/-0.07</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.11+/-0.08</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M4-91-2

FRACTION 04A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>1.14+/-0.39</u>
Uranium-235	0.05	<u>0.07+/-0.03</u>
Uranium-238	0.05	<u>2.62+/-0.54</u>

All results report in:

UNITS pCi/gram

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-611

SAMPLE ID M5-91-2 FRACTION 05A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	5.65+/-0.33
Uranium-235	0.05	0.34+/-0.10
Uranium-238	0.05	10.4+/-0.1

All results report in:

UNITS pCi/gram

SAMPLE ID M6-91-2 FRACTION 06A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	1.64+/-0.26
Uranium-235	0.05	<0.05
Uranium-238	0.05	2.35+/-0.30

All results report in:

UNITS pCi/gram

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-611

SAMPLE ID M7-91-2 FRACTION 07A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	2.54+/-0.41
Uranium-235	0.05	<0.05
Uranium-238	0.05	2.98+/-0.41

All results report in:

UNITS pCi/gram

SAMPLE ID M8-91-2 FRACTION 08A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.37+/-0.12
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.72+/-0.15

All results report in:

UNITS pCi/gram



US Army Jefferson Proving
Ground
Madison, IN 47250-5100

Date Received: 02/28/92
Date Reported: 04/29/92
Work Order: 92-02-609
Category:

Attn: STEJP-CT (R. Herring)

Work ID: Water (NR)
P O # : DAAD03-92-P-0264

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CEP, Inc. REPORT
04/29/92 10:30:23

Work Order # 92-02-609

* Filter the water through a 0.45 micron filter and analyzed
the filtrate.

Approved By: _____

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW-1-91-2 (FILTERED) FRACTION 01B TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<0.6*
Uranium-235	0.6	<0.6*
Uranium-238	0.6	<0.6*

All results report in:
UNITS pCi/liter

SAMPLE ID MW-1-91-2 (UNFILTERED) FRACTION 01A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	10.5+/-3.4
Uranium-235	0.6	<0.6
Uranium-238	0.6	22.2+/-5.1

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 2 (FILTERED)

FRACTION 02B TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<0.6*
Uranium-235	0.6	<0.6*
Uranium-238	0.6	<0.6*

All results report in:
UNITS pCi/liter

SAMPLE ID MW 2 (UNFILTERED)

FRACTION 02A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	4.1+/-2.3
Uranium-235	0.6	<0.6
Uranium-238	0.6	8.9+/-3.4

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 3 (FILTERED)

FRACTION 03B

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 01/15/92

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6*

Uranium-235

0.6

<0.6*

Uranium-238

0.6

<0.6*

All results report in:
UNITS pCi/liter

SAMPLE ID MW 3 (UNFILTERED)

FRACTION 03A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 01/15/92

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

9.2+/-1.4

Uranium-235

0.6

<0.6

Uranium-238

0.6

21.2+/-4.6

All results report in:
UNITS pCi/liter

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Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 6 (FILTERED)FRACTION 05BTEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 01/15/92Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6*

Uranium-235

0.6

<0.6*

Uranium-238

0.6

<0.6*

All results report in:
UNITS pCi/literSAMPLE ID MW 6 (UNFILTERED)FRACTION 05ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 01/15/92Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

8.4+/-1.3

Uranium-235

0.6

<0.6

Uranium-238

0.6

19.5+/-4.5

All results report in:
UNITS pCi/liter



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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 7 (FILTERED)

FRACTION 06B

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 01/15/92

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6*

Uranium-235

0.6

<0.6*

Uranium-238

0.6

<0.6*

All results report in:
UNITS pCi/liter

SAMPLE ID MW 7 (UNFILTERED)

FRACTION 06A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 01/15/92

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

7.4+/-3.6

Uranium-235

0.6

<0.6

Uranium-238

0.6

20.6+/-5.4

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 10 (FILTERED)

FRACTION 07B

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 01/15/92

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6*

Uranium-235

0.6

<0.6*

Uranium-238

0.6

<0.6*

All results report in:
UNITS pCi/liter

SAMPLE ID MW 10 (UNFILTERED)

FRACTION 07A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 01/15/92

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

24.5+/-3.7

Uranium-235

0.6

1.8+/-0.3

Uranium-238

0.6

56.6+/-9.2

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 11 (FILTERED) FRACTION 08B TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<0.6*
Uranium-235	0.6	<0.6*
Uranium-238	0.6	<0.6*

All results report in:
UNITS pCi/liter

SAMPLE ID MW 11 (UNFILTERED) FRACTION 08A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	5.3+/-2.4
Uranium-235	0.6	<0.6
Uranium-238	0.6	9.4+/-3.0

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWN

FRACTION 09A TEST CODE ISOU

NAME Isotopic Uranium

Date & Time collected 12/21/91

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

8.3+/-5.2

Uranium-235

0.6

<0.6

Uranium-238

0.6

11.5+/-6.1

All results report in:
UNITS pCi/liter

SAMPLE ID SWBS

FRACTION 10A TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 12/21/91

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6

Uranium-235

0.6

<0.6

Uranium-238

0.6

<0.6

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWSE FRACTION 11A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<0.6
Uranium-235	0.6	<0.6
Uranium-238	0.6	<0.6

All results report in:
UNITS pCi/liter

SAMPLE ID SWBN FRACTION 12A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	10.7+/-4.0
Uranium-235	0.6	1.10+/-0.50
Uranium-238	0.6	34.4+/-6.5

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWNW FRACTION 13A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	3.8+/-2.0
Uranium-235	0.6	<0.6
Uranium-238	0.6	8.4+/-2.8

All results report in:
UNITS pCi/liter

SAMPLE ID SWME FRACTION 14A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	5.2+/-2.3
Uranium-235	0.6	<0.6
Uranium-238	0.6	12.3+/-3.7

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWSW FRACTION 15A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	2.2+/-1.0
Uranium-235	0.6	<0.6
Uranium-238	0.6	4.9+/-2.6

All results report in:
UNITS pCi/liter

SAMPLE ID SWSR FRACTION 16A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 09/27/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	5.1+/-2.3
Uranium-235	0.6	<0.6
Uranium-238	0.6	8.8+/-2.8

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWNE FRACTION 17A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	7.40+/-2.00
Uranium-235	0.6	<0.6
Uranium-238	0.6	17.1+/-3.7

All results report in:
UNITS pCi/liter

SAMPLE ID MW9-2-90 (FILTERED) FRACTION 18B TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 09/18/90 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	3.4+/-1.0*
Uranium-235	0.6	<0.6*
Uranium-238	0.6	6.3+/-3.2*

All results report in:
UNITS pCi/liter

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Results by Sample

Work Order # 92-02-609

SAMPLE ID MW9-2-90 (UNFILTERED)FRACTION 18A TEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 09/18/90Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	4.4+/-0.9
Uranium-235	0.6	<0.6
Uranium-238	0.6	9.4+/-7.6

All results report in:
UNITS pCi/literSAMPLE ID MW10-2-90 (FILTERED)FRACTION 19B TEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 09/18/90Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	3.1+/-1.9*
Uranium-235	0.6	<0.6*
Uranium-238	0.6	5.1+/-2.3*

All results report in:
UNITS pCi/liter

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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW10-2-90 (UNFILTERED)

FRACTION 19A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 09/18/90

Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	4.9+/-2.7
Uranium-235	0.6	<0.6
Uranium-238	0.6	5.2+/-2.9

All results report in:
UNITS pCi/liter

SAMPLE ID SWSW-2-90

FRACTION 20A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 09/18/90

Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	6.4+/-2.9
Uranium-235	0.6	<0.6
Uranium-238	0.6	7.0+/-3.0

All results report in:
UNITS pCi/liter



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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-607

SAMPLE ID SWNW-2-90

FRACTION 21A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 09/18/90

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

4.67+/-2.70

Uranium-235

0.6

<0.6

Uranium-238

0.6

10.8+/-4.8

All results report in:
UNITS pCi/liter

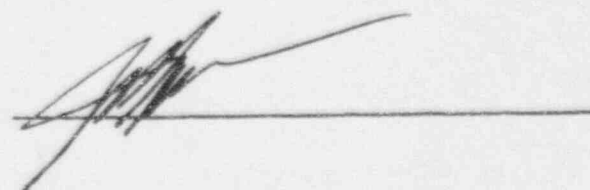
Commander
US Army Jefferson Proving
Ground
Madison, IN 47250-5100
Attn: Mark Pierson, RSO

Date Received: 08/07/90
Date Reported: 08/24/90
Work Order: 90-08-143
Category:

sediment
Spring 90

Work ID: Environmental
P O # : DAAD0390M0620

Certified By:



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Received: 08/07/90

CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-143

SAMPLE ID M1-90-1

FRACTION 01A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.30+/-0.07</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.28+/-0.06</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M2-90-1

FRACTION 02A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.06+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.06+/-0.02</u>

All results report in:

UNITS pCi/gram



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CEP, Inc.

REPORT

Work Order # 90-08-143

Results by Sample

SAMPLE ID M3-90-1FRACTION 03ATEST CODE ISOU SNAME Isotopic UraniumDate & Time Collected 05/19/90Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.39+/-0.0</u>
Uranium-235	0.05	<u><0.0</u>
Uranium-238	0.05	<u>0.30+/-0.0</u>

All results report in:

UNITS pCi/gramSAMPLE ID M4-90-1FRACTION 04ATEST CODE ISOU SNAME Isotopic UraniumDate & Time Collected 05/19/90Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.14+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.15+/-0.02</u>

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-143

SAMPLE ID M5-90-1

FRACTION 05A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.11 +/- 0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.09 +/- 0.02</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M6-90-1

FRACTION 06A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u><0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u><0.05</u>

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-143

SAMPLE ID M7-90-1 FRACTION 07A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.24+/-0.04</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.22+/-0.04</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M8-90-1 FRACTION 08A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.27+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.23+/-0.03</u>

All results report in:

UNITS pCi/gram

 EG&G MOUND APPLIED TECHNOLOGIES

PO BOX 3000 MIAMISBURG, OHIO 45343-0987 • TEL (513) 865-4020

Spring 30

April 15, 1991

Mr. Mark Pearson
U. S. Army Jefferson Proving Ground
Madison, IN 47250

Reference: MIPR K9-01-01, Amendment No. 3

Dear Mr. Pearson:

Enclosed are the results of soil, water, and urine collected at Jefferson Proving Ground in April, 1989. Our estimated lower detection limits (LDL) are given for each type of sample analyzed.

Sincerely,

Charles A Phillips

Charles A. Phillips, Acting Supervisor
Environmental Analysis & Bioassay

CAP:bp
Enclosures

URANIUM IN SOIL SAMPLES SUBMITTED APRIL 1989 BY JEFFERSON
PROVING GROUNDS ANALYZED BY EG&G MOUND APPLIED
TECHNOLOGIES MARCH 1991

M U N F I I , (	SAMPLE ID	SAMPLE WEIGHT (g)	U-234 pCi/g *	U-238 pCi/g *
	=====	=====	=====	=====
	10-89-1	5	8.2541 +/-0.1405	59.400 +/-0.3769 ←
	12-89-1	5	0.8136 +/-0.0412	1.8970 +/-0.0629
	32-89-1	5	0.7159 +/-0.0356	0.7925 +/-0.0375
	43-89-1	5	0.6694 +/-0.0305	0.7024 +/-0.0312
	44-89-1	5	0.9893 +/-0.0574	1.1030 +/-0.0606
	47-89-1	5	0.6462 +/-0.0372	0.6770 +/-0.0380
	48-89-1	5	0.8563 +/-0.0477	0.8878 +/-0.0480
	52-89-1	5	0.8738 +/-0.0388	2.0929 +/-0.0600
	53-89-1	5	0.6882 +/-0.0200	0.7511 +/-0.0209
	54-89-1	5	0.7336 +/-0.0201	0.7733 +/-0.0207
	55-89-1	5	0.8717 +/-0.0386	0.9637 +/-0.0405
	56-89-1	5	0.7269 +/-0.0366	0.7838 +/-0.0380
	6-89-1	5	4.9239 +/-0.0963	34.399 +/-0.2547 <
	8-89-1	5	1.1035 +/-0.0470	4.4642 +/-0.0945
	M-1-89-1	5	0.5064 +/-0.0298	0.5592 +/-0.0313
	M-2-89-1	5	0.1902 +/-0.0021	0.1832 +/-0.0019
	M-3-89-1	5	0.7919 +/-0.0354	0.6999 +/-0.0333
	M-4-89-1	5	0.1119 +/-0.0129	0.1250 +/-0.0136
	M-5-89-1	5	0.1838 +/-0.0203	0.5875 +/-0.0362
	M-6-89-1	5	0.3987 +/-0.0263	0.3712 +/-0.0254
	M-7-89-1	5	0.5349 +/-0.0290	0.4568 +/-0.0268
	M-8-89-1	5	0.1332 +/-0.0018	0.1286 +/-0.0017

U-234 BLANK = .0014 pCi/g

U-238 BLANK = .0011 pCi/g

LDL U-234 = .0049 pCi/g

LDL U-238 = .0044 pCi/g

* BLANKS SUBTRACTED FROM RESULTS

URANIUM IN WATER SAMPLES SUBMITTED APRIL 1989 BY JEFFERSON
PROVING GROUNDS ANALYZED BY EG&G MOUND APPLIED
TECHNOLOGIES FEBRUARY 1991

JPG ID	VOLUME L	U-234 pCi/L *	U-238 pCi/L *
=====	=====	=====	=====
MW1-89-1	2.00	0.2122 +/- 0.0167	0.1963 +/-0.0158
MW2-89-1	2.00	0.9115 +/- 0.0527	0.5982 +/-0.0428
MW3-89-1	2.00	0.9164 +/- 0.0550	0.5147 +/-0.0413
MW4-89-1	2.00	0.4135 +/- 0.0355	0.4418 +/-0 364
MW5-89-1	2.00	1.2975 +/- 0.0650	0.8554 +/-0.0528
MW6-89-1	2.00	1.6698 +/- 0.0811	1.1997 +/-0.0688
MW7-89-1	2.00	1.3573 +/- 0.0647	1.4384 +/-0.0664
MW8-89-1	2.00	0.2905 +/- 0.0314	0.5495 +/-0.0423
MW9-89-1	2.00	2.4013 +/- 0.0865	0.5868 +/-0.0431
MW10-89-1	2.00	2.0422 +/- 0.0823	0.9351 +/-0.0558
MW11-89-1	2.00	0.4549 +/- 0.0380	0.2458 +/-0.0281
SWME-89-1	2.00	0.0279 +/- 0.0089	0.0289 +/-0.0081
SWNW-89-1	2.00	0.1069 +/- 0.0131	0.1938 +/-0.0161
SWSW-89-1	2.00	0.0455 +/- 0.0153	0.0515 +/-0.0154
SWBS-89-1	2.00	0.1300 +/- 0.0224	0.0916 +/-0.0188
SWS-89-1	2.00	0.0545 +/- 0.0145	0.0629 +/-0.0148
SWSE-89-1	2.00	0.0858 +/- 0.0184	0.0757 +/-0.0170

LDL U-234 = .0284 pCi/L

LDL U-235 = .0230 pCi/L

BLANK U-234 = .0069 pCi/L

BLANK U-238 = .0056 pCi/L

*BLANKS SUBTRACTED FROM RESULTS



Controls for Environmental Pollution, Inc.

OUT OF STATE 800/545 2188 • FAX 505/982-9289

U.S. ARMY CORPS OF ENGINEERS
ATTENTION: CIVIL ENGINEER

PO BOX 144
FORT MONROE, VA 23046-0144

ATTN: CIVIL ENGINEER

FOR THE ENVIRONMENTAL
COMMISSION

Page 1 of 1

APPROVED BY: [Signature]

[Signature]



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Received: 05/01/90

CEP, Inc.

REPORT

Work Order # 70-05-005

Results by Sample

SAMPLE ID #1

FRACTION 01A IL-500-1500 NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05

<0.05
<0.05
<0.05

All results report in

UNITS

pCi/gram

SAMPLE ID #2

FRACTION 02A TEST CODE ISOU 5 NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05

<0.05
<0.05
0.06+/-0.04

All results report in

UNITS

pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #3 FRACTION 03A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	<0.05

All results report in:

UNITS pCi/gram

SAMPLE ID #4 FRACTION 04A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.09+/-0.03
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.07+/-0.03

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #6

FRACTION 05A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	1.65+/-0.16
Uranium-235	0.05	0.12+/-0.02
Uranium-238	0.05	3.85+/-0.11

All results report in:

UNITS pCi/gram

SAMPLE ID #8

FRACTION 06A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.25+/-0.03
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.60+/-0.03

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #10 FRACTION 07A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u><0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.08 +/- 0.03</u>

All results report in:

UNITS pCi/gram

SAMPLE ID #12 FRACTION 08A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u><0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.08 +/- 0.02</u>

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #18

FRACTION 09A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	<0.05

All results report in:

UNITS pCi/gram

SAMPLE ID #41

FRACTION 10A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.09+/-0.03
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.09+/-0.03

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #42

FRACTION 11A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.08+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.06+/-0.02

All results report in:

UNITS pCi/gram

SAMPLE ID #43

FRACTION 12A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	<0.05

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #44

FRACTION 13A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.05+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	<0.05

All results report in:

UNITS pCi/gram

SAMPLE ID #45

FRACTION 14A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	<0.05

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-03-005

SAMPLE ID #46

FRACTION 15A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.06+/-0.01
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.05+/-0.01

All results report in:

UNITS pCi/gram

SAMPLE ID #47

FRACTION 16A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.06+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.05+/-0.01

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #48

FRACTION 17A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.06+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.08+/-0.02

All results report in:

UNITS pCi/gram

SAMPLE ID #50

FRACTION 18A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.05+/-0.01

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID #53

FRACTION 19A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	<0.05

All results report in:

UNITS pCi/gram

SAMPLE ID #54

FRACTION 20A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.13+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.09+/-0.02

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

Work Order # 90-05-005

Results by Sample

SAMPLE ID M1

FRACTION 21A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SEDIMENT

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234

0.05

0.09+/-0.01

Uranium-235

0.05

<0.05

Uranium-238

0.05

0.08+/-0.01

All results report in:

UNITS pCi/gram

SAMPLE ID M2

FRACTION 22A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SEDIMENT

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234

0.05

<0.05

Uranium-235

0.05

<0.05

Uranium-238

0.05

<0.05

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID M3 FRACTION 23A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.12+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.10+/-0.01</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M4 FRACTION 24A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.07+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.05+/-0.01</u>

All results report in:

UNITS pCi/gram



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-05-005

SAMPLE ID M5 FRACTION 25A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.06+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.13+/-0.02</u>

All results report in:

UNITS pCi/gram

SAMPLE ID M6 FRACTION 26A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 12/04/89 Category SEDIMENT

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.15+/-0.03</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.16+/-0.04</u>

All results report in:

UNITS pCi/gram



Work Order # 90-05-005

Results by Sample

SAMPLE ID M7

FRACTION 27A

TEST CODE ISOV S

NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SEDIMENT

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234

0.05

0.08+/-0.01

Uranium-235

0.05

 <0.05

Uranium-238

0.05

 0.10 ± 0.02

All results report in:

UNITS pCi/gram

SAMPLE ID M8

FRACTION 28A

TEST CODE ISDV S

NAME Isotopic Uranium

Date & Time Collected 12/04/89

Category SEDIMENT

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234

0.05

 <0.05

Uranium-235

0.05

 ≤ 0.05

Uranium-238

0.05

 <0.05

All results report in

UNITS pCi/gran



Controls for Environmental Pollution, Inc.
P.O. BOX 5351 • Santa Fe, New Mexico 87502

IN STATE 800/545-2122 • FAX 505-822-2222

Water

10/1

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Controls for Environmental Pollution, Inc.

P.O. BOX 5351 • Santa Fe, New Mexico 87502

OUT OF STATE 800/848-2188 • FAX 505-822-9282

IN STATE 505/982-9841

Page

Report

Test

Units

Uranium-234

pCi/liter

Test

Unit

Uranium-234

pCi/liter

Uranium-235

pCi/liter

Uranium-238

pCi/liter

10-05-005

10-05-005

10-05-005

10-05-005

10-05-005

10-05-005

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10-05-005

10-05-005

10-05-005

Controls for Environmental Pollution, Inc.

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IN STATE 505/982-9841
OUT OF STATE 800/843-2122 • FAX - 505-822-2222

REPORT

Work Order # 90-05-005

12/15/89

Test

W

SWMS

* SWSE

SWS

Uranium-234

Uranium-235

Uranium-238

12/04/89

12/04/89

12/04/89

2.5 +/- 1.0

0.6 +/- 0.5

2.7 +/- 1.0

< 0.6

< 0.6

< 0.6

4.9 +/- 1.4

1.2 +/- 0.7

4.0 +/- 1.4

Test

W

SWMS

SWNW

SWNE

12/04/89

12/04/89

12/04/89

1.4 +/- 0.8

< 0.6

< 0.6

< 0.6

< 0.6

< 0.6

2.4 +/- 1.0

< 0.6

< 0.6

Controlled By





Commander
US Army Jeffersville
Ground
Madison IN 47093-1420
Attn: Mark Pienkowski

03/11/95 08:00:00
03/11/95 08:00:00
03/11/95 08:00:00
03/11/95 08:00:00

1-609-982-9289
Jeffersville
Mark Pienkowski

Work ID: Environmental
P.O. # D-4406381K

Signature By



Controls for Environmental Pollution, Inc.

PO BOX 5401 • FARMINGTON, CT 06030 • OUT OF STATE 800/545-2188 • FAX • 505-982-9289

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Received 08/07/90

CEP, Inc.

Results by 08/10/90

Work Order # 90-08-142

SAMPLE ID L1-90-1

FRACTION 01A

CODE 15015

NAME Isotopic Uranium

Category LEAVES

Type of Analysis

Date of Analysis

Result

Uranium-234
Uranium-235
Uranium-238

1.2e-10 0.1
1.2e-10 0.1
1.2e-10 0.1

All results reported in

UNITS picograms/g

SAMPLE ID L2-90-2

FRACTION 02A

CODE 15015

NAME Isotopic Uranium

Category LEAVES

Date & Time Collected: 05/19/90

Type of Analysis

Date of Analysis

Result

Uranium-234
Uranium-235
Uranium-238

1.2e-10 0.1
1.2e-10 0.1
1.2e-10 0.1

All results reported in

UNITS picograms/g



Controls for Environmental Pollution, Inc.

100 BOX 1001 • Southfield, MI 48034 • TEL 800/545-2188 • FAX 505-982-9289

Commander
US Army Jefferson Proving
Ground
Madison, IN 47250-5100
Attn: Mark Pierson, RSO

Date Received: 08/07/90
Date Reported: 08/30/90
Work Order: 90-08-144
Category:

Work ID: Environmental
P.O. #: DAAD0390M0620

Certified By:

Mr. LaRue

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Received: 08/07/90

CEP, Inc. REPORT

Work Order # 90-08-144

Results by Sample

SAMPLE ID 2-90-1FRACTION 01A TEST CODE ISOU S NAME Isotopic UraniumDate & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.26+/-0.10</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.27+/-0.04</u>

All results report in:

UNITS pCi/gram (wet)SAMPLE ID 3-90-1FRACTION 02A TEST CODE ISOU S NAME Isotopic UraniumDate & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.12+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.12+/-0.02</u>

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 4-90-1

FRACTION 03A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.17+/-0.03
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.20+/-0.04

All results report in:

UNITS pCi/gram (wet)

SAMPLE ID 5-90-1

FRACTION 04A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.26+/-0.03
Uranium-235	0.05	<0.05
Uranium-238	0.05	1.13+/-0.07

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 6-90-1 FRACTION 05A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>14.7+/-0.3</u>
Uranium-235	0.05	<u>1.27+/-0.10</u>
Uranium-238	0.05	<u>39.9+/-0.4</u>

All results report in:

UNITS pCi/gram (wet)

SAMPLE ID 8-90-1 FRACTION 06A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.77+/-0.10</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>1.71+/-0.07</u>

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 10-90-1

FRACTION 07A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.10+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.07+/-0.02</u>

All results report in:

UNITS pCi/gram (wet)

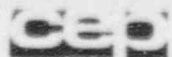
SAMPLE ID 12-90-1

FRACTION 08A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.48+/-0.10</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.47+/-0.05</u>

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 14-90-1

FRACTION 09A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 05/19/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.11+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.15+/-0.02

All results report in:

UNITS pCi/gram (wet)

SAMPLE ID 15-90-1

FRACTION 10A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 05/19/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.21+/-0.03
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.25+/-0.02

All results report in:

UNITS pCi/gram (wet)

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Received: 08/07/90CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 16-90-1FRACTION 11A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.16+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.17+/-0.03</u>

All results report in:

UNITS pCi/gram (wet)SAMPLE ID 26-90-1FRACTION 12A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.15+/-0.04</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.12+/-0.03</u>

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 27-90-1

FRACTION 13A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 05/19/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.08+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.08+/-0.02</u>

All results report in:

UNITS pCi/gram (wet)

SAMPLE ID 28-90-1

FRACTION 14A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 05/19/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.20+/-0.03</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.20+/-0.04</u>

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 29-90-1

FRACTION 15A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.17+/-0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.40+/-0.05</u>

All results report in:

UNITS pCi/gram (wet)

SAMPLE ID 30-90-1

FRACTION 16A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>8.64+/-0.11</u>
Uranium-235	0.05	<u>0.63+/-0.10</u>
Uranium-238	0.05	<u>19.93+/-0.31</u>

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 43-90-1

FRACTION 17A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.11+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.09+/-0.02</u>

All results report in:

UNITS pCi/gram (wet)

SAMPLE ID 48-90-1

FRACTION 18A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.15+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.14+/-0.02</u>

All results report in:

UNITS pCi/gram (wet)



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CEP, Inc. REPORT
Results by Sample

Work Order # 90-08-144

SAMPLE ID 53-90-1

FRACTION 19A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.13+/-0.03</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.10+/-0.03</u>

All results report in:

UNITS pCi/gram (wet)

SAMPLE ID 56-90-1

FRACTION 20A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 05/19/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.12+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.11+/-0.02</u>

All results report in:

UNITS pCi/gram (wet)



Controls for Environmental Pollution, Inc.

IN STATE 800/545-2188

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Controls for Environmental
Pollution, Inc.

P. O. Box 5351

Santa Fe, NM 87502

Attn: James J. Mueller

Phone: (505) 982-9841

Commander

US Army Jefferson Proving

Ground

Madison, IN 47250-5100

Attn: Mark Pierson, RSD

Order #: 90-08-145

Date: 09/10/90 15:51

Work ID: Environmental

Date Received: 08/07/90

Date Completed: 09/10/90

Purchase Order: DAAD0390M0620

Invoice Number:

SAMPLE IDENTIFICATION

Sample Number	Sample Description
01	MW1-90-1
03	MW3-90-1
05	MW5-90-1
07	MW7-90-1
09	MW9-90-1
11	MW11-90-1
13	SWME-90-1
15	SWSW-90-1
17	SWN-90-1
19	SWSE-90-1

Sample Number	Sample Description
02	MW2-90-1
04	MW4-90-1
06	MW6-90-1
08	MW8-90-1
10	MW10-90-1
12	SWBN-90-1
14	SWNE-90-1
16	SWNW-90-1
18	SWBS-90-1
20	SWS-90-1



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Remainder of sample(s) for routine analysis will be disposed of three weeks from final report date. Sample(s) for bacteria analysis only, will be disposed of immediately after analysis. This is not applicable if other arrangements have been made.



Certified By

Order # 90-08-145
09/10/90 15:51

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TEST RESULTS BY SAMPLE

Sample: 01A MW1-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	2.5+/-0.8		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	2.8+/-0.8		pCi/liter		

Sample: 02A MW2-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	2.2+/-0.8		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	2.1+/-0.9		pCi/liter		

Sample: 03A MW3-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 04A MW4-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	0.7+/-0.4		pCi/liter		
Uranium-235	<0.6		pCi/liter		

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<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-238	0.8 +/- 0.4		pCi/liter		

Sample: 05A MW5-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 06A MW6-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	2.9 +/- 0.8		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	3.1 +/- 0.9		pCi/liter		

Sample: 07A MW7-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	1.8 +/- 0.7		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	3.0 +/- 1.0		pCi/liter		

Sample: 08A MW8-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	1.0 +/- 0.5		pCi/liter		
Uranium-235	<0.6		pCi/liter		

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<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-238	3.2+/-0.8		pCi/liter		

Sample: 09A MW9-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 10A MW10-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 11A MW11-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 12A SWBN-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		

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<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-238	<0.6		pCi/liter		

Sample: 13A SWME-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 14A SWNE-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 15A SWSW-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 16A SWNW-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		

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<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-238	<0.6		pCi/liter		

Sample: 17A SWN-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 18A SWBS-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 19A SWSE-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	0.6+/-0.4		pCi/liter		
Uranium-235	<0.6		pCi/liter		
Uranium-238	<0.6		pCi/liter		

Sample: 20A SWS-90-1

Collected: 05/19/90

<u>Test Description</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Uranium-234	<0.6		pCi/liter		
Uranium-235	<0.6		pCi/liter		



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Test Description
Uranium-238

Result
0.6

Limit

Units Analyzed By
pCi/liter

Commander
US Army Jefferson Proving
Ground - Building 205
Madison, IN 47250-5100
Attn: Mark Pierson, RSO

Date Received: 01/03/91
Date Reported: 01/22/91
Work Order: 91-01-031
Category:

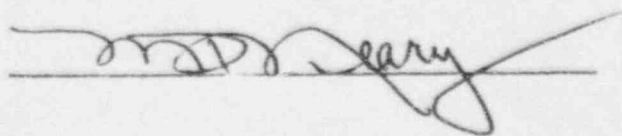
Work ID: Environmental
P O # : DAAD0391P0171

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Received: 01/03/91

CEP, Inc. REPORT
01/22/91 15:16:59

Work Order # 91-01-031

Approved By:



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REPORT

Work Order # 91-01-031

Received: 01/03/91

Results by Sample

SAMPLE ID M1-2-90

FRACTION 01A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.14+/-0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.12+/-0.04</u>

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

Work Order # 91-01-031

Received: 01/03/91

Results by Sample

SAMPLE ID M2-2-90

FRACTION 02A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90 Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234

0.05

10.60 +/- 2.12

Uranium-235

0.05

0.80 +/- 0.16

Uranium-238

0.05

24.69 +/- 0.32

All results report in:

UNITS pCi/gram

699
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Received: 01/03/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID M3-2-90

FRACTION 03A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.27+/-0.04</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.20+/-0.03</u>

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

Work Order # 91-01-031

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Results by Sample

SAMPLE ID M4-2-90

FRACTION 04A

TEST CODE ISOU 5

NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.06+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u><0.05</u>

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

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Received: 01/03/91

Results by Sample

SAMPLE ID M5-2-90

FRACTION 05A

TEST CODE 150U S

NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234

0.05

<0.05

Uranium-235

0.05

<0.05

Uranium-238

0.05

0.07+/-0.02

All results report in:

UNITS pCi/gram

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SAMPLE ID M6-2-90

CEP, Inc.

REPORT

Results by Sample

Work Order # 91-01-031

FRACTION 06A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.35+/-0.04
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.29+/-0.03

All results report in:

UNITS pCi/gram

9069

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REPORT

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Results by Sample

SAMPLE ID M7-2-90

FRACTION 07A TEST CODE 150U 5 NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234

0.05

0.16+/-0.04

Uranium-235

0.05

<0.05

Uranium-238

0.05

0.18+/-0.04

All results report in:

UNITS pCi/gram

100

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CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID MB-2-90 FRACTION DBA TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.68+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.07+/-0.02

All results report in:

UNITS pCi/gram

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CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID 2-2-90

FRACTION U9A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.15+/-0.04</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.16+/-0.04</u>

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

Work Order # 91-01-031

Results by Sample

SAMPLE ID 3-2-90

FRACTION 10A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.20+/-0.05</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.30+/-0.06</u>

All results report in:

UNITS pCi/gram

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CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID 5-2-90

FRACTION 11A TEST CODE ISOU 5 NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.49+/-0.10</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>1.14+/-0.07</u>

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

Results by Sample

Work Order # 91-01-031

SAMPLE ID 7-2-90

FRACTION 12A

TEST CODE ISOU.S

NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.06+/-0.02
0.05
0.05

All results report in:

UNITS

pCi/litram

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CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID 9-2-90

FRACTION 13A TEST CODE ISGV S NAME Isotopic Uranium
Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.15+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.15+/-0.02

All results report in:

UNITS pCi/gram

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Received: (11/03/91)

SAMPLE ID 14-2-90

Work Order # 11-01-211

USE DELTA HARE Isotopic Analysis
Category ALL

Type

Urinary
Dietary
Excretion

0.00
0.00
0.00

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Received: 01/03/98

AMPLE ID 16-2-90

01/03/98
stopper will

Type 11

Drum 100
Drum 100
Drum 100

CEP, Inc.

REPORT

Results by Sample

Work Order # 91-01-031

FRACTION 16A

TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.09+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.10+/-0.02

All results report in

UNITS pCi/gram

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Received: 01/03/91

PLE ID 19-2-90

CEP, Inc

REPORT

Results by Sample

Work Order # 91-01-031

FRACTION 17A TEST CODE: ISOU S NAME Isotopic Uranium
Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.11+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.17+/-0.03

All results report in:

UNITS pCi/gram

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REFORM

Work Order # 91-01-031

Results by Sample

AMPLE ID 31-2-90

FRACTION 18A

TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 12/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05

0.094/ 0.03
0.03
0.03

All results report in:

UNITS

pCi/gm

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Received: 01/03/91

CEP, Inc.

REPORT

Results by Sample

Work Order # 91-01-031

SAMPLE ID 32-2-90

FRACTION 19A

TEST CODE ISU 5

NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.07+/-0.02
0.05
0.12+/-0.03

All results report in:

UNITS

pCi/gram

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Received: 01/03/91

CEP, Inc.

REPORT

Results by Sample

Work Order # 91-01-031

SAMPLE ID 36-2-90

FRACTION 20A

TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05

0.14+/-0.04
0.05
0.14+/-0.04

All results report in

UNITS pCi/gm

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Received: 01/03/91

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REPORT

Results by Sample

Work Order # 91-01-031

SAMPLE ID 39-2-90

FRACTION 21A

TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/l

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05
0.03+/-0.03
0.05
0.11+/-0.04

All results report in:

UNITS pCi/gram

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Received: 01/03/91

SAMPLE ID 40-2-90

CEP, Inc.

REPORT

Results by Sample

Work Order # 91-01-031

FRACTION 22A TEST CODE ISOU 5 NAME Isotopic Uranium
Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<0.05
Uranium-235	0.05	<0.05
Uranium-238	0.05	<0.05

All results report in:

UNITS pCi/gram

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Received: 01/03/91

CEP, Inc.

REPORT

Work Order # 91-01-031

Results by Sample

SAMPLE ID 41-2-90

FRACTION 234

TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis

Detection
Limit pCi/l

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05

0.13+/-0.02
0.05
0.16+/-0.02

All results reported in

UNITS

pCi/gram

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Received: 01/03/91

CEP, Inc
Results by Sample

Work Order # 91-01-031

SAMPLE ID 45-2-90

FRACTION 24A TEST CODE ISOU 3 NAME Isotopic Uranium
Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.16+/-0.04
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.11+/-0.03

All results report in:

UNITS pCi/gram

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CEP, Inc.

REPORT

Work Order # 91-01-031

Received: 01/03/91

Results by Sample

SAMPLE ID 47-2-90

FRACTION 25A TEST CODE ISOU S NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.07+/-0.02</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.07+/-0.02</u>

All results report in:

UNITS pCi/gram

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Received: 01/03/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID 48-2-90

FRACTION 26A TEST CODEL ISOU S NAME Isotopic Uranium
Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	12.27+/-2.45
Uranium-235	0.05	0.92+/-0.18
Uranium-238	0.05	28.60+/-0.36

All results report in

UNITS pCi/gram

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Received: 01/03/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID 49-2-90

FLUORUM 27A

TEST CODE 1030 9

NAME Isotopic Uranium

Date & Time Collected 10/10/90

Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	0.13+/-0.02
Uranium-235	0.05	<0.05
Uranium-238	0.05	0.14+/-0.02

All results reported in:

UNITS pCi/gram

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Received: 01/03/91

CEP, Inc. REPORT
Results by Sample

Work Order # 91-01-031

SAMPLE ID 50-2-90

FRACTION 28A TEST CODE ISOU S NAME Isotopic Uranium
Date & Time Collected 10/10/90 Category SOIL

Type of Analysis	Detection Limit pCi/g	RESULT
Uranium-234	0.05	<u>0.15+/-0.04</u>
Uranium-235	0.05	<u><0.05</u>
Uranium-238	0.05	<u>0.14+/-0.04</u>

All results report in:

UNITS pCi/gram



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ANALYSIS REPORT

DATE: 08/11/93 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-49172-4
Date Samples Received: 07/09/93
Customer PO Number: WO4ZAA-3113-0003

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-49172-4-1	9897-49172-4-2	9897-49172-4-3	9897-49172-4-4
Sponsor Designation -	M1-93-1	M2-93-1	48-93-1	6-93-1
Date Collected -				

Determinations in pCi/g unless noted

Uranium-233 & -234 - total	0.2 ± 0.1 *	0.1 ± 0.1 *	0.6 ± 0.1 *	4.4 ± 0.7 *
Uranium-235 - total	0.0 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *	0.6 ± 0.2 *
Uranium-238 - total	0.1 ± 0.1 *	0.2 ± 0.1 *	0.6 ± 0.1 *	40 ± 2 *
% Moisture	22.2	17.5	19.9	18.0

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By:


Bud Summers
Radiochemistry Supervisor

BS/ep





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ANALYSIS REPORT

DATE: 08/02/93 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-49171-4
Date Samples Received: 07/09/93
Customer PO Number: W04ZAA-3113-0003

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-49171-4-1	9897-49171-4-2	9897-49171-4-3	9897-49171-4-4
Sponsor Designation -	SWBN-93-1	SWBS-93-1	MW7-93-1	MW2-93-1
Date Collected -				

Determinations in pCi/L unless noted

Uranium-233 & -234 - total	0.0 ± 0.1 *	0.1 ± 0.1 *	1.4 ± 0.2 *	1.0 ± 0.2 *
Uranium-235 - total	0.0 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *
Uranium-238 - total	0.3 ± 0.1 *	0.0 ± 0.1 *	1.1 ± 0.2 *	0.6 ± 0.1 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By:


Bud Summers
Radiochemistry Supervisor

BS/ep





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ANALYSIS REPORT

DATE: 07/28/93 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-49167-2
Date Samples Received: 07/09/93
Customer PO Number: DAAD03-93-P-0338

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-49167-2-1	9897-49167-2-2
Sponsor Designation -	A6-93-1	A4-93-1
Date Collected -		

Determinations in mCi/Filter unless noted

Uranium-234 - total	0.1 ± 0.2 *	0.2 ± 0.2 *
Uranium-235 - total	0.0 ± 0.1 *	0.1 ± 0.1 *
Uranium-238 - total	0.0 ± 0.1 *	0.0 ± 0.2 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By: Bud Summers
Radiochemistry Supervisor

BS/ep

CUSTOMER US Army Jefferson Proving Ground
 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 93-07-108



Soil-Isotopic Uranium
 TYPE OF ANALYSIS

DAAD03-93-P-0320
 CUSTOMER ORDER NUMBER

07/12/93
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	Total Wgt. wet/dry(g)	pCi/g(dry)
57-93-1		U234	628/466	0.75±0.14
		U235		0.03±0.02
		U238		0.77±0.13
6-93-1		U234	531/456	10.66±0.87
		U235		1.17±0.15
		U238		79.7±5.8
M7-93-1		U234	737/556	0.44±0.11
		U235		0.06±0.03
		U238		0.50±0.11
47-93-1		U234	448/341	0.72±0.13
		U235		<0.01
		U238		0.84±0.13
44-93-1		U234	506/393	0.69±0.13
		U235		0.04±0.03
		U238		0.80±0.14
M4-93-1		U234	724/612	0.10±0.07
		U235		<0.01
		U238		0.13±0.07
M3-93-1		U234	724/536	0.55±0.13
		U235		<0.03
		U238		0.53±0.12
M8-93-1		U234	655/554	0.14±0.07
		U235		<0.01
		U238		0.14±0.06
48-93-1		U234	739/578	0.78±0.14
		U235		<0.01
		U238		0.99±0.15
M2-93-1		U234	702/574	0.12±0.07
		U235		<0.01
		U238		0.11±0.06

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APPROVED BY Cliff Gravel, Data Analyst

Cliff Gravel 8/17/93

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CUSTOMER US Army Jefferson Proving Ground
 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 93-07-108



Soil-Isotopic Uranium
 TYPE OF ANALYSIS

DAAD03-93-P-0320
 CUSTOMER ORDER NUMBER

07/12/93
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	Total Wgt. wet/dry (g)	pCi/g(dry)
M5-93-1		U234	845/693	0.16±0.07
		U235		<0.01
		U238		0.32±0.09
M1-93-1		U234	850/675	0.19±0.07
		U235		<0.01
		U238		0.26±0.08
55-93-1		U234	640/545	0.67±0.12
		U235		<0.01
		U238		0.63±0.11
56-93-1		U234	581/406	0.88±0.17
		U235		<0.01
		U238		1.06±0.18

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 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 93-07-107



Air Filter-Isotopic Uranium
 TYPE OF ANALYSIS

DAAD03-93-P-0320
 CUSTOMER ORDER NUMBER

07/12/93
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	pCi/sample
A5-93-1		U234	<0.02
		U235	<0.01
		U238	<0.02
A1-93-1		U234	<0.01
		U235	<0.01
		U238	<0.29
A3-93-1		U234	<0.01
		U235	<0.02
		U238	<0.02
A2-93-1		U234	<0.01
		U235	<0.02
		U238	<0.01

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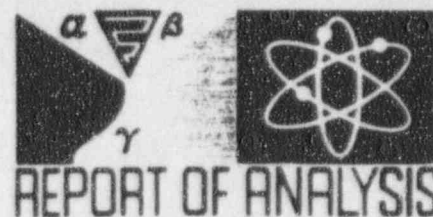
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CUSTOMER US Army Jefferson Proving Ground
 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 93-07-107



Air Filter-Isotopic Uranium
 TYPE OF ANALYSIS

DAAD03-93-P-0320
 CUSTOMER ORDER NUMBER

07/12/93
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	pCi/sample
A5-93-1		U234	<0.02
		U235	<0.01
		U238	<0.02
A1-93-1		U234	<0.01
		U235	<0.01
		U238	<0.29
A3-93-1		U234	<0.01
		U235	<0.02
		U238	<0.02
A2-93-1		U234	<0.01
		U235	<0.02
		U238	<0.01

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 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 93-07-104



Water-Isotopic Uranium
 TYPE OF ANALYSIS

DAAD03-93-P-0320
 CUSTOMER ORDER NUMBER

07/12/93
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	pci/l
MW2-93-1		U234	1.66±0.57
		U235	<0.09
		U238	0.82±0.42
MW11-93-1		U234	2.32±0.32
		U235	<0.04
		U238	2.10±0.31
SWN-93-1		U234	0.23±0.13
		U235	<0.05
		U238	0.29±0.15
SWSE-93-1		U234	0.36±0.15
		U235	<0.02
		U238	0.20±0.14
MW1-93-1		U234	0.30±0.14
		U235	<0.02
		U238	0.20±0.14
MW4-93-1		U234	0.50±0.16
		U235	<0.04
		U238	0.39±0.16
SWNW-93-1		U234	0.19±0.12
		U235	<0.06
		U238	0.30±0.15
SW5W-93-1		U234	<0.11
		U235	<0.11
		U238	<0.11
MW10-93-1		U234	1.55±0.51
		U235	<0.07
		U238	1.05±0.42
SWBS-93-1		U234	0.39±0.15
		U235	<0.05
		U238	0.24±0.14

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CUSTOMER US Army Jefferson Proving Ground
 ATTENTION Commander/STEJP-CT-EN
 ADDRESS DAAD03-93-P-0320
 CITY Madison IN 47250-5100
 W.O. NO. 93-07-104



Water-Isotopic Uranium
 TYPE OF ANALYSIS

DAAD03-93-P-0320
 CUSTOMER ORDER NUMBER

07/12/93
 SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	pci/l
MW6-93-1		U234	2.66±0.54
		U235	0.14±0.11
		U238	2.40±0.52
MW5-93-1		U234	0.72±0.18
		U235	<0.04
		U238	0.65±0.19
SWNE-93-1		U234	<0.07
		U235	<0.07
		U238	<0.13
SWBN-93-1		U234	<0.05
		U235	<0.02
		U238	0.23±0.14
MW3-93-1		U234	0.84±0.44
		U235	<0.10
		U238	0.78±0.44
MW8-93-1		U234	0.38±0.18
		U235	0.11±0.08
		U238	0.53±0.22
MW7-93-1		U234	1.43±0.37
		U235	0.11±0.10
		U238	0.91±0.30
MW9-93-1		U234	4.50±0.60
		U235	0.11±0.08
		U238	3.84±0.55

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Cliff Gravel

DATE

ACCU-LABS RESEARCH, INC.

11485 West 48th Avenue - Wheat Ridge, CO 80033 - (303) 423-2766

ANALYSIS REPORT

DATE: 11/09/90 PAGE 1

LTC PIERSON
U.S. ARMY
RADIATION PROTECTION OFFICER
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-35514-8
Date Samples Received: 09/14/90
Customer PO Number: DAADO390M0693

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-35514-8-1	9897-35514-8-2	9897-35514-8-3	9897-35514-8-4
Sponsor Designation -	MW3-89-2	MW9-89-2	SW-89-2	SWNE-89-2
Comments -	NOV 89	NOV 89	NOV 89	NOV 89
Date Collected -				

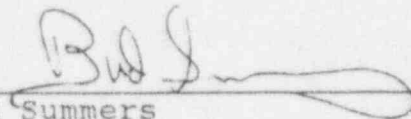
Determinations in pCi/L unless noted

Uranium-233 & -234 - total	1.0 ± 0.3 *	1.7 ± 0.5 *	0.0 ± 0.2 *	0.0 ± 0.1 *
Uranium-235 - total	0.1 ± 0.1 *	0.1 ± 0.1 *	0.0 ± 0.1 *	0.0 ± 0.1 *
Uranium-238 - total	4.9 ± 0.6 *	3.3 ± 0.6 *	0.4 ± 0.2 *	0.0 ± 0.1 *

ALR Designation -	9897-35514-8-5	9897-35514-8-6	9897-35514-8-7	9897-35514-8-8
Sponsor Designation -	SWNW90-1	SWNE90-1	MW6-90-1	MW11-90-1
Comments -	MAY 90	MAY 90	MAY 90	MAY 90
Date Collected -				

Uranium-233 & -234 - total	0.1 ± 0.2 *	0.0 ± 0.1 *	3.4 ± 0.6 *	0.5 ± 0.2 *
Uranium-235 - total	0.0 ± 0.1 *	0.0 ± 0.1 *	0.2 ± 0.1 *	0.1 ± 0.1 *
Uranium-238 - total	0.1 ± 0.1 *	0.0 ± 0.1 *	14 ± 1 *	0.5 ± 0.2 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By: 
Bud Summers
Radiochemistry Supervisor

BS/dh 



Accu-Labs Research, Inc.

4663 Table Mountain Drive Golden, Colorado 80403-1650
(303) 277-9514 FAX (303) 277-9512

QC Spring 21

ANALYSIS REPORT

DATE: 08/05/91 PAGE 1

LTC PIERSON
U.S. ARMY
RADIATION PROTECTION OFFICER
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-38796-7
Date Samples Received: 06/28/91
Customer PO Number: DAAD0391P0462

These samples to be disposed of 30 days after the date of this report.

Parameter	Concentration
Lab Job Number: 9897-38796-7-1 Sponsor ID: A2	
Date Collected: / / Determinations: pCi/L unless noted	
Uranium-233 & -234- T (pCi/Filter Comp.)	5.7 ± 1.0 *
Uranium-235- T (pCi/Filter Comp.)	0.2 ± 0.3 *
Uranium-238- T (pCi/Filter Comp.)	6.3 ± 1.1 *

ANALYSIS REPORT

DATE: 08/05/91 PAGE 2

Parameter	Concentration
Lab Job Number: 9897-38796-7-2	Sponsor ID: M1-91-1
Date Collected: / /	Determinations: pCi/L unless noted
Uranium-233 & -234- T (pCi/g)	1.6 ± 0.3 *
Uranium-235- T (pCi/g)	0.0 ± 0.1 *
Uranium-238- T (pCi/g)	1.5 ± 0.3 *

ANALYSIS REPORT

DATE: 08/05/91 PAGE 3

Parameter	Concentration
Lab Job Number: 9897-38796-7-3 Sponsor ID: M2-91-1	
Date Collected: / / Determinations: pCi/L unless noted	
Uranium-233 & -234- T (pCi/g)	1.6 ± 0.3 *
Uranium-235- T (pCi/g)	0.1 ± 0.1 *
Uranium-238- T (pCi/g)	2.1 ± 0.3 *

ANALYSIS REPORT

DATE: 08/05/91 PAGE 4

Parameter

Concentration

Lab Job Number: 9897-38796-7-4 Sponsor ID: MW6-91-1

Date Collected: / / Determinations: pCi/L unless noted

Uranium-233 & -234- T

2.5 ± 0.4 *

Uranium-235- T

0.1 ± 0.1 *

Uranium-238- T

3.6 ± 0.4 *

A N A L Y S I S R E P O R T

DATE: 08/05/91 PAGE 5

<u>Parameter</u>	<u>Concentration</u>
Lab Job Number: 9897-38796-7-5 Sponsor ID: MW9-91-1	
Date Collected: / / Determinations: pCi/L unless noted	
Uranium-233 & -234- T	1.4 ± 0.3 *
Uranium-235- T	0.0 ± 0.1 *
Uranium-238- T	2.7 ± 0.4 *

A N A L Y S I S R E P O R T

DATE: 08/05/91 PAGE 6

<u>Parameter</u>	<u>Concentration</u>
Lab Job Number: 9897-38796-7-6 Sponsor ID: SW-BN-91-1	
Date Collected: / / Determinations: pCi/L unless noted	
Uranium-233 & -234- T	0.0 ± 0.1 *
Uranium-235- T	0.0 ± 0.1 *
Uranium-238- T	0.4 ± 0.2 *

A N A L Y S I S R E P O R T

DATE: 08/05/91 PAGE 7

Parameter	Concentration
Lab Job Number: 9897-38796-7-7 Sponsor ID: SW-NW-91-1	
Date Collected: / / Determinations: pCi/L unless noted	
Uranium-233 & -234- T	0.2 ± 0.2 *
Uranium-235- T	0.0 ± 0.1 *
Uranium-238- T	0.4 ± 0.2 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By: Bud S.
 Bud Summers
 Radiochemistry Supervisor

BS/ep
 2P



QC Full 91

Accu-Labs Research, Inc.

4663 Table Mountain Drive Golden, Colorado 80403-1650
(303) 277-9514 FAX (303) 277-9512

ANALYSIS REPORT

DATE: 04/02/92 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-41841-4
Date Samples Received: 02/27/92
Customer PO Number: DAAD03-92-P-0263

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-41841-4-1	9897-41841-4-2	9897-41841-4-3	9897-41841-4-4
Sponsor Designation -	M1-91-2	M2-91-2	6-91-2	48-91-2
Date Collected -				

Determinations in pCi/g (dry) unless noted

Uranium-233 & -234 - total	0.4 ± 0.1 *	0.3 ± 0.1 *	12 ± 1 *	0.8 ± 0.1 *
Uranium-235 - total	0.0 ± 0.1 *	0.0 ± 0.1 *	4.5 ± 0.2 *	0.0 ± 0.1 *
Uranium-238 - total	0.3 ± 0.1 *	0.3 ± 0.1 *	140 ± 10 *	0.9 ± 0.1 *

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96σ.

By: Benny Whitford
for Bud Summers
Radiochemistry Supervisor

BS/ep
JR



Accu-Labs Research, Inc.

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ANALYSIS REPORT

DATE: 03/12/92 PAGE 1

STEJP-CT (R.HERRING)
U.S. ARMY
USA JEFFERSON PROVING GROUND
MADISON, IN 47250-5100

Lab Job Number: 9897-41844-4
Date Samples Received: 02/27/92
Customer PO Number: DAAD03-92-P-0263

These samples to be disposed of 30 days after the date of this report.

ALR Designation -	9897-41844-4-1	9897-41844-4-2	9897-41844-4-3	9897-41844-4-4
Sponsor Designation -	MW3-91-2	MW5-91-2	SWBN-91-2	SWBS-91-2
Date Collected -				

Determinations in $\mu\text{Ci/L}$ unless noted

Uranium-233 & -234 - total	$0.7 \pm 0.2 *$	$0.1 \pm 0.2 *$	$-0.1 \pm 0.1 *$	$0.0 \pm 0.1 *$
Uranium-235 - total	$0.0 \pm 0.1 *$	$0.0 \pm 0.1 *$	$0.0 \pm 0.1 *$	$0.0 \pm 0.1 *$
Uranium-238 - total	$0.4 \pm 0.2 *$	$0.2 \pm 0.1 *$	$0.1 \pm 0.1 *$	$0.0 \pm 0.1 *$

* Variability of the radioactive disintegration process (counting error) at the 95% confidence level, 1.96 σ .

By:

Bud Summers
Radiochemistry Supervisor

BS/ep



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Received: 02/28/92

CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW-1-91-2 FRACTION 01A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	10.5+/-3.4
Uranium-235	0.6	<0.6
Uranium-238	0.6	22.8+/-5.1

All results report in:
UNITS pCi/liter

SAMPLE ID MW 2 FRACTION 02A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	4.1+/-2.3
Uranium-235	0.6	<0.6
Uranium-238	0.6	8.9+/-3.4

All results report in:
UNITS pCi/liter

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Received: 02/28/92

CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 3

FRACTION 03A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

g c L a b

Uranium-234

0.6

9.2+/-1.4

0.7 ± .2

Uranium-235

0.6

<0.6

0 ± .1

Uranium-238

0.6

21.2+/-4.6

0.4 ± .2

All results report in:
UNITS pCi/liter

SAMPLE ID MW 5

FRACTION 04A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

<0.6

0.1 ± .2

Uranium-235

0.6

<0.6

0 ± .1

Uranium-238

0.6

<0.6

0.2 ± .1

All results report in:
UNITS pCi/liter



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Received: 02/28/92

CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 6 FRACTION 05A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	8.4+/-1.3
Uranium-235	0.6	<0.6
Uranium-238	0.6	19.5+/-4.5

All results report in:
UNITS pCi/liter

SAMPLE ID MW 7 FRACTION 06A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	7.4+/-3.6
Uranium-235	0.6	<0.6
Uranium-238	0.6	20.6+/-5.4

All results report in:
UNITS pCi/liter



Page 5
Received: 02/28/92

CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID MW 10 FRACTION 07A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	24.5+/-3.7
Uranium-235	0.6	1.8+/-0.3
Uranium-238	0.6	56.6+/-9.2

All results report in:
UNITS pCi/liter

SAMPLE ID MW 11 FRACTION 08A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 01/15/92 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	5.3+/-2.4
Uranium-235	0.6	<0.6
Uranium-238	0.6	9.4+/-3.0

All results report in:
UNITS pCi/liter



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CEP, Inc.

REPORT

Work Order # 92-02-609

Received: 02/28/92

Results by Sample

SAMPLE ID SWNW-2-90

FRACTION 21A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 09/18/90

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

4.67+/-2.70

Uranium-235

0.6

<0.6

Uranium-238

0.6

10.8+/-4.8

All results report in:
UNITS pCi/liter

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Received: 02/28/92
SAMPLE ID 56-91-2
CEP, Inc.
Results by Sample
Work Order # 92-02-610

FRACTION Q1A
TEST CODE 1304 S
NAME Isotopic Uranium
Date & Time Collected: 09/27/91
Category SOIL

Type of Analysis	Detection Limit pCi/g	Result
Uranium-234	0.05	1.52+/-0.43
Uranium-235	0.05	0.08+/-0.05
Uranium-238	0.05	1.45+/-0.54

All results reported in

UNITS pCi/gram

SAMPLE ID 48-91-2
FRACTION Q2A
TEST CODE 1304 S
NAME Isotopic Uranium
Date & Time Collected: 09/27/91
Category SOIL

Type of Analysis	Detection Limit pCi/g	Result
Uranium-234	0.05	1.09+/-0.21
Uranium-235	0.05	0.08+/-0.05
Uranium-238	0.05	1.52+/-0.24

See Lab
#8
0
9 +.1

All results reported in

UNITS pCi/gram



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CEP, Inc.
Results by Sample
Work Order # 92-02-610

SAMPLE ID 44-91-2
FRACTION 03A
TEST CODE 130U 3
NAME Isotopic Uranium
Date & Time Collected 09/27/91
Category SOIL

Type of Analysis	Detection Limit pCi/g	Result
Uranium-234	0.05	0.52+-0.19
Uranium-235	0.05	0.05
Uranium-238	0.05	0.78+-0.22

All results report in

UNITS pCi/gram

SAMPLE ID 43-91-2
FRACTION 04A
TEST CODE 150U 5
NAME Isotopic Uranium
Date & Time Collected 09/27/91
Category SOIL

Type of Analysis	Detection Limit pCi/g	Result
Uranium-234	0.05	0.21+-0.10
Uranium-235	0.05	0.10+-0.05
Uranium-238	0.05	0.72+-0.48

All results report in

UNITS pCi/gram



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CEP, Inc

Results by Sample

Work Order # 92-02-610

SAMPLE ID 6-91-2

FRACTION 05A

TEST CODE 150U 3

NAME Isotopic Uranium

Date & Time Collected 02/27/91

Category SOIL

Type of Analysis

Detection Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05

0.44 +/- 0.18
0.05
0.90 +/- 0.23

QC Lab

12 ± 1
4.5 ± 1.2
140 ± 10

All results report in

UNITS

pCi/gm

SAMPLE ID 8-91-2

FRACTION 06A

TEST CODE 150U 3

NAME Isotopic Uranium

Date & Time Collected 02/27/91

Category SOIL

Type of Analysis

Detection Limit pCi/g

RESULT

Uranium-234
Uranium-235
Uranium-238

0.05
0.05
0.05

1165 +/- 45
85 +/- 9
2892 +/- 31

1174
0.138
= 0.13

All results report in

UNITS

pCi/gm

1174
0.138
= 0.13



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CEP, Inc.

REPORT

Work Order # 92-02-609

Received: 02/28/92

Results by Sample

SAMPLE ID SWNEFRACTION 17ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 12/21/91Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

7.40+/-2.00

Uranium-235

0.6

<0.6

Uranium-238

0.6

17.1+/-3.7

All results report in:
UNITS pCi/literSAMPLE ID MW9-2-90FRACTION 18ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 09/18/90Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

4.4+/-0.9

Uranium-235

0.6

<0.6

Uranium-238

0.6

9.4+/-7.6

All results report in:
UNITS pCi/liter



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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWSW

FRACTION 15A TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 12/21/91

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

2.2+/-1.0

Uranium-235

0.6

<0.6

Uranium-238

0.6

4.9+/-2.6

All results report in:
UNITS pCi/liter

SAMPLE ID SWSR

FRACTION 16A TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 09/27/91

Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

5.1+/-2.3

Uranium-235

0.6

<0.6

Uranium-238

0.6

8.6+/-2.8

All results report in:
UNITS pCi/liter



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CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWN

FRACTION 09A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 12/21/91

Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	8.3+/-5.2
Uranium-235	0.6	<0.6
Uranium-238	0.6	11.5+/-6.1

All results report in:
UNITS pCi/liter

SAMPLE ID SWBS

FRACTION 10A

TEST CODE ISOU

NAME Isotopic Uranium

Date & Time Collected 12/21/91

Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<0.6
Uranium-235	0.6	<0.6
Uranium-238	0.6	<0.6

QC Lab

0 ± .1
0 ± .1
0 ± .1

All results report in:
UNITS pCi/liter



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Received: 02/28/92

CEP, Inc. REPORT
Results by Sample

Work Order # 92-02-609

SAMPLE ID SWSE FRACTION 11A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	<0.6
Uranium-235	0.6	<0.6
Uranium-238	0.6	<0.6

All results report in:
UNITS pCi/liter

SAMPLE ID SWBN FRACTION 12A TEST CODE ISOU NAME Isotopic Uranium
Date & Time Collected 12/21/91 Category WATER

Type of Analysis	Detection Limit pCi/L	RESULT
Uranium-234	0.6	10.7 +/- 4.0
Uranium-235	0.6	1.10 +/- 0.50
Uranium-238	0.6	34.4 +/- 6.5

QC Lab
-0.1 ± .1
0 ± .1
0.1 ± .1

All results report in:
UNITS pCi/liter



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CEP, Inc.

REPORT

Work Order # 92-02-609

Received: 02/28/92

Results by Sample

SAMPLE ID SWNWFRACTION 13ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 12/21/91Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

3.8+/-2.0

Uranium-235

0.6

<0.6

Uranium-238

0.6

8.4+/-2.8

All results report in:
UNITS pCi/literSAMPLE ID SWMEFRACTION 14ATEST CODE ISOUNAME Isotopic UraniumDate & Time Collected 12/21/91Category WATER

Type of Analysis

Detection
Limit pCi/L

RESULT

Uranium-234

0.6

5.2+/-2.3

Uranium-235

0.6

<0.6

Uranium-238

0.6

12.3+/-3.7

All results report in:
UNITS pCi/liter



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Received: 02/28/92

SAMPLE ID 10-91-2

CEP, Inc.

Results by sample

FRACTION 08A

TEST CODE 1800 S

NAME Isotopic Uranium

Date & Time Collected: 07/27/91

Work Order # 92-02-610

Category SOIL

Type of Analysis

Uranium-234
Uranium-235
Uranium-238

Detection
Limit (ppb)

0.05
0.05
0.05

Unit

12.2 ± 1.3
2.28 ± 0.90
4.8 ± 1.20

All results report in

UNITS

µg/gm

SAMPLE ID 12-91-2

FRACTION 08A

TEST CODE 1800 S

NAME Isotopic Uranium

Date & Time Collected: 09/27/91

Category SOIL

Type of Analysis

Uranium-234
Uranium-235
Uranium-238

Detection
Limit (ppb)

0.05
0.05
0.05

Unit

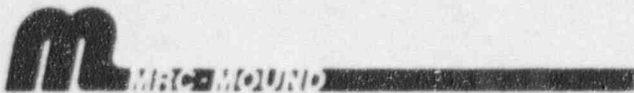
0.84 ± 0.36
0.98 ± 0.09
2.27 ± 0.61

All results report in

UNITS

µg/gm

Spring 88



Operated for the United States
Department of Energy

July 29, 1988

Commander
U. S. Army Jefferson Proving Ground
Attn: STEJP-TD-A (Mr. Richard Herring)
Madison, Indiana 47250

Dear Mr. Herring:

Copies of the results of the analyses of the Spring (1988) soil, silt and water samples are enclosed. Concentrations for U-234, U-235 and U-238 along with the lower detection limits (LDL's) are given for each sample that we received. The errors given represent the counting statistics errors only. The U-235 concentrations, all very low, have a high experimental error associated with them.

Dave Abbott sent you the latest urine data and based on the information we passed on to you at our May 19, 1988 meeting, you should have all of the FY-1988 data.

If you need any additional information, call either myself or Dave.

Sincerely,

Carl T. Bishop
Supervisor, Environment
Analysis & OC

CTB:ww
Enclosure

cc: D. T. Abbott
C. A. Phillips

URANIUM IN SOIL JEFFERSON PROVING GROUNDS
MAY 1988 ANALYZED BY MRC/MOUND JULY 1988

SAMPLE ID	SAMPLE WT (g)	pCi/g U-234		pCi/g U-235		pCi/g U-238	
=====	=====	=====		=====		=====	
M1-88-1	3.0	0.1793 +/-	0.0214	0.0081 +/-	0.0053	0.1678 +/-	0.0203
M2-88-1	3.0	0.0789 +/-	0.0168	0.0034 +/-	0.0045	0.0929 +/-	0.0173
M3-88-1	3.0	0.5620 +/-	0.0293	0.0264 +/-	0.0089	0.6039 +/-	0.0403
M4-88-1	3.0	0.1038 +/-	0.0171	0.0030 +/-	0.0041	0.1173 +/-	0.0175
M5-88-1	3.0	0.1091 +/-	0.0169	0.0021 +/-	0.0038	0.1056 +/-	0.0161
M6-88-1	3.0	0.3324 +/-	0.0260	0.0098 +/-	0.0053	0.3094 +/-	0.0248
M7-88-1	3.0	0.6814 +/-	0.0406	0.0328 +/-	0.0093	0.7466 +/-	0.0422
M8-88-1	3.0	0.0899 +/-	0.0158	0.0033 +/-	0.0042	0.0774 +/-	0.0144
M8-88-1	3.0	0.0956 +/-	0.0124	0.0023 +/-	0.0033	0.1016 +/-	0.0120
6-88-1	3.0	0.9808 +/-	0.0438	0.0793 +/-	0.0126	3.2629 +/-	0.0787
8-88-1	3.0	5.5661 +/-	0.9537	*		39.5626 +/-	6.5810 ←
8-88-1	3.0	4.9036 +/-	0.5831	*		33.3929 +/-	3.7308 ←
10-88-1	3.0	0.9472 +/-	0.0686	0.0817 +/-	0.0204	3.0353 +/-	0.1219
12-88-1	3.0	0.9143 +/-	0.0457	0.0803 +/-	0.0137	2.8888 +/-	0.0802
32-88-1	3.0	0.4959 +/-	0.0350	0.0186 +/-	0.0074	0.5204 +/-	0.0355
43-88-1	3.0	0.6807 +/-	0.0472	0.0744 +/-	0.0157	0.8121 +/-	0.0511
44-88-1	3.0	0.7402 +/-	0.0410	0.0334 +/-	0.0091	0.7795 +/-	0.0418
45-88-1	3.0	0.5343 +/-	0.0304	0.0425 +/-	0.0088	0.3293 +/-	0.0240
46-88-1	3.0	1.1303 +/-	0.0487	0.0860 +/-	0.0136	3.4003 +/-	0.0835
46-88-1	3.0	1.0863 +/-	0.0275	0.0816 +/-	0.0078	3.3166 +/-	0.0465
47-88-1	3.0	0.6240 +/-	0.0375	0.0404 +/-	0.0098	0.6707 +/-	0.0385
48-88-1	3.0	0.7486 +/-	0.0250	0.0516 +/-	0.0069	0.7966 +/-	0.0254
49-88-1	3.0	0.8099 +/-	0.0252	0.0365 +/-	0.0058	0.8910 +/-	0.0260
50-88-1	3.0	0.8171 +/-	0.0418	0.0429 +/-	0.0099	0.8139 +/-	0.0415
52-88-1	3.0	0.8321 +/-	0.0462	0.0573 +/-	0.0123	2.5801 +/-	0.0802
53-88-1	3.0	0.5944 +/-	0.0350	0.0309 +/-	0.0084	0.6429 +/-	0.0360
54-88-1	3.0	0.5589 +/-	0.0363	0.0251 +/-	0.0082	0.6048 +/-	0.0375

* TAILING FROM U-234 INTERFERED
WITH ANALYSIS

LDL U-234 .033 pCi/g

LDL U-235 .012 pCi/g

LDL U-238 .029 pCi/g

REAGENT BLANK U-234 .0098 pCi/g

REAGENT BLANK U-235 .0020 pCi/g

REAGENT BLANK U-238 .0074 pCi/g

URANIUM IN WATER JEFFERSON PROVING GROUNDS
MAY 1988 ANALYZED BY MRC/MOUND JULY 1988

SAMPLE ID	VOL L	U-234 pCi/l	U-235 pCi/l	U-238 pCi/l
GW2-88-1	2.0	1.3132 +/- 0.0704	0.0438 +/- 0.0129	0.8305 +/- 0.0562
GW3-88-1	2.0	0.8746 +/- 0.0579	0.0229 +/- 0.0095	0.5846 +/- 0.0475
MW1-88-1	2.0	0.2552 +/- 0.0171	0.0108 +/- 0.0036	0.6422 +/- 0.0265
MW4-88-1	2.0	0.4794 +/- 0.0394	0.0125 +/- 0.0065	0.5118 +/- 0.0408
MW5-88-1	2.0	1.5756 +/- 0.0677	0.0491 +/- 0.0120	0.9733 +/- 0.0534
MW5-88-1	1.5	1.5025 +/- 0.0744	0.0383 +/- 0.0119	0.9059 +/- 0.0581
MW6-88-1	1.5	1.4964 +/- 0.0757	0.0544 +/- 0.0145	1.2994 +/- 0.0707
MW6-88-1	2.0	1.5372 +/- 0.0423	0.0619 +/- 0.0085	1.4010 +/- 0.0405
MW8-88-1	2.0	0.3403 +/- 0.0326	0.0243 +/- 0.0087	0.9005 +/- 0.0524
MW8-88-1	1.5	0.3382 +/- 0.0220	0.0287 +/- 0.0057	0.8997 +/- 0.0344
SWEN-88-1	2.0	0.1390 +/- 0.0150	0.0066 +/- 0.0034	0.1809 +/- 0.0170
SWES-88-1	2.0	0.1164 +/- 0.0197	0.0056 +/- 0.0044	0.0821 +/- 0.0170
SWNE-88-1	2.0	0.0427 +/- 0.0159	0.0008 +/- 0.0028	0.0618 +/- 0.0204
SWNE-88-1	2.0	0.1631 +/- 0.0306	0.0042 +/- 0.0052	0.2228 +/- 0.0356
SWNW-88-1	2.0	0.1731 +/- 0.0239	0.0094 +/- 0.0056	0.2555 +/- 0.0291
SWN-88-1	2.0	0.0882 +/- 0.0116	0.0041 +/- 0.0026	0.1290 +/- 0.0138
SWSW-88-1	2.0	0.0503 +/- 0.0149	0.0026 +/- 0.0035	0.0665 +/- 0.0165
SWS-88-1	2.0	0.2001 +/- 0.0299	0.0019 +/- 0.0034	0.1822 +/- 0.0287
SWSE-88-1	2.0	0.1334 +/- 0.0188	0.0132 +/- 0.0040	0.1209 +/- 0.0182

REAGENT BLANK U-234 = 0.0061 pCi/l

REAGENT BLANK U-235 = 0.0006 pCi/l

REAGENT BLANK U-238 = 0.0060 pCi/l

LDL U-234 = 0.021 pCi/l

LDL U-235 = 0.005 pCi/l

LDL U-238 = 0.024 pCi/l

UNIFORM IN DEER COUNTS TO AND FROM COLLECTED MEASURES, 1997 FROM JERSEY AND JERSEY MEASURES TO ALL OF 1997

1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296		2297		2298		2299		2300		2301		2302		2303		2304		2305		2306		2307		2308		2309		2310		2311		2312		2313		2314		2315		2316		2317		2318		2319		2320		2321		2322		2323		2324		2325		2326		2327		2328		2329		2330		2331		2332		2333		2334		2335		2336		2337		2338		2339		2340		2341		2342		2343		2344		2345		2346		2347		2348		2349		2350		2351		2352		2353		2354		2355		2356		2357		2358		2359		2360		2361		2362		2363		2364		2365		2366		2367		2368		2369		2370		2371		2372		2373		2374		2375		2376		2377		2378		2379		2380		2381		2382		2383		2384		2385		2386		2387		2388		2389		2390		2391		2392		2393		2394		2395		2396		2397		2398		2399		2400		2401		2402		2403		2404		2405		2406		2407		2408		2409		2410		2411		2412		2413		2414		2415		2416		2417		2418		2419		2420		2421		2422		2423		2424		2425		2426		2427		2428		2429		2430		2431		2432		2433		2434		2435		2436		2437		2438		2439		2440		2441		2442		2443		2444		2445		2446		2447		2448		2449		2450	
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JEFFERSON PROVING GROUNDS URANIUM IN WATER
SAMPLES NOVEMBER 1987

SAMPLE ID	SAMPLE VOLUME L	pCi/L U-234	pCi/L U-235	pCi/L U-238
SW-SE-87-2	2.0	0.6924 +/-0.0505	0.0264 +/-0.0119	0.3177 +/-0.0447
SW-SW-87-2	2.0	0.3496 +/-0.0171	0.0166 +/-0.0065	0.3057 +/-0.0172
MW-2-87-2	2.0	0.7037 +/-0.0278	0.0225 +/-0.0071	0.3425 +/-0.0195
SW-BN-87-2	2.0	0.2556 +/-0.0230	0.0045 +/-0.0061	0.1673 +/-0.0210
SW-BN-87-2	1.5	0.1564 +/-0.0283	0.0043 +/-0.0054	0.1871 +/-0.0338
MW-3-87-2	2.0	0.3321 +/-0.0306	0.0153 +/-0.0087	0.2911 +/-0.0384
MW-4-87-2	2.0	0.5171 +/-0.0391	0.0130 +/-0.0033	0.2911 +/-0.0372
SW-5-87-2	2.0	0.2586 +/-0.0311	0.0123 +/-0.0089	0.1717 +/-0.0136
MW-1-87-2	2.0	0.4165 +/-0.0333	0.0139 +/-0.0087	0.4417 +/-0.01361
MW-1-87-2	1.5	0.3628 +/-0.0379	0.0106 +/-0.0083	0.4240 +/-0.0407
MW-6-87-2	2.0	1.7301 +/-0.0752	0.0695 +/-0.0156	1.6173 +/-0.0726
MW-3-87-2	1.5	0.7816 +/-0.0559	0.0284 +/-0.0111	0.6064 +/-0.0491
SW-NC-87-2	2.0	0.6661 +/-0.0242	0.0149 +/-0.0087	0.3104 +/-0.0522
SW-NC-87-2	1.5	0.4339 +/-0.0271	0.0073 +/-0.0067	0.3711 +/-0.0133
SW-NC-87-2	2.0	0.5160 +/-0.0177	0.0072 +/-0.0177	0.7711 +/-0.0177
SW-NC-87-2	1.5	0.4711 +/-0.0437	0.0636 +/-0.0177	0.7711 +/-0.0177
MW-7-87-2	2.0	1.1457 +/-0.0607	0.0412 +/-0.0123	0.5211 +/-0.0341

REMARKS: BLINDS

BL

0064 pCi/L U-234

0.021 pCi/L U-234

0007 pCi/L U-235

0.044 pCi/L U-235

0065 pCi/L U-238

0.021 pCi/L U-238

Uranium in Jefferson Proving Ground Soils

DATE : Mar-88

JPG ID	U-234 pCi/g		U-238 pCi/g	
6-87-2	0.89 +/-	0.09	2.42 +/-	0.22
8-87-2	1.13 +/-	0.11	4.79 +/-	0.41
10-87-2	2.78 +/-	0.29	17.3 +/-	1.7 ←
duplic	2.92 +/-	0.24	18.3 +/-	1.4 ←
12-87-2	0.68 +/-	0.07	1.12 +/-	0.10
duplic	0.64 +/-	0.07	1.12 +/-	0.11
32-87-2	0.63 +/-	0.06	0.66 +/-	0.06
43-87-2	0.63 +/-	0.08	0.76 +/-	0.10
duplic	0.59 +/-	0.05	0.64 +/-	0.06
44-87-2	0.82 +/-	0.08	0.85 +/-	0.08
duplic	0.79 +/-	0.07	0.85 +/-	0.07
45-87-2	1.04 +/-	0.11	2.14 +/-	0.21
46-87-2	1.26 +/-	0.11	3.93 +/-	0.30
47-87-2	0.70 +/-	0.07	0.79 +/-	0.08
duplic	0.64 +/-	0.06	0.61 +/-	0.06
48-87-2	0.87 +/-	0.07	0.95 +/-	0.08
49-87-2	0.89 +/-	0.10	0.97 +/-	0.11
50-87-2	0.80 +/-	0.04	0.91 +/-	0.04
52-87-2	0.95 +/-	0.04	1.40 +/-	0.05
53-87-2	0.58 +/-	0.05	0.62 +/-	0.06
54-87-2	0.80 +/-	0.07	0.82 +/-	0.07
61-87-2	0.40 +/-	0.04	0.73 +/-	0.11
duplic	0.37 +/-	0.06	0.74 +/-	0.06
62-87-2	0.12 +/-	0.04	0.15 +/-	0.03
63-87-2	0.64 +/-	0.03	0.60 +/-	0.06
64-87-2	0.22 +/-	0.02	0.19 +/-	0.03
65-87-2	0.15 +/-	0.02	0.29 +/-	0.03
66-87-2	0.50 +/-	0.05	0.46 +/-	0.03
67-87-2	0.77 +/-	0.07	0.78 +/-	0.07
68-87-2	0.10 +/-	0.02	0.09 +/-	0.01
BLANK BCL	0.02 +/-	0.03	0.02 +/-	0.01
LDL pCi	0.12		0.05	

03/10/88

END OF DATA

Uranium in Jefferson Proving Ground Waters

DATE : Jun-87

MOUND FACILITY PIAMISBURG, OHIO

JPG ID	Sample Volume	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L
MW1-87-1	2.00	0.26 +/-	0.009 +/-	0.45 +/-
MW2-87-1	2.00	1.28 +/-	0.038 +/-	0.82 +/-
duplic	1.45	1.48 +/-	0.023 +/-	0.89 +/-
MW3-87-1	2.00	0.73 +/-	0.030 +/-	1.03 +/-
duplic	1.89	0.69 +/-	0.027 +/-	1.05 +/-
MW4-87-1 *	2.00	0.23 +/-	0.014 +/-	0.45 +/-
MW5-87-1	2.00	2.93 +/-	0.089 +/-	1.96 +/-
duplic	1.76	3.20 +/-	0.076 +/-	2.09 +/-
MW6-87-1	2.00	1.66 +/-	0.083 +/-	1.58 +/-
duplic	1.75	1.64 +/-	0.071 +/-	1.56 +/-
MW7-87-1	2.00	1.17 +/-	0.040 +/-	0.87 +/-
MW8-87-1	1.60	0.41 +/-	0.029 +/-	1.07 +/-
SW-BN-87-1	2.00	0.14 +/-	0.005 +/-	0.15 +/-
SW-BS-87-1	2.00	0.19 +/-	0.009 +/-	0.17 +/-
SW-ME-87-1	2.00	0.04 +/-	0.001 +/-	0.03 +/-
duplic	1.60	0.03 +/-	-0.001 +/-	0.04 +/-
SW-N-87-1	2.00	0.12 +/-	0.003 +/-	0.14 +/-
SW-NE-87-1	2.00	0.14 +/-	0.001 +/-	0.12 +/-
duplic	1.61	0.11 +/-	0.005 +/-	0.11 +/-
SW-NW-87-1	2.00	0.19 +/-	0.002 +/-	0.15 +/-
SW-S-87-1	2.00	0.08 +/-	0.006 +/-	0.10 +/-
SW-SE-87-1	2.00	0.07 +/-	0.004 +/-	0.07 +/-
SW-SW-87-1	2.00	0.14 +/-	0.007 +/-	0.13 +/-
BLANK pCi/L		0.004 +/-	0.0003 +/-	0.005 +/-
LDL pCi		0.0207	0.0103	0.0324

*Sample contains 500 ml of SWBS, -500 ml of mixture

Uranium in Jefferson Proving Ground Soils

DATE : Jun-87

JPG ID	U-234 pCi/g		U-235 pCi/g		U-238 pCi/g	
8	5.06 +/-	0.31	0.75 +/-	0.06	33.3 +/-	1.9
10	0.92 +/-	0.06	0.075 +/-	0.013	2.53 +/-	0.14
12	0.70 +/-	0.05	0.042 +/-	0.010	0.91 +/-	0.06
32	0.69 +/-	0.06	0.048 +/-	0.013	0.72 +/-	0.06
50	0.94 +/-	0.06	0.045 +/-	0.010	0.98 +/-	0.06
53	0.66 +/-	0.05	0.035 +/-	0.010	0.71 +/-	0.05
54	0.69 +/-	0.05	0.032 +/-	0.007	0.69 +/-	0.05
43	0.79 +/-	0.06	0.042 +/-	0.010	0.80 +/-	0.06
M7-87-1	0.38 +/-	0.04	0.018 +/-	0.007	0.35 +/-	0.03
6-87-1	2.12 +/-	0.31			11.1 +/-	1.4
44-87-1	0.88 +/-	0.06	0.062 +/-	0.010	1.19 +/-	0.08
45-87-1	8.36 +/-	1.40			54.6 +/-	8.8
46-87-1	0.96 +/-	0.06	0.055 +/-	0.010	1.07 +/-	0.07
47-87-1	0.75 +/-	0.05	0.042 +/-	0.010	0.79 +/-	0.06
48-87-1	0.87 +/-	0.06	0.045 +/-	0.010	0.93 +/-	0.06
52-87-1	0.86 +/-	0.06	0.068 +/-	0.013	2.19 +/-	0.14
M1-87-1	0.26 +/-	0.02	0.012 +/-	0.003	0.26 +/-	0.02
M2-87-1	0.20 +/-	0.02	0.008 +/-	0.003	0.17 +/-	0.02
M3-87-1	0.78 +/-	0.03	0.048 +/-	0.007	0.84 +/-	0.03
M4-87-1	0.14 +/-	0.02	0.008 +/-	0.003	0.17 +/-	0.02
M5-87-1	0.09 +/-	0.02	0.002 +/-	0.003	0.09 +/-	0.01
M6-87-1	0.52 +/-	0.04	0.022 +/-	0.007	0.49 +/-	0.04
M8-87-1	0.08 +/-	0.02	0.002 +/-	0.003	0.09 +/-	0.02
BLANK pCi	0.03 +/-	0.03	0.005 +/-	0.009	0.02 +/-	0.02
LDL pCi	0.13		0.043		0.08	

Uranium in Jefferson Proving Ground Waters

MOUND FACILITY MIAMISBURG, OHIO

DATE : Jan-87

JPG ID	U-234 pCi/L		U-235 pCi/L		U-238 pCi/L	
MW-5	1.77 +/-	0.22	0.062 +/-	0.016	1.15 +/-	0.15
MW-6	1.83 +/-	0.23	0.139 +/-	0.027	1.85 +/-	0.23
MW-7	1.31 +/-	0.19	0.051 +/-	0.016	0.99 +/-	0.15
duplic	1.29 +/-	0.17	0.040 +/-	0.013	1.08 +/-	0.14
MW-8	0.48 +/-	0.08	0.050 +/-	0.016	0.80 +/-	0.12
SW-ME	0.09 +/-	0.02	0.005 +/-	0.004	0.09 +/-	0.02
duplic	0.09 +/-	0.02	0.003 +/-	0.004	0.09 +/-	0.02
MW-1	0.32 +/-	0.05	0.013 +/-	0.007	0.40 +/-	0.06
MW-2	0.78 +/-	0.13	0.018 +/-	0.009	0.38 +/-	0.07
MW-3	0.89 +/-	0.14	0.035 +/-	0.013	0.55 +/-	0.09
duplic	0.69 +/-	0.09	0.030 +/-	0.011	0.39 +/-	0.06
MW-4	0.23 +/-	0.04	0.015 +/-	0.007	0.32 +/-	0.05
SW-N	0.16 +/-	0.03	0.012 +/-	0.006	0.23 +/-	0.04
SW-NE	0.16 +/-	0.03	0.006 +/-	0.005	0.15 +/-	0.03
SW-NW	0.16 +/-	0.03	0.006 +/-	0.004	0.14 +/-	0.04
SW-BN	0.15 +/-	0.03	0.004 +/-	0.004	0.20 +/-	0.04
SW-BS	0.21 +/-	0.04	0.013 +/-	0.007	0.16 +/-	0.03
duplic	0.21 +/-	0.03	0.013 +/-	0.007	0.20 +/-	0.03
SW-SE	0.19 +/-	0.03	0.010 +/-	0.006	0.17 +/-	0.03
SW-SW	0.18 +/-	0.03	0.005 +/-	0.004	0.17 +/-	0.03
SW-S	0.19 +/-	0.03	0.011 +/-	0.006	0.22 +/-	0.04
BLANK pCi/L	0.004 +/-	0.002	0.0003 +/-	0.0004	0.004 +/-	0.001
LDL	0.022		0.0041		0.014	

28-Jan-87
JEFFERSON PROVING GROUND URANIUM IN SOIL AND SEDIMENT
NOVEMBER 1986

SAMPLE ID	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)
06	25.73 +/- 5.55	5.44 +/- 1.47	193.86 +/- 38.86 ←
06	21.77 +/- 4.50	5.26 +/- 1.36	203.37 +/- 38.54 ←
08	5.99 +/- 0.46	0.95 +/- 0.12	45.24 +/- 3.05
10	1.88 +/- 0.15	0.21 +/- 0.03	10.33 +/- 0.71
12	4.83 +/- 0.60	0.81 +/- 0.13	32.88 +/- 3.84
12	4.27 +/- 0.50	0.67 +/- 0.11	29.48 +/- 3.18
32	0.62 +/- 0.05	0.03 +/- 0.01	0.70 +/- 0.05
43	0.53 +/- 0.04	0.03 +/- 0.01	0.58 +/- 0.05
43	0.60 +/- 0.05	0.03 +/- 0.01	0.67 +/- 0.05
44	0.67 +/- 0.05	0.03 +/- 0.01	0.68 +/- 0.05
44	0.68 +/- 0.05	0.02 +/- 0.01	0.75 +/- 0.06
45	0.84 +/- 0.06	0.05 +/- 0.01	0.98 +/- 0.07
46	0.83 +/- 0.06	0.04 +/- 0.01	0.95 +/- 0.07
46	0.78 +/- 0.06	0.03 +/- 0.01	0.86 +/- 0.06
47	0.58 +/- 0.04	0.03 +/- 0.01	0.62 +/- 0.05
47	0.56 +/- 0.05	0.02 +/- 0.01	0.64 +/- 0.05
48	0.81 +/- 0.06	0.04 +/- 0.01	0.87 +/- 0.06
49	0.82 +/- 0.06	0.04 +/- 0.01	0.91 +/- 0.07
50	0.88 +/- 0.07	0.05 +/- 0.01	0.87 +/- 0.06
52	0.65 +/- 0.05	0.04 +/- 0.01	0.85 +/- 0.06
53	0.53 +/- 0.04	0.02 +/- 0.01	0.54 +/- 0.04
53	0.57 +/- 0.05	0.03 +/- 0.01	0.65 +/- 0.05
54	0.68 +/- 0.06	0.03 +/- 0.01	0.73 +/- 0.06
M-1	0.67 +/- 0.05	0.03 +/- 0.01	0.75 +/- 0.06
M-2	0.15 +/- 0.02	0.00 +/- 0.00	0.22 +/- 0.02
M-3	0.63 +/- 0.05	0.03 +/- 0.01	0.60 +/- 0.05
M-4	0.10 +/- 0.02	0.01 +/- 0.00	0.10 +/- 0.02
M-5	0.09 +/- 0.02	0.00 +/- 0.00	0.13 +/- 0.02
M-6	0.27 +/- 0.03	0.01 +/- 0.01	0.25 +/- 0.03
M-7	0.73 +/- 0.06	0.03 +/- 0.01	0.70 +/- 0.06
M-8	0.15 +/- 0.02	0.01 +/- 0.00	0.46 +/- 0.04
	LDL U-234 0.03 pCi/g	LDL U-235 0.01 pCi/g	LDL U-238 0.03 pCi/g



Mr. D. H. Herring

Operated for the United States
Department of Energy

February 11, 1986

Commander
U.S. Army Jefferson Proving Ground
ATTN: STEJP-TD-A (Mr. Richard Herring)
Madison, IN 47250

Dear Mr. Herring:

I have taken the results of the paired quality assurance samples analyzed by Eberline and compiled them along with Mound's result for the same sample location. The enclosed table constitutes the compilation. If other details are desired, please consult the chain-of-custody forms for Mound results and whatever form you used for Eberline results. Other quality assurance records should include the interlaboratory comparison we ran with the Air Force Armaments Laboratory on two of your soil samples as reported in a previous letter. I have also enclosed a number of Mound Environmental Science Reports, which include summaries of the main interlaboratory comparison studies we have performed as required by DOE of all its contractor analytical laboratories. If I may be of further assistance please call or write.

Very truly yours,

David T. Abbott
Senior Health Physicist

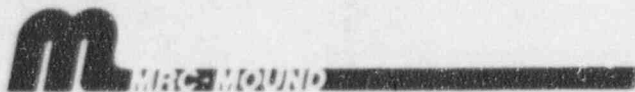
DTA/hs
Enc. 7

cc:C.T. Bishop

JEFFERSON PROVING GROUND QA SAMPLE RESULTS

Sample	Date	Analyst	U-234	U-235	U-238	Units
MW-1	4/30/84	Eberline	<0.3	<0.1	<0.4	pCi/l
water		Mound	0.297	-	0.159	pCi/l
			0.267	-	0.119	pCi/l
SW-BN	5/30/84	Eberline	<0.1	<0.1	<0.1	pCi/l
water		Mound	0.096	-	0.117	pCi/l
MW-5	1/10/84	Eberline	<0.1	<0.1	<0.1	pCi/l
water		Mound	0.100	<0.01	0.045	pCi/l
			0.088	<0.01	0.030	pCi/l
SW-SE	12/6/83	Eberline	<0.1	<0.1	<0.1	pCi/l
water		Mound	<0.04	<0.01	<0.03	pCi/l
SW-NE	12/6/83	Eberline	<0.1	<0.1	<0.1	pCi/l
water		Mound	<0.04	<0.01	0.054	pCi/l
			0.052	<0.01	0.070	pCi/l
14A(soil)		Eberline	1.2	<0.1	1.1	pCi/g
14	12/83	Mound	0.81	0.03	0.87	pCi/g
15A(soil)		Eberline	1.0	<0.1	1.0	pCi/g
15	12/83	Mound	0.81	0.05	0.81	pCi/g
17A(soil)		Eberline	1.0	<0.1	1.1	pCi/g
17	12/83	Mound	0.81	0.03	0.80	pCi/g
27A(soil)		Eberline	0.7	0.4	0.6	pCi/g
27	12/83	Mound	0.71	0.02	0.73	pCi/g
26A(soil)		Eberline	0.6	<0.1	0.5	pCi/g
26	12/83	Mound	0.67	0.02	0.77	pCi/g
28A(soil)		Eberline	0.5	<0.1	0.6	pCi/g
28	12/83	Mound	0.64	0.03	0.64	pCi/g
29A(soil)		Eberline	0.7	0.2	0.6	pCi/g
29	12/83	Mound	0.73	0.03	0.81	pCi/g
30A(soil)		Eberline	0.7	<0.1	0.6	pCi/g
30	12/83	Mound	0.77	0.04	0.81	pCi/g
37A(soil)		Eberline	0.6	<0.1	0.7	pCi/g
37	12/83	Mound	0.62	0.02	0.65	pCi/g
38A(soil)		Eberline	0.7	<0.1	0.7	pCi/g
38	12/83	Mound	0.88	0.02	0.89	pCi/g
4 sed	4/30/84	Eberline	0.7	<0.1	0.7	pCi/g
M-4	4/24/84	Mound	0.18	<0.003	0.15	pCi/g

Sample	Date	Analyst	U-234	U-235	U-238	Units
6 sed	4/30/84	Eberline	0.6	<0.1	0.7	pCi/g
M-6	4/24/84	Mound	0.71	0.02	0.73	pCi/g
19 sed	4/30/84	Eberline	0.7	<0.1	0.7	pCi/g
19 soil	4/24/84	Mound	0.87	0.02	0.88	pCi/g
26 sed	4/30/84	Eberline	0.5	<0.1	0.6	pCi/g
26 soil	4/24/84	Mound	0.75	0.03	0.76	pCi/g
32 sed	4/30/84	Eberline	0.5	<0.1	0.6	pCi/g
32 soil	4/24/84	Mound	0.74	0.03	0.81	pCi/g
Dig Cr	WP4/30/84	Eberline	0.2	<0.1	0.4	pCi/g
M-2	4/24/84	Mound	0.56	0.01	0.55	pCi/g
10(soil)	12/2/84	Eberline	1.5	0.11	8.0	pCi/g
	12/84	Mound	1.13	0.066	3.35	pCi/g
M-3 sed	12/2/84	Eberline	0.5	0.02	0.5	pCi/g
	12/84	Mound	0.386	0.018	0.378	pCi/g
MW-1	12/2/84	Eberline	0.3	<0.0	0.3	pCi/l
	12/84	Mound	0.325	0.018	0.223	pCi/l
SW-S	12/2/84	Eberline	<0.1	<0.1	<0.1	pCi/l
	12/84	Mound	0.041	<0.004	0.041	pCi/l
SW-NW	5/85	Eberline	0.30	<0.10	0.22	pCi/l
	4/85	Mound	0.078	0.010	0.091	pCi/l
SW-BN	5/85	Eberline	0.23	1.05	0.95	pCi/l
	4/85	Mound	0.102	<0.008	0.084	pCi/l
MW-2	5/85	Eberline	2.04	0.07	1.08	pCi/l
dup		Eberline	2.00	0.10	1.04	pCi/l
	4/85	Mound	1.94	0.063	0.996	pCi/l
MW-3	5/85	Eberline	0.25	0.04	0.19	pCi/l
	4/85	Mound	0.049	<0.008	0.030	pCi/l
6 (soil)	5/85	Eberline	2.15	0.19	12.7	pCi/g
	4/85	Mound	7.84	0.687	61.24	pCi/g
19(soil)	5/85	Eberline	0.17	<0.03	0.52	pCi/g
	4/85	Mound	0.153	0.037	0.878	pCi/g
M-2 sed	5/85	Eberline	0.19	<0.03	0.24	pCi/g
	4/85	Mound	0.138	0.010	0.134	pCi/g
M-6 sed	5/85	Eberline	0.34	<0.03	0.29	pCi/g
	4/85	Mound	0.511	0.026	0.513	pCi/g



Operated for the United States
Department of Energy

December 12, 1985

Commander
U. S. Army
Jefferson Proving Ground
ATTN: STEJP-TD-A (Dr. Norman Wykoff)
Madison, IN 47250

Dear Dr. Wykoff:

This past Spring and Summer we started an informal interlaboratory comparison study with Mr. Richard Crews, Environics Office Laboratory, U. S. Air Force Armaments Laboratory, Eglin AFB, Florida. During the Summer we sent him two of your soil samples for which we had previously reported to you the results of our isotopic uranium analysis. Today Mr. Crews telephoned me and we swapped results. Eglin's analyses were done by ICAP and Beta Spectroscopy. Below are our results, his results, our results converted to units comparable to his results and the percent difference assuming the average of Eglin's analysis is the true value.

Sample: Mound I.D. 8509172
JPG I.D. 6-85-1

Mound results (pCi/g) converted (micrograms/g)	
U-238	61.24 181
U-235	0.687
U-234	7.84
Eglin results (micrograms/g)	
beta spectroscopy	159
ICAP	162

% Difference 13

Sample: Mound I.D. 8509173
JPG I.D. 8-85-1

Mound results (pCi/g) converted (micrograms/g)	
U-238	30.84 91
U-235	0.413
U-234	4.61
Eglin results (micrograms/g)	
beta spectroscopy	73
ICAP	101
	110

% Difference 4

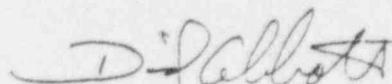
Dr. Norman Wykoff

- 2 -

December 12, 1985

These results may be of use to you for your environmental monitoring program quality assurance records. I would be interested in seeing how we compare to Eberline, particularly if they have also analyzed these same samples.

Very truly yours,



David T. Abbott
Senior Health Physicist

DTA:km

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URANIUM IN CORE SAMPLES FROM JEFFERSON PROVING GROUNDS
ANALYZED BY EG&G MOUND APPLIED TECHNOLOGIES MARCH 1989

JPG ID	U-234 pCi/g	U-235 pCi/g	U-238 pCi/g
=====	=====	=====	=====
MW-9 19.5 TO 20.0 ft.	0.0587 +/-0.0188	0.0010 +/-0.0022	0.0732 +/-0.02
MW-9 26.0 TO 26.5 ft.	0.1426 +/-0.0261	0.0097 +/-0.0022	0.1243 +/-0.02
MW-9 39.0 TO 39.5 ft.	0.2213 +/-0.0296	0.0144 +/-0.0022	0.2041 +/-0.02
MW-10 30.0 TO 30.5 ft.	0.7273 +/-0.0339	0.0374 +/-0.0022	0.7413 +/-0.02
MW-10 40.5 TO 41.0 ft.	0.5952 +/-0.0374	0.0285 +/-0.0022	0.6095 +/-0.02
MW-11 19.0 TO 19.5 ft.	0.1766 +/-0.0287	0.0187 +/-0.0022	0.1916 +/-0.02
MW-11 24.0 TO 24.5 ft.	0.3632 +/-0.0449	0.0855 +/-0.0022	0.3105 +/-0.04
MW-11 29.0 TO 29.5 ft.	0.1199 +/-0.0241	0.0044 +/-0.0022	0.1194 +/-0.02
MW-11 34.0 TO 34.5 ft.	0.0923 +/-0.0199	0.0022 +/-0.0022	0.1017 +/-0.02
MW-9 30.0 TO 30.5 ft.	0.1259 +/-0.0249	0.0099 +/-0.0022	0.1276 +/-0.02

1.00 U-234 = .034 pCi/g

1.00 U-235 = .040 pCi/g

1.00 U-238 = .025 pCi/g

REAGENT BLANK U-234 = .0065 pCi/g

REAGENT BLANK U-235 = .0035 pCi/g

REAGENT BLANK U-238 = .0048 pCi/g

DNV-17-89 WLF

31-MAR-89

URANIUM IN WATER SAMPLES FROM JEFFERSON PROVING
 GROUNDS ANALYZED BY EGG MOUND APPLIED TECHNOLOGIES
 MARCH 1989

SAMPLE ID	VOL. L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L
=====	==	=====	=====	=====
MW-1-88-2	2.0	0.3350 +/- 0.0355	0.0149 +/- 0.0076	0.3248 +/- 0.0348
MW-2-88-2	2.0	0.7456 +/- 0.0653	0.0119 +/- 0.0071	0.3591 +/- 0.0377
MW-3-88-2	2.0	0.9151 +/- 0.0702	0.0187 +/- 0.0078	0.5260 +/- 0.0460
MW-4-88-2	2.0	0.5268 +/- 0.0452	0.0220 +/- 0.0081	0.4419 +/- 0.0399
MW-5-88-2	2.0	1.1100 +/- 0.0862	0.0266 +/- 0.0091	0.6722 +/- 0.0579
MW-6-88-2	2.0	1.4389 +/- 0.0992	0.0414 +/- 0.0101	1.0123 +/- 0.0740
MW-7-88-2	2.0	1.3209 +/- 0.0977	0.1070 +/- 0.0159	0.9259 +/- 0.0729
MW-8-88-2	2.0	0.4084 +/- 0.0426	0.0026 +/- 0.0052	0.5069 +/- 0.0497
MW-9-88-2	2.0	1.8813 +/- 0.1298	0.0201 +/- 0.0080	0.3458 +/- 0.0359
MW-10-88-2	1.4	2.0335 +/- 0.0906	0.1861 +/- 0.0153	0.4130 +/- 0.0275
MW-11-88-2	2.0	1.1312 +/- 0.0865	0.0253 +/- 0.0069	0.5774 +/- 0.0510
MW-12-88-2	2.0	1.9752 +/- 0.0862	0.0169 +/- 0.0079	0.3181 +/- 0.0372
SW-1-88-2	2.0	0.1175 +/- 0.0183	0.0049 +/- 0.0058	0.1227 +/- 0.0197
SW-2-88-2	2.0	0.6464 +/- 0.0588	0.0846 +/- 0.0146	4.5272 +/- 0.3005
SW-3-88-2	1.5	0.6266 +/- 0.0321	0.0961 +/- 0.0103	4.0780 +/- 0.1509
SW-4-88-2	2.0	0.1718 +/- 0.0209	0.0088 +/- 0.0066	0.3157 +/- 0.0353
SW-5-88-2	2.0	0.2102 +/- 0.0278	0.0108 +/- 0.0068	0.2246 +/- 0.0274
SW-6-88-2	2.0	0.1445 +/- 0.0223	0.0270 +/- 0.0095	0.2346 +/- 0.0297
SW-7-88-2	2.0	0.1186 +/- 0.0182	0.0031 +/- 0.0037	0.1007 +/- 0.0167
SW-8-88-2	1.5	0.1193 +/- 0.0125	0.0048 +/- 0.0050	0.1117 +/- 0.0127
SW-9-88-2	2.0	0.0410 +/- 0.0080	0.0351 +/- 0.0110	0.1397 +/- 0.0268
SW-10-88-2	2.0	0.0111 +/- 0.00342	0.0069 +/- 0.0043	0.7375 +/- 0.0369
SW-11-88-2	2.0	0.0113 +/- 0.0089	0.0072 +/- 0.0063	0.1827 +/- 0.0249

LDR U-234 = .021 pCi/L

LDR U-235 = .005 pCi/L

LDR U-238 = .023 pCi/L

REAGENT BLANK U-234 = .0061 pCi/L

REAGENT BLANK U-235 = .0010 pCi/L

REAGENT BLANK U-238 = .0055 pCi/L

JPGWSPR WML CAF MAR. 89

URANIUM IN SOIL JEFFERSON PROVING GROUNDS
NOVEMBER 1988 ANALYZED BY EG&G MOUND APPLIED
TECHNOLOGIES APRIL 1989

May-89

JPG ID	SAMPLE WEIGHT (G)	U-234 pCi/g	U-235 * pCi/g	U-238 pCi/g
M-1-88-2	3.0	0.5010 +/-0.0193	0.0248 +/-0.0035	0.5458 +/-0.02
M-2-88-2	3.0	0.1255 +/-0.0084	0.0182 +/-0.0030	0.1125 +/-0.00
M-3-88-2	3.0	0.9945 +/-0.0336	-0.0284 +/-0.0037	0.8049 +/-0.02
M-4-88-2	3.0	0.0957 +/-0.0069	0.0061 +/-0.0018	0.1035 +/-0.00
M-4-88-2	3.0	0.1059 +/-0.0078	0.0204 +/-0.0033	0.0941 +/-0.00
M-5-88-2	3.0	0.1123 +/-0.0081	0.0056 +/-0.0019	0.2397 +/-0.01
M-5-88-2	3.0	0.1157 +/-0.0078	0.0110 +/-0.0024	0.2360 +/-0.01
M-6-88-2	3.0	1.2917 +/-0.0724	0.0583 +/-0.0094	1.0627 +/-0.06
M-7-88-2	3.0	0.8605 +/-0.0306	0.0410 +/-0.0047	0.8126 +/-0.02
M-8-88-2	3.0	0.1059 +/-0.0133	0.0167 +/-0.0049	0.0939 +/-0.01
6-88-2	3.0	1.4735 +/-0.1092	0.1035 +/-0.0173	6.8932 +/-0.44
8-88-2	0.3	15.8110 +/-0.5310	4.7247 +/-0.1958	123.7269 +/-3.72
8-88-2	0.3	17.0848 +/-0.5794	2.8482 +/-0.1384	106.9079 +/-3.29
10-88-2	3.0	1.9013 +/-0.1416	0.2236 +/-0.0259	10.4375 +/-0.68
10-88-2	1.0	1.6352 +/-0.1420	0.6031 +/-0.0657	8.8220 +/-0.58
12-88-2	3.0	0.8957 +/-0.0519	0.0877 +/-0.0111	2.9887 +/-0.14
32-88-2	3.0	0.5569 +/-0.0353	0.0408 +/-0.0075	0.6437 +/-0.02
43-88-2	3.0	0.5365 +/-0.0341	0.0368 +/-0.0069	0.6097 +/-0.02
44-88-2	3.0	0.6789 +/-0.0231	0.0406 +/-0.0043	0.7048 +/-0.02
45-88-2	3.0	0.7151 +/-0.0422	0.0570 +/-0.0086	0.7901 +/-0.04
46-88-2	3.0	1.0808 +/-0.0388	0.1085 +/-0.0072	3.1326 +/-0.05
46-88-2	3.0	1.1105 +/-0.0518	0.1075 +/-0.0122	3.3735 +/-0.14
47-88-2	3.0	0.5923 +/-0.0367	0.0323 +/-0.0065	0.6276 +/-0.02
48-88-2	3.0	0.7725 +/-0.0471	0.0380 +/-0.0075	0.7950 +/-0.04
49-88-2	3.0	0.8317 +/-0.0545	0.1412 +/-0.0153	0.8549 +/-0.03
50-88-2	3.0	0.7745 +/-0.0454	0.0459 +/-0.0079	0.8410 +/-0.04
52-88-2	3.0	0.7609 +/-0.0587	0.0592 +/-0.0134	1.9595 +/-0.14
52-88-2	3.0	0.7357 +/-0.0257	0.0655 +/-0.0055	1.7773 +/-0.02
53-88-2	1.0	0.5334 +/-0.0381	0.0319 +/-0.0073	0.5543 +/-0.02
54-88-2	3.0	0.5491 +/-0.0365	0.0309 +/-0.0067	0.6142 +/-0.02
55-88-2	3.0	0.6826 +/-0.0269	0.0538 +/-0.0056	0.7322 +/-0.02
56-88-2	3.0	0.6236 +/-0.0224	0.0316 +/-0.0038	0.6411 +/-0.02
58-88-2	3.0	0.7840 +/-0.0302	0.0808 +/-0.0069	0.7538 +/-0.02
45-88-1 #	3.0	0.6476 +/-0.0460	0.0319 +/-0.0078	0.7817 +/-0.02

REAGENT BLANK U-234 = .0018 pCi/g
REAGENT BLANK U-235 = .0010 pCi/g
REAGENT BLANK U-238 = .0015 pCi/g
LLL U-234 = .0061 pCi/g
LDL U-235 = .003 pCi/g
LDL U-238 = .0073 pCi/g
*SOME VALUES MAY BE BIAS HIGH
FROM TAILING OF U-234
#RERUN FROM MAY 1988

URSOIL89.MK1

CUSTOMER U.S. Army Jefferson Proving Grounds
ATTENTION Rec. Dept. - Bldg. 108A
ADDRESS Madison, IN 47250-5100
CITY
W.O. NO. E-9585



Attn: Transportation Officer Voucher W53HZB9010-0500

Isotopic Uranium in Water

TYPE OF ANALYSIS

BL #C7, 275,780
CUSTOMER ORDER NUMBER

SAMPLES RECEIVED 01/16/89

Auth. DAAD03-89-M-0152 (8336-004)

Customer Identification	Date Collected	Type of Analysis	Total Vol. (ml)	pCi/l
SW-BN-88-2		U-234	3500	0.52±0.13
		U-235		0.00±0.03
		U-238		0.71±0.16
SW-NW-88-2		U-234	3610	0.21±0.09
		U-235		0.00±0.01
		U-238		0.41±0.12
MW-6-88-2		U-234	3680	3.1±0.3
		U-235		0.08±0.06
		U-238		2.8±0.3
MW-7-88-2		U-234	3350	1.5±0.2
		U-235		0.07±0.03
		U-238		1.1±0.2

☐ REPORTED VIA TELEPHONE

PAGE 1 OF 1

TMA Eberline
Thermo Analytical Inc.

7021 PAN AMERICAN FREEWAY, N.E.
ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 345-3461

APPROVED BY

R. Melgard
Rod Melgard, Mgr.

03/08/89

CUSTOMER U.S. Army Jefferson Proving Grounds
ATTENTION Transportation Officer
ADDRESS Rec. Dept. - Bldg. 108A
CITY Madison, IN 47250-5100
W.O. NO. E-9584



Voucher #W53H2B9010-0500 BL #C-7275780

Isotopic Uranium in Soil

TYPE OF ANALYSIS

DAAD03-89-M-0152
CUSTOMER ORDER NUMBER

SAMPLES RECEIVED

01/16/89

(8336-0004)

Customer Identification	Date Collected	Type of Analysis	Total Wt. wet/dry (g)	pCi/g (dry)
M 88-2		U-234	773/653	0.21±0.09
		U-235		0.00±0.03
		U-238		0.15±0.08
M8-88-2		U-234	828/676	0.11±0.07
		U-235		0.00±0.04
		U-238		0.14±0.08
6-88-2		U-234	517/440	1.6±0.2
		U-235		0.11±0.05
		U-238		8.0±0.4
47-88-2		U-234	670/560	0.67±0.13
		U-235		0.00±0.04
		U-238		0.75±0.14

☐ REPORTED VIA TELEPHONE

PAGE 1 OF 1

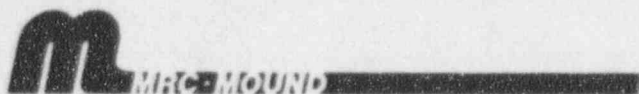
TMA Eberline
Thermo Analytical Inc.

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APPROVED BY

R. Melgard
Rod Melgard, Mgr.

03/07/89



Operated for the United States
Department of Energy

April 8, 1986

Commander
U.S. Army Jefferson Proving Ground
ATTN: STEJP-TD-A (Mr. Richard Herring)
Madison, IN 47250

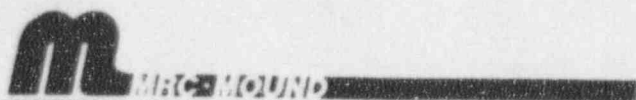
Dear Mr. Herring:

Reported below are the results of analyzing your environmental samples collected in November 1985 and January 1986. Also reported are detection limits and results of analytical blanks. Actual measured values are reported but flagged (*) if below detection limits. Sample identification numbers followed by "D" indicates sample was analyzed in duplicate, with the average value reported.

JPG ID	Net U-234 pCi/L	Net U-235 pCi/L	Net U-238 pCi/L
SW-NE-85-2	0.08 +- 0.02	0.008 +- 0.008	0.07 +- 0.02
SW-N-85-2	0.06 +- 0.02	0.003*	0.06 +- 0.02
SW-NW-85-2	0.05 +- 0.02	0.000*	0.05 +- 0.02
SW-BN-85-2	0.05 +- 0.02	0.004 +- 0.005	0.06 +- 0.02
SW-SE-85-2	0.04 +- 0.02	0.002*	0.02 +- 0.02
SW-S-85-2	0.03 +- 0.01	0.000*	0.03 +- 0.02
SW-SW-85-2	0.02 +- 0.01	-0.001*	0.03 +- 0.02
SW-BS-85-2	0.05 +- 0.02	0.005 +- 0.005	0.05 +- 0.02
SW-ME-85-2 D	0.03 +- 0.02	0.000*	0.02 +- 0.02
MW-1-85-2	0.17 +- 0.03	0.003*	0.15 +- 0.03
MW-2-85-2	0.98 +- 0.06	0.016 +- 0.009	0.38 +- 0.04
MW-3-85-2 D	0.38 +- 0.04	0.006 +- 0.005	0.22 +- 0.03
MW-4-85-2	0.31 +- 0.04	0.012 +- 0.007	0.25 +- 0.03
MW-5-85-2	0.12 +- 0.03	0.008 +- 0.007	0.19 +- 0.03
MW-6-85-2 D	2.58 +- 0.11	0.091 +- 0.020	2.26 +- 0.10
MW-7-85-2	1.20 +- 0.07	0.049 +- 0.014	0.79 +- 0.06
MW-8-85-2	0.30 +- 0.04	0.006 +- 0.006	0.40 +- 0.04
LDL	0.02	0.004	0.02
Blank	0.0083	0.0013	0.0062

JPG ID	Net U-234 pCi/filter	Net U-235 pCi/filter	Net U-238 pCi/filter
A11-86-1	0.02*	-0.003*	0.01*
A13-86-1	0.00*	0.003*	0.03*
A14-86-1	0.00*	-0.001*	0.01*
A16-86-1	-0.01*	0.004*	0.02*
A18-86-1	0.01*	0.003*	0.01*
A19-86-1	-0.01*	-0.001*	0.06 +- 0.03
A20-86-1	-0.01*	-0.001*	0.03*
LDL	0.03	0.01	0.04
Blank	0.0318	0.0031	0.0181

JPG ID	Net U-234 pCi/g	Net U-235 pCi/g	Net U-238 pCi/g
M-1-85-2	0.12 +- 0.02	0.008 +- 0.005	0.13 +- 0.02
M-2-85-2	0.13 +- 0.03	0.003*	0.13 +- 0.02
M-3-85-2	1.40 +- 0.13	0.081 +- 0.019	1.18 +- 0.11
M-4-85-2	0.09 +- 0.02	0.003*	0.10 +- 0.02
M-5-85-2	0.12 +- 0.03	0.006 +- 0.005	0.13 +- 0.02
M-6-85-2	0.72 +- 0.06	0.003*	0.77 +- 0.06
M-7-85-2	0.28 +- 0.04	0.015 +- 0.007	0.26 +- 0.03
M-8-85-2	0.08 +- 0.02	0.005*	0.08 +- 0.02
6-85-2 D	7.93 +- 0.57	1.616 +- 0.134	57.41 +- 3.96
8-85-2 D	2.19 +- 0.19	0.258 +- 0.042	12.39 +- 0.86
10-85-2 D	1.49 +- 0.12	0.132 +- 0.003	6.78 +- 0.42
12-85-2	0.78 +- 0.06	0.044 +- 0.011	1.16 +- 0.08
41-85-2	0.75 +- 0.07	0.034 +- 0.010	0.81 +- 0.07
43-85-2	0.57 +- 0.05	0.038 +- 0.010	0.64 +- 0.05
44-85-2	0.95 +- 0.07	0.051 +- 0.011	0.99 +- 0.07
45-85-2	2.89 +- 0.18	0.292 +- 0.032	16.99 +- 0.98
46-85-2	1.25 +- 0.09	0.094 +- 0.016	3.86 +- 0.23
47-85-2	0.71 +- 0.06	0.042 +- 0.010	0.77 +- 0.06
48-85-2	0.79 +- 0.06	0.042 +- 0.011	0.81 +- 0.06
49-85-2	0.70 +- 0.07	0.035 +- 0.012	0.71 +- 0.07
50-85-2	0.96 +- 0.07	0.043 +- 0.011	0.87 +- 0.07
LDL	0.04	0.006	0.02
BLANK	0.0104	0.0012	0.0110



Operated for the United States
Department of Energy

August 20, 1984

Commander
U. S. Army Jefferson Proving Ground
ATTN: STEJP-TD-A (Dr. Norman Wykoff)
Madison, Indiana 47250

Dear Dr. Wykoff:

The post-operational samples collected in April have been analyzed and are reported here. One of the soil samples had an anomalously high U-235 value and is being re-analyzed. If the result changes, I will inform you. Also note that three aliquots of soil sample number 8 definitely show the presence of depleted uranium. In the baseline sampling, we only reported concentrations for "reindeer moss", but we did collect some "British Soldier" lichens. Since the post-operational lichen sample was a "British Solider", we analyzed two of the samples we had collected during the baseline for comparison purposes. The percent ash indicates the presence of soil contamination. A clean lichen sample will run about 5-10% ash.

As of September 1, Dr. Clarence Styron will assume the position of Radiation and Biological Safety Officer at Monsanto's Central Research Laboratories in St. Louis. Due to this, I have assumed management responsibility for Mound's Army contracts. If I can be of assistance, please call.

Sincerely yours,

David T. Abbott
Senior Ecologist

DTA:km
Enclosure

cc: Behram Shroff, w/enc

Uranium concentrations in soil samples collected April 24 and 25, 1984, at JPG. Activities are pCi/g and errors are 2 sigma for both the sample and tracer.

Grid #	U-234	U-235	U-238	234/238
1	0.90±0.06	0.02±0.02	0.97±0.07	0.93
2	0.74±0.05	0.02±0.01	0.75±0.05	0.99
3	0.77±0.06	0.03±0.01	0.82±0.05	0.94
4	0.82±0.06	0.03±0.01	0.84±0.06	0.98
5	0.82±0.08	0.03±0.01	0.80±0.08	1.02
6	0.69±0.05	0.03±0.01	0.77±0.05	0.90
7	0.78±0.05	0.03±0.01	0.84±0.05	0.93
8a	0.92±0.06	0.04±0.01	2.57±0.13	0.36
8b	0.89±0.06	0.06±0.01	2.51±0.13	0.36
8c	0.85±0.05	0.05±0.01	2.44±0.12	0.35
9	0.70±0.05	0.05±0.01	0.68±0.05	1.03
10	0.59±0.05	0.04±0.01	0.66±0.05	0.89
11	0.65±0.05	0.05±0.01	0.75±0.05	0.87
12	0.84±0.08	0.14±0.01	0.90±0.09	0.93
13	0.67±0.05	0.03±0.01	0.70±0.05	0.96
14	0.84±0.06	0.03±0.01	0.91±0.06	0.92
15	0.68±0.05	0.03±0.01	0.78±0.05	0.87
16	0.79±0.05	0.03±0.01	0.89±0.05	0.86
17	0.91±0.07	0.03±0.01	0.97±0.08	0.94
18	0.54±0.05	0.02±0.01	0.58±0.05	0.93
19	0.87±0.06	0.02±0.01	0.88±0.06	0.99
20	0.81±0.05	0.02±0.01	0.85±0.05	0.95
21	0.76±0.06	0.03±0.01	0.81±0.06	0.94
22	0.64±0.05	0.02±0.01	0.66±0.05	0.97
23	0.84±0.06	0.03±0.01	0.90±0.06	0.93

Grid #	U-234	U-235	U-238	234/ 238
24	0.76+0.08	0.07+0.02	0.78+0.08	0.97
25	0.88+0.07	0.03+0.01	0.94+0.07	0.94
26	0.75+0.05	0.03+0.01	0.76+0.05	0.99
27	0.72+0.05	0.03+0.01	0.65+0.05	1.11
28	0.73+0.07	0.02+0.01	0.79+0.07	0.97
29	0.73+0.05	0.03+0.01	0.76+0.05	0.96
30	0.82+0.06	0.03+0.01	0.79+0.06	1.04
31	0.78+0.06	0.02+0.01	0.81+0.06	0.95
32	0.74+0.05	0.03+0.01	0.81+0.06	0.91
33	0.72+0.05	0.06+0.01	0.72+0.05	1.00
34	0.74+0.05	0.03+0.01	0.80+0.05	0.92
35	0.72+0.05	0.04+0.01	0.75+0.05	0.95
36	0.93+0.08	0.05+0.01	0.94+0.08	0.98
37	0.74+0.07	0.13+0.02	0.77+0.07	0.95
38	0.80+0.05	0.04+0.01	0.86+0.06	0.93
39	0.61+0.05	0.03+0.01	0.63+0.05	0.97
40	0.82+0.06	0.04+0.01	0.86+0.06	0.95
LDL	0.0203	0.0033	0.0148	

* This sample is being reanalyzed

Uranium concentrations in sediment samples collected 24-25 April, 1984, at JFG. Activities are pCi/g and errors are 2 sigma for counting and tracer.

Sample	U-234	U-235	U-238
M-1	0.52±0.05	0.02±0.01	0.53±0.05
M-2	0.56±0.05	0.01±0.01	0.55±0.05
M-3	0.74±0.06	0.02±0.01	0.81±0.06
M-4	0.18±0.02	<LDL	0.15±0.02
M-5	0.28±0.04	0.01±0.01	0.32±0.05
M-6	0.71±0.05	0.02±0.01	0.73±0.05
M-7	0.52±0.09	0.06±0.02	0.42±0.07
M-8	0.12±0.01	0.004±0.003	0.11±0.01
LDL	0.0203	0.0033	0.0148

Uranium concentrations in lichens collected during baseline and post-operational sampling. Activities are pCi/g ash and errors are 2 sigma for counting and tracer.

Sample	U-234	U-235	U-238	% Ash
preop 1	0.70±0.06	0.02±0.01	0.77±0.06	54.5
preop 2	0.79±0.07	0.03±0.01	0.82±0.07	64.9
postop1	0.68±0.06	0.02±0.01	0.72±0.06	62.8

note- both preoperational lichens were the same species as the postoperational sample. They weren't reported in the baseline study because of the high ash content (indicating soil contamination).

Results of uranium analysis on water samples collected after DU firing commenced.

activities are pCi/L

errors are 2 sigma counting of peak and tracer

Sample	U-238	U-234	Total U
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Control-1	0.058+0.029	0.091+0.033	0.149+0.043
MW-1	0.159+0.048	0.297+0.067	0.456+0.082
MW-1	0.119+0.039	0.267+0.059	0.386+0.071
MW-2	1.643+0.210	3.773+0.436	5.416+0.484
MW-3	0.176+0.048	0.387+0.075	0.562+0.089
MW-3	0.168+0.043	0.336+0.063	0.504+0.076
MW-4	0.163+0.045	0.263+0.058	0.426+0.073
MW-5	0.025+0.021	0.051+0.023	0.076+0.031
MW-5	0.039+0.024	0.061+0.026	0.100+0.036
MW-6	1.578+0.201	1.996+0.244	3.574+0.316
MW-7	0.029+0.022	0.076+0.028	0.105+0.036
MW-7	0.031+0.023	0.048+0.024	0.079+0.034
MW-8	0.409+0.071	0.372+0.066	0.781+0.097
SW-8	0.034+0.024	0.044+0.023	0.077+0.033
SW-SE	0.055+0.031	0.043+0.026	0.098+0.041
SW-NE	0.120+0.044	0.107+0.040	0.227+0.059
SW-N	0.117+0.041	0.093+0.036	0.210+0.054
SW-NW	0.153+0.048	0.140+0.045	0.293+0.066
SW-SW	0.036+0.024	0.041+0.022	0.077+0.033
SW-BN	0.117+0.037	0.096+0.032	0.213+0.049
SW-BS	0.107+0.036	0.102+0.033	0.209+0.049
reagent blank	0.0148	0.0140	
LDL	0.0263	0.0103	



MONSANTO

Operated for the United States
Department of Energy

August 25, 1986

Commander
U.S. Army Jefferson Proving Ground
ATTN: STEJP-TD-A (Mr. Richard Herring)
Madison, IN 47250

Dear Mr. Herring:

Reported below are the results of analyzing your environmental samples collected in Spring, 1986. Also reported are detection limits and results of analytical blanks. Actual measured values are reported but flagged (*) if below detection limits.

Very truly yours,

David T. Abbott
Senior Health Physicist

DTA/hs
Encl
cc: C. T. Bishop
A. A. Glosby

Uranium in Jefferson Proving Ground Waters

DATE : Aug-86

JPG ID	Sample Volume	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L
SW-BN 86-1	2.00	0.164 +/- 0.023	0.0086 +/- 0.0053	0.192 +/- 0.025
SW-BS 86-1	2.00	0.199 +/- 0.024	0.0164 +/- 0.0070	0.186 +/- 0.023
duplic	1.72	0.202 +/- 0.027	0.0059 +/- 0.0049	0.182 +/- 0.026
SW-NE 86-1	2.00	0.143 +/- 0.022	0.0106 +/- 0.0059	0.122 +/- 0.020
MW-7 86-1	2.00	1.37 +/- 0.07	0.0665 +/- 0.0145	1.20 +/- 0.06
MW-3 86-1	2.00	0.551 +/- 0.040	0.0410 +/- 0.0110	1.26 +/- 0.06
duplic	1.76	0.666 +/- 0.051	0.0278 +/- 0.0102	1.39 +/- 0.07
SW-S 86-1	2.00	0.128 +/- 0.021	0.0140 +/- 0.0070	0.180 +/- 0.025
MW-5 86-1	2.00	0.357 +/- 0.032	0.0220 +/- 0.0080	0.762 +/- 0.045
SW-SW 86-1	2.00	0.117 +/- 0.020	0.0023 +/- 0.0030	0.100 +/- 0.018
SW-NW 86-1	2.00	0.153 +/- 0.024	0.0080 +/- 0.0055	0.181 +/- 0.026
MW-1 86-1	2.00	0.451 +/- 0.038	0.0440 +/- 0.0120	1.83 +/- 0.08
duplic	1.95	0.485 +/- 0.040	0.0477 +/- 0.0123	1.91 +/- 0.08
SW-N 86-1	2.00	0.176 +/- 0.024	0.0110 +/- 0.0060	0.267 +/- 0.029
SW-ME 86-1	2.00	0.045 +/- 0.013	* 0.0015 +/- 0.0025	0.048 +/- 0.013
duplic	1.70	0.048 +/- 0.014	0.0082 +/- 0.0059	0.057 +/- 0.015
SW-SE 86-1	1.84	0.120 +/- 0.013	0.0060 +/- 0.0027	0.100 +/- 0.011
MW-4 86-1	1.74	0.285 +/- 0.020	0.0282 +/- 0.0063	0.433 +/- 0.024
MW-2 86-1	1.86	1.61 +/- 0.04	0.0597 +/- 0.0081	1.03 +/- 0.03
MW-8 86-1	1.83	0.820 +/- 0.033	0.0809 +/- 0.0104	4.14 +/- 0.07
duplic	1.88	0.756 +/- 0.053	0.0957 +/- 0.0191	3.94 +/- 0.12
MW-6 86-1	2.00	1.73 +/- 0.08	0.1220 +/- 0.021	1.92 +/- 0.08
duplic	1.50	1.76 +/- 0.08	0.0993 +/- 0.0200	1.83 +/- 0.09
BLANK		0.0085 +/- 0.0031	0.001 +/- 0.001	0.0064 +/- 0.0031
LDL		0.0145	0.0046	0.0145

Uranium in Jefferson Proving Ground Soils and Sediments

DATE : Aug-86

JPG ID	U-234 pCi/g	U-235 pCi/g	U-238 pCi/g
M1-86-1	0.534 +/- 0.053	0.0464 +/- 0.0100	0.611 +/- 0.057
M2-86-1	0.190 +/- 0.025	0.0267 +/- 0.0077	0.391 +/- 0.040
M3-86-1	0.884 +/- 0.080	0.0847 +/- 0.0140	0.837 +/- 0.077
M4-86-1	0.159 +/- 0.026	* 0.0051 +/- 0.0043	0.172 +/- 0.027
duplic	0.180 +/- 0.022	0.0101 +/- 0.0053	0.194 +/- 0.022
M5-86-1	0.155 +/- 0.023	* 0.0054 +/- 0.0040	0.166 +/- 0.024
M6-86-1	0.454 +/- 0.063	0.0404 +/- 0.0127	0.441 +/- 0.060
M7-86-1	0.100 +/- 0.019	0.0124 +/- 0.0060	0.085 +/- 0.017
6-86-1	3.16 +/- 0.34	0.442 +/- 0.060	19.8 +/- 2.0
duplic	2.90 +/- 0.25	0.368 +/- 0.043	17.2 +/- 1.4
6A-86-1	1.89 +/- 0.16	0.231 +/- 0.029	9.92 +/- 0.77
8-86-1	5.49 +/- 0.63	1.14 +/- 0.15	38.2 +/- 4.2
duplic	6.39 +/- 0.57	1.19 +/- 0.10	44.6 +/- 3.1
10-86-1	1.08 +/- 0.15	0.435 +/- 0.070	4.42 +/- 0.53
duplic	1.28 +/- 0.12	0.114 +/- 0.019	4.89 +/- 0.40
12-86-1	0.810 +/- 0.073	0.0474 +/- 0.0103	0.991 +/- 0.087
43-86-1	0.657 +/- 0.060	0.0387 +/- 0.0097	0.704 +/- 0.063
44-86-1	0.874 +/- 0.083	0.0687 +/- 0.0143	0.907 +/- 0.087
45-86-1	1.81 +/- 0.22	0.213 +/- 0.040	7.52 +/- 0.87
47-86-1	0.687 +/- 0.060	0.0367 +/- 0.0087	0.677 +/- 0.060
48-86-1	0.864 +/- 0.071	0.0411 +/- 0.0097	0.894 +/- 0.080
M8-86-1	0.357 +/- 0.037	0.0184 +/- 0.0063	0.341 +/- 0.037

BLANK 0.0288 +/- 0.011 0.0048 +/- 0.0052 0.0282 +/- 0.0137

LDL 0.0979 0.0242 0.0637

The following results were produced for JPG samples collected in April, 1985. For water samples units are pCi/liter; for soil and sediment units are pCi/gram; for air units are pCi/sample. For error terms see chain of custody forms.

JPG I.D.	Mound I.D.	Type	²³⁸ U	²³⁵ U	²³⁴ U	²³⁴ U/ ²³⁸ U
D1blank	8508715	water	0.0035	0	0.0017	-
D1blank	8508716	water	0.0035	0	0.0053	-
D1blank	8508717	water	0.0017	0	0	-
D1blank	8508718	water	0.0019	0.0022	0.0037	-
MW1-85-1	H85-298	g.water	0.255	0.009	0.340	1.33
MW2-85-1	H85-298	g.water	0.996	0.063	1.94	1.95
MW3-85-1	H85-300	g.water	0.030	*-0.001	0.049	1.63
MW4-85-1	8508704	g.water	0.396	0.017	0.418	1.06
MW5-85-1	H85-301	g.water	0.092	*-0.001	0.076	0.83
MW6-85-1	H85-302	g.water	1.42	0.070	1.78	1.25
duplicate			1.21	0.051	1.56	1.29
MW7-85-1	8508705	g.water	0.759	0.029	1.28	1.67
duplicate			0.762	0.019	1.16	1.52
MW8-85-1	8508706	g.water	0.347	0.022	0.347	1.00
*LDL			0.005	0.005	0.011	
SWBS-85-1	8508707	s.water	0.075	0.006	0.091	1.21
SWNW-85-1	8508708	s.water	0.091	0.010	0.078	0.86
SWS-85-1	8508709	s.water	0.082	*0.002	0.061	0.74
duplicate			0.048	*0.004	0.037	0.77
SWNE-85-1	8508710	s.water	0.082	*0.002	0.034	0.41
SWN-85-1	8508711	s.water	0.128	*0.004	0.106	0.83
SWBN-85-1	8508712	s.water	0.084	*-0.001	0.102	1.21
SWSE-85-1	8508713	s.water	0.046	*0.002	0.081	1.76
SWSW-85-1	8508714	s.water	0.053	*0.004	0.037	0.70
duplicate			0.045	*0.002	0.035	0.78
*LDL			0.005	0.005	0.011	
blank	filter	air	0.027	0.002	0.039	
blank	filter	air	0.017	0	0.022	
A7-85-1	8508719	air	0.092	*0.004	*0.033	
A8-85-1	8508720	air	0.042	*0.003	*0.022	
A9-85-1	8508721	air	*0.017	*0.001	*0.014	
A10-85-1	8508722	air	0.045	*0.003	*0.018	
*LDL			0.034	0.008	0.056	
M1-85-1	8509164	sediment	0.477	0.022	0.575	1.20
M2-85-1	8509165	sediment	0.134	0.010	0.138	1.03
M3-85-1	8509166	sediment	0.326	*	0.357	1.10
M4-85-1	8509167	sediment	0.185	0.010	0.204	1.10
M5-85-1	8509168	sediment	0.144	0.010	0.135	0.94
M6-85-1	8509169	sediment	0.513	0.026	0.511	1.00

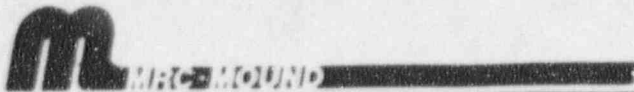
JPG I.D.	Mound I.D.	Type	²³⁸ U	²³⁵ U	²³⁴ U	²³⁴ U/ ²³⁸ U
M7-85-1	8509170	sediment	0.295	0.020	0.289	0.98
M8-85-1	8509171	sediment	0.140	0.006	0.142	1.01
6-1-85	8509172	soil	61.24	0.687	7.84	0.13
8-85-1	8509173	soil	30.84	0.413	4.61	0.15
10-85-1	8509174	soil	2.24	0.066	0.843	0.38
12-85-1	8509175	soil	0.816	0.026	0.817	1.00
19-85-1	8509176	soil	0.878	0.037	0.753	0.86
26-85-1	8509177	soil	0.913	0.047	0.859	0.94
32-85-1	8509178	soil	0.969	0.022	0.928	0.96
36-85-1	8509179	soil	1.13	0.052	1.03	0.91
*LDL	8 blanks	4.65sigma	0.0214	0.0042	0.0242	
precision	8 duplicates	2.0sigma	13%	26%	7%	

Concentrations of uranium in special samples collected at Jefferson Proving Ground in June and July, 1985. Error terms for soil are one standard deviation of replicate samples. Error terms for water and the filter are two standard deviations based on counting statistics only. Units of measurement are pCi/g for soil and pCi/liter for water and particulates in water. Water and soil results below are mean values of replicates; for individual values and values of blanks see chain of custody forms.

Sample	U-238 +-error	U-234 +-error	U-235 +-error	234/ 238
41-85-1	0.73 +-0.03	0.66 +-0.01	0.032 +-0.011	0.90
42-85-1	1.06 +-0.02	0.87 +-0.01	0.037 +-0.003	0.82
6A-85-1	13.6 +-1.0	2.36 +-0.11	0.18 +-0.007	0.17
SW-NB-85-1	0.57 +-0.07	0.11 +-0.03	0.010 +-0.009	0.19
SW-NB-F-85-1	0.069+-0.010	0.012+-0.005	<0.001	0.18
LDL soil pCi	0.015	0.020	0.0033	
LDL water pCi	0.006	0.010	0.005	

The following results were produced for JPG samples collected in December, 1984. For water samples units are pCi/liter; for soil and sediment units are pCi/gram. For error terms see chain of custody forms.

JPG I.D.	Mound I.D.	Type	238U	235U	234U	234U/238U
DI blank	H85-226	water	0.0022	0.0026	0.0065	
DI blank	H85-227	water	0	0	0.0151	
DI blank	H85-228	water	0.0021	0.0049	0.0062	
DI blank	H85-229	water	0.0151	0.0051	0	
MW-1	H85-205	g water	0.223	0.018	0.325	1.46
MW-2	H85-206	g water	0.220	0.058	1.89	2.30
MW-2	duplicate	g water	0.698	0.058	1.78	2.55
MW-3	H85-207	g water	0.026	*0.0023	0.034	1.31
MW-4	H85-208	g water	0.165	0.023	0.246	1.49
MW-5	H85-209	g water	0.100	*0.0053	0.131	1.31
MW-6	H85-210	g water	1.57	0.068	2.22	1.41
MW-6	duplicate	g water	1.41	0.060	1.85	1.31
MW-7	H85-211	g water	0.688	0.024	1.08	1.57
MW-7	duplicate	g water	0.614	0.034	0.929	1.61
MW-8	H85-212	g water	0.642	0.042	0.537	0.84
SW-NE	H85-213	s water	0.089	*0.011	0.129	1.47
SW-SE	H85-214	s water	0.049	*0.002	0.057	1.16
SW-N	H85-215	s water	0.095	*0	0.093	0.98
SW-N	duplicate	s water	0.095	*0.004	0.069	0.73
SW-S	H85-216	s water	0.041	*0.004	0.041	1.00
SW-BN	H85-217	s water	0.093	*0.006	0.111	1.34
SW-BE	H85-218	s water	0.090	*0.004	0.093	1.03
SW-NW	H85-219	s water	0.095	*0	0.116	1.22
SW-NW	duplicate	s water	0.102	*0.008	0.115	1.13
SW-21	H85-220	s water	*0.032	*0.005	0.093	
*LDL		water	0.0322	0.0111	0.0288	
M-1	8506200	sediment	0.314	0.010	0.291	0.93
M-2	8506202	sediment	0.657	0.042	0.655	1.00
M-3	8506658	sediment	0.378	0.019	0.386	1.02
M-4	8508938	sediment	0.197	0.006	0.196	0.99
M-5	8507247	sediment	0.141	0.007	0.146	1.04
M-6	8507431	sediment	1.01	0.018	0.963	0.95
M-7	8507605	sediment	0.334	0.019	0.337	1.01
M-8	8507606	sediment	0.217	0.008	0.159	0.73
*LDL		sediment	0.0214	0.0042	0.0242	
S	8507604	soil	10.2	0.150	1.99	0.20
S	8507607	soil	22.6	0.271	3.80	0.17
10	8508259	soil	3.35	0.066	1.13	0.34
12	8507610	soil	0.862	0.043	0.818	0.95
19	8507611	soil	0.949	0.040	0.856	1.01
26	8507612	soil	0.924	0.046	0.881	0.95
32	8507613	soil	0.860	0.036	0.839	0.97
35	8507614	soil	1.04	0.047	1.00	0.96
*LDL		soil	0.0214	0.0042	0.0242	



Operated for the United States
Department of Energy

June 26, 1984

Commander
U.S. Army Jefferson Proving Ground
ATTN: STEJP-LD-F (Mr. Behram Shroff)
Madison, Indiana 47250

Dear Mr. Shroff:

The baseline report we are preparing for Jefferson Proving Ground is progressing well, and at least a portion of it will be available for reviewing in the first half of July. The analysis of samples is complete and preliminary results are enclosed. Please note that the values for air samples reported in the March 15, 1984 letter have been changed due to a more extensive evaluation of filter blanks. It is unlikely that the baseline results reported here will change, but we prefer to retain the preliminary status until the complete report is finished. Also enclosed are the preliminary data for water samples collected after DU firing commenced. Soil and sediment samples are in analysis. If I may be of any assistance, please telephone.

Sincerely yours,

David T. Abbott
Senior Ecologist

DTA:km
Enc.

cc: N. Wykoff, w/enc
R. Herring, w/enc

Impact Area Soil 35/1

errors are 2 sigma counting of peak and tracer

Sample grid	U-234 pCi/g	U-235 pCi/g	U-238 pCi/g	234 238	238 235
1	0.87+0.09	0.03+0.01	0.92+0.09	.945	30
2	0.76+0.08	0.03+0.01	0.86+0.09	.884	29
3	0.72+0.08	0.03+0.01	0.74+0.08	.973	25
4	0.84+0.04	0.03+0.01	0.89+0.04	.944	30
5	0.82+0.08	0.03+0.01	0.93+0.09	.882	31
6	0.71+0.06	0.03+0.01	0.76+0.06	.934	25
7	0.74+0.06	0.03+0.01	0.77+0.06	.961	26
8	0.68+0.06	0.03+0.01	0.74+0.06	.919	25
9	0.73+0.06	0.02+0.01	0.79+0.06	.924	40
10	0.61+0.06	0.02+0.01	0.71+0.06	.859	36
11	0.62+0.06	0.03+0.01	0.68+0.06	.912	23
12	0.67+0.06	0.03+0.01	0.70+0.06	.957	23
13	0.68+0.06	0.03+0.01	0.68+0.06	1.00	23
14	0.81+0.06	0.03+0.01	0.87+0.06	.931	29
15	0.81+0.06	0.05+0.01	0.81+0.06	1.00	16
16	0.83+0.08	0.03+0.01	0.81+0.08	.976	28
17	0.81+0.06	0.03+0.01	0.80+0.06	1.01	27
18	0.61+0.05	0.01+0.01	0.65+0.05	.938	65
19	0.72+0.04	0.03+0.01	0.77+0.05	.935	26
20	0.76+0.06	0.03+0.01	0.83+0.06	.916	28
21	0.66+0.06	0.04+0.01	0.75+0.06	.880	19
22a	0.61+0.06	0.03+0.01	0.70+0.06	.871	23
22b	0.68+0.05	0.02+0.01	0.76+0.04	.895	38
23	0.79+0.05	0.02+0.01	0.81+0.05	.975	40

Impact Area Soil

Sample grid #	U-234 pCi/g	U-235 pCi/g	U-238 pCi/g	234 238	238 235
24	0.75+0.05	0.03+0.01	0.78+0.05	.962	26
25	0.86+0.05	0.03+0.01	0.99+0.06	.869	33
26	0.67+0.04	0.02+0.01	0.77+0.04	.870	38
27	0.71+0.06	0.02+0.01	0.73+0.06	.973	36
28	0.64+0.04	0.03+0.01	0.64+0.04	1.00	21
29	0.73+0.05	0.03+0.01	0.81+0.05	.901	27
30	0.77+0.05	0.04+0.01	0.81+0.05	.951	20
31	0.80+0.05	0.02+0.01	0.83+0.05	.964	42
32	0.78+0.07	0.03+0.01	0.83+0.07	.940	28
33	0.68+0.06	0.05+0.01	0.71+0.06	.958	14
34	0.63+0.05	0.02+0.01	0.69+0.06	.913	34
35	0.83+0.08	0.02+0.01	0.87+0.08	.954	44
36	0.95+0.09	0.03+0.01	0.93+0.09	1.02	31
37	0.62+0.04	0.02+0.01	0.65+0.04	.954	32
38	0.88+0.05	0.02+0.01	0.89+0.05	.989	44
39	0.53+0.04	0.02+0.01	0.55+0.04	.964	28
40	0.92+0.11	0.03+0.01	1.01+0.11	.911	34
LDL	0.01	0.01	0.02		
mean	0.739	0.028	0.787	.939	30.
sigma	0.095	0.0078	0.098	.042	9.
relative error	12.9%	27.9%	12.5%	4.5%	30

ratio of means 234/238 = 0.939

ratio of means 238/235 = 28.1

a,b denote duplicate aliquots from same sample

Background Soil

errors are 2 sigma counting of peak and tracer

Sample location	U-234 pCi/g	U-235 pCi/g	U-238 pCi/g	234 238	238 235
B-1	0.62±0.04	0.02±0.01	0.70±0.04	.886	35
B-2	0.77±0.05	0.02±0.01	0.83±0.05	.928	42
B-3	0.90±0.05	0.02±0.01	0.93±0.05	.968	46
B-4	1.11±0.07	0.08±0.02	0.86±0.07	1.05	11
B-5	0.91±0.05	0.02±0.01	0.90±0.05	.978	45
B-6	0.77±0.08	0.07±0.02	0.86±0.09	.895	12
B-7a	0.87±0.06	0.03±0.01	0.94±0.06	.926	31
B-7b	0.89±0.05	0.03±0.01	0.94±0.05	.947	31
B-8	0.82±0.05	0.03±0.01	0.81±0.05	1.01	27
B-9	0.57±0.04	0.03±0.01	0.59±0.04	.966	20
B-10	0.55±0.04	0.02±0.01	0.61±0.04	.902	30
LDL	0.01	0.01	0.02		
Mean	0.766	0.034	0.803	.952	29.6
Sigma	0.138	0.022	0.127	.053	12.7
Relative err	18.0%	64.7%	15.8%	5.5%	42.4

Ratio of means 234/238 = 0.954

Ratio of means 238/235 = 23.6

a.b denote duplicate aliquots from same sample

Sediment

errors are 2 sigma counting of peak and tracer

Location/ Sample	U-234 pCi/g	U-235 pCi/g	U-238 pCi/g	234 238	2
Big Creek					
upstream M-4	0.33+0.04	<LDL	0.39+0.05	.846	7
impact M-5	0.26+0.02	0.01+0.003	0.27+0.02	.963	2
downstream M-2	0.18+0.02	<LDL	0.17+0.02	1.05	5
Middlefork Creek					
upstream M-3	0.87+0.08	0.02+0.01	0.94+0.08	.926	4
impact M-6	0.90+0.05	0.02+0.01	0.85+0.05	1.06	4
downstream M-1	0.22+0.03	0.01+0.01	0.25+0.03	.880	
mean Big Creek	0.257	<0.01	0.277	.928	4
sigma	0.075		0.110		
mean Middlefork Creek	0.663	0.017	0.680	.975	4
sigma	0.384	0.006	0.375		
mean upstream	0.60	<0.02	0.66	.909	5
mean impact area	0.58	0.015	0.56	1.04	3
mean downstream	0.20	<0.01	0.21	.952	3
LDL	0.01	0.01	0.02		

Monitoring Wells

errors are 2 sigma counting of peak and tracer

Sample	U-238 pCi/L	U-234 pCi/L	U-235 pCi/L	Counting time min.
MW-1	0.189+0.041	0.235+0.046	<LDL	1000
	0.157+0.040	0.239+0.050	<LDL	1000
MW-2	2.21 +0.07	5.08 +0.10	0.087+0.013	3000
	2.78 +0.15	6.17 +0.22	0.092+0.026	1000
	2.42 +0.13	5.84 +0.20	0.069+0.022	1000
MW-3	0.006+0.004	0.012+0.005	<LDL	3000
	<LDL	<LDL	<LDL	1000
	<LDL	<LDL	<LDL	1000
MW-4	0.126+0.033	0.108+0.043	<LDL	1000
	0.174+0.042	0.222+0.047	<LDL	1000
MW-5	0.045+0.010	0.100+0.014	<LDL	3000
	0.030+0.018	0.088+0.032	<LDL	1000
	0.029+0.017	0.057+0.026	<LDL	1000
MW-6	2.48 +0.15	2.96 +0.17	0.076+0.027	1000
	2.49 +0.14	3.21 +0.16	0.096+0.028	1000
MW-7	0.058+0.022	0.148+0.036	<LDL	1000
	0.078+0.027	0.104+0.031	<LDL	1000
MW-8	0.839+0.085	0.783+0.082	0.035+0.017	1000
	0.729+0.078	0.704+0.077	0.022+0.014	1000
LDL	0.03	0.04	0.01	

Surface Water

errors are 2 sigma counting of peak and tracer

Sample	U-238 pCi/L	U-234 pCi/L	U-235 pCi/L	Counting time min.
SW-NW	0.042±0.025 0.039±0.023	0.036±0.023 0.054±0.027	<LDL <LDL	1000 1000
SW-N	0.046±0.010 <LDL 0.060±0.028	0.063±0.012 0.059±0.046 0.071±0.031	<LDL <LDL <LDL	3000 1000 1000
SW-NE	0.054±0.026 0.070±0.030	0.028±0.018 0.052±0.026	<LDL <LDL	1000 1000
SW-SW	<LDL 0.030±0.020	<LDL 0.028±0.019	<LDL <LDL	1000 1000
SW-S	<LDL <LDL	<LDL <LDL	<LDL <LDL	1000 1000
SW-SE	<LDL <LDL	0.022±0.018 0.026±0.020	<LDL <LDL	1000 1000
SW-BN	<LDL 0.030±0.022	0.049±0.024 0.052±0.028	<LDL <LDL	1000 1000
SW-BS	0.052±0.024 0.028±0.020	0.042±0.022 0.067±0.032	<LDL <LDL	1000 1000
LDL	0.03	0.04	0.01	

Air Samples - taken 9 January, 1984

Sample	U-238 aCi/m ³	U-234 aCi/m ³
A-1	<49	<96
A-2	<59	<120
A-3	<69	<140
A-4	<62	<120
A-5	62+25	<120

Air Samples - taken 23 February, 1984 (during burn)

Sample	U-238 aCi/m ³	U-234 aCi/m ³
A1-A	<130	<250
A1-B	<61	<120
A-2	<39	<77
A-3	<41	<81
A-4	<41	<80
A-5	<39	<77
LDL	0.03	0.06 pCi/sample

Leaf Litter
errors are 2 sigma counting

Sample	U-238 pCi/g ash	U-234 pCi/g ash	U-235 pCi/g ash	% ash
W-S	0.133+0.018	0.116+0.017	<LDL	5.9
W-MID	0.289+0.031	0.310+0.032	<LDL	5.0
W-N	0.284+0.036	0.287+0.036	<LDL	5.7
E-S	0.082+0.016	0.095+0.017	<LDL	6.6
E-MID	0.316+0.020	0.332+0.021	0.0094+0.0035	3.4
E-N	0.113+0.014	0.111+0.014	<LDL	6.0
LDL pCi/sample	0.05	0.08	0.02	

Lichen Samples

Uranium concentrations pCi/g ash
errors are 2 sigma counting

Sample	U-238	U-234	U-235	% ash
L-7	0.85±0.09	0.90±0.09	0.018±0.008	11.7
L-8	0.92±0.11	0.76±0.10	0.026±0.013	4.1
L-9	0.98±0.10	0.88±0.10	0.029±0.011	10.4
L-23	0.91±0.10	0.97±0.10	0.015±0.007	6.1
L-28	0.98±0.10	0.93±0.10	0.040±0.012	10.3
L-37	0.97±0.12	0.93±0.12	0.046±0.020	4.9
LDL	0.05	0.08	0.02	
pCi/sample				

note- sample numbers indicate location of nearest soil sample

Deer Samples

Activities in pCi/gram ash. Errors are 2 sigma counting peak and trace

Sample/ JPG area	Liver			% ASH
	U-234	U-235	U-238	
8322120 57	0.016+0.007	<LDL	0.024+0.008	4.7
8322121 6	<LDL	<LDL	0.006+0.008	2.2*
8322122 57	<LDL	<LDL	0.003+0.004	4.8
8322123 57	0.054+0.014	<LDL	0.040+0.013	4.5
8322124 54	0.017+0.008	<LDL	0.005+0.005	4.8
8322125** 57 & 60	0.021+0.009	<LDL	0.035+0.012	4.4
8322126 57	<LDL	<LDL	0.013+0.004	4.2
8322127 57	0.028+0.010	<LDL	0.028+0.010	4.4

LDL/sample 0.032 pCi 0.004 pCi 0.0022

* some ash lost during analysis

** composite of 2 deer

Sample/ JPG area	Kidney			% ASH
	U-234	U-235	U-238	
8322120 57	<LDL	<LDL	<LDL	5.1
8322121 6	0.055+0.027	<LDL	<LDL	6.2
8322122 57	<LDL	<LDL	<LDL	4.9
8322123 57	NO SAMPLE			
8322124 54	<LDL	<LDL	0.049+0.022	3.7
8322125* 57 & 60	0.021+0.010	<LDL	0.016+0.008	5.3
8322126 57	<LDL	<LDL	<LDL	5.7
8322127 57	NO SAMPLE			
LDL/sample	0.032 pCi	0.004 pCi	0.0022	

*composite of 2 deer

Sample/ JPG area	U-234	Bone U-235	U-238	% ASH
	-----	-----	-----	-----
8322120 57	NO SAMPLE			
8322121 6	<LDL	<LDL	0.0003+0.0004	53.1
8322122 57	<LDL	<LDL	<LDL	56.8
8322123 57	NO SAMPLE			
8322124 54	NO SAMPLE			
8322125**	<LDL	<LDL	<LDL	61.2
57 & 60				
8322126 57	<LDL	<LDL	0.0002+0.0005	49.7
8322127 57	<LDL	<LDL	0.0002+0.0004	53.5
LDL/sample	0.032 pCi	0.004 pCi	0.0022	

** composite of 2 deer

Raccoon and Clam Samples

Activities in pCi/gram ash. Errors are 2 sigma.

Sample lab id #	U-234	Raccoon muscle		% ASH
	-----	U-235	U-238	-----
8322128	<LDL	<LDL	<LDL	3.8
8322129	<LDL	<LDL	<LDL	3.8
8322130	<LDL	<LDL	<LDL	4.0
8322131	<LDL	<LDL	<LDL	4.0
8322132	<LDL	<LDL	<LDL	3.5
8322133	<LDL	<LDL	<LDL	4.1
8322134	<LDL	<LDL	0.010±0.007	4.1
LDL pCi/sample 0.0323		0.0044	0.0223	

Sample lab id #	U-234	Clam soft tissue		% ASH
	-----	U-235	U-238	-----
8322436	0.35±0.03	0.0095±0.0043	0.31±0.02	30.7
LDL pCi/sample 0.0323		0.0044	0.0223	

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/13/86

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 1

MS MARY A GASSERT
 CONTRACTING OFFICER
 USA JEFFERSON PROVING GROUND
 MADISON IN 47250-5100

2-0647

DAAD03-86-M-0239

05/09/86

06/11/86

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (%CI/GM DRY)	NUCL-UNIT-1 U/M %	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-1 %	LAB.
			START DATE TIME	STOP DATE TIME				DATE	TIME		
63596 45-86-1			05/08	U-233/U-234	9.5 +-0.4 E-01		6/09		5		
					5.9 +-1.2 E-02		6/09		5		
					4.9 +-0.1 E-00		6/09		5		
63598 M2-86-1			05/08	U-233/U-234	4.8 +-1.0 E-02		6/09		5		
					1.4 1. E-03		6/09		5		
					4.8 +-1.0 E-02		6/09		5		

TELETYPE ISOTOPIES

RUN DATE 06/13/86
PAGE 2

REPORT OF ANALYSIS

WORK ORDER NUMBER 2-0647
CUSTOMER P.O. NUMBER 05/09/86
DELIVERY DATE 06/11/86

MS MARY A CASSEBT
CONTRACTING OFFICER
USA JEFFERSON PROVING GROUND
MADISON IN 47250-5100

SEGMENT/SILT

TELETYPE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/CM DPM)	NUCL-UNIT-1 (U/M)	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-1 g	LAB.
63597	MS-86-1		05/08		U-233/U-234 U-235 U-238	6.5 ±1.0 E-02 1.1 ±1.0 E-03 5.4 ±0.9 E-02		6/09 6/09 6/09		S S S
63599	LOCATION QUALIFIED		05/08		U-233/U-234 U-235 U-238	1.5 ±0.1 E-00 1.1 ±0.1 E-01 1.1 ±0.1 E-01		6/09 6/09 6/09		S S S

TELETYPE INQUIRIES

REPORT OF ANALYSIS

RUN DATE 06/13/86
PAGE 3

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED DELIVERY DATE

2-0667

088003-R6-M-0719

05/09/86 06/11/86

MS MARY A CASSETT
CONTRACTING OFFICE
USA JEFFERSON PROVING GROUND
MADISON IN 47250-5100

M A T E R

TELEPHONE
SAMPLE
NUMBER

CUSTOMER'S
IDENTIFICATION

STA
NUM

COLLECTION-DATE

START

STOP

TIME DATE

NUCLIDE

ACTIVITY
(PCI/LITER)

NUCL-UNIT-I
U/M

MID-COUNT
TIME

DATE

VOLUME - UNITS
ASH-WGHT-I

LAB.

63592 SW-BW-R6-1

05/08

U-233/U-234

2.0 +0.4 F-01
1.2 +1.0 F-02
1.9 +0.4 F-01

6/07
6/07
6/07

5
5
5

63593 MW-7

05/08

U-233/U-234

1.7 +0.1 F-00
3.6 +1.5 F-02
1.3 +0.1 F-00

6/07
6/07
6/07

5
5
5

63594 SW-NW

05/08

U-233/U-234

2.0 +0.4 F-01
1.5 +3.5 F-03
2.3 +0.4 F-01

6/07
6/07
6/07

5
5
5

63595 MW-3

05/08

U-233/U-234

3.4 +0.8 F-01
4.9 +1.9 F-02
1.5 +0.1 F-00

6/07
6/07
6/07

5
5
5

LAST PAGE OF REPORT

J. D. Martin

APPROVED BY J D MARTIN

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 03/14/86

MS MARY A GASSERT
CONTRACTING OFFICER
USA JEFFERSON PROVING GROUND
MADISON IN 47250-5100

WORK ORDER NUMBER

2-5505

CUSTOMER P.O. NUMBER

DAAD03-86-M-0239

DATE RECEIVED

01/27/86

DELIVERY DATE

02/26/86

PAGE 1

AIR PARTICULATE FILTERS

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/CU. M)	NUCL-UNIT-I U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-I *	LAB.
			START DATE	STOP DATE				DATE	TIME		
53417	FIELD SAMPLE-A 15861		01/12 1205	01/12 1332	U-233/ U-234 U-235 U-238	9.2 +-3.5 E-04 L.T. 8. E-05 2.7 +-2.6 E-04		3/06 3/06 3/06		3.84E 03 CU.FT 5 5 5	

LAST PAGE OF REPORT

SEND 1 COPIES TO JE1005 MS MARY A GASSERT

2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - GEILII GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB.

APPROVED BY H. KING

03/14/86

TELEDYNE ISOTOPES

RUN DATE 02/11/86

REPORT OF ANALYSIS

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 1

MS MARY A GASSERT
 CONTRACTING OFFICER
 USA JEFFERSON PROVING GROUND
 MACISG IN 47250-5100

2-5197

DAAD03-86-M-0239

01/09/86

02/07/86

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM CRY)	NUCL-UNIT-1 U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-1 *	LAB.
			START DATE	STOP DATE				DATE	TIME		
51474	NG 6		12/08		U-233/U-234	1.4 +-0.1 E 00		2/03		5	
					U-235	7.1 +-1.1 E-02		2/03		5	
					U-238	1.0 +-0.1 E 01		2/03		5	

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 02/11/86

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 2

MS MARY A GASSERT
 CONTRACTING OFFICER
 USA JEFFERSON PROVING GROUND
 MACISON IN 47250-5100

2-5197

DAAD03-86-P-0234

01/09/86

02/07/86

SEDIMENT/SILT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-1 U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-1 *	LAB.
			START DATE	STOP DATE				DATE	TIME		
51475	NC 2	SEDIMENT	12/08		U-233 /U-234	1.3 +-0.2 E-01		2/03		5	
					U-235	3.2 +-2.6 E-03		2/03		5	
					U-238	1.1 +-0.1 E-01		2/03		5	

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 02/11/86

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 3

MS MARY A GASSERT
 CONTRACTING OFFICER
 USA JEFFERSON PROVING GROUND
 MACISEN IN 47250-5100

2-5157

D44003-86-M-0239

01/09/86

02/07/86

WATER - GROUND

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-(U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-(*	LAB.
			START DATE	STOP TIME				DATE	TIME		
51476	NC 7 QA WELL		11/15		U-233/U-234	1.4 +/-0.2 E-00		2/03		5	
					U-235	1.1 +/- 4. E-02		2/03		5	
					U-238	8.0 +/-1.8 E-01		2/03		5	

TELEDYNE ISCTEPES

REPORT OF ANALYSIS

RUN DATE 02/11/86

MS MARY A GASSERT CONTRACTING OFFICER USA JEFFERSON PROVING GROUND MAGISON IN 47250-5100	WORK ORDER NUMBER 2-5197	CLSILMER P.O. NUMBER DAAD03-86-M-0239	DATE RECEIVED 01/09/86	DELIVERY DATE 02/07/86	PAGE 4
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WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PLI/LITER)	NUCL-UNIT-I U/M *	MID-COUNT TIME		VOLUME - UNITS ASH-WGHT-(*)	LAB.
			START DATE	STOP TIME				DATE	TIME		
51477 GA	SURFACE		12/08		U-233/U-234	2.2 +/-1.0 E-01		2/03		5	
					U-235	L.T. 5. E-02		2/03		5	
					U-238	L.T. 1. E-01		2/03		5	

LAST PAGE OF REPORT

APPROVED BY H. KING

02/11/86

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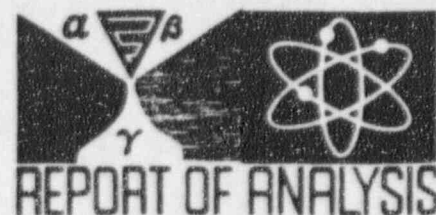
2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - GE(LI) GAMMA SPEC LAB.

5 - TRITIUM GAS/L.S. LAB.

CUSTOMER U.S. ARMY JEFFERSON PROVING GROUND
 ATTENTION MADISON, IN 47250
 ADDRESS
 CITY
 S.O. NO. E-3985



Radiochemical analyses of water, soil, sediment, filter, & deer. P.O. #DAADO3-84-M-0650
 CUSTOMER ORDER NUMBER 6/29/84

Customer Identification	Date Collected	Type of Analysis	pCi/l			Total Vol. (ml)
			U-234	U-235	U-238	
(MW-1)8410027-1 (water)	4/30/84		<0.3	<0.1	<0.4	3850
(SW Bn)8410041-1 (Water)	5/30/84		<0.1	<0.1	<0.1	3820
(MW-5) split (water)	1/10/84		<0.1	<0.1	<0.1	3870
(SW-SE)AEHA Split (water)	12/6/83		<0.1	<0.1	<0.1	610
(SW-NE)AEHA Split (water)	12/6/83		<0.1	<0.1	<0.1	3680
			pCi/g (dry)			wet/dry(g)
14A (Soil)			1.2±0.1	<0.1	1.1±0.1	621/488
15A (Soil)			1.0±0.1	<0.1	1.0±0.1	420/359
17A (Soil)			1.0±0.1	<0.1	1.1±0.1	463/362
27A (Soil)			0.7±0.2	0.4±0.1	0.6±0.2	641/477
26A (Soil)			0.6±0.1	<0.1	0.5±0.1	501/385
28A (Soil)			0.5±0.1	<0.1	0.6±0.1	596/476
29A (Soil)			0.7±0.1	0.2±0.1	0.6±0.1	497/381
30A (Soil)			0.7±0.1	<0.1	0.6±0.1	563/429
37A (Soil)			0.6±0.1	<0.1	0.7±0.1	575/440
38A (Soil)			0.7±0.1	<0.1	0.7±0.1	474/372
4 Sediment	4/30/84		0.7±0.1	<0.1	0.7±0.1	586/426
6 Sediment	4/30/84		0.6±0.1	<0.1	0.7±0.1	547/431
19 Sediment	4/30/84		0.7±0.1	<0.1	0.7±0.1	437/335
26 Sediment	4/30/84		0.5±0.1	<0.1	0.6±0.1	499/353
32 Sediment	4/30/84		0.5±0.1	<0.1	0.6±0.1	346/259
Dig Cr WP	4/30/84		0.2±0.1	<0.1	0.4±0.1	646/385

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PAGE 1 OF 2 PAGE

Eberline

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APPROVED BY

Chandrasekaran

CHANDRASEKARAN, E.S., MANAGER

8/13/8

DAY

ARMY



CITY E-3985

S.O. NO.

Radiochemical analyses of filter & deer

TYPE OF ANALYSIS

CUSTOMER ORDER NUMBER SAMPLES RECEIVED

Customer Identification	Date Collected	Type of Analysis	pCi/g (dry)			Total Vol. (g) wet/dry
			U-234	U-235	U-238	
A-5 Split (filter)	2/23/84		0.2±0.2	<0.1	<0.1	
A-6 (filter)	1/10/84		<0.2	<0.2	<0.2	
#1 (Deer)			<0.001	<0.001	<0.001	430/144
#2 (Deer)			<0.001	<0.001	<0.001	594/238
#3 (Deer)			<0.001	<0.001	<0.001	624/270
#4 (Deer)			<0.001	<0.001	<0.001	697/295

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PAGE 2 OF 2 PAGE

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CHANDRASEKARAN, E.S., MANAGER

8/13/8

DAY

CUSTOMER U.S. ARMY JEFFERSON PROVING GROUND
 ATTENTION MADISON, IN 47250
 ADDRESS
 CITY
 S.O. NO. E-4671



Radiochemical analyses of soil, sediment & water.

TYPE OF ANALYSIS

CUSTOMER ORDER NUMBER

SAMPLES RECEIVED

2/25/85

Customer Identification	Date Collected	Type of Analysis	pCi/g(dry)	wet/dry Total Wt. (g)
Sample Point 146 (Soil)	1985 3:15 am	U-234	0.5±0.1	438/298
		U-235	0.02±0.02	
		U-238	0.7±0.1	
Sample Point 10 Q-A (Soil)	12/2/84	U-234	1.5±0.1	558/444
		U-235	0.11±0.03	
		U-238	8.0±0.3	
M-EPERM (Sediment)	1/29/85	U-234	0.7±0.1	885/657
		U-235	0.03±0.02	
		U-238	0.7±0.1	
M-3 QA (Sediment)	12/2/84	U-234	0.5±0.1	823/623
		U-235	0.02±0.02	
		U-238	0.5±0.1	
			<u>pCi/l</u>	<u>Vol. (ml)</u>
TAP (water)	1/29/85	U-234	0.4±0.2	3700
		U-235	0.0±0.2	
		U-238	0.5±0.2	
SW-EPER (water)	1/29/85	U-234	0.2±0.2	3700
		U-235	0.0±0.1	
		U-238	0.2±0.1	
MW-1 (water)	12/2/84	U-234	0.3±0.1	4000
		U-235	0.0±0.1	
		U-238	0.3±0.1	
SW-S (water)	12/2/84	U-234	-0.1±0.4	4100
		U-235	0.1±0.3	
		U-238	0.1±0.4	

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5/10/8

DA

CUSTOMER U.S. ARMY JEFFERSON PROVING GROUND
 ATTENTION PROCUREMENT DIV. b-125, WYCOSS
 ADDRESS RECEIVING DEPT. BLDG. 108A
 CITY MADISON, IN 47250
 S.O. NO. E-4893



Isotopic Uranium in Water DAAD03-B5-M-0099
 TYPE OF ANALYSIS CUSTOMER ORDER NUMBER SAMPLES RECEIVED 5/13/85

Customer Identification	Date Collected	Type of Analysis	pCi/l	Total Vol. (ml)
SW-NW (Water)		U-234	0.30 ± 0.10	3720
		U-235	<0.10	
		U-238	0.22 ± 0.11	
SW-BN (Water)		U-234	0.23 ± 0.08	3605
		U-235	1.05 ± 0.18	
		U-238	0.95 ± 0.16	
MW-2 (Water)		U-234	2.04 ± 0.22	3655
			2.00 ± 0.23*	
		U-235	0.07 ± 0.04	
			0.10 ± 0.06*	
		U-238	1.08 ± 0.16	
			1.04 ± 0.17*	
MW-3 (Water)		U-234	0.25 ± 0.06	3324
		U-235	0.04 ± 0.03	
		U-238	0.19 ± 0.07	

*Duplicate analysis

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Ernest A. Sanchez
 ERNEST A. SANCHEZ, MANAGER

6/28/85

DATE

CUSTOMER U.S. ARMY JEFFERSON PROVING GROUND
 ATTENTION PROCUREMENT DIV. B-125, WYCOSS
 ADDRESS RECEIVING DEPT., BLDG. 108A
 CITY MADISON, IN 47250
 S.O. NO. E-4893



Isotopic Uranium in Soil & Sediment
 TYPE OF ANALYSIS

DAAD03-85-M-0099

CUSTOMER ORDER NUMBER

SAMPLES RECEIVED 5/13/85

Customer Identification	Date Collected	Type of Analysis	pCi/g. (dry)	Total Wt. (g) wet/dry
6 (Soil)		U-234	2.15 ± 0.12	523/392
		U-235	0.19 ± 0.04	
		U-238	12.7 ± 0.3	
19 (Soil)		U-234	0.47 ± 0.04	487/382
		U-235	<0.03	
		U-238	0.52 ± 0.04	
M-2 (Sediment)		U-234	0.19 ± 0.03	965/754
		U-235	<0.03	
		U-238	0.24 ± 0.06	
M-6 (Sediment)		U-234	0.34 ± 0.04	1000/681
		U-235	<0.03	
		U-238	0.29 ± 0.04	

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PAGE 2 OF 2 PAGE

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 ERNEST A. SANCHEZ, MANAGER

6/28/85

DATE

JEFFERSON PROVING GROUND
 ELEMENT DIV. b-125, WYCOSS

RECEIVING DEPT. BLDG. 108A
 MADISON, IN 47250

P.O. NO. E-48933



Isotope Uranium in water

0099

SAMPLES RECEIVED

5/13/85

Customer Identification	Date Collected	Type of Analysis	pCi/l	Total Vol. (ml)
SW-NW (Water)		U-234	0.30 ± 0.10	3720
		U-235	<0.10	
		U-238	0.22 ± 0.11	
SW-BN (Water)		U-234	0.23 ± 0.08	3605
		U-235	1.05 ± 0.18	
		U-238	0.95 ± 0.16	
MW-2 (Water)		U-234	2.04 ± 0.22	3655
			$2.00 \pm 0.23^*$	
		U-235	0.07 ± 0.04	
			$0.10 \pm 0.06^*$	
		U-238	1.08 ± 0.16	
			$1.04 \pm 0.17^*$	
MW-3 (Water)		U-234	0.25 ± 0.06	3324
		U-235	0.04 ± 0.03	
		U-238	0.19 ± 0.07	

*Duplicate analysis

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Ernest A. Sanchez

ERNEST A. SANCHEZ, MANAGER

6/28/85

DATE

JEFFERSON PROVING GROUND
 ELEMENT DIV. B-125, WYCOSS
 RECEIVING DEPT., BLDG. 108A
 MADISON, IN 47250
 E-4893



SAMPLES RECEIVED 5/13/85

Customer Identification	Date Collected	Type of Analysis	pCi/g (dry)	Total Wt. (g)
				wet/dry
6 (Soil)		U-234	2.15 ± 0.12	523/392
		U-235	0.19 ± 0.04	
		U-238	12.7 ± 0.3	
19 (Soil)		U-234	0.47 ± 0.04	487/382
		U-235	<0.03	
		U-238	0.52 ± 0.04	
M-2 (Sediment)		U-234	0.19 ± 0.03	965/754
		U-235	<0.03	
		U-238	0.24 ± 0.06	
M-6 (Sediment)		U-234	0.34 ± 0.04	1000/681
		U-235	<0.03	
		U-238	0.29 ± 0.04	

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Ernest A. Sanchez
 ERNEST A. SANCHEZ, MANAGER

6/28/85
 DATE

CUSTOMER U.S. Army Jefferson Proving Ground
 ATTENTION Ms. Grant
 ADDRESS Receiving Dept., Bldg. 108A
 CITY Madison, IN 47250-5100
 W.O. NO. E-6537



Isotopic
 Uranium in Soil, Sediment & Water
 TYPE OF ANALYSIS

DAAD03-87-M-0012
 CUSTOMER ORDER NUMBER

SAMPLES RECEIVED 12/5/86

Customer Identification	Cust. Sample	Date Collected	Type of Analysis	Total Wt. wet/dry (g)	pCi/g
#6	Soil		U-235 U-234 U-238	382/303	1.5±0.1 14±1 100±10 ←
#46	Soil		U-235 U-234 U-238	422/322	0.08±0.03 0.7±0.1 1.0±0.1
#M2	Sediment		U-235 U-234 U-238	1024/796	0.00±0.03 0.00±0.03 0.00±0.05
M#5	Sediment		U-235 U-234 U-238	1037/804	0.00±0.02 0.3±0.1 0.1±0.1
				Total Vol. (ml)	pCi/l
SW-NW	Water		U-235 U-234 U-238	2710	0.00±0.06 0.5±0.2 0.5±0.2
SW-BN	Water		U-235 U-234 U-238	3660	0.00±0.02 0.6±0.1 0.5±0.1

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PAGE 1 OF 1 PAGE

TMA Eberline
Thermo Analytical Inc.

7021 PAN AMERICAN FREEWAY, N.E.
 ALBUQUERQUE, NEW MEXICO 87109
 PHONE (505) 345-3461

APPROVED BY

Rod Melgard, Mgr.

2/13/87

DATE

CUSTOMER U.S. Army Jefferson Proving Ground
 ATTENTION Ms. Grant, Transportation Officer
 ADDRESS Receiving Dept., Bldg 108A
 CITY Madison, IN 47250-5100
 W.O. NO. E-7128



DAAD03-87-M-0012

W53H2B6162-185

PC0248
CUSTOMER ORDER NUMBER

Radiochemical Analysis of Soil & Water

TYPE OF ANALYSIS

SAMPLES RECEIVED 5/14/87

Customer Identification	Date Collected	Type of Analysis	Total Wt. wet/dry (g)	pCi/g (dry)
6-87-1 Soil #1		U-234 U-235 U-238	468/362	1.6±0.2 0.10±0.04 9.9±0.4
52-87-1 Soil #2		U-234 U-235 U-238	416/317	0.8±0.2 0.04±0.04 1.8±0.2
M1-87-1 Sediment #1		U-234 U-235 U-238	1003/826	0.3±0.1 0.00±0.06 0.2±0.1
M2-87-1 Sediment #2		U-234 U-235 U-238	980/750	0.2±0.1 0.00±0.01 0.2±0.1
			<u>Total Vol. (ml)</u>	<u>pCi/l</u>
MW-1-87-1 Ground Water #1		U-234 U-235 U-238	2150	0.3±0.1 0.00±0.05 0.6±0.1
MW-2-87-1 Ground Water #2		U-234 U-235 U-238	3720	1.6±0.2 0.05±0.03 1.0±0.2
SW-NW-87-1 Surface Water #1		U-234 U-235 U-238	3780	0.1±0.1 0.00±0.05 0.2±0.1
SW-SE-87-1 Surface Water #2		U-234 U-235 U-238	3380	0.1±0.1 0.00±0.02 0.0±0.1

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Thermo Analytical Inc.

7021 PAN AMERICAN FREEWAY, N.E.
 ALBUQUERQUE, NEW MEXICO 87109
 PHONE (505) 345-3461

APPROVED BY

Rod Melgard, Mgr.

6/9/87

DATE

CUSTOMER U.S.A. Jefferson Proving Ground
 ATTENTION Receiving Dept.-Bldg. 108A
 ADDRESS Madison, IN 47250-5100
 CITY
 W.O. NO. E-8064



DAAD03-88-M-0159

Isotopic Uranium in filters

Bill of Lading, C-1 320, 043
 CUSTOMER ORDER NUMBER SAMPLES RECEIVED

12/28/87

Customer Identification	Date Collected	Type of Analysis	pCi/Sample
A-387-2		U-234	0.0±0.6
Air filter		U-235	0.0±0.1
		U-238	0.0±0.6
Blank		U-234	0.0±0.6
		U-235	0.0±0.3
		U-238	0.0±0.4

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1/20/88

CUSTOMER U.S.A. Jefferson Proving Ground
 ATTENTION Receiving Dept.-Bldg. 108A
 ADDRESS Madison, IN 47250-5100
 CITY
 W.O. NO. E-8053



Bill of Lading C-1,320,043

Isotopic Uranium in Water, Sediment & Soil DAAD03-88-M-0159

TYPE OF ANALYSIS

CUSTOMER ORDER NUMBER

SAMPLES RECEIVED

12/28/87

Customer Identification	Date Collected	Type of Analysis	Total Vol. (ml)	pCi/l
MW-2-87-2 Water		U-234 U-235 U-238	3250	1.0±0.2 0.00±0.03 0.4±0.2
MS-7-87-2 Water		U-234 U-235 U-238	3910	1.5±0.2 0.00±0.04 0.9±0.2
SW-BN-87-2 Water		U-234 U-235 U-238	3840	0.3±0.1 0.00±0.04 0.3±0.1
SW-NW-87-2 Water		U-234 U-235 U-238	3840	0.3±0.2 0.00±0.08 0.5±0.2
			Total Wt. wet/dry (g)	pCi/g (dry)
M-2-87-2 Sediment		U-234 U-235 U-238	754/646	0.3±0.1 0.00±0.06 0.4±0.1
M-8-87-2 Sediment		U-234 U-235 U-238	813/668	0.2±0.1 0.00±0.05 0.2±0.1
6-87-2 Soil		U-234 U-235 U-238	644/544	1.4±0.2 0.09±0.05 4.5±0.3
53-87-2 Soil		U-234 U-235 U-238	525/459	0.7±0.1 0.00±0.04 0.9±0.2

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PAGE 1 OF 1 PAGE

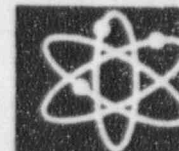
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APPROVED BY

R. Melgard
 Rod Melgard, Mgr.

1/25/88



REPORT OF ANALYSIS

CUSTOMER U.S. ARMY JEFFERSON PROVING GROUND
 ATTENTION PROCUREMENT DIV. b-125, WYCOSS
 ADDRESS RECEIVING DEPT. BLDG. 108A
 CITY MADISON, IN 47250
 PHONE E-4893

Isotopic Uranium in Water
 TYPE OF ANALYSIS

DAAD03-85-M-0099
 CUSTOMER ORDER NUMBER

SAMPLES RECEIVED 5/13/85

Customer Identification	Date Collected	Type of Analysis	pCi/l	Total Vol. (ml)
SW-NW (Water)		U-234	0.30 ± 0.10	3720
		U-235	<0.10	
		U-238	0.22 ± 0.11	
SW-BN (Water)		U-234	0.23 ± 0.08	3605
		U-235	1.05 ± 0.18	
		U-238	0.95 ± 0.16	
MW-2 (Water)		U-234	2.04 ± 0.22	3655
			2.00 ± 0.23*	
		U-235	0.07 ± 0.04	
		U-238	1.08 ± 0.16	
MW-3 (Water)		U-234	0.25 ± 0.06	3324
		U-235	0.04 ± 0.03	
		U-238	0.19 ± 0.07	

*Duplicate analysis

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Eberline



Ernest A. Sanchez
 ERNEST A. SANCHEZ, MANAGER

6/28/85

ARMY

ALBUQUERQUE LABORATORY



LESS
CITY E-3985
S O NO

Radiochemical analyses of filter & deer.
TYPE OF ANALYSIS

CUSTOMER ORDER NUMBER

ANALYSIS RECEIVED

Customer Identification	Date Collected	Type of Analysis	pCi/g (dry)			Total Vol. (g) wet/dry
			U-234	U-235	U-238	
A-5 Split (filter)	2/23/84		0.2±0.2	<0.1	<0.1	
A-6 (filter)	1/10/84		<0.2	<0.2	<0.2	
#1 (Deer)			<0.001	<0.001	<0.001	430/144
#2 (Deer)			<0.001	<0.001	<0.001	594/238
#3 (Deer)			<0.001	<0.001	<0.001	624/270
#4 (Deer)			<0.001	<0.001	<0.001	697/295

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Thermo Electron

Chandrasekaran

8/13/84

P O BOX 3874 ALBUQUERQUE NEW MEXICO 87190
PHONE (505) 345-3200 FAX (505) 345-0578

CHANDRASEKARAN, E.S., MANAGER

CUSTOMER U.S. ARMY JEFFERSON PROVING GROUND
 ATTENTION MADISON, IN 47250
 ADDRESS
 CITY
 SO NO. E-3985



Radiochemical analyses of water, soil, sediment, filter, & deer. P.O.#DAAD03-84-M-0650
 TYPE OF ANALYSIS CUSTOMER ORDER NUMBER SAMPLES RECEIVED 6/29/84

Customer Identification	Date Collected	Type of Analysis	pCi/l			Total Vol. (ml)
			U-234	U-235	U-238	
(MW-1)8410027-1 (water)	4/30/84		<0.3	<0.1	<0.4	3850
(SW Bn)8410041-1 (Water)	5/30/84		<0.1	<0.1	<0.1	3820
(MW-5) split (water)	1/10/84		<0.1	<0.1	<0.1	3870
(SW-SE)AEHA Split (water)	12/6/83		<0.1	<0.1	<0.1	610
(SW-NE)AEHA Split (water)	12/6/83		<0.1	<0.1	<0.1	3680
			pCi/g (dry)			wet/dry(
14A (Soil)			1.2±0.1	<0.1	1.1±0.1	621/488
15A (Soil)			1.0±0.1	<0.1	1.0±0.1	420/359
17A (Soil)			1.0±0.1	<0.1	1.1±0.1	463/362
27A (Soil)			0.7±0.2	0.4±0.1	0.6±0.2	641/477
26A (Soil)			0.6±0.1	<0.1	0.5±0.1	501/385
28A (Soil)			0.5±0.1	<0.1	0.6±0.1	596/476
29A (Soil)			0.7±0.1	0.2±0.1	0.6±0.1	497/381
30A (Soil)			0.7±0.1	<0.1	0.6±0.1	563/429
37A (Soil)			0.6±0.1	<0.1	0.7±0.1	575/440
38A (Soil)			0.7±0.1	<0.1	0.7±0.1	474/372
4 Sediment	4/30/84		0.7±0.1	<0.1	0.7±0.1	586/426
6 Sediment	4/30/84		0.6±0.1	<0.1	0.7±0.1	547/431
19 Sediment	4/30/84		0.7±0.1	<0.1	0.7±0.1	437/335
26 Sediment	4/30/84		0.5±0.1	<0.1	0.6±0.1	499/353
32 Sediment	4/30/84		0.5±0.1	<0.1	0.6±0.1	346/259
Dig Cr WP	4/30/84		0.2±0.1	<0.1	0.4±0.1	646/385

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Eberline

Thermo Electron
 CORPORATION

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PAGE 1 OF 2 PAGE
 CHANDRASEKARAN, E.S., MANAGER
 8/13

CUSTOMER U.S. ARMY JEFFERSON PROVING GROUND
 ATTENTION PROCUREMENT DIV. B-125, WYCOSS
 ADDRESS RECEIVING DEPT., BLDG. 108A
 CITY MADISON, IN 47250
 S.O. NO. E-4893



Isotopic Uranium in Soil & Sediment.
 TYPE OF ANALYSIS

DAAD03-85-M-0099
 CUSTOMER ORDER NUMBER

ANALYSIS RECEIVED 5/13/85

Customer Identification	Date Collected	Type of Analysis	pCi/g (dry)	Total Wt. (g) wet/dry
6 (Soil)		U-234	2.15 ± 0.12	523/392
		U-235	0.19 ± 0.04	
		U-238	12.7 ± 0.3	
19 (Soil)		U-234	0.47 ± 0.04	487/382
		U-235	<0.03	
		U-238	0.52 ± 0.04	
M-2 (Sediment)		U-234	0.19 ± 0.03	965/754
		U-235	<0.03	
		U-238	0.24 ± 0.06	
M-6 (Sediment)		U-234	0.34 ± 0.04	1000/681
		U-235	<0.03	
		U-238	0.29 ± 0.04	

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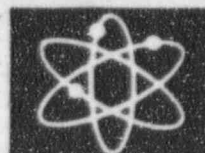
Eberline  Thermo Electron

APPROVED BY

Ernest A. Sanchez
 ERNEST A. SANCHEZ, MANAGER

6/28/85

CUSTOMER U.S.A. Jefferson Proving Ground
ATTENTION Receiving Dept.-Bldg. 108A
ADDRESS Madison, IN 47250-5100
CITY
W.O. NO. E-8053



REPORT OF ANALYSIS

Bill of Lading C-1,320,043

Isotopic Uranium in Water, Sediment DAAD03-88-M-0159

TYPE OF ANALYSIS & Soil CUSTOMER ORDER NUMBER SAMPLES RECEIVED 12/28/87

Customer Identification	Date Collected	Type of Analysis	Total Vol. (ml)	pCi/l
MW-2-87-2 Water		U-234 U-235 U-238	3250	1.0±0.2 0.00±0.03 0.4±0.2
MS-7-87-2 Water		U-234 U-235 U-238	3910	1.5±0.2 0.00±0.04 0.9±0.2
SW-BN-87-2 Water		U-234 U-235 U-238	3840	0.3±0.1 0.00±0.04 0.3±0.1
SW-NW-87-2 Water		U-234 U-235 U-238	3840	0.3±0.2 0.00±0.08 0.5±0.2
			Total Wt. wet/dry (g)	pCi/g (dry)
M-2-87-2 Sediment		U-234 U-235 U-238	754/646	0.3±0.1 0.00±0.06 0.4±0.1
M-8-87-2 Sediment		U-234 U-235 U-238	813/668	0.2±0.1 0.00±0.05 0.2±0.1
6-87-2 Soil		U-234 U-235 U-238	644/544	1.4±0.2 0.09±0.05 4.5±0.3
53-87-2 Soil		U-234 U-235 U-238	525/459	0.7±0.1 0.00±0.04 0.9±0.2

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TMA Eberline
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APPROVED BY

R. Melgard

Rod Melgard, Mgr. 1/25/88 DATE

CUSTOMER U.S. Army Jefferson Proving Ground
 ATTENTION Ms. Grant, Transportation Officer
 ADDRESS Receiving Dept., Bldg 108A
 CITY Madison, IN 47250-5100
 W.O. NO. E-7128



DAAD03-87-M-0012

Radiochemical Analysis of Soil & Water

W53H2B6162-185

PC0248

CUSTOMER ORDER NUMBER

SAMPLES RECEIVED 5/14/87

TYPE OF ANALYSIS

Customer Identification	Date Collected	Type of Analysis	Total Wt. wet/dry (g)	pCi/g (dry)
6-87-1 Soil #1		U-234	468/362	1.6±0.2
		U-235		0.10±0.04
		U-238		9.9±0.4
52-87-1 Soil #2		U-234	416/317	0.8±0.2
		U-235		0.04±0.04
		U-238		1.8±0.2
M1-87-1 Sediment #1		U-234	1003/826	0.3±0.1
		U-235		0.00±0.06
		U-238		0.2±0.1
M2-87-1 Sediment #2		U-234	980/750	0.2±0.1
		U-235		0.00±0.01
		U-238		0.2±0.1
			<u>Total Vol. (ml)</u>	<u>pCi/l</u>
MW-1-87-1 Ground Water #1		U-234	2150	0.3±0.1
		U-235		0.00±0.05
		U-238		0.6±0.1
MW-2-87-1 Ground Water #2		U-234	3720	1.6±0.2
		U-235		0.05±0.03
		U-238		1.0±0.2
SW-NW-87-1 Surface Water #1		U-234	3780	0.1±0.1
		U-235		0.00±0.05
		U-238		0.2±0.1
SW-SE-87-1 Surface Water #2		U-234	3380	0.1±0.1
		U-235		0.00±0.02
		U-238		0.0±0.1

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Rod Melgard, Mgr.

6/9/87

CUSTOMER U.S. Army Jefferson Proving Ground
 ATTENTION Receiving Dept. Bldg. 108H
 ADDRESS Madison, IN 47250-5100
 CITY
 W.O. NO. E-8599



Isotopic Uranium in Water, Sediment & Soil
 TYPE OF ANALYSIS

DAA03-88-M-0159
 CUSTOMER ORDER NUMBER

SAMPLES RECEIVED 5/10/88

Customer Identification	Date Collected	Type of Analysis	Total Vol. (ml)	pCi/l
Water Sample MW1-88-1		U-234	3600	0.3±0.2
		U-235		0.0±0.1
		U-238		0.7±0.2
Water Sample MW6-88-1		U-234	3600	1.9±0.3
		U-235		0.09±0.07
		U-238		1.6±0.3
Water Sample SWN-88-1		U-234	3700	0.2±0.2
		U-235		0.0±0.1
		U-238		0.4±0.2
Water Sample SWBN-88-1		U-234	3400	0.3±0.2
		U-235		0.0±0.1
		U-238		0.5±0.3
			Total Vol. wet dry (g)	pCi/g (dry)
Sediment Sample M1-88-1		U-234	1130/932	0.2±0.1
		U-235		0.00±0.01
		U-238		0.2±0.1
Sediment Sample M2-88-1		U-234	1229/1012	0.1±0.1
		U-235		0.00±0.01
		U-238		0.1±0.1
Soil Sample 6-88-1		U-234	1020/828	1.3±0.1
		U-235		0.08±0.03
		U-238		6.1±0.2
Soil Sample 45-88-1		U-234	684/554	0.5±0.1
		U-235		0.03±0.01
		U-238		0.7±0.1

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5/31/88

CUSTOMER U.S. Army Jefferson Proving Ground
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 ADDRESS Madison, IN 47250-5100
 CITY
 W.O. NO. E-8599



Isotopic Uranium in Water, Sediment & Soil
 TYPE OF ANALYSIS

DAA03-88-M-0159
 CUSTOMER ORDER NUMBER

SAMPLES RECEIVED 5/10/88

Customer Identification	Date Collected	Type of Analysis	Total Vol. (ml)	pCi/l
Water Sample MW1-88-1		U-234 U-235 U-238	3600	0.3±0.2 0.0±0.1 0.7±0.2
Water Sample MW6-88-1		U-234 U-235 U-238	3600	1.9±0.3 0.09±0.07 1.6±0.3
Water Sample SWN-88-1		U-234 U-235 U-238	3700	0.2±0.2 0.0±0.1 0.4±0.2
Water Sample SWBN-88-1		U-234 U-235 U-238	3400	0.3±0.2 0.0±0.1 0.5±0.3
			<u>Total Vol. wet dry (g)</u>	<u>pCi/g (dry)</u>
Sediment Sample M1-88-1		U-234 U-235 U-238	1130/932	0.2±0.1 0.00±0.01 0.2±0.1
Sediment Sample M2-88-1		U-234 U-235 U-238	1229/1012	0.1±0.1 0.00±0.01 0.1±0.1
Soil Sample 6-88-1		U-234 U-235 U-238	1020/828	1.3±0.1 0.08±0.03 6.1±0.2
Soil Sample 45-88-1		U-234 U-235 U-238	684/554	0.5±0.1 0.03±0.01 0.7±0.1

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5/31/88